ADAPTABLE SERVICE-SYSTEM DESIGN: AN ANALYSIS OF SHARIAH FINANCE IN PAKISTAN

This thesis is submitted for the degree of Doctor of Philosophy

By

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In the Name of ALLAH (SWT), the Most Compassionate, the Most Merciful

ABSTRACT

An adaptable service system adjusts to the operational-level environments of organisations to enable heterogeneous services. This adaptation is important for sustainability and contextual-value (benefit) creation in a service system. Academics, such as those related to the current service-ecosystem concept, acknowledge the significance of this adaptation. However, little is known about a comprehensive adaptation process and how that integrates within a design for a service system. Also, practitioners are inclined towards this development, as the financial regulator in Pakistan has established an "evolutionary framework". This framework encourages financial institutions to design *Shariah* finance services (SFS) which respond and evolve to the emergent market environments. The existing SFS models take benefit from Islamic jurisprudence and economics literatures to provide designs for transactions of financial and physical assets. However, the SFS models de-emphasis the intangible service-elements, where the adaptation is more likely to occur. Currently there is a great need for models that could explain the detailed adaptation process and its placement in an SFS design. The aim of this research is to develop, evaluate and theorise a model for conceptualising a holistic adaptable service-system design.

The research aim is achieved through the proposal of a novel deferred service-system design (DSD) model. The DSD conceptualises a service-system design that adapts to the operational-level environments of SFS organisations in Pakistan. The DSD has seven constructs: (i) the service creators apply centrally-planned designs to create a service ii) they adapt these designs to meet the requirements of emergent contexts (iii) the service personnel, customers and aiding parties co-create a service by integrating their (iv) roles and actions, (v) resources and usufructs, (vi) rules and control to generate (vii) value. DSD is based on service-system design (SSD) literature, SFS literature and theory of deferred action (TODA) – a theory of system and organisation design.

A multiple case study strategy is employed to evaluate, extend and theorise the DSD developed in phase I. Qualitative data are collected in four SFS organisations: Islamic commercial bank, Islamic life *Takaful*, Islamic mutual fund, and Islamic leasing organisation. Thirty-two in-depth narrative interviews of SFS personnel are conducted and analysed using a narrative discourse analysis method. The findings are triangulated by adding focus-group discussions, visualisations and service offering documents.

The empirical findings are synthesised with the extant literature to develop a novel and comprehensive DSD in phase II. The findings show that the service co-creators apply a centrally-developed planned design typology (PDT). PDT includes different blends of SFS models (e.g., partnerships, sales, leases, agency and endowment), expected varieties (list, range and negative) and addable-deductible modules. The service co-creators and their inclusive systems (e.g., families, societies, markets, regulators and other government agencies) affect the planned service-system design to adapt or migrate. The service co-creators follow a novel six-step deferred adaptation process (DAP): emergence locale, information diffusion, knowledge diffusion, indexation, specifics evaluation and adaptation/migration.

The empirical findings advance our understanding of a service-system design by showing how a planned design enables adaptation through PDT. More importantly, how the service co-creators follow a systematic process, DAP, to attain the desired adaptation or migrate off the scene. The findings also broaden the conceptualisation of SFS by showing how it is co-created by the financial institutions, customers and aiding parties. This is due to the SFS being perceived as a product of financial institution alone. This research also makes a contribution to service visualisation method by extending and using the service blueprint as an additional data-collection and analysis tool. This study provided fourteen implications for the practitioners.

DEDICATION

Prophet Muhammad *(SAS)*

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LIST OF ACRONYMS

Acronym	Full form
ATM	Automated teller machines
CCM	Customer contact model
CDA	City development authority
CDC	Central depository company
DAP	Deferred adaptation process
DSD	Deferred service-system design
FBR	Federal board of revenue
FDP	Functional deferment point
FSA	Financial service authority
GDP	Gross domestic product
GOP	Government of Pakistan
ICB	Islamic commercial bank
ILS	Islamic leasing service
ILT	Islamic life Takaful
IMF	Islamic mutual funds
JCI	Journey to customer interface
LC	Letter of credit
MOTD	Memorandum of deposit and title deed
NDA	Narrative discourse analysis
NIFT	National institutional facilitation technologies
NMAD	New membership assessment department
PCN	Process-chain network
PDT	Planned design typology
PMM	Persona mapping model
SAS	*Salla allahu-alayhi-waalihi-wa salam*
SBM	Service blueprint model
SBP	State bank of Pakistan
SDL	Service dominant logic
SECP	Securities and exchange commission of Pakistan
SFS	*Shariah* finance service
SOM	Service opportunity matrix
SWT	*Subhanahu wa tallah*
TODA	Theory of deferred action
UST	Unified service theory

ARABIC EXPRESSIONS AND OPERATIONAL MEANINGS

Arabic expression	Operational meaning
Allah (SWT)	The God (glorified and exalted is He)
Al-Dunniyah	The world
Asl	Original case
Bai	Sale
Bai-Istisnah	Order-to-manufacture sale
Bai-Muajjal	Deferred payment sale
Bai-Musawamah	Sale with no obligation to disclose the price
Bai-Salam	Deferred-delivery sale
Bai-Tawarruq	Tripartite sale or Monetisation
Far	New or emergent case
Faraz	Obligatory
Fatwa	Verdict or ruling derived from the *Quran* and *Sunnah* by a qualified Muslim scholar.
Fiqh	Islamic jurisprudence
Gharar	Excessive uncertainty
Hadith	Saying of the Prophet (*SAS*)
Halal	Permitted
Haram	Prohibited
Hibah	Gift
Hikmah	Wisdom
Hukum	Ruling
Hukum-ul-Asl	Ruling for the original case
Ibadat	Devotional matters
Ijarah	Lease
Ijmah	Consensus of Islamic jurists
Illah	Legal cause
Islam	Religion of peace
Istihsan	Preference of one ruling over another
Makruh	Disliked
Mandoob	Recommended or preferred
Maslahah	Social benefit principle
Maysir	Gambling
Mubaah	Allowed
Mudarabah	Capital and expertise partnership
Mudarib	Expert partner
Muamalat	Worldly dealings
Murabahah	Cost-plus sale
Musharikah	Joint partnership in actions and/or resources
Musharikah-Mutanaqisah	Diminishing partnership
Muqayyadah	Restricted
Mutlaqah	Unrestricted

Nus	*Quran* and *Sunnah*
Tabarru	Brotherhood
Qard-e-Hasnah	Interest free loan
Qiyas	Juridical analogy
Quran	The Muslim's holy book
Rab-ul-Mal	The owner of capital
Riba	Usury including the conventional interest
Shariah	Islamic law
Shirkah	Partnership
Shirkat-ul-Ammwal	Partnership in resources
Shirkat-ul-Aamal	Partnership in actions
Sukuks	Islamic alternatives to bonds.
Sunnah	Sayings and deeds of prophet Muhammad (*SAS*)
Surah Yasin	A *Surah* of the *Quran*
Takaful	Joint guarantee, Islamic alternative to insurance
Wajib	Obligatory but not as clear as *Faraz*
Waqf	Endowment
Wikalah	Agency: legal permission to act on behalf of someone
Wikalat-ul-istimal	Agency contract for the use of assets
Zakah	Purification of wealth by giving 2.5 per cent of a quantified wealth to eligible poor

CHAPTER 1: INTRODUCTION TO THE RESEARCH

1.1 Introduction and Background

This chapter aims to introduce the research and to establish an overall context for the study. The narrative of the thesis starts with the background and introduction of the broad problem area: service-system design. Afterwards, it moves to the focal research problem: adaptation within a service-system design, from which the knowledge gaps, research aim, objectives and questions mount. Proceeding further, the motivation and rational, research context, research methodology, research contributions to theory and practice, research limitations and the organisation of thesis are briefly discussed.

In today's markets, businesses are becoming more and more service-oriented (Martinez, Bastl and Kingston, 2010). Along with specialised service companies (e.g., banks) manufacturers and trading companies are also adding service portfolios. For instance, the prominent retail chains and producers now offer online purchase services, product delivery services and even finance services (e.g., Honda Finance and Tesco Insurance). These strategic moves towards servitisation are partly due to service's growing contribution to the economies upon which these businesses rely (Chase and Apte, 2007; Gordon and Gupta, 2004).

Services in total add 70 per cent to the world's gross domestic product (GDP) (The World Bank, 2013) but they are still under-researched and theoretically not well understood because of the service-systems' complexity (Bullinger, Fähnrich and Meiren, 2003; Ostrom *et al.*, 2010). Due to this complexity, a service system cannot be standardised and designed centrally at strategic level of organisations because it requires creating highly perishable, heterogeneous and context-specific services during the service encounters at operational level of organisations (Palmer and Cole, 1995). It is very rare to have two similar service experiences in different service encounters (Zeithaml and Bitner, 2003). Therefore, the current organisations shape a service system, which continually adapts to specific operational environments and thus enables contextual service and value creations (Moritz, 2005). There is a need of further understanding this dynamism or evolvement within service system and its community (Han, 2010).

Services in general are deeds, processes and performances (Zeithaml and Bitner, 2003), which are designed, created and consumed in organisations dealing with finance, health care, sports clubs, transport and others (Shostack, 1982). A complex service-system co-creates value (benefit) for and with customers and other value-creating networks through the application of knowledge and skills (Vargo and Lusch, 2004a and 2011). In this service and value-creation process, different and multiple systems integrate and create a network of service systems (Sampson, 2010 and 2012). A debit card service is an example of such a holistic service-system, where multiple entities such as customer, bank, interbank network, Internet Company, visa system and traders integrate their resources to co-create and co-consume value (e.g., an online payment for purchases).

Until the industrial revolution in the 18th and 19th centuries, a service was considered a simple intangible product, that is, something intangible with embedded utility produced and distributed by the organisations (Vargo and Lusch, 2011). With this supposition, product design and development techniques were researched and applied to the service and service systems as well. This happened because services were treated as peripheral and not as core like goods in the economic exchange of that time (Chase and Apte, 2007; Vargo and Lusch, 2004a).

With the increase in significance of services within economic exchange, the product perspective has been challenged by researchers. For instance, Shostack (1982) in her well-cited work "How to Design a Service" suggested separating the service design concept from the conventional product development concept to better understand and research service design complexity. She suggested a system perspective for investigating and understanding a service (Shostack, 1982). In this perspective, a service is conceptualised as a system made of interrelated elements making a complex whole. The system perspective is used to holistically understand the service and its dynamism.

A service system is complex because of the involvement of multiple service creators who cannot be separated as producer and consumer, because they co-produce and co-consume a service simultaneously (Han, 2010; Zeithaml and Bitner, 2003). The service occurs within the interactions of multiple systems and remains alive for a very short period of time, hence why it is considered highly time-perishable (Palmer and Cole, 1995). These characteristics make a service system very unpredictable and difficult to concretely specify in a centrally developed standard design (service package). A

standard and pre-planned design cannot work effectively within dynamic practice environments as it has been proven to be incomplete and oversimplified (Shostack, 1982).

This line of thinking has recently been extended by the concepts of service-dominant logic (SDL) and the service science, which conceptualise service as a complex service-system and its value co-creation within specific contexts/uses (Holmlid and Evenson, 2006; Lusch and Vargo, 2006a, 2006b; Maglio *et al.,* 2009; Vargo *et al.*, 2010). In specific contexts or environments, the situated service creators interact and adapt to each other for value co-creation (Vargo, Maglio and Akaka, 2008). Lusch and Vargo (2006a) suggested reconsidering the conventional economic logic of conceptualising a service as an intangible product produced by the organisation and consumed by a customer. The terms of production and consumption are no longer relevant in today's service-systems where the service organisation, customer and supporting systems collaboratively work to co-produce and co-consume value (Benkler, 2006; Sampson, 2010; Vargo and Lusch, 2008a and 2008b). Toffler (1981) therefore termed the service participants as *prosumers*: those who produce as well as consume a service together.

Knowledge development within the service system and its design literature is an on-going process. The current scientific discussions attempt to conceptualise a service system as a natural ecosystem in which the agents within a network or service system adapt to each other during their interactions (environments) to actually determine and create benefits or values for each other and for the overall community (Bellingham and Petehem, 2012; Maglio *et al.,* 2009; Sangiorgi, 2009 and 2012; Vargo and Lusch, 2011; Vargo, Maglio and Akaka, 2008). Taking this line of thinking further, this present research attempts to understand how these systems dynamically adapt and how this adaptation can be embedded within a holistic service-system design. Understanding this adaptation and its design has recently received a significant research attention (e.g., Bellingham and Petehem, 2012, Maglio *et al.,* 2009, Patrício *et al.,* 2011, Sangiorgi, 2009 and 2012 and Vargo and Lusch, 2011).

This research is contextualised in the *Shariah* finance service (SFS) organisations of Pakistan. The finance service was the vanguard of service revolution in the 19th century and still plays a key role in the development of economies (Barras, 1990). SFS is a specific type of finance service which complies with the Islamic law or *Shariah,* which provides a complete code of life for Muslims (Abdul-Razak, 2013; Kuran, 1995;

Usmani, 2002a). *Shariah* is not just a set of rules but a complete life code and belief system which specify individual and social objectives and norms (Usmani, 2002b). *Shariah* prohibits charge and payment of interest, excessive uncertainty, earning by chance and any economic transactions that involve prohibited goods such as alcohol and pornographic materials (Dogarawa, 2013; Obaidullah, 2005; Ullah, 2012b). Current SFS research is primarily based on Islamic economics and jurisprudence which form a product development perspective for designing services (e.g., Ahmed, 2011a). In SFS products, the mechanism for financial and physical assets transactions are established through Islamic economic models such as *Shirkah* (partnerships), *Bai* (sales), *Ijarah* (lease) and others such as *Waqf* (endowment) and *Hibah* (gift) (e.g., Abdul-Razak, 2013; Iqbal and Mirakhor, 2008; Usmani, 2002a). SFS organisations incorporate these models into their service products through product development departments or teams, following a detailed product development process (Ahmed, 2011a).

In service context, the product approach is important but not sufficient in terms of conceptualising a holistic service-system (system of systems) and its adaptation to specific environments for service and value co-creation (e.g., Sampson, 2010, 1982; Vargo and Lusch, 2004a and 2004b). For instance in an auto-lease practice, an Islamic bank, customer, *Takaful* (alternative to insurance) company, tracker company, auto supplier, auto evaluator, registrar of vehicles or other local aiding parties adapt to and integrate with each other to establish a contextual system of systems for specific service cases. This integration and adaptation of systems for value co-creation has received less attention within SFS literature. For instance, the SFS model for auto leases, called *Ijarah*, primarily focuses on the lessor and lessee (e.g., bank and customer) and pays little consideration to locally integrating and adapting aiding parties.

This research takes a contemporary service co-creation and service (eco) system (adaptable system) perspective to research the SFS designs. This view primarily aims to extend the current ecosystem debate in service research; it is also expected to complement current Islamic economic and jurisprudence-based SFS models. The following section discusses the problem of *adaptation within service system* and highlights what particular *knowledge gaps* related to this adaptation require a further empirical research. Afterwards the research questions, aim and objectives are pulled from the knowledge gaps.

1.2 Research Problem: Adaptation in Service-System Design

The research problem emerges with a designers' assumption of considering service as a product. A product, as the term implies, is something produced with embedded utility (Lusch and Vargo, 2006a and 2006b). With this supposition, the designers apply conventional product development processes including the idea generation, concept development, product design, prototyping and launch (e.g., Hollins and Shinkins, 2006; Schmitt, 2003; Zeithaml and Bitner, 2003 and 2012). In the service context, a product development process does not, in reality, results in a service product with embedded utility (as manufacturers do). However, the designers actually produce textual, visual and mental artefacts (planned designs). These artefacts are called service packages in practice and are theoretically termed *planned designs* in this research. Planned designs are used by different situated service creators within multiple and different contexts to actually create real services.

A planned design consists of futuristic activities (e.g., developing credit proposal, depositing cheque) expected to be performed by different service creators who operate in multiple service encounters – the moments in which the service co-creators interact to create a real service (Chase and Tansik, 1983; Czepiel, 1990; Shostack, 1982; Surprenant and Solomon, 1987). A commercial bank centrally develops planned designs and applies these in different branches at various times-places to create real services. Different planned designs uniquely package the future usufructs of a service system. For instance deposit, finance and lease offerings, as planned designs, uniquely package the usufruct of a banking system.

In reality a planned design is an artefact (e.g., a document, illustration, or verbal and mental intension) the consequences (i.e. real services) of which occur in the future (Pandza and Thorpe, 2010). The contents of a planned design therefore principally rely on the predictions of futuristic and multiple service encounters. However, it is problematical to assume that the designers located at the strategic level will completely and accurately forecast all the service encounters that they expect to occur in multiple realms of time-space (Ullah, 2013; Ullah and Patel, 2011a). This approach "has the obvious flaw that the plans can be no better than the forecasts upon which they are based" (Burton and Forsyth, 1986, p. 9). A service *design* activity occurs ahead of service *creation* activity (Han, 2010; Pandza and Thorpe, 2010). Therefore, the later activity (service creation) is exposed to the emergence or novel patterns within service-

creation environments (e.g., local bank branches, social contexts and regulatory environments). Such emergence is hard to predict and pre-specify completely within a planned design because the real integrating service participants do not emerge and operate in isolation but interact within multiple specific environments and evolve organically (Goldstein *et al.,* 2002). A planned design therefore proves to be incomplete, oversimplified and static whereas the real service-system emerges as an "open system capable of improving the state of another system through sharing or applying its resources … and capable of improving its own state by acquiring external resources" (Spohrer *et al.*, 2008, p. 7).

Different customers and service personnel participate in multiple service encounters, causing a system to include and exclude unpredicted internal and internal interactions (Bitner, Booms and Tetreault, 1990; Bitner, 1992). These inclusions and exclusions in a system only emerge in actual practice and therefore remain off-design and plans (Patel, 2012). As Burton and Forsyth (1986, p. 9) argued that "the plans may be very thorough and powerful – given the forecasts. But quality of the plans, in terms of validity and relevance, depend upon the future which reveals itself". The environment that affects a planned design to adapt includes physical infrastructure (servicescape) (Bitner, 1992), service creators themselves and the broad social, legal and economic systems in which they operate (Patrício *et al.,* 2011; Sangiorgi, 2008).

New patterns or emergence in environments also sometimes force a planned design to migrate off a context or simply to reject the creation of a service (Ullah, 2013). This adaptation or migration for the best fit into ecosystem's environments is a common feature in natural species and humans. This tendency can also be true for a service system, which is a system of social agents (humans) and their interactions and behaviours for value creation within broad social ecosystems. Vargo, Maglio and Akaka (2008, p. 149) therefore maintained that "value creation in service systems can only be defined in terms of an improvement in system well-being and we can measure value in terms of a system's adaptiveness or ability to fit in its environment".

The improvement and well-being enhance because the persistent adaptation brings silent and sustained innovation into a service-system design and thus enhances the system's sustainability. This sustained innovation occurs because a planned design grows with inclusion and exclusion of emergent service creators, their interactions and integration of resources (Barras, 1990; Sawhney, Balasubramanian and Krishnan,

2004). As Simon (1996) argued that a creator is not the sole source of artefact (design) rather it evolve in response to the selective force. Referring to the same evolution within a service design, Moritz (2005, p. 47) said that "the service design continues after the service is in use and monitors it for constant improvement" Amazon is a service design minded company and since its launch in 1995 every day parts of the service experience are changed and improved".

In designing strategic plans, Burton and Forsyth (1986) suggested that the relevant question for planning is not what a firm should plan to do but what a firm should plan *to be able to do.* Designing this *ability* of specifying a service-system's elements in a real and dynamic environment can make a planned design flexible in its parameters and can create value as per the requirements of each service case. Such *design adaptation space* for adjusting a planned design within its application environment is termed *deferred action* by Patel (2006 and 2012) in his organisation and systems design theory of deferred action (TODA).

1.3 Knowledge Gaps

In the context of *adaptation within service-system design*, two interrelated knowledge gaps require further empirical research. The first gap is the lack of knowledge about the *actual adaptation process that the service creators use to adapt a service system to specific environments.* The second knowledge gap is *how they incorporate this adaptation process within a holistic service-system design*. Knowledge about these two related and focal points can empower the service community to design a service system that can better meet the service needs of specific environments. This adaptation is necessary for value creation and thus survivability and well-being of a service system (Maglio, Vargo and Akaka, 2008). Sangiorgi (2009, p. 419) therefore suggested further research regarding the "service-systems complexity; what are the qualities and dynamics of these systems". Sangiorgi (2012) and Morelli (2006) also suggested developing new models, frameworks and methods to uncover the service-system's complexity and its adaptiveness. Han (2010, p. 235) also mentioned that the service community and their system "evolves in dynamic manner" and showed this phenomenon as a future research direction in her recent PhD thesis.

More recently, these knowledge gaps have been specifically pointed by the leading service researchers. Vargo and Lusch (2011, pp. 185–186), oft-cited authors, while arguing about the service co-creating networks said: "as much as the idea of resource

networks contribute to the understanding of value creation and context, its consideration sometimes lacks a critical characteristic of systems, which are dynamic and potentially self-adjusting and thus simultaneously functioning and reconfiguring themselves." Bellingham and Petehem (2012, p. 38) also put up the notion that "service companies can no longer work in a command and control model. It is not sustainable in today's reality". A similar but more elaborative statement is made by Professor Robert F. Lusch in a recent presentation at University at Arizona. He said we can clearly see a shift from old and rigid hierarchal command and control structures and long term strategic planning to very flexible, adaptive, sense-response and collaborative types of service organisation. He stressed that this line should be a way forward in service research (Lusch, 2013).

Many other recent studies related to service-systems have directly or indirectly emphasised the importance of understanding the service-systems and its adaptation for value co-creation in context/environment (e.g., Cabiddu, Lui and Piccoli, 2013; Chandler and Vargo, 2011; Maglio *et al.*, 2009; Pareigis, Echeverri and Edvardsson, 2012; Patrício *et al.,* 2011; Sangiorgi, 2009 and 2012; Sampson, 2010; Vargo *et al*., 2010; Vargo and Lusch, 2011; Vargo, Maglio and Akaka, 2008).

Gummesson (2013) specified finance service and its environment as ideal theoretical context to which the service research should contribute. Finance service is currently seemed dominant by the economics and legal (institutional) literatures. For instance, SFS is primarily bases on Islamic jurisprudence and economics (Ahmed, 2001a; Usmani, 2002b). A service perspective (taken by this research) can broaden our understanding of the SFS systems related to the service co-creation and system's adaptation into specific environments. Knowing this adaptation is important in SFS. As Ahmed (2006) suggested leaving a room within the documentation of SFS products so that these can be customised into the environments of specific service transactions.

This research has therefore placed a pursuit to fill the focal knowledge gaps of understanding the service-system-adaptation process and its placement within a holistic service-system design within the context of SFS in Pakistan.

1.4 Research Aim, Objectives and Questions,

Basing on the knowledge gaps, the following research aim, objectives and questions are set for this research:

1.4.1 Research Aim

- To develop a theoretically and empirically based model, that could describe a service-system design that adapts to the specific operational-level environments of *Shariah* finance organisations in Pakistan.

1.4.2 Research Objectives

The following four interrelated objectives (milestones) are set to achieve the above research aim.

- To critically review the literature of service-system design in general and SFS-system design in particular, in order to conceptualise the theoretical constructs of an adaptable service-system design. Also, to identify the knowledge gaps to be research further in the empirical study.

- To develop a model by interconnecting and justifying the theoretical constructs of an adaptable service-system design.

- To evaluate the proposed model through empirical findings from four *Shariah* finance service organisations in Pakistan.

- To develop a post-empirical model through synthesis of cross-case findings and literature, to establish the theoretical and practical contributions

1.4.3 Questions

The following research questions are used as guides to establish a logical argument within the thesis:

- How the service creators adapt a service-system design, from theoretical and empirical perspectives, to create heterogeneous services at the operational-level environments of *Shariah* finance organisations in Pakistan?

The following two sub-questions further elaborate on the main research question:

- How does a planned design (service package) provide a locale for the adaptation?
- What process the service creators do follow to attain the adaptation?

1.5 Motivation and Rationale

There are three primary reasons that have motivated this research inquiry. The first motivation came through the researcher's observation of the problem in the current published literature. The problem of designing adaptable service-systems stems from the current debate in the service-system literature (Maglio *et al.*, 2009; Sangiorgi, *2009 and 2012*; Vargo and Lusch, 2011; Vargo, Maglio and Akaka, 2008). Doing research in this phenomenon has the potential to extend the literature through a proposal of a theoretically and empirically based model. Current research in the field strives to understand the service systems which adapt to co-create value like natural adaptive ecosystems (Chandler and Vargo, 2011; Cabiddu, Lui and Piccoli, 2013; Mars, Bronstein and Lusch, 2012; Pareigis, Echeverri and Edvardsson, 2012). These discussions acknowledge the existence and importance of service-system adaptation but do not explain the detailed adaptation process. Also, there is less knowledge about how to embed this adaptation process within a service-system design.

The second motivation came from the lack of service-system adaptation research in SFS. SFS are more prominently gaining importance in Muslim countries and global financial centres such as the UK (El-Qorchi, 2005; Iqbal, 2007; Ullah, 2012). These services are currently dominated by the research perspective established through Islamic economics and jurisprudence (Ahmed, 2011a; Ayub, 2008; Ebrahim, 2000; El-Gamal, 2006; Hasan, 2011; Iqbal and Mirakhor, 2008, 2011; ObaidUllah, 2005). The service-system design and its adaptation conceptualisation can complement the current Islamic economic and jurisprudence approaches to more holistically conceptualise the SFS design and its adaptation to specific contexts.

The third and more pragmatic motivation came from the current shift in the economies from the goods dominance to services dominance and scarcity of research to support this transition. Until the industrial revolution in the 18th and 19th centuries, the economies were dominated by tangible goods, and services were treated as peripherals (Chase and Apte, 2007; Lusch and Vargo, 2006a). Recently though there has been a significant shift towards servitisation from manufacturing but still the service systems are under-researched. Services now contribute 70 per cent of the world's GDP (The World Bank, 2013). Ng, Maull and Smith (2011, p. 13) also said that service makes 75 percent of the labour in UK and USA. In spite of this significant contribution of service

to the economies, the service systems are not been sufficiently researched. Bullinger, Fähnrich and Meiren (2003) argued that:

> "When comparing the research on service topics with those research activities that focus on material goods, an obvious gap can be observed. While there exists a broad range of models, methods and tools for the development of goods, the development of services has hardly become a topic of scientific literature" (p. 275).

Similarly, Holmlid (2007) said that the phenomenon of service and its design are theoretically not well understood. This research addresses a relatively under-researched area of high economic value.

1.6 Research Context: SFS in Pakistan

Dey (2001, p. 2) described a context as "any information that can be used to characterise the situation of an entity". The phenomenon of an adaptable service-system design is contextualised into four SFS organisations in Pakistan, which is a south Asian Islamic republic country. Pakistan gain independence on 14 August 1947 based on the theory of two separate nations in British-controlled India i.e. Hindus and Muslims (Caldarola, 1982; Verma, 2001). The Muslim majority provinces are separated from India and named as the Islamic Republic of Pakistan. Pakistan shares borders with Afghanistan, India, China, Iran and the Arabian Sea (Figure 1.1).
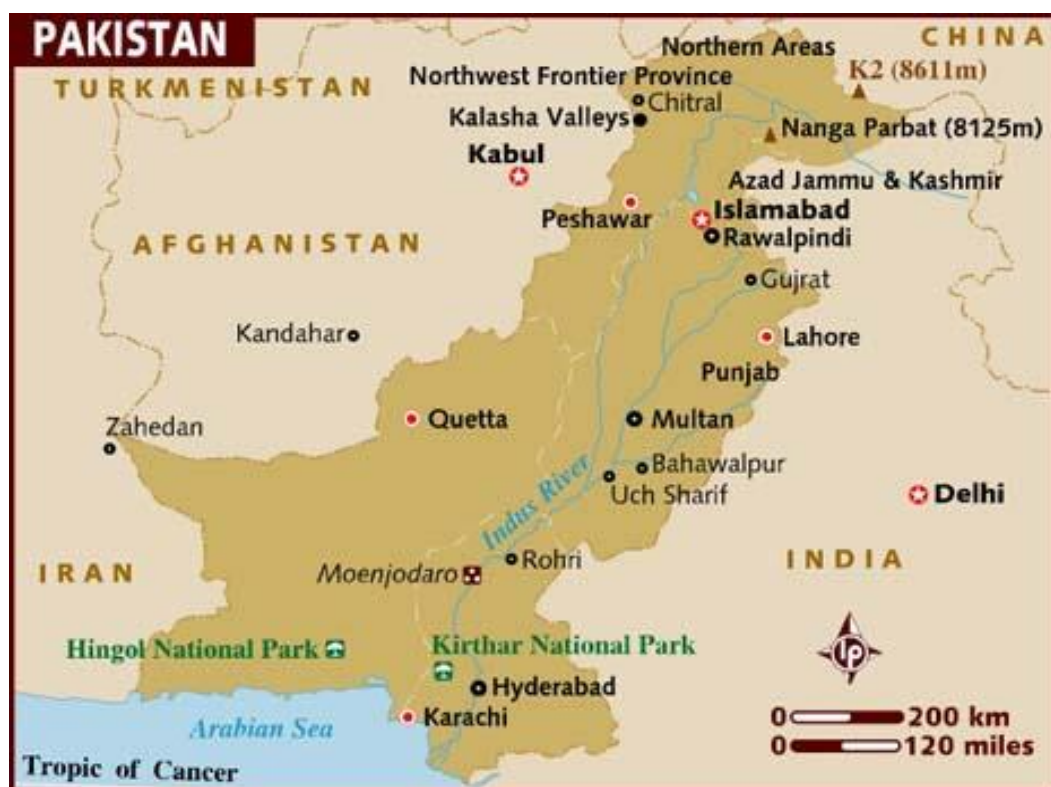
Figure 1.1: Pakistan's map

Source: www.lonelyplanet.com/maps/asia/pakistan/

Pakistan was established in the name of a religion: *Islam*. Therefore the aim of the early leaders in Pakistan was to establish an Islamic democratic system in the country, including its own Islamic economic and financial systems. On the occasion of establishing the central bank in the country, the founder of the nation commented as "we must work our destiny in our own way and present to the world an economic system based on [the] true Islamic concept of equality of manhood and social justice" (Quaid-e-Azam Mohammad Ali Jinnah, in SBP, 1948).

Under Article 38(f) of Pakistan's 1973 Constitution, the Government of Pakistan (GOP) is bound to establish Islamic economic and financial systems free of *Riba* or usury, which includes the conventional notion of interest (Constitution of Pakistan, 1973).

The initial efforts to establish an Islamic economic and financial system started in 1978, with verbal promises from politicians that ended with no material outputs (Alvi, n.d.). In the eighties, the financial and corporate system was amended to permit the issuance of new interest-free securities of corporate financing named participation term certificates (PTC). In 1985, the existing laws such as Companies' Ordinance 1984,

Negotiable Instruments Act 1881 and State Bank Act 1948 were amended to provide room for the Islamic financial system (Mehmood, 2002).

Initially, the GOP failed to establish a successful SFS-system (SBP, 2008). This happened mainly for four reasons. Firstly, the GOP tried to transform abruptly the conventional system into an Islamic one by adopting a revolutionary framework rather than allowing the market players to evolve themselves, which normally termed an evolutionary framework. Secondly, the newly introduced SFS system was not flexible enough to meet the ever-changing needs of the dynamic markets (SBP, 2008). Thirdly, there was no appropriate mechanism to ensure *Shariah* compliance, which reduced the confidence of the market participants. Finally, all the stakeholders including the regulators were not ready to play their roles when the time came to launch the Islamic finance system. The infrastructure was found to be deficient (SBP, 2008).

In 1991, the federal *Shariah* court was established to monitor the transformation process from conventional finance to Islamic finance. Similarly a commission for transformation of the finance system is established in the central bank of the country (Saeed, 2012). In 2003, the Islamic finance is re-launched with and *evolutionary framework*. This framework is set in response to the overall mission of SBP as (italic is the author's emphases): "To promote monetary and financial stability and foster a sound and *dynamic financial system*, so as to achieve sustained and equitable economic growth and prosperity in Pakistan" (SBP, 2012b, p. ii).

Two aspects of this new framework are very important. Firstly, there is no specific timeline for conversion of the finance system; rather it is left to the market forces to decide which way the finance system should transform itself (SBP, 2008). Secondly, no disruption in the prevailing system is allowed until the market is ready for the new system to evolve. Compared to past experience, the new approach provided flexibility to the financial institutions with service developments and *Shariah* compliance methodology (Saeed, 2012). Currently there is a significant need to develop contextual frameworks and models, which could conceptualise the adaptable SFS designs that can better suit this new evolutionary regulatory framework.

In different countries, the SFS design strategies vary. In the UAE and Bahrain the process is entirely left to the financial institutions; in Sudan the government has provided some guidelines (SBP, 2010). In Pakistan the Central Bank or the SBP has a

unique and flexible strategy for SFS designing and development. This strategy is based on the experience gained from the earlier launch of Islamic banking and the *Mudarabah* sector (SBP, 2010). The population in Pakistan is very sensitive to *Shariah* compliance. For this reason, SBP has decided to have a regulatory role in ensuring *Shariah* compliance for all SFS. This also allows them to provide the essential flexibility to Islamic finance institutions and to enable them to respond to the changing needs of the customers and markets (SBP, 2012b).

The SBP has adopted an open strategy with a minimum threshold of *Shariah* rules. These rules are termed "essentials of Islamic banking modes of finance" and the accompanied "model agreements" (SBP, 2008, p. 13). These essential are use as prudential regulations. The financial institutions incorporated these modes and model agreements within their service packages. They are also used by the SBP for the periodic audit and inspections of banks (SBP, 2012a). Apart from these broad central *Shariah* compliance requirements, each bank is free to add features to their service offerings as long as these are approved by their *Shariah* advisors or boards. This mechanism has enabled the SFS organisations to respond swiftly to market needs and remain compliant to *Shariah*.

Pakistan's financial industry is more banking centric and is therefore lack diversity (into non-banking finance) and is therefore considered more vulnerable to risks (SECP, 2012). To develop and regulate the non-banking-finance sector, the parliament in Pakistan has promulgated the Securities and Exchange Commission (SECP) of Pakistan Act, 1997. SECP, an autonomous commission, is established to regulate non-banking finance companies (NBFCs), specialised companies (e.g., leasing mudarabah) and Insurance, including its Islamic alternative i.e. Takaful (Akhtar, 2007; SECP, 2012). SECP has recently started efforts to promote non-banking SFS by encouraging the *sukuks* (Islamic bonds) and issuance of *Takaful* rules 2012. These rules also allow the conventional insurance companies to offer *Takaful* services through specialised windows (SECP, 2012). In Pakistan, there are 6 full-pledged Islamic commercial banks. Also, 13 conventional banks (among total of 38) offering SFS through specialised windows (SBP, 2012a). Along with the commercial banks there are 5 specialised takaful operators, 26 leasing *Mudarabahs*, and 15 mutual funds, offering non-banking finance services (SBP, 2012b).

There are three primary reasons which justify the selection of SFS in Pakistan as the context for this research. Firstly, service-system design research in itself is new and emerging (Mager, 2009). There is a need to develop models, frameworks and methods in different contexts to advance its' theory (Morelli, 2006; Sangiorgi, 2009 and 2012); SFS in Pakistan is a new context for service design research. The service design research is still a Western and developed countries' phenomenon. SFS in Pakistan provides a new theoretical and practical context (a different service within a developing country), which enhances the originality of the data theory. There are few studies that merely focus on measuring the service quality within SFS (e.g., Ahmad *et al.*, 2010; Amin and Isa, 2008; Othman and Owen, 2001). Adaptable service-system design has been rarely researched within the SFS in Pakistan context.

Secondly, the regulatory environment of SFS in Pakistan provides a unique opportunity to evaluate and further develop the aimed model. The current regulators and SFS organisations are transforming themselves from static regulatory frameworks to flexible frameworks for developing services (SBP, 2008). The proposed model is of intense practical importance in this context because the service systems of any country should be able to fit in the regulatory and institutional framework of the country (Hausman, Pakes and Rosston, 1997). Little research has been done to support the current evolutionary regulatory framework for SFS in Pakistan. This present inquiry provides an in-depth research response to the current evolutionary framework through development of a theoretically and empirically based model that describes how the service systems adapt (evolve) at operational-level and how this adaptation can be conceptualised in a holistic service-system design. The evolutionary framework is a regulatory framework for the Islamic banking industry in Pakistan. It is established by the central bank of Pakistan and it is expected to transform and evolve the SFS system gradually through insights from experiences in SFS practice (SBP, 2008). The evolutionary framework is flexible and allows the financial institutions to develop and deliver services that adapt to the emergent market needs to enable continues evolution (SBP, 2008) (see also sections 1.6 and 7.4.2).

Thirdly, the pragmatic reason for choosing SFS in Pakistan is the researcher's practical knowledge of the context. The researcher is employed in a public educational institute in Pakistan, which has financed this study. The researcher's awareness of the context has made the selection and composition of case studies more convenient and effective.

The employer institute helped in arranging the contacts to collect the data. The institute's alumni, who are now working in different SFS organisations, have participated and have snowballed the research to other appropriate and knowledgeable colleagues. This helped in completing the data collection in a timely manner and also allowed the researcher to follow up on clarifying the post-data-collection ambiguities.

1.7 Research Methodology: Multiple Case Study

This research employed a pragmatic approach to research the problem. Pragmatism is a problem-centred research paradigm (Creswell, 2003). This problem-focused research approach can result in both theory development as well as theory evaluation until they address the research question. Figure 1.2 outlines the sequential steps undertaken to complete this research. Three epistemological roles are assumed to develop, evaluate and theorise a model for theory and practice contributions. Initially the model is built and justified through literature. To evaluate and theorise the model, a qualitative approach is adopted to holistically conceptualise an *adaptable service-system design.*
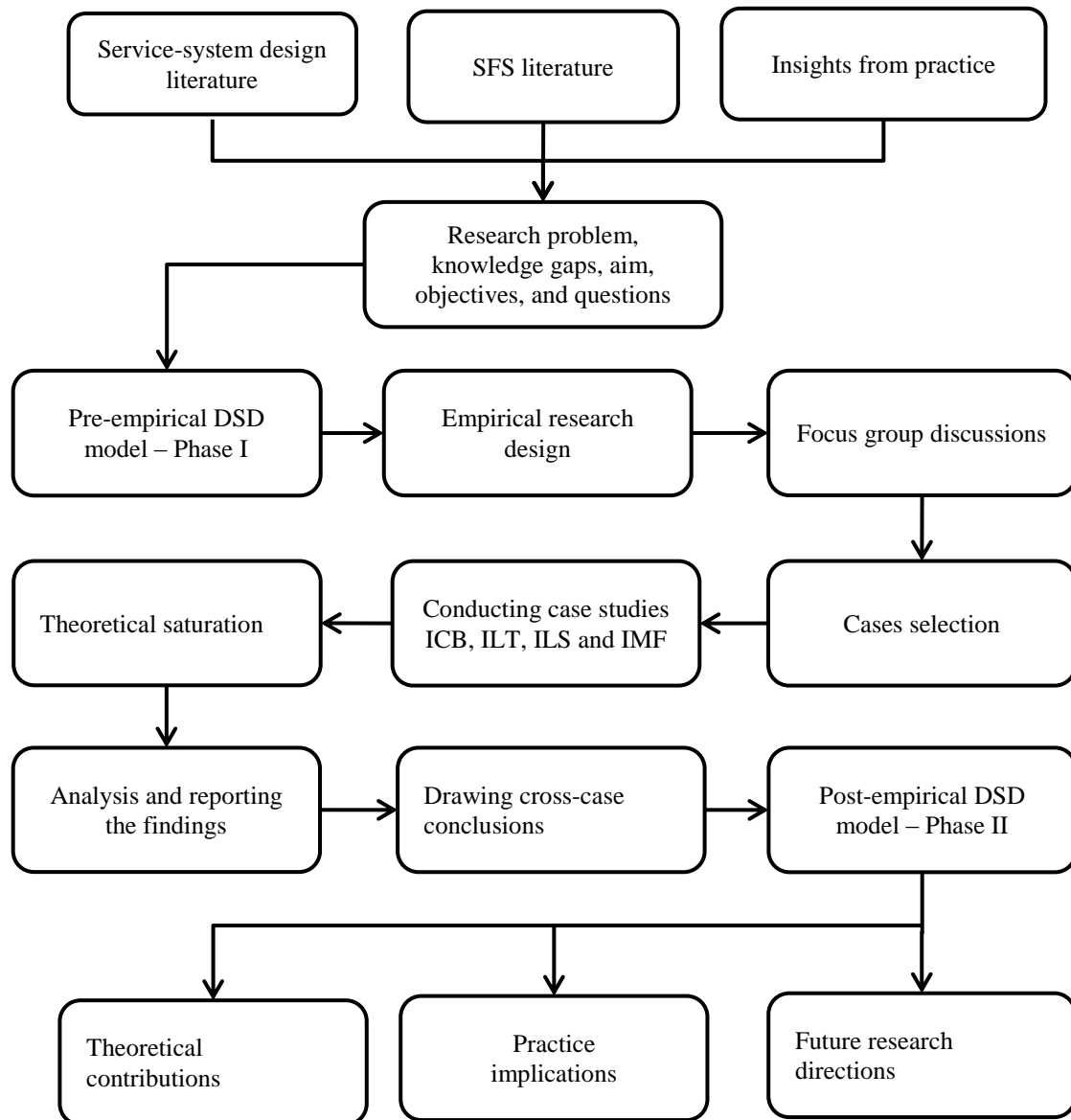
Figure 1.2: Research process flow

Source: Developed based on Yin (2009)

A multiple embedded case study strategy is employed (Yin, 2003 and 2009: Stake, 2006). Four SFS organisations (Islamic commercial bank, Islamic *Takaful* service company, Islamic mutual fund company and an Islamic leasing company) are selected. Within these organisations, specific real service stories are evaluated as embedded units of analysis. Such multiple embedded case study design is the most rigorous case study design compared to other alternatives of simple single case study, single embedded case study and simple multiple case study design (Yin, 2009). The multiple case study design is used successfully in the current service systems research (Han, 2010; Sangiorgi, 2004; Segelström, 2010; Tomake, 2003).

Focus group discussions are initially conducted to pilot and contextualise the research questions into SFS. The in-depth narrative interview method is selected as the core data collection tool within four case studies (e.g., Han, 2010). Real service stories about the embedded service experiences are narrated by the service personnel. These real stories have reflected the in-depth detail of real service-system-constructs and the real design adaptation process used by service creators during their interactions for service and value co-creations. Focus group discussions, service visualisations and documents are also used as additional methods to triangulate and confirm the findings (e.g., Han, 2010; Yin, 2009).

These qualitative methods are selected because they provide more detailed information than what is available through quantitative data collection methods (Boyce and Neale, 2006). In-depth interviews extract detailed information about marginal developments in the phenomenon. Information regarding such marginal developments is very important for model conceptualisation and evaluation (Luna-Reyes and Andersen, 2003). Within the narratives, the critical moments (adaptations to specific environments) are further discussed through probes.

The narrative discourse analysis (NDA) method is used to reduce, simplify and segregate the narrative discursive themes (e.g., Stickley *et al.*, 2007). Structural and grounded codes are developed within Nvivo 9, data management software. Structural codes have validated the model constructs and open codes have extended the model through new empirical findings. Each case study is presented a relatively distinct evidence of the model, and has thus created a chain of evidence. Establishing such a chain of evidence is important in case study research for analytic generalisability as they work like multiple experiments in natural science research (Yin, 2003), For each case study a service blueprint is also developed with the participants and documents are viewed to confirm and ensure that the findings are valid. Such triangulation enhances the research quality in terms of validity and reliability.

NDA is an appropriate analysis method for this study for three main reasons. Firstly, the core form of data is narrative discursive resources therefore NDA is the logically appropriate method. Secondly, NDA is in line with the epistemological role of evaluation and further development of the model. NDA provides narrative themes for both structural codes as well as open codes thus validating as well as further extending the model. Thirdly, this research aims to understand the real service created by the

personnel and to show it as evidence that the model will work in practice. The focus of analysis is the actual *doings* narrated by the personnel.

NDA focuses on the actual doings of people rather than the textual characteristics (Potter, 2004). These real experiences behind the words create new knowledge grounded on experiences. The discourse analysis helps the researcher to understand the broaden phenomenon lying beyond the questions that a researcher post (Uygur, 2009). The narrative discourses and discussions about service practices are cross-compared with the pre-empirical model. Conclusions are drawn related to the gaps to confirm and further extend the model. This approach is called gap mapping (Han, 2010). To ensure the quality of research, the principles of validity, reliability and problem relevance/utility are interpreted and applied. For ethical considerations, Brunel University's ethical principles are applied.

1.8 Summary of Contributions to Theory and Practice Implications

A PhD-level research should make a knowledge contribution in one or another form or areas (Phillips and Pugh, 2010). This research primarily contributes to the knowledge in terms of contributions to theory, method and practice implications. These contributions are established through the development of a novel deferred service-system design (DSD) model. The DSD grounds on two focal theories: theory of deferred action (e.g., Patel, 2006 and 2012) and service dominant logic (SDL) (e.g., Vargo and Lusch, 2004a, 2004b and 2011).

This research contributes to service-system theory, particularly to the SDL (e.g., Vargo and Lusch, 2004a, 2008a, 2011 and 2013; Vargo *et al.,* 2010), which is recently extended further to the service ecosystem conceptualisation (Chandler and Vargo, 2011; Cabiddu, Lui and Piccoli, 2013; Mars, Bronstein and Lusch, 2012; Pareigis, Echeverri and Edvardsson, 2012). This leading and current thread of discussion conceptualises a service system as a natural ecosystem in which the agents contextually adapt to each other and thus co-create and co-consume value (benefits) (Vargo and Lusch, 2013; Vargo, Maglio and Akaka, 2008). SDL recognises the existence of adaptation in service-system for value co-creation within context. However, it does not actually uncover the detailed adaptation process and how this adaptation integrates within a design of service system. These two knowledge gaps have been traced within recent literature. This study addresses these knowledge gaps through the development of a theoretically and empirically based DSD model.

The proposed DSD model holistically conceptualises an adaptable service-system design. The DSD, in particular, advances our understanding of an adaptable service-system design in two areas: i) how does a planned design of service system provide a locale for the adaptation? And ii) what process the service creators do follow to attain the desired adaptation in a service system?

DSD answers the first question through a planned design typology (PDT). PDT includes different combinations of business (*Shariah* compliant business in this research) models (e.g., partnerships, sales, agency, lease, and endowment), expected varieties in each parameter of service (list, range, negative) and the addable and deductible modules (core and peripheral). The findings showed that how planned designs provide a locale for adaptation by allowing the situated service creators to blend these mutually inclusive designs and thus create heterogeneous services in different contexts. PDT is novel because it follows the scientific norm of developing a new theoretically and empirically based typology (classification) by bringing together previously considered distinct classifications and importantly add new classifications that arise from the data.

The core and more original contribution of the proposed DSD is the deferred adaptation process (DAP). DAP is the answer to second research question: what process the service creators do follow to attain the desired adaptation in a service-system design? An interesting journey of adaptation starts during the actual service encounters when and where the service creators interact and follow a novel and comprehensive adaptation process to actually realise the desired adaptation or migrate off the scene. This adaptation process is empirically found and is justified through recent debates in the literature. DAP completes in six steps: emergence locale, information diffusion, knowledge diffusion, indexation, specifics' evaluation, enactment of adaptation or migrating off (not creating the service). Chapter 6, sections 6.2 and 6.3 provide detailed discussions on these core contributions.

Additionally, the phenomenon of service-system design is more conceptual and lacks empirical evidence from diverse service fields (e.g., Chandler and Vargo, 2011; Mars, Ronstein and Lusch, 2012; Pareigis, Echeverri and Edvardsson, 2012). SFS is a new type of service for the service system and its design literature. A rigorous multiple case evidence, from the SFS in Pakistan, is brought which has the potential to evaluate and enhance the current service ecosystem and SDL debates. The geographical context of

Pakistan also enhances the originality of data theory because the service system is largely a Western and developed world's phenomenon (Han, 2010) (chapter 7, section 3.7.1)

The research also contributes to the focal theory of deferred action (TODA) (Patel, 2006 and 2012). TODA (in combination with SDL) is used to develop the pre-empirical DSD. The TODA is a system and organisation design theory (Patel, 2006), which has so far been developed through and evaluated in the designs for information system, web system for universities, learning system and organisation (Elliman and Eatock, 2005; Nyame-Asiamah, 2013; Patel, Eldabi and Khan, 2010; Patel and Hackney, 2010; Ramrattan and Patel, 2010). This research brings evidence for TODA from a service-system's context where it has not been applied before. This study not only confirms the theory in a new service field but also enhances its generic design constructs through PDT and DAP.

The PDT is an extension to the TODA's planned action construct, which actually recommend that designers should leave a locale within planned designs. Such locale remains deferred until that is specified by the people who actually apply the design (Patel, 2012). This research has further excavated the emergence and corresponding deferred action constructs of TODA and described a detailed six-step adaptation process (emergence locale, information diffusion, knowledge diffusion, indexation, specifics' evaluation, adaptation/ migration). The empirically found deferred adaptation process (DAP) is abstracted and theorised through cross-case synthesis and discussions within wider literature. The PDT and DAP have not been holistically explained before and are empirically found based on the emergent data nodes in this research. These contributions are in line with scientific norm where scientific theories require repeated evaluation for further development and confirmation (Patel, 2012) (chapter 7, section 3.7.2).

This research also contributes to the *Shariah* finance service (SFS) models. SFS is the synthesis of Islamic jurisprudence, finance (economics) and service. The current SFS models (e.g., partnerships, sales, agency, lease, and endowment) predominantly bases on Islamic jurisprudence and economics (e.g., Ahmed, 2011a; Ayub, 2008; Iqbal and Mirakhor, 2008; Obaidullah, 2005; Usmani, 2002a). These partnerships, sales, agency, lease and endowment arrangements can be conceptualised as models or contracts. In the literature, the term 'model' is used when these concepts are used to holistically depict

or conceptualise *Shariah* finance service systems. For instance, Ahmed (2011a) used the terms 'one-tier' and 'two-tier' *Mudarabah* models to depict a holistic Islamic banking (service) system. These concepts can be represented as contracts to show how the parties in a service are legally responsible for their actions. The contracts perspective is more popular among scholars who study SFS from the Islamic jurisprudence perspective (e.g., Usmani, 2002a). This research used the term 'models' for the concepts of *Shirkah, Bai, Wikalah, Ijarah* and others because these concepts are used to holistically conceptualise a finance service system that complies with *Shariah* law.

The SFS models sufficiently cover the economic and legal aspects such as the financial and physical assets' transactions. However, these models provide little provision for the service aspects such as value co-creation and service-system adaptation to specific environments. SFS models are important and even essential for developing the planned designs (service packages in SFS context), but these are not enough for a holistic conceptualisation of an adaptable service-system design. The proposed DSD complements the SFS models with a service perspective. This perspective can enable the theorists and practitioners to conceptualise the SFS as cocreated by the financial institution, customer and aiding parties. More importantly, this research also highlights how the SFS cocreators can establish the desired adaptation or migration within their service systems (chapter 7, section 3.7.3).

This research also makes contribution to service visualisation method by extending the conventional service blueprint (visualisation tool) (Bitner, Ostrom and Morgan, 2008; Shostack, 1982) and using it as an additional data collection and analysis method. This research adds an additional grid to the blueprint, which enables it to separate the individual service episodes and roles within a service system. This segregation of service episodes and roles enhances the blueprint's tagging (addressing) and analysis capability. This benefit is particularly important for locating the planned and emergent episodes within a real system (chapter 7, section 7.3.4).

This research has implications for service and SFS practices. For general service and its design practice, this research suggests the use of PDT as a design strategy and toolkit. This typology can be used to train the employees related to the kinds of service package they can develop in terms of leaving a room for future adaptation. Similarly for

effective adaptation of service package, the service practitioners can be trained based on the novel adaptation process described by this research.

To design holistic service packages, the proposed DSD suggests visualising a service as cocreated by the service organisation, customer and aiding parties. The practitioners are recommended to develop dual-role personas based on deferment criteria (how much of a role can be specified and how much can be deferred). This duality within a role will enable each service creator to know what to specify and what to defer during the actual service design and service creation. These specified and deferred roles can further be informed through knowledge about the typology of resources (expertise, finance and physical), rules (ethical or *Shariah* rules, regulators' rules, organisations' rules, customers' and aiding parties' rules) and the contextual value, which are the core constructs of the DSD model developed in this study (chapter 7, section 7.4.1).

DSD also has important and specific implications for SFS and its design practices. Importantly, the regulatory framework in Pakistan's SFS is evolutionary and allows the financial institutions to develop services based on the emergent markets and needs (SBP, 2008 and 2010). The evolutionary framework is a regulatory framework established by the central bank of Pakistan and that is expected to transform the service industry gradually through insights from experiences from actual practice (SBP, 2008). Such framework is flexible and allows the financial institutions to develop and deliver services that adapt to the emergent market needs (SBP, 2008) (See sections 1.6 and 7.4.2 for further detail). The earlier static regulatory framework failed to work in Pakistan (SBP, 2008). The actual emergence or evolution occurs within the concrete service-creation practice, which then needs to be embedded within strategic (organisational level) and regulatory (industry level) frameworks for evolution. The DSD (and its embedded PDT and DAP) have propound implications for establishing the desired evolutionary systems at the operational level because it traces the emergence (evolution) within actual service practice and show a path for how it can be embedded within a design of SFS system (chapter 7, section 7.4.2).

1.9 Research Limitations

It is important to specify research limitations for different research parameters to obtain an optimum level of focus in the research and to highlight possible future research directions. In this study, the broad research area is defined as service-system design.

Seven research design limitations are identified and interpreted as possible options for future research.

Firstly, the model is empirically evaluated in specific service i.e., SFS. Other conventional service sectors can provide further insights. Secondly, this research is limited to the specific geographical context of Pakistan. Researching the problem in other geographical contexts can also further improve the concept. Thirdly, the data is primarily collected from front-office personnel. The back-office employees, customers and aiding parties can have different or broad perspectives of the phenomenon, particularly related to their contributions in a service system.

Fourthly, the proposed model separates central designers and local service cocreators/designers (who also design the functional detail). The central designers develop planned designs (e.g., service packages) and send these to other time-spaces. The local designers then adapt and apply these planned designs to actually create context-specific services. In practice it is difficult to clearly separate the central and local designers because the organisation hierarchies vary and each service designer can do both central designing as well as local designing. However, these central and local design functions can be separated. This research classifies local designers as the people in the front office (e.g., a commercial bank branch) and central designers as the people in the back office (e.g., head offices). This approach accepts the assumption of line of visibility. The line of visibility separates the systems' interactions that are visible and not visible to a customer (Shostack, 1982).

Fifthly, this research has empirically found the deferred-adaptation-process (DAP), which specifies six detailed adaptation steps that service creators can take to adapt a system. This adaptation process indicates the existence of microsystems within a service system through which the service creators can establish the required adaptation in a planned design. Further research will increase the knowledge about these underlying systems and their roles within adaptation processes.

Sixthly, this research has designed, justified, and applied a rigorous embedded multiple case study methodology (Yin, 2003 and 2009). The approach involved theory evaluation as well as theory development and as results the research came up with a theoretically and empirically based model. Compared to quantitative surveys, this

methodology has limited statistical generalisability power but enhanced analytical power and practical relevance of the model.

Finally, the proposed model is primarily evaluated and developed through narrative discourses of real service experiences of SFS practitioners within four SFS organisations. However, the model is not applied in service systems to directly observe its practical success. Developing methods and instantiations for application, through and for this model, can reveal important pragmatic knowledge (chapter 7, section 7.5).

1.10 Thesis Organisation

A well-organised thesis needs to have background theory, focal theory, data theory and contributions (Phillips and Pugh, 2010, p. 64). These components of the thesis are organised in seven chapters (Table 1.1):

Theory	Contents
BACKGROUND THEORY	CHAPTER 1: Introduction

	CHAPTER 2:
	
	 Literature review:
	
	     Service system design
	
	     SFS system design

FOCAL THEORY	CHAPTER 3: The proposed theoretical model: DSD
DATA THEORY	CHAPTER 4: Research methodology

	CHAPTER 5:
	
	 Focus-group-discussions' analysis
	
	 Individual case analysis
	
	     Case I: Islamic commercial banking service
	
	     Case II: Islamic life *Takaful* service
	
	     Case III: Islamic leasing service
	
	     Case IV: Islamic mutual fund service

KNOWLEDGE CONTRIBUTION	CHAPTER 6: Cross-case synthesis and discussion
	CHAPTER 7: Conclusion

Table 1.1 Thesis organisation

Source: Developed based on Phillips and Pugh (2010, pp. 64-66)

Chapter one introduces the research. The thesis argument is built by tracing the gradual development within service literature in relation to the research problem and knowledge gaps. Research aim, objectives, questions are deduced from the focal knowledge gaps. The motivation and rationale of the study are discussed, the research context is explained and the research boundaries are outlined. The research methodology is described. Originality of the research is discussed through theory and practice implications. Finally, the organisation of the thesis is outlined.

Chapter two reviews the literature in general service-system design and SFS design. Part one discusses the service-system concept, prominent service-system theories and models, service design concept, prominent service-system design models and finally summarises the literature and highlights the knowledge gaps. Part two then contextualises the thesis argument in relation to SFS. The discussion starts with the *Shariah* philosophy, its relationship with social emergence, *Shariah* economic and financial systems and the SFS models. Finally the knowledge gaps are contextually discussed and the research question, aims and objectives are restated.

Chapter three outlines the theoretical model: deferred service-system design (DSD) (Phase – I). Two focal theories, TODA and SDL, are explained and justified to establish a foundation for the DSD. Seven constructs are adopted, adapted and linked to develop the novel DSD model. The seven constructs are discussed and justified through relevant threads within extant literature.

Chapter four outlines the research methodology. Three research paradigms of positivism, constructivism and pragmatism are discussed. Pragmatism is selected and justified as the appropriate mind set for researching the problem. Three epistemological roles are defined for developing the DSD, evaluating the DSD and discussing the theoretical and practical contributions. Qualitative and quantitative approaches are briefly discussed and the qualitative approach is selected and justified. The multiple embedded case study strategy is selected and justified. The detailed case study design is outlined along with its components such as the selection of case organisations, units of analysis, case study protocols and access to organisations. Finally research quality and ethical principles and their application within this research are discussed.

Chapter five presents the data analysis. This chapter is divided into two parts. Part one presents the findings in pilot focus group discussions and part two presents the findings within four individual case studies.

Chapter six presents the cross-case synthesis and discussion to theorise the DSD. Each construct of the DSD is discussed in the context of selected narrative discourses from the four cases and relevant literature. The new empirical constructs are discussed with greater detail. All findings are finally squeezed into a post-empirical DSD – Phase II.

Chapter seven concludes the research. Findings are summarised in terms of how the four research objectives are met. The originality of the research is established by discussing the research contributions to service-system theory (i.e. SDL), design theory (i.e. TODA), SFS theory (i.e. SFS models) and methodology (e.g., adaptation and use of service blueprints as additional data collection and analysis tool). Implications are outlined for general service and SFS design practices. Finally, seven research limitations and future directions are clarified.

1.11 Chapter Summary

In this chapter, the research is introduced to set an overall context for the research. The thesis argument is built by introducing the recent discussion in the service-system design literature and its trend towards the conceptualisation of service as self-adjusting service ecosystem.

The research problem of adaptation within the service system is discussed in detail and supported by extant arguments within service-system design and SFS literatures. From the discussion, two interrelated knowledge gaps are pulled out, which are: the need to know the detailed adaptation process, and its placement within a service-system design.

To fill these knowledge gaps, the aim is set to develop, evaluate and theorise a model that could describe a service-system design that adapts to the specific operational-level environments of *Shariah* finance organisations in Pakistan. Four detailed objectives are outlined as milestones for attaining the research aim. A direction for the thesis argument is set through the main research question: How the service creators adapt a service-system design, from theoretical and empirical perspectives, to the operational-level environments of *Shariah* finance organisations in Pakistan?

Afterwards, the rationale and motivation is discussed and the context: SFS in Pakistan is introduced. The potential theoretical and practical contributions are briefly discussed, limitations are summarised and the thesis organisation (scheme) is sketched out in terms of seven chapters.

CHAPTER 2: LITRATURE REVIEW – DIFFERENT PERSPECTIVES OF SERVICE-SYSTEM DESIGN, SFS-SYSTEM DESIGN, EXISTING MODELS AND THEORIES

2.1 Introduction

This chapter presents the extant literature review to attend the first research objective of conceptualising the core theoretical constructs of an adaptable service-system design in literature and to identify the knowledge gaps to be research empirically. This review is divided into two parts (sections 2.2 and 2.3). Section 2.2 presents the review of generic service-system concept, the prominent service-system theories and models, service-system design and its models and finally summarises the literature to enlist the theoretical constructs of an adaptable service-system design and the knowledge gaps. Section 2.3 contextualises the thesis' argument into the SFS literature. In this section discussion focuses on *Shariah* philosophy, *Shariah* and social emergence, *Shariah-based* economic system. Finally, a service perspective is put on SFS models (e.g., partnership, sale, lease, agency) from which the knowledge gaps are contextually interpreted.

This review is guided by three main lines of thinking. First, the initial blurred research problem, which is perceived in the theory and practice of service organisations. The research problem enabled the review to incline towards the literature related to the adaptation within service systems and design for it. This initial observation of problem is considered important and is termed a guiding 'north star' within vast sea of literature (Han, 2010). A north star in the sea is historically used by the sea travellers to set a direction within the horizons of a sea.

Second guiding point was the research aim and quest for conceptualising an adaptable-service-system design. This holistic approach has helped to select unified theories and models that comprehensively conceptualise a service system, rather than studies that research the isolated relationships between individual components. The third guiding point is the gradual development in the concept of service system and its design. This guiding point enabled the research to gradually develop the argument from Adam Smith's argument about service (economic perspective) to the current service ecosystem debate and finally point out the marginal knowledge gaps. With this review, the problem became more marginal and contemporary.

The review helped in four areas. Firstly, it enabled the researcher to understand the problem from different theoretical perspectives and to identify the research problem and underneath knowledge gaps which are then further researched empirically. Secondly, it helped to conceptualise the service-system constructs and linked them to build the aimed model (DSD). The prominent service-system theories and models are discussed and the constructs are abstracted to develop the aimed model. Among the reviewed theories and models, two focal theoretical perspectives (TODA and SDL) are used for the initial conceptualisation. Each construct of the DSD is then separately discussed and supported through relevant themes in the literature. Thus a robust background theory and a focal theory are established before the empirical study, which are considered necessary within a case study research (Yin, 2012).

The review approach, adopted in this research, agrees with Phillips and Pugh (2010) and Yin (2009) who maintained that it is necessary to have background and focal theories (framework or model) before starting the empirical research. This is to ensure that the researcher goes to the empirical field with an open mind and not with an empty mind (Han, 2010). An initial conceptualisation is necessary to frame the review and empirical data. Thirdly, the review of the SFS literature helped to contextualise the thesis' argument, the DSD and the theoretical and practical contributions. Finally, the review has helped highlight what methods have been successfully used by researchers in previous studies to investigate the similar phenomenon. Different parameters of the research methodology are adopted and justified through the relevant sources in the literature.

2.2 What are Service System and its Design?

Beer (1979, p. 7) defined a system as "group of elements dynamically related in time according to some coherent pattern". A design for a system is the style and approach through which a designer arranges the system's elements, to develop complex structures (Hooker, 2004).

2.2.1 Service System?

This section strives to conceptualise the core constructs of a service system from different theoretical perspectives. A service emerges within multiple service encounters among service organisations, customers and other supporting parties who establish a system of systems (Sampson, 2010). In routine, the term service is used for offerings such as professional services, retail, *financial*, telecommunication and health care

(Shostack, 1982). Literally, service means the action of helping or doing work for someone. Service constitutes a series of actions that form a process, which is the core to a service system (Grönroos, 2000; Sangiorgi, 2008; Sampson, 2010). Banks are the service systems in which the service co-creators perform a series of actions to process a cheque for and with the customer. Similarly, the customer could be (or belong to) a system (individual, corporation or a government) who undertakes a series of actions to enable the economic exchange with the banks. So, establishing a *series of actions* is essential in a service system. Table 2.1 summarises the dictionaries' definitions of service.

Definition	Source
A valuable action, deed, or effort performed to satisfy a need or to fulfil a demand.	(Business Dictionary Online, 2012)
An act of help or assistance. An organised system of labour and material aids used to supply the needs.	(Collins Dictionary, 2001, p.1374)
The action or process of service. An act of assistance.	(Concise Oxford English Dictionary, 2011, p. 1316)
A work or duty performed for someone … the function performed by one who or that which serve … help, use, benefit.	(Longman Dictionary of the English Language, 1995, p.1473)

Table 2.1: Dictionaries' definitions of service

In a service system, along with intangible actions, the service creators use a number of resources (Grönroos, 2000; Tomiyama, 2005). These resources include physical and intellectual artefacts to create utility or value for and with customers and other service co-creating partners. In a hotel service, the rooms and edible items are the physical resources. Similarly, the customer in a bank interacts with the physical resources such as the ATM system to enable the withdrawal of the currency (value creation).

Actions are the core of the service system but their attachment with physical resources is relatively optional (Kotler, 2001; Vargo and Lusch, 2004a). The various combinations of intangible (e.g., actions and competencies) and tangible resources (e.g., goods and premises) create various types of service systems in the economy (Shostack, 1982). First are those service systems that are dominated by the application of intangible actions, competencies and expertise. In these service systems, the core of value arises through the application of these intangible elements with the peripheral use of tangible products. Hospitals and universities predominantly create value through

expertise and actions of doctors and teachers. These are service-dominant entities because service elements outweigh the physical elements.

Second are those service systems that have a moderate concentration of intangible elements and tangible elements. Travel service systems and hotels have a moderate concentration of tangible and intangible elements. The usufructs of hotel rooms, food and equipment are equally important to the intangible skills and actions performed by the personnel (e.g., making the booking, delivering food, and guidance) (Bitner, Ostrom and Morgan, 2008).

Third are those service systems that are dominated by the physical products. For instance, auto manufacturing companies predominantly manufacture autos by using heavy manufacturing plants. But along with this core physical element, they use vehicle design services, sales services, plant operation services, supply services, repair and maintenance services and now even auto finance and leasing services. From this perspective, Levitt (1972, p. 41) defined a service industry as: "there is no such thing as service industry, there are only industries whose service components are greater or less than those of other industries and everybody is in service".

Within a service system, each entity exists on its own and maintains its identity. The unique interactions and resources utilise results in service for itself and for other co-creating entities. These service entities include the customer, service organisations and other supporting networks (Sampson, 2010). These service entities establish a distributed control over the actions and usufructs of the resources. They establish this control through the application of rules in the service system (Sangiorgi, 2008). Within a service system, the control over service is stronger inside and it weakens in the interacting points (Chase and Tansik, 1973; Sampson, 2010). During these interactions the service creators adapt to each other's requirements and the overall context of the interactions controlled through the institutional rules. Compared to goods-dominated systems, service-dominant systems are more regulated and have stronger legal control infrastructure (Mattoo and Sauve, 2003).

The actions and resource use actually lack a clear and explicit structure such as tangible products. Therefore, the service systems do not have explicit parameters and cannot be effectively predicted and specified in its pre-planned designs. This is true because human senses can better visualise the tangible goods rather than intangible actions and utilisation of resources. A service-system structure therefore heavily relies on the

participants' behaviours during actual service interactions. These behaviours and usufructs cannot be seen, touched, felt or tasted (Zeithaml and Bitner, 2003). The service community can only experience the service through tangible elements or touchpoints within a service system (Han, 2010; Parker and Heapy, 2006).

Inseparability of service production and consumption is also a factor that makes a service system complex to understand and design (Edvardsson, Gustafsson and Roos, 2005; Palmer and Cole, 1995). The entities within a service system randomly produce and consume service elements. It becomes very difficult to separate the production and consumption pattern in each service encounter, which occurs among different people in different environments. This characteristic is unique to service systems because physical goods follow a sequential and standard process pattern of production, sale and consumption. So in goods the producers and consumers can be separated but not in a service. For instance in an educational service system, the teacher and students both randomly produce and consume the service and value during the classroom discussions (service encounters). Toffler (1981) termed the service co-creators as *prosumers* (combining the concepts of producer and consumer), who together and at the same time produce and consume a service. In this sense, every participant in a service system is the service creator as well as consumer.

Services are also very perishable in nature. Perishability of service means that a service expires right after its production. The time interval between service production and consumption cannot be perceived effectively because these occur almost at the same point in time (Fitzsimmons and Fitzsimmons, 2000; Han, 2010). Due to this perishability, Adam Smith, in his seminal work 'wealth of nation', argued that services are not an ideal element and contributor in the economy because no value can be stored in them and neither can value be transferred to another entity through exchange, as happens in the case of tangible goods, which can store value for longer (Vargo, Lusch and Morgan, 2006). It is the perishability of service that makes it difficult to be considered as a 'product'. The reason is that it is intangible – nobody can see or feel when and where the service is 'produced'. Because it emerges so randomly within multiple episodes, no one can holistically conceptualise a service product. For instance, in the case of a depository service that occurs throughout your life, it is very hard to separate when and where it is produced and when and where it is consumed. The production and consumption, in reality, occur spontaneously and, thus, make the service itself very perishable.

The integration of multiple and different service entities and their resource integration results in heterogeneous services in multiple service-encounters (Edvardsson, Gustafsson and Roos, 2005; Palmer and Cole, 1995; Zeithaml and Bitner, 2003). Heterogeneity or diversity is incapability to standardise the service and service system. Heterogeneity represents the unique experience that a consumer has by interacting with other service co-creators (Han, 2010). The service encounters emerge uniquely because they occur in unique contexts which force them to adapt (Ullah and Patel, 2011b). This heterogeneity in a service system is caused by many factors such as service creators' familiarity and unfamiliarity with the service system, personality, expectations and influences from fellow customers and the service-system's physical environment (Han, 2010; Bitner, 1992). Services are contextual and two services can rarely occur in the same pattern (Zeithaml and Bitner, 2003).

The multiple service co-creators belong to different activity systems that establish service encounters or a series of encounters to achieve their mutual objectives (Normann, 1991; Sangiorgi, 2008). A human activity always has some objective to achieve as is the case for a service system as well (Nardi, 1996; Sangiorgi, 2008). The organisations are, in essence, the purposeful actions (Patel, 2006). The commercial service co-creators as economic beings have mutual and reciprocal economic and social objectives to achieve (Sangiorgi, 2008). These objectives in a service system establish the value propositions for the service co-creators in context (Vargo and Lusch, 2004a). In financial services, the bankers, customers and allied parties (e.g., visa system and interbank networks) integrate their actions and resources to create service and value.

2.2.2 Service-System Theories and Models

This section moves the review forward to discuss the prominent service-system theories and models. A theory is a "supposition or a system of ideas intended to explain something" (Concise Oxford English Dictionary, 2011, p. 1496). A model is a more specific set of statements or propositions and their relationships represented in constructs (Manson, 2006). The aim of this review is to holistically conceptualise the phenomenon of service-system from different perspectives. Knowing different and alternative perspectives is important for placing the thesis' argument in the right paradigm and establishing the marginal contribution to knowledge (Nardi, 1996).

a. Service-Product Perspective

The service-product theory or product perspective conceptualises a service as an intangible product produced by the service organisation and consumed by the customer (Vargo and Lusch, 2011). This perspective was established with the development of economics in a goods-dominated industrial era (Lusch and Vargo, 2006b).

In the bartering era, the service-system concept was simple because the exchange of values was direct. Each party was required to do something for the other and received direct benefit in return (Vargo and Lusch, 2011). From this perspective, services were the direct give-and-take activities of parties in an economic exchange (system). After the bartering era, when a monetary system was created and economic organisations were separated from households, a more indirect exchange of values emerged (Vargo and Lusch, 2011). In a monetary system there is a division between service producers and consumers (Vargo and Lusch, 2011).

The service organisations were considered as the service factories integrating the services (actions) and products (goods) to create benefits (Chase and Garvin, 1989). The underlying assumption was that an organisation alone produces and clients alone consume the services and goods and considerations are adjusted through money (indirect value promises) (Vargo and Lusch, 2011). The customer is considered as the sole consumer or destroyer of value in the economic exchange (Normann, 2001). Therefore, the focus of research in this paradigm was on how to create built-in value in service products and to transfer the same to the customer. This product-centred perspective is the foundation of economics based business disciplines including the service systems (Vargo and Morgan, 2005).

This product-centred perspective has been inspired by the economists' school of thought established by Adam Smith, who considered services as intangible and peripheral products within economies. In the influential book "The Wealth of the Nation", Smith described services as:

> "The labour of some of the most respectable orders in the society is … unproductive of any value, and does not fix or realise itself in any permanent subject, or vendible commodity, which endure after that labour is past, and for which an equal quantity of labour afterwards be procured … their service, how honourable, how useful, or how necessary so ever, produces nothing for which an equal quantity of service can afterwards be procured" (Smith, 1776/1904, in Vargo, Lusch and Morgan, 2006, p. 30).

This quote has been extensively cited in service literature (e.g., Lovelock and Gummesson, 2004; Segelström, 2010; Spithoven, 2000), because this argument sets a

seminal ground for the perspective of conceptualising service as an intangible product. Smith argued that service providers are not the important contributors to the economy because their services are perishable and do not take any fixed shape, so cannot be stored and supplied. The value in a service finishes with the completion of the task. Goods on the other hand are definable units of outputs that can retain value and that can be used in transactions because they provide *thin crossing points* (Baldwin, 2008). Thus, with economic exchange the built-in value in products can be transferred. This built-in value or value-in-exchange is termed utility within economic science (Lusch and Vargo, 2013).

Due to the reduced importance of service within in the industrial era, the service-focused research only gained momentum in the beginning of the twentieth century when the financial services proved to be the vanguard of the service revolution (Barras, 1990). However, in the early studies, the services were still conceptualised as products (though intangible). This perspective has significantly affected the way the service systems were researched in this era. For example, considering the services as intangible products, Leffingwell (1917) applied Taylor's (1911) four principles of scientific management to service organisations to improve the service *production* efficacy of the organisation (Chase and Apte, 2007). Similarly, Leffingwell and Robinson (1943) applied the exceptional principle to service organisation in which they suggested separately dealing the exceptional services so that the remaining normal services could be efficiently produced by the organisation (Chase and Apte, 2007).

The service researchers influenced by the product perspective ignored service co-creating customers and aiding parties. Efficiency cannot be achieved without consideration of the supporting systems and customers' inputs (Sampson and Froehle, 2006; Sampson, 2010, 2012). Customers' presence has a significant impact on service system and negatively affects the efficiency (Chase and Tansik, 1973); even their virtual presence matters (Lovelock, 1996).

Efficiency in a service system is the achievement of planned objectives (e.g., value creation in a service system) while spending the minimum possible amount of time and other resources. Customers' presence in a service system affects the efficiency negatively for two reasons. Firstly, when customers are present in the system they interact with the personnel and have unplanned requirements that cause the consumption of more time and resources than planned for a service encounter (Chase and Tansik, 1983). Secondly, efficiency is reduced because the personnel and

customers have low levels of control over the service encounter during their interaction (Sampson, 2013). The actions of personnel largely depend on the input from the customer, and vice versa. Therefore, the activities take more time and require more resources to complete. This situation reduces the efficiency of the personnel and the customer and, hence, reduce the efficiency of the overall service system.

During the efficiency enhancing era in service research, the organisation is assumed as sole producer and customer as sole consumer, which has limited the researchers' visions and perspectives for addressing service-system problems. This happens because the service was merely considered as product of the organisation and only they can bring efficiency in their productions. Within the product perspective, many authors have adapted the conventional product development processes for service development. These service-product development processes include service design and implementation as two steps within the product development process. Han (2010, p. 85) has synthesised five prominent service-product-development models (i.e. Cooper and Edgett, 1999; Edvardsson *et al.* 2000; Hollins and Shinkins, 2006; Schmitt, 2003; Zeithaml and Bitner, 1996) to describe a service-product-development process as:

- Review of the culture and overall strategy of organisation.
- Diagnosis and analysis of the new service development strategy of organisation and the market assessment.
- Idea generation and concept development within organisation and market.
- Synthesis of the concept with resources in organisation and plan the implementation.
- Development and specification of detailed design of the service to be launched.
- Testing the prototype of service to validate the entire service product.
- Launch, deliver and support the service by training the staff and supporting policy documents.
- Post-launch review of the performance of service product for a certain period and fix any problems that emerge.

This present study focuses on the happenings beyond the post-launch review, where different service creators apply the designs to create services in different contexts. This research explores how the launched products (termed planned designs in this research) adapt to various contexts, to understand the adaptation process and how this adaptation can be conceptualised in a holistic service-system design.

The adaptation process occurs during the actual service-creation encounters. However, while developing the planned design in pre-launch phase, an overall locale for adaptation needs to be enabled so that the people at the operational level have direction for executing the adaptation. As recommended by Ahmed (2006), the documentation of SFS products should leave empty spaces so that the contextual detail of each service case can be entered at the transaction point in order to tailor the service product. This phenomenon is described as functional deferment points (FDPs) by Patel (2012). FDPs are the locales in the designs of a system that are deferred and are to be specified in future by people in different situations.

The amount and extent of locale for adaptation partly depends on the organisational culture. Service creation requires a more collaborative culture because the actual value is co-created by the different agents in the system as a result of integrating their resources (Lusch and Vargo, 2011). This means that service designs are more effective when they are collaboratively developed by the potential service creators and, more importantly, each participant has enough control to establish the adaptation process. The current evolutionary regulatory framework for SFSs in Pakistan is evidence of the emergent collaborative culture: the country's central bank has realised that they will not be successful if they impose a hierarchal, static, and rigidly controlled structure, as such a structure failed once in Pakistan (SBP, 2008). The current evolutionary framework of the central bank in Pakistan embraces collaborate culture. The central bank now collaborates with financial institutions and other players in the market to share inputs and evolve collectively by adapting to each other's requirements.

b. Service Molecular Model

The product perspective and its consequent product development perspective were broken down by Shostack (1977). As a renowned researcher and banker of her time, she argued:

> "Squeezing services into the procrustean phrase, intangible products, is not only a distortion … but also a complete contradiction in terms. It is wrong to imply that services are just like products except for intangibility. By such logic, apples are just like oranges, except for their 'appleness'. Intangibility is not a modifier; it is a state" (p. 73)

Shostack (1977, 1982, 1984 and 1987) established a system perspective for conceptualising service and service markets. She developed a service molecular model (SMM) and deduced a service system as the whole of three elements: intangible elements, tangible elements and the bonds in-between (Figure 2.1). Shostack (1982 and1987) proposed that there is a need to break free the service design from product

development approach. She argued that "product/service combinations that form larger market entities can be quite complex. Since they are dynamic and have highly interrelated elements" (Shostack, 1982, p. 49). The unique bonds between service and product elements establish the interactions and cause the service system to emerge heterogeneously. So, she recommended to holistically conceptualising a service system. Shostack (1982) took the analogy from a physical molecule in which the unique bonds among atoms result in the emergence of unique substances. In the same way a service system uniquely emerges within different encounters when the service and product elements within a system establish unique bonds or interactions. Pointing to the same service-product interaction in a service system, Chase and Garvin (1989) maintained that within a service factory the service components move around the physical products. Shostack (1982) said that a box of cereal is not simply a product but a culmination of a series of products and services starting with the farming.
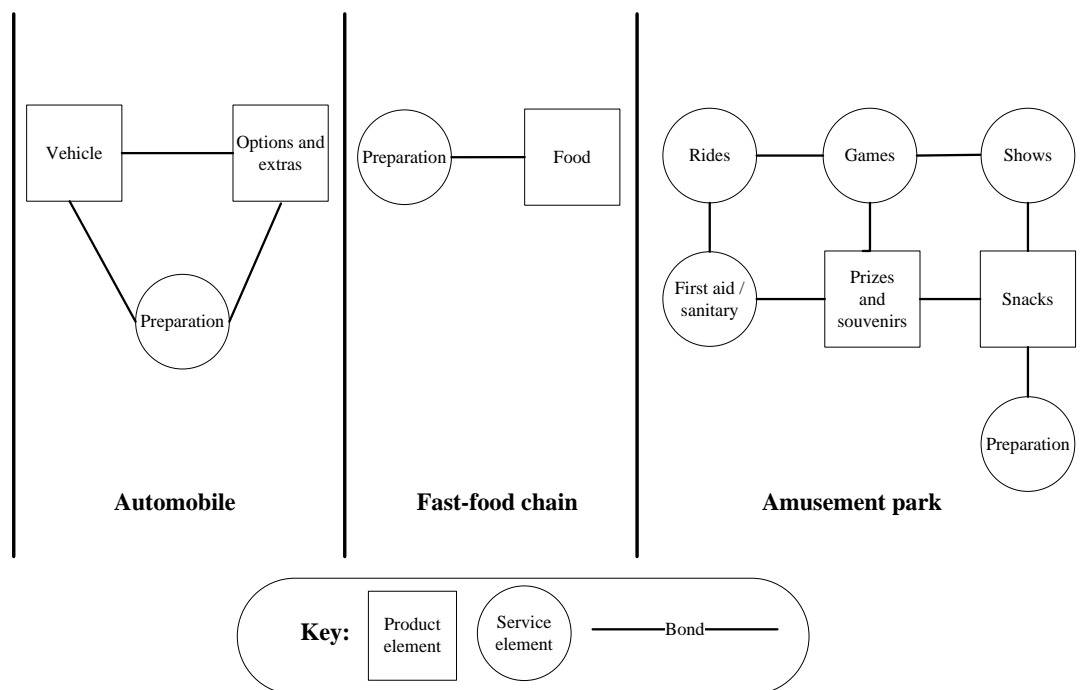
Figure 2.1: Basic molecular modelling

Source: Shostack (1982, p. 50)

There are three constructs of the basic SMM. First is the tangible element, which is a physical product to be purchased and used by the customer or may be used in facilitating a service. For example in a restaurant service-system, food is a tangible product. Second is the intangible element or service component, which constitutes actions. For example preparing the food and carrying that to the table are the intangible elements. Third are the bonds which reflect the relationships between tangible and

intangible elements. For instance how the actions of a chef are related with the input of food.

Based on different compositions of tangible and intangible elements in a service system, Shostack (1982, p. 52) put the service entities on a line of tangibility (Figure 2.2). The entities on the right side of the line are classified as the service-dominant entities, whereas the entities on the left are classified as product-dominant. The entities in the middle are classified as service entities with moderate concentration of service and product elements. From this perspective, the conventional classification of manufacturing, merchandising and service organisation is in reality a mutually inclusive classification. This is because every entity has some service and product elements with relatively low or high concentrations (Levitt, 1972). For example, the current retail stores have both retail goods (groceries) and services (online sales service and goods delivery). The dominance of a service or good element within an entity leads to classification of organisation being service or goods-oriented.
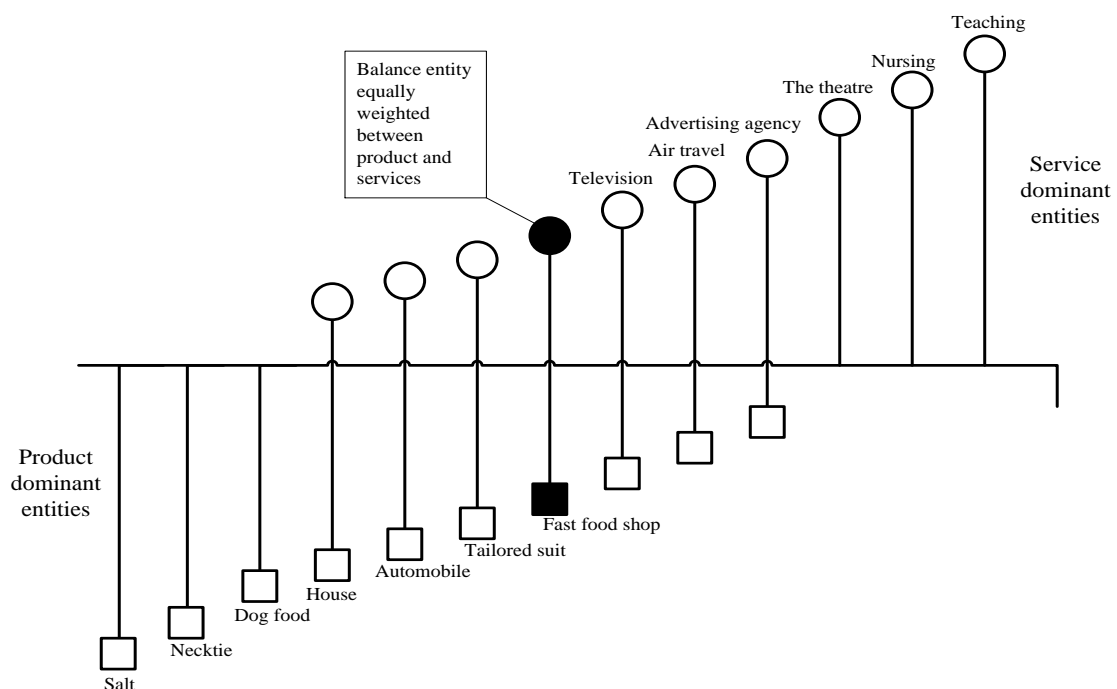
Figure 2.2: The scale of elemental dominance

Source: Shostack (1982, p. 52)

Within a service system, the products and service elements uniquely integrate in different service encounters (Goldstein *et al.,* 2002). This integration does not transform the subjects and objects to some outputs, but the focus remains on the usufruct and usage of the system rather than on its transformation (Normann, 1991).

This usufruct or usage of actions and resources is actually the service. In a banking service, an ATM machine does not transform into a new kind of output (as happens in manufacturing) but its unique and contextual usage becomes part of the service. Within a service system, multiple parties contextually integrate their actions and usufructs of resources to create the services (Goldstein *et al.,* 2002). In online banking, a customer performs actions to integrate his computer with the resources of an internet company and bank to co-create and co-consume a service.

c. Customer Contact Model

The interaction between service organisation and customer is the core in a service system. Chase and Tansik (1983) proposed the customer contact model (CCM). They studied the interaction among the service personnel and customers in a service system. The authors argued that the presence of the customer in service systems affects the actions of the personnel. Their interactions negatively affect the potential operation efficiency of the whole service system (Figure 2.3):

$$\text{Potential operating efficiency} = f\left(1 - \frac{\text{Customer contact time}}{\text{Service creation time}}\right).$$

Figure 2.3: Customer contact model

Source: Chase and Tansik (1983, p. 1039)

Chase and Tansik (1983) suggested that a service system should be divided into high-contact and low-contact segments. Low-contact segments are suggested to focus more on the production of tangible elements to enhance efficiency, whereas the high-contact segments focus more on the interaction and service elements. CCM shows that contact areas are more service-oriented, whereas the low-contact areas are more product-oriented within an overall service system. CCM extends on Shostack's (1982) model, which simply categorised a service system into product and service elements and how different entities come with different concentrations of service and product elements. CCM argues how these two elements are concentrated differently within a single service system. The product elements are more focused on an organisation, whereas service components concentrate on the entity's interaction points. Sampson (2010 and 2012) recently furthered this argument and said that service-system's participants have more control on the service process centrally and thus becomes more efficient. Whereas, they have low control in the interaction points touching the external areas,

causing lowering the efficiency. In a bank for instance, the front-office personnel have less control compared back-office personnel, who do not interact with the customer and other contextual entities.

CCM suggests different management and design criteria for high-contact (service-centred) and low-contact (product-centred) units in a system. Even the objectives of these units are suggested to be different because of relative exposure of each type of unit to the environment. CCM recommends that high-contact units should focus on efficiency and low-contact units should focus on effectiveness of the service (Chase and Tansik, 1983). The service processes should be broken down into high- and low-interacting segments to differently allocate time and other resources, which will enhance the efficiency of the overall service system.

d. Servicescape Model

The composition and arrangements of the tangible elements in the service system create a unique physical environment (servicescape) for a service system to operate in. For instance the bank branch outlet is a servicescape. Bitner (1992) developed the servicescape model and argued that most of the service production and consumption occur in the same point in place-time, so the surroundings have a strong impact on the customer's and service personnel's perceptions and in turn on their behaviours. This happens because the situation around the service creation affects the participants' perception of the service encounters and in turn affects their behaviours, which are reflected in actions and processes. This emergence in employees' and customers' behaviours creates specification differences in service production, consumption and value creation (Stuart, 1998). These differences occur because the employees and customers have their own images of service before, during and after the service delivery. When they see the service environment differently, they start to behave differently and take necessary actions to adapt (Johnston and Clark, 2001). These emergent actions of service creators were particularly noted by Bitner, Booms and Tetreault (1990). They evaluated 700 service encounters in diverse industries like airlines, hotels and restaurants and concluded: "Though standardized responses or actions can be used for some types of incidents, in most cases the response must be tailored to the specifics of the incident" (Bitner, Booms and Tetreault, 1990, p. 82).

Bitner, Booms and Tetreault (1990) suggested that the employees in service encounters should have the discretion to take appropriate actions in response to the unusual and emergent situations. The situations became emergent because multiple service

encounters occurring at the same time (Sangiorgi, 2004). Service encounters are generally perceived as one-to-one interactions occurring on a timeline, but in reality they are created in simultaneous multiple encounters occurring in different environments (Sangiorgi, 2004). To create an auto lease service, the customer, various service personnel and aiding parties simultaneously perform actions to complete the service. Similarly, the same personnel are also involved in other service cases. Some customers and service personnel are more efficient and effective than others, so the service system emerges heterogeneously in different service encounters. The interactions among multiple entities within a service system and service-systems' interactions with broad external systems results in a unique environment which makes it behave in a new manner. This is the same as the unique bonds among the atoms in molecules, which results in the emergence of novel substances (Shostack, 1982) or the unique cell combinations, which result in different organisms.

Sangiorgi (2008) also argued that during service encounters, the service creators' own activities as well as other parties' activities can emerge with conflicts and contradictions, thus results in an emergent service-system. Zeithaml and Bitner (2012) argued that due to these differences, two services rarely occur in the same pattern. Heskett *et al.* (1994) also maintained that local interactions between personnel and customers can be effectively managed if they are designed according to the local contexts. Heskett *et al.* established this concept through service profit chain. They argued that profitability increased with service design decentralisation because the customer perceives greater value when they get things done according to their situation and needs. Similarly, Vargo, Maglio and Akaka (2008) argued that within a service system, the service creators adapt the service to the context and thus enhance the value in the system.

Due to the effect of physical environments, the service creators need to adapt and fit within the service organisation and then also needs to fit within the external environment (Bullinger, 2003). Thomke (2003) conducted a comprehensive study in 205 branches of Bank of America and concluded that the actual service customises at the individual transaction level. The customer and external environment have a strong impact on the service-systems' behaviours. Goldstein *et al.* (2002) argued that the service system does not emerge and operate in isolation but interacts with its environment, which forces it to grow organically. This growth or evolution occurs when the service creators interact within context. In these interactions, value or benefit

is peculiarly and contextually set by the recipient (Vargo and Lusch, 2008a). This means that emergence in the service practice environment is not only caused by the interaction in the system's internal elements but also by the interactions among the system's external elements.

Through case studies of educational service and tourism service-systems, Stuart (1998) also confirmed the affect that surroundings on the service-system's behaviours. He suggested the synchronisation of new services with both internal organisation culture and market need. Further, he argued that there should be a best fit of the service into the internal culture and customer need. The service elements that Stuart suggested adapting are physical facilities, processes, participants and information systems, which create an overall servicescape.

Goldstein *et al.* (2002) argued the overall service-system infrastructure (that deliver the service) and the service benefits should be linked with the strategic objectives of the organisation and customer needs. They argued that the service system is incomplete without a link between an organisation's strategic intent and customer's needs and this link is missing in the current service-system designs (see Figure 2.4).
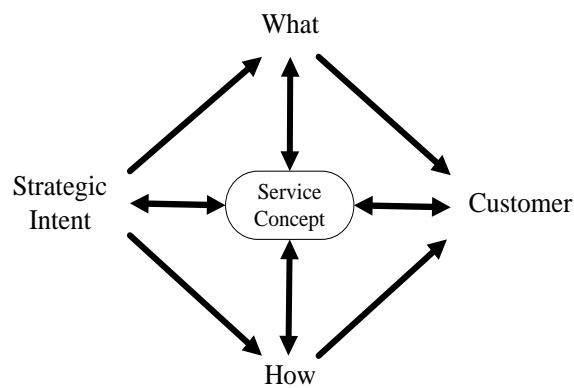
Figure 2.4: The missing link in service design research

Source: Goldstein *et al*. (2002, p. 124)

Goldstein *et al.* (2002) argued that knowing answers to *what* and *how* questions is not enough but integration of these two is important for better understanding of the service concept. Goldstein *et al.* (2002) concluded that a customer has an image of service before, during and after service delivery. The customer may think of a service as whole or some individual elements of the service system. Any gap between the strategic objectives of the organisation and customer's needs may be considered as a fault in service delivery (Johnston and Clark, 2001; Parasuraman, Zeithaml and Berry, 1985).

Thus, a service system should be designed so that it conveniently integrates and adapts to the organisation's strategic objectives and customer's need.

In the editorial review of new issues and opportunities in service design, Verma *et al.* (2002) concluded that service design without consideration of the actual service-creation context limits the capability of an organisation to design market-winning services. The context is established by multiple and different service creators and their parent, sister and child systems. Edvardsson, Enquist and Johnston (2010) came up with the concept of *experience room* and they suggested six dimensions of the servicescape. These dimensions are the physical artefacts, the intangible artefacts, the technology, the customer placement, the customer involvement and the interaction with employees. Rosenbaum and Massiah (2011) further extended the servicescape model and argued that within a service system there are controllable and uncontrollable stimuli. These stimuli affect the service creators to avail or avoid a service. These stimuli are the results of social factors, which significantly affect the service creators' behaviours in a given person-place attachment (servicescape).

e. Service Encounters Triad

The service system is not just about the service elements, product elements and their high or low concentration in different servicescapes. Who is actually involved in the system and their control in the service system are equality important. Cook *et al.* (2002) proposed a service encounter triad model, which depicts the relationships between the service organisation, contact personnel and customer, all of which unite to establish a service system (Figure 2.5). They argued that a service organisation looks for efficiency and contact personnel seek more autonomy so that they can adapt to the contextual service encounter and to the customer's need. Thomke (2003) also noted that the services get tailored to individual customers. This happens because organisations tend to have lower control at the operational level where they interact with the customer and other service-creating entities (Chase and Tansik, 1983; Sampson, 2010 and 2012).
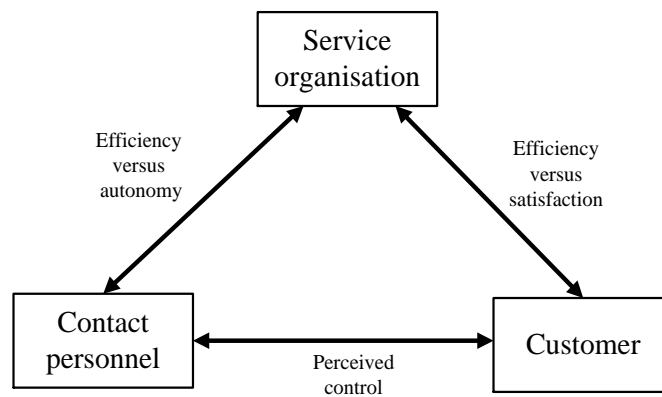
Figure 2.5: The service encounters triad

Source: Cook *et al.* (2002, p. 160)

The customer as part of the system looks for satisfaction and shares the perceived control with the contact personnel (Bateson, 1985; Hui and Bateson, 1991). This means that the personnel and customer both want to be objective in their service co-creation and consumption and thus share the control over the process, whereas the organisation wants to create the service efficiently. In reality, all the participants jointly control the actual service system and look for their own value propositions in the system (Lusch and Akaka, 2012; Lusch and Vargo, 2013).

f. Service Opportunity Matrix

The service system operates in a broad market and industry, both of which have an impact on its structure. Sawhney, Balasubramanian and Krishnan (2004) developed the service opportunity matrix (SOM). They argued that the organisations should redefine their service systems and should develop more focused activities and outcomes based on the system rather than services and products. They evaluated the utility of outputs over the outputs themself. Sawhney, Balasubramanian and Krishnan (2004) recommended establishing a service system as an activity chain. Pine and Gilmore (1998) also described service system as chain of intangible activities and experiences carried out by the organisations on their customers' behalf. In this activities chain, Sawhney, Balasubramanian and Krishnan proposed that activities in a service system should be logically linked and directed to the desired outcomes. Other researchers such as Parker and Heapy (2006), Sampson (2012) and Sangiorgi (2008) also came to the same conclusion. In this activity chain, the service creators co-produce and co-consume value as an outcome of an activity. For instance, registering a leased vehicle is an activity within the chain of activities that establish an auto lease service.

Sawhney, Balasubramanian and Krishnan (2004) suggested that the chain of activities or service system can be adapted in response to the opportunities in the market. In this process the co-creators would need to add (deduct) new (old) activities. They identified four areas of adaptations in response to market opportunities (Figure 2.6).
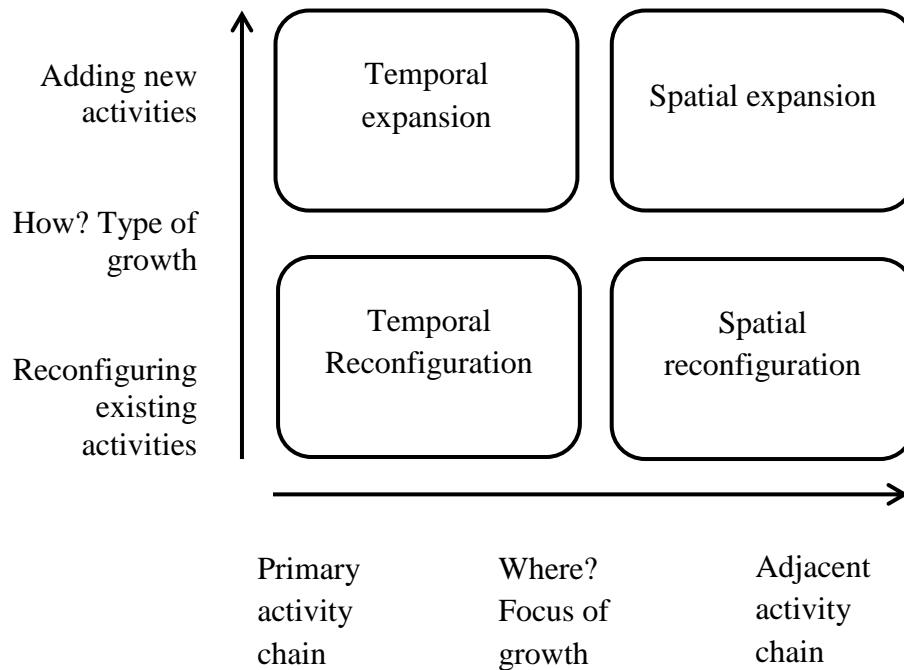
Figure 2.6: The service opportunity matrix

Source: Sawhney, Balasubramanian and Krishnan (2004, p. 59)

There are two dimensions of SOM: the type of growth in the service system (adding new activities or reconfiguring existing activities) and the focus of growth in the system (primary activity chain or adjacent activity chain). Cross-comparison of these two dimensions leads to four types of expansion: temporal expansion, temporal reconfiguration, spatial expansion and spatial reconfiguration. SOM provides depth in the service system adaptation by identifying areas and types of adaptation within a system. For instance, in a depository service *opening an account* is a core activity chain and making an online transaction is an adjacent activity chain. Both these chains of activities can be adapted through addition (deduction) of activities or reconfiguration of them.

Service opportunities emerge in broader systems such as economies and markets, where service employees and customers interact to create and consume services. In this interaction they adapt and exploit the opportunities to enhance mutual benefits. For

instance when new ideas of business emerge, the financial institutions evaluate these opportunities and adapt their service packages to finance them. Availing these emergent opportunities enhances value for the service co-creators and consumers. A similar adaptation is noted by Vargo, Maglio and Akaka (2008) who argued that value-in-use remains the focus and the participants adapt to each other to co-create this value.

g. Service-Activity-System Model

The service system as an activity chain developed by the SOM is logical but has an assumption that only organisations can create this chain of activities – a service system. Sangiorgi (2004 and 2008) came up with the concept that a service system emerges with multiple and different activity chains or systems. Sangiorgi (2004) conceptualised the service as an activity system. She argued that within each service encounter, multiple activity systems interact to create a service system and consequent service. Sangiorgi's model is based on the activity theory, which is pioneered by the Russian scientists Alexei Leont'ev and Vygotsky in around 1920 and 1930 (Engestrom and Miettinen, 1999). Figure 2.7 shows how an activity theory conceptualises the interaction between two human beings as interaction between two activity systems (Engeström, 2001). Activity theory is gradually developed and applied into multiple disciplines (Bardram, 1997; Engeström, 2000; Jonassen and Rohrer-Murphy, 1999; Nardi, 1996; Zott and Amit, 2010).
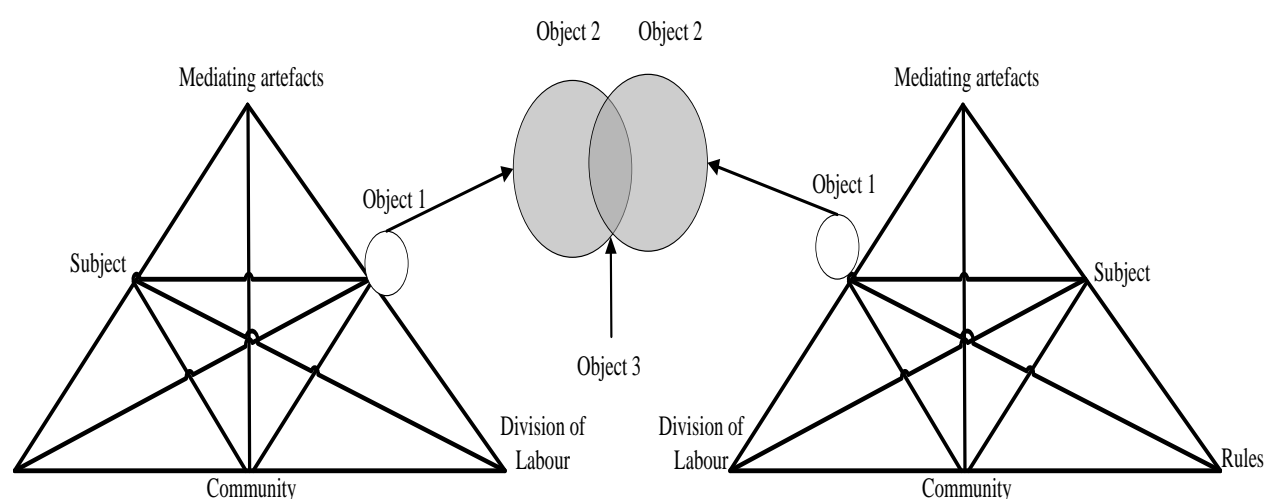
Figure 2.7: Two interacting activity systems

Source: Engeström (2001, p. 136)

Activity theory is most used by researchers to conceptualise the socio-technical systems (e.g., McNair and Paretti, 2010; Wyeld and Prasolova-Forland, 2009). There are six

interrelated constructs of activity theory: the subject or actor who actually performs the activity; the object or the purpose for which the subject engages in the activity, as organisations are the purposeful actions (Patel, 2006); the community, which constitutes all the actors involved in the activity, who establish the overall social context for the activity; the artefacts, which are the tools and concepts used by the actors during the activity; the divisions of work or roles assumed by the actors within an activity; and the rules, which are the conventions, guidelines and norms that regulate an activity.

The service activity model further goes into the details of each service activity (within the chain of activities) described by Sawhney, Balasubramanian and Krishnan (2004). Sangiorgi (2008) noted that service system encounters are actually the interactions among different people belonging to different activity systems with different objectives (and activity components) thus causing the emergence of a complex service encounters. This is the same argument raised by Sampson (2012) who said that people in multiple entities integrate their actions and resources to create a multiple-entity system. A similar argument is made by Maglio and Spohrer (2008) who conceptualised a service as system of systems in which the agents integrate their activities to create the services and values.

The service activity model extends the service system concept. It confirms Shostack's (1982) concept of a service system as tangible and intangible artefacts used by the service creators. Similarly it also acknowledges the nature of the service system as a chain of activities (e.g., Sawhney, Balasubramanian and Krishnan, 2004; Pine and Gilmore, 1998). The service activity system separately mentions the service community and the subjects, which contradicts most of the service-system researchers who argued that the service creators could be the service organisation, customer and aiding parties (Bitner, Ostrom and Morgan, 2008; Sampson, 2010). The classification of subjects and community is more abstract and ignores the notion that every participant within an activity is in essence a stakeholder and a subject (e.g., Han, 2010). This is true because all the participants in the service systems actually co-create the service (Vargo and Lusch, 2008b). Also, the service activity system concept is seems more focused on the physical artefacts that mediate the subjects and their objects (Sangiorgi, 2004). Whereas most of the service research is seem more inclined towards the intangible resources such as expertise and competence and the usages of the resources (Lusch and Vergo, 2004a).

h. Unified Service Theory

The notion of service encounters among multiple activity systems is further extended by Sampson and Froehle (2006) and Sampson (2010, 2011 and 2012). Sampson and Froehle (2006) proposed a unified service theory (UST) to more abstractly conceptualise a service system and how multiple entities integrate their actions and resources to establish a system of systems. Such a holistic approach for understanding a service system is also preferred by Maggigate (2008) and Patrício *et al.* (2009). The fundamental premise of UST is that a service is a process (chain of actions) in which a customer significantly contributes his resources (Sampson and Froehle, 2006). There are three prominent constructs of the UST.

First, a business process can only be considered a service when a customer is involved in it. According to UST a customer can be an individual person or group of persons (entities). The customer makes the actual spending decision in a service system (Sampson, 2001).

Second, the customer makes three types of contributions to the service systems:

- Customer's self, which means "employment of the customer labour in the process" (Sampson and Froehle, 2006, p. 332). For instance, the actions that a customer undertakes to withdraw money using an ATM machine. The customer's physical presence in the service system makes it unique (Cash and Tansk, 1983). Even the customer's virtual presence also affects a service system (Lovelock, 1992 and 1999).

- Customer's physical belongings, which are the artefacts or resources that the customer utilises in the service process. For instance, a customer may use a laptop and mobile phone to access a bank account. Artefacts are the important parts of the service activity system (Sangiorgi, 2008) and they represent the tangible touchpoints in the system (Parker and Heapy, 2006; Han, 2010).

- Customer's information inputs, which are the customer's inputs in the form of oral and verbal communications informing other service co-creating entities. This information informs the service process to establish the onward activity chain. For instance, a loan applicant provides financial statements to the bank to be evaluated for the loan service.

Sampson (2010, 2011 and 2012) conceptualise the complex service-system as a network of entities. He argued that each service entity in the chain performs actions on

the resources within controlled service domains to meet their needs. UST agrees with Shostack's (1982 and 1987) molecular model as it recognises the existence of intangible actions and tangible resources and their relationships (bonds). Similarly it also agrees with Sangiorgi's (2004) service activity system model, who argued that the service system emerges with encounters of multiple entities. However, UST is more focused on the customer's inputs within a service system, which is mainly inspired by the customer interaction concept presented by Chase and Tansik (1983) in their CCM.

i. Service Dominant Logic

Vargo and Lusch (2004a and 2004b) extended the system perspective by introducing the Service dominant logic (SDL). They forcefully challenged the product-dominant paradigm for conceptualising a service. They interpreted the four characteristics of a service (intangibility, inseparability, heterogeneity and perishability) as the four remnant myths of the product-dominant paradigm and argued that service should have its own definition rather than attempting to differentiate service as a different kind of good having the said four qualities (Vargo and Lusch, 2004b). Through their extensive and well-cited work in the first decade of the twenty-first century, they established a service-centred perspective called SDL to understand service and service systems problems (e.g., Lusch and Vargo, 2006a and 2006b; Vargo and Lusch, 2004a and 2004b, 2008a, 2008b and 2011; Vargo and Morgan, 2005; Vargo, Lusch and Akaka, 2010; Vargo, Maglio and Akaka, 2008).

SDL pays more attention to the interaction of producer, consumer and other suppliers and network partners and their value co-creation in context. SDL believes that multiple systems co-create value through collaborative processes (Lusch and Vargo, 2006a, 2006b; Vargo and Lusch, 2004a). SDL considers *service* as the core of all business entities, markets and societies (Lusch and Vargo 2006a and 2006b). The goods or operand resources only carry the value created by the soft or operant resources (knowledge and skills).

The tangible elements in a service system are the artefacts around which the service creators have intangible experiences (Chase and Garvin, 1989; Prahalad and Ramaswamy, 2000; Sangiorgi, 2008). SDL thinks differently and views tangible elements as peripheral to the service – a core of every entity. This logic considers service as a state in which the goods move. Thus both people and resources within a system render service (Vargo and Lusch, 2011). Table 2.2 outlines the ten fundamental premises of SDL.

	Premise	Explanation/justification
FP1	Service is the fundamental basis of exchange.	The application of operant resources (knowledge and skills), *service* is the basis of all exchange. Service is exchanged for service.
FP2	Indirect exchange masks the fundamental basis of service exchange.	Goods, money and institutions mask the service for service nature of exchange.
FP3	Goods are distribution mechanisms for service provision.	Goods (both durable and non-durable) derive their value through use – the service they provide.
FP4	Operant resources are the fundamental source of competitive advantage.	The comparative ability to cause desired change drives competition.
FP5	All economies are service economies.	Service (singular) is only now becoming more apparent with increased specialisation and outsourcing.
FP6	The customer is always a co-creator of value.	Implies value creation is interactional.
FP7	The enterprise cannot deliver value, but only offers value propositions.	The firm can offer its applied resources and collaboratively (interactively) create value following acceptance, but cannot create/deliver value alone.
FP8	A service-centred view is inherently customer oriented and relational.	Service is customer-determined and co-created; thus, it is inherently customer oriented and relational.
FP9	All economic and social actors are resource integrators.	Implies the context of value creation is in networks of networks (resource integrators).
FP10	Value is always uniquely and phenomenologically determined by the beneficiary.	Value is idiosyncratic, experiential, contextual and meaning laden.

Table 2.2: Fundamental premises of SDL

Source: Vargo, Lusch and Akaka, 2010 (p. 138)

SDL is a perspective and logic that attempts to conceptualise the phenomenon of service and why it should be consider dominant over the tangible goods in an economic exchange (Vargo and Lusch, 2008b). SDL believes that the overall value in economic exchange (which include financial transactions) emerge through the service, which is the application of competences. The tangible goods also serve in the form of its usage. Thus both people and goods in system provide service (Vargo, Lusch and Akaka, 2010). As both a cashier employee and an ATM machine, both create a service in a bank. For a customer the actual value emerges through the contextual usage of

resources (Vargo and Lusch, 2004a and 2004b). The core of service is the operant resources (knowledge and skills) which are applied by the service creators to the operand resources (physical resources). The operand resources are only the value potentials (Vargo, Lusch and Akaka, 2010). The actual value emerges during the integration and use of resources and is co-created by the service organisation, the customer and other value networks (Cabiddu, Lui and Piccoli, 2013). Such value is contextually determined by the beneficiary (Vargo, Lusch and Akaka, 2010).

This line of thinking was initially triggered by Shostack (1977) who said that intangibility in the service system is a state not a modifier. As a result, every entity in essence is a service entity because actual value is created by the intangible operant resources through its effect on the operand physical resources. These experiences and value rendered by the physical products are more important than the products themselves (Kotler, 1977; Sawhney, Balasubramanian and Krishnan, 2004). Grönroos (2000) said that in a service system the focus should be the consumers' value-creating processes and not the attached tangible products because the actual value (for which the customer avail a service) is distinctively perceived by the consumer in his own context (Grönroos, 2000). For the contextual value creation, the service entities establish a network of entities (Sampson, 2010; Vargo, Lusch and Akaka, 2010). Different concentrations of physical resources results in the emergence of different kinds of entities and services (Shostack, 1982).

SDL is a change in the perspective. Previously, the scholars conceptualised a service system by analysing how much intangibility existed within a tangible system but SDL proposed thinking about to what extent tangible elements exist within an intangible system. Historically, Levitt (1972, p. 41) had defined a service industry as "there is no such thing as service industry, there are only industries whose service components are greater or less than those of other industries and everybody is in service". SDL extend this perspective further and considers service as the dominant state of entities, with heterogeneous concentrations of operand resources. This means every entity is in essence a service entity with different concentrations of goods.

j.   Complex Ecosystems Theory

SDL is recently further extended within literature to conceptualise the service system as a self-adjusting complex ecosystem (Chandler and Vargo, 2011: Lusch, Vargo and Tanniru, 2010; Vargo and Akaka, 2012; Wieland *et al*., 2012). Ecosystem is a short form of ecological system, which literally refers to the community of living organisms

and non-living components that interact in their environments and adapt to each other's requirements and to the overall communal environment (Smith and Smith, 2012). The humans, trees and animals as a community interact with the non-living components such as soil, water and minerals thus creating an ecosystem. These living and non-living components create value cocreation networks. Vargo and Lusch (2011) argued that in the context of value cocreation, it is important to understand the dynamic, self-adjusting and reconfiguring nature of the service ecosystem. The service ecosystem perspective is more abstract than that of the simple network of systems, a service system is considered as network of networks or system of systems (e.g., Sampson, 2010, 2012; Maglio and Spohrer, 2011).

Service ecosystem perspective conceptualises the network of service systems as a self-adjusting and adapting system that emerges during resource integration and value-creation encounters (Wieland *et al.,* 2012). This self-adaptation in the system happens because the subsystems or entities adapt to each other's requirements (context) and thus co-create value (Vargo, Maglio and Akaka, 2008). This contextual value creation in systems (Vargo, Lusch and Akaka, 2010) actually increases the survivability and well-being of service systems (Wieland *et al.*, 2012). This is the same as when organisms adapt to their environments to survive and thus improve their well-being. Different contextual points in time-space provide opportunities and threats which forces a service system to include and exclude actions and resources thus causing this adaptation or migration (Ullah, 2013). Normann (2001) argued that a service system should be able to reconfigure resources so that it responds to new opportunities, market conditions and customers' needs. Such response to the environment enhances the effectiveness and efficiency of the service system and thus sustainability (Edvardsson and Enquist, 2009).

A service ecosystem contains underlying micro systems, which interact and adapt to each other to create benefits for each other (Lusch, Vargo and Tanniru, 2010). Thus the overall service-system contextualises itself within the unique service encounters' environments. In this sense, "the service systems are dynamic configurations of resources, in which the value is co-created and evaluated as value-in-context" (Vargo, Lusch and Akaka*,* 2010, p. 138). Such value-in-context is contextually derived and is determined at a given time-space (Vargo, Lusch and Akaka, 2010).

The internal human agents or micro systems in the service system create responses to the contexts. Maglio *et al.* (2009) stated that it is the human being who infuses operant resources (knowledge and skills) that results in a dynamic service-system within each

service encounter. The heterogeneous interactions among internal micro systems cause a service ecosystem to emerge with new patterns because they adapt to each other's requirements in different service environments. Shostack (1982 and 1984), in her pioneering studies, highlighted the idea by saying that individual elements in the system are interrelated and they interact to make a service system where the whole service system is more than the sum of the service elements because of the interactions in-between. In every service encounter, the unique interactions among the service-system elements cause the system to emerge uniquely and therefore two services rarely occur in the same pattern (Zeithaml and Bitner, 2003). It is the same as unique bonds among atoms within a molecule, which cause the emergence of unique substances (Shostack, 1982).

Conceptualising the service-system as an ecosystem is appealing because of its practical relevance to the current real service-systems. A system which adapts to the dynamics of the environment is called a complex adaptive system (Fleming and Sorenson, 2001; Holland 1992). Service ecosystems are complex adaptive service-systems (Patrício *et al.*, 2011; Vargo *et al.*, 2006). A service system is complex and dynamic because its parameters are problematic to predict and specify within its design. This complexity arises when various service systems emerge and create a network of service systems and adapt to each other to co-create value-in-context (Maglio and Spohrer, 2008). In a mutual fund investment system, the customer, the service personnel, brokers, fund managers, the trustee organisations, the evaluators, the commercial banks and other aiding parties integrate their actions and resources to co-create value-in-context/use. These service systems can of different sizes ranges from a single individual to a global economy (Maglio and Spohrer, 2008). In interbank cheque clearance systems, the customer, the payer-payee banks and the clearing house system are the participants or micro systems of various sizes. The emergent ecosystem divides the labour among the co-creating subsystems (e.g., Normann, 2001; Sangiorgi, 2008).

In a holistic view of a service ecosystem, different people integrate and configure resources such as technology and their value propositions (Maglio and Spohrer, 2008). The service ecosystem systems are complex because the underneath agents or service cocreators have two-way relationships and links. These co-creators and links affect and get affected by other co-creators and their links (Chandler and Vargo, 2011).

 In service ecosystems, there are various layers or levels of system. At the concrete operational level, individuals or people integrate their activities to form departmental

systems. For instance, the remittance department in a bank is an operational-level ecosystem. Then different departmental systems make a more abstract system such as a bank. The bank then creates a more macro and abstract service-system by integrating its resources with the customer and supporting entities such as credit evaluation companies and interbank fund transfer networks. Such structures can become as abstract as the global economies as service systems (Maglio and Spohrer, 2008). Chandler and Vargo (2011) specified four levels or layers of the service system: dyad, triad, complex network and network of networks (ecosystem).

This present research focuses on the integration of the service organisation, customer and aiding parties who establish a system of systems (ecosystem) and create a service. For instance, in a depository service-system, a customer, bank personnel and aiding parties (e.g., Visa system, Onelink ATM network) integrate their resources to create a service system. At the operational level, human understanding combines with the physical resources to establish "many types of service systems … [that] evolve to co-create value" (Maglio and Spohrer, 2008, p. 18). For instance, a current account opening service, an auto lease service, and a life insurance service are some examples of finance services in which the personnel, customer and aiding parties integrate their expertise with the available financial and other physical resources to enable contextual service systems for their mutual benefits.

The next section conceptualises the service-system *design* concept.

2.2.3 Service-System Design

This section furthers the research argument to discuss the leading researchers' approaches to designing a service system. This research seeks to understand the phenomenon of service system design, which requires the knowledge about both service systems and its design approaches. Hooker (2003) argued that the design theory and literature merely provided a style and level of designing and the knowledge about the object of designing (e.g., service system) comes from its own source. The core of service-system design is the service-system construct. However, it is necessary to understand its design styles and perspectives to establish a complete view of the phenomenon.

Literally, design as noun can be defined as "a plan or drawing produced to show the look and function of something before it is built or made" (Concise Oxford English Dictionary, 2011, p. 388). The same dictionary defines *designing* as "the art of making

plans or drawings for something" (p. 388). In this literal sense of design, the "real and actual are substituted by symbols" (Patel, 2006, p. xiii). However, there is a more reflective side of the design, where a designer attempts to bring change in the object through design (Simon, 1996).

The service system designing is actually the planning for enacting unique service-system encounters. According to Mahdjoubi (2003, p. 1) such designing as planning is a natural systematic mental process that occurs before the actual actions that a human being undertake. In an auto lease design, the designers specify who will do what in creating the actual service, what types of vehicles will be leased, what rules will apply and what future cash flows will occur.

The designer uses prior experience and future visions and objectives to design a service system (Boland and Collopy, 2004). In this approach, the designers visualise and prescribe solutions for the service-system's problems and opportunities (Segelström, 2010). The designers conceptualise and visualise the system's constructs and their functionalities within the micro and macro contexts (e.g., designing a depository service within the organisation and regulatory environment). A service-system designer builds abstract models and frameworks to better understand and represent the real service-system and its functioning (service and value-creation process) (Han, 2010; Segelström, 2010).

In banking service-system, the designers illustrate service-system parameters and show them as service packages in totality. The SFS packages (planned designs) come to the retail banking branches as leaflets, templates, charts, hypothetical service examples and manuals that explain a planned service to be actually created in multiple points in time-space. These illustrations and exemplary services aim to educate the local service creators about the actual service-creation process. These planned designs do not necessarily come as a whole chart or document but may be in segmented parts informing various parameters of the service targeted to various service creators.

Service-system design has a hybrid root in the service system and design field (Han, 2010). Initial thoughts about the generic design occurred in architecture and have gradually extended to goods and now to the service and service systems (Segelström, 2010). Designs are, in essence, the tangible and intangible artefacts (images, models, documents, mental concepts) that reflect the existing or the futuristic and imaginative actions and objects (service systems). Service-system designing is an activity of

developing such artefacts. A service-system design is considered robust if it completely and accurately predicts and specifies the actual service-system components. These service-system components are expected to emerge and integrate in multiple service practice environments to which a design will apply.

The designers would need to consider the amount of flexibility that is allowed within the overall governance systems and culture of service organisations. For instance, in Pakistan the SFS regulatory framework from 1980 to 2001 was rigid, with more centralised control. In such a regulatory environment, adaptation was very hard to enable. In the current regulatory framework, the financial institutions are provided with greater room to design flexible and adaptable service systems (SBP, 2008). So, the organisations are developing a culture that supports adaptation.

Service-system designers primarily perform two jobs: improving the existing service systems and designing new service systems to meet new needs (Brown, 2008, p. 2). In practice, service organisations centrally design a service offering that packages the usufructs of *a* service system and sends these to different service-creation points. The local service creators then adapt and apply the offerings to create real services. For instance, the product development department of a commercial bank will design depository and financing service packages and send these to different retail branches, where the local employees will apply these planned designs to create real services. The packages (such as types of deposits) are not the services but are merely the artefacts that inform service-creation processes.

In both central designing and local service design application activities, the participants use their expertise which they develop through training and experience. In a service design development, the designers also take inputs from the service design users and service users i.e. employees and customers (Kaario *et al.,* 2009; March and Raijmakers, 2008; Segelström and Holmlid, 2009). Designers use charts and leaflets, develop physical objects, design interactions and reflect the service environments to holistically represent a futuristic event (service) (Buchanan, 2007).

In designing a service, the designers apply explorative, generative and evaluative design approaches (Mager, 2008). They explore the existing and futuristic service-system possibilities and package them to form promises or offerings. These packages are actually the unique service-system *designs* because they provide a style for the future usage of a system. In finance service organisations, such planned designs come

in the form of different depository service packages, finance service packages and insurance service packages. Each of these planned designs uniquely packages the usage of systems' components. For instance, the brochure of a current account is a planned design, which explains who will participate in the service, what actions the participants will take, what resources will be used, what rules will apply and what benefits will be created.

In SFS organisations, the central designers at the strategic level explore, combine and evaluate multiple SFS models to design service packages such as *Ijarah* auto packages or *Murabahah* working capital finance packages (these models are discussed in section two of this chapter). These planned designs are the prescriptions or plans for solving the finance-related problems or exploiting some *Halal* (allowed) opportunities for and with the customers and other aiding parties. These planned designs will be converted into real services, when and where the actual service creators apply them to the real systems in different points in time-space.

The next section discusses the five most used service design models. Afterwards, the service- system-design literature is summarised and the knowledge gaps are discussed.

2.2.4 Service-Systems-Design Models

Due to the lack of established service-system design theories, models and frameworks, the service designers mostly use the flowchart method to actually design a service (system). These flowcharts visualise the expected service creators and their actions in concrete detail but miss the important abstraction level, which is necessary for a scientific theorisation. This section discusses the five most used service design models (tools).

    a)   **Service Blueprint Model**

The service blueprint model (SBM) is the most known and widely used service design model, which outlines the service processes that are performed by the customer, the service personnel and the supporting systems (Bitner, Ostrom and Morgan, 2008; Shostack, 1982). SBM is a "mapping technique for visualizing intangible service-systems by reducing the service process into a series of consumer and organisation based steps" (Polonsky and Garma, 2006, p. 2). Service creators and managers use SBM as a visual and holistic depiction of an existing or futuristic service-system (Bitner, Ostrom and Morgan, 2008; Spraragen and Chan, 2008). It is similar to the practice of architects who use different charts (blueprints) to convey their design

concepts to stakeholders such as engineers, potential owners and residents (Spraragen and Chan, 2008). SBM can be used for different purposes such as to show the designing of a service (Shostack, 1982) or to show the enabling, tracking, delivering or consuming of a service (Spraragen and Chan, 2008). Figure 2.8 illustrates a SBM for a hotel service-system adopted from Bitner, Ostrom and Morgan (2008, pp. 76 -77).

Physical evidence	Ad, Website	Hotel, exterior parking	Cart for bags, employee dress	Desk, paperwork, lobby key	Elevators, hallways, room	Cart for bags, employee dress	Menu	Deliver tray, food appearance	Food	Room amenities, bathroom	Bill lobby, hotel, exterior parking
Customer's actions	Make reservation	Arrive at hotel	Give bags to bellperson	Check in	Go to room	Receive bags	Call room service	Receive food sign/tip	Eat	Sleep/ shower	Check out and leave
Onstage/visible contact employee's actions			Greet and take bags	Process registration		Deliver bags		Deliver food			Process checkout
Backstage/ invisible employee's actions	Make reservation for guest		Take bags to room				Take food order				
Support processes	Reservation system		Registration system				Prepare food				Registration system

Line of interaction

Line of visibility

Line of internal interaction

Figure 2.8: Service blueprint model

Source: Bitner, Ostrom and Morgan (2008, pp. 76-77)

In conventional SBM, the designers arrange the service processes temporally, which leads to the achievement of a purpose set by the service creators. The SBM visualises the service-system's participants, their actions and the resources they use. The fundamental premise in SBM is the division of service processes through line of visibility, which divides the service steps into *visible-to-customer* and *not-visible-to-customer* (Sampson and Froehle, 2006).

There are five basic constructs of SBM as shown the horizontal lines in Figure 2.8. First, at the top, is the physical evidence, which represents the tangible elements in a service system through which the participants experience a service. In a banking service, these may include the forms, the currency, the ATM machines, the computers and different components which form the bank's premises. Second are the customer's onstage actions that occur during the customer's interaction with service personnel or physical touchpoints. For instance, the customer's action for presenting a cheque to the cashier is the onstage action and the cheque is the physical evidence and touchpoint.

Third are the onstage contact personnel's actions, which are performed by the interacting service personnel, who can be seen by the customer across the line of interaction, for instance, the cashier's actions for cashing a cheque in front of the customer. Fourth are actions carried out by the backstage invisible personnel. Fifth are the support actions performed by the internal and external aiding parties, which cannot be seen by the customer and they are beyond the line of internal interactions. For instance, in an auto finance company, the preparation of the credit evaluation report by the credit evaluation company is not seen by a customer.

Fließ and Kleinaltenkamp (2004, p. 397) divided the service blueprints into four horizontal lines to separate the service-system processes. First is the line of interaction, which separates customer actions from supplier actions. Second is the line of visibility, which separates visible actions (front office) from invisible actions (back office). Third is the line of internal interaction, which separates back-office activities from the supporting system's actions and finally line of implementation, which separates support activities from the management activities.

SBM uniquely arranges the service-system components to present a complete service design. It provides enough space to show the actions and resources to be enacted in the service system (Sampson, 2012). SBM has successfully been used by well-known companies to enhance their service efficiency (Bitner, Ostrom and Morgan, 2008).

However, this model does not sufficiently incorporate the visualisation of multiple entity systems (e.g., ecosystems) (Sampson, 2012). Similarly, it statically enlists the sequential service steps and does not account for the complexity and adaptations that happen in real service practices.

b) Journey to Customer Interface Model

Parker and Heapy (2006) developed the concept of a journey to customer interface (JCI) to holistically conceptualise a service-system design from the perspective of how a customer experiences a service (Figure 2.9). They drew conclusions from 50 interviews, which they conducted with service innovators from the public, private and voluntary services sectors. They argued that "services are needed to be understood as a journey or a cycle – a series of critical encounters that take over time and across channels" (Parker and Heapy, 2006, p. 5). JCI builds on the touchpoints that spread over a timeline. Touchpoints are the physical objects and the physical existence of people in a system through which a service can be experience (Parker and Heapy, 2006). A service system is an activity-chain which establish an experience (e.g., Pine and Gilmore, 1998; Sampson, 2012; Sawhney, Balasubramanian and Krishnan, 2004) and therefore it is very logical to design a service system in the format in which these activities occur naturally.

Time-aspect, interaction and emotional triggers are the three cores constructs of JCI (Segelström, 2010). First is the time-aspect, which represents the time lapse between two touchpoints or service encounters. For instance, a simple cashing of a cheque service may include three touchpoints of i) token machine, ii) chairs for waiting and iii) cheque cashing machine or personnel. Through JCI, a service system can be further explored in concrete details of service encounters on a timeline to depict how a real service emerges. The second construct of JCI are the interactions, which are points at which the actions meet with other actions or physical touchpoints. For instance, the customer meeting points with the token machine, chair and cashier are the interactions in the JCI. These are termed direct interactions by Sampson (2010) and bonds by Shostack (1982 and 1987). The third construct are the emotional triggers, which are the values and beliefs. These triggers motivate the participants to perform or not to perform certain actions. For instance, the belief and value of compliance with *Shariah* may motivate a customer within an SFS organisation to take the pamphlets that explain *Shariah*-compliant packages and may ignore the pamphlets that explain the conventional financial packages. Parker and Heapy (2006, p. 34) noted that customer

interactions with each touchpoint are the unique service experiences and should be "treated as 'episodes' – interruptions to people's everyday lives". Figure 2.9 shows a hypothetical JCI design for a hotel service-system. In this Figure the concept of JCI is based on Parker and Heapy (2006) and Segelström (2010), whereas the service story is adopted from Bitner, Ostrom and Morgan (2008).

Kahn and Tallec (2013) recently gamified the JCI and suggested designing a service system by creating a visual scenario through blank JCI sheets, personas (roles within a system) and cards (touchpoints within a system). They suggested that every participant within the JCI game should be asked to select each persona and define a goal for that and pick the touchpoints which allow the selected persona to reach its goals. The rules of the game need to be defined. Recently, Engine, a leading London-based service design consultancy, used JCIs to successfully improve the service system of an airport (Engine, 2013).
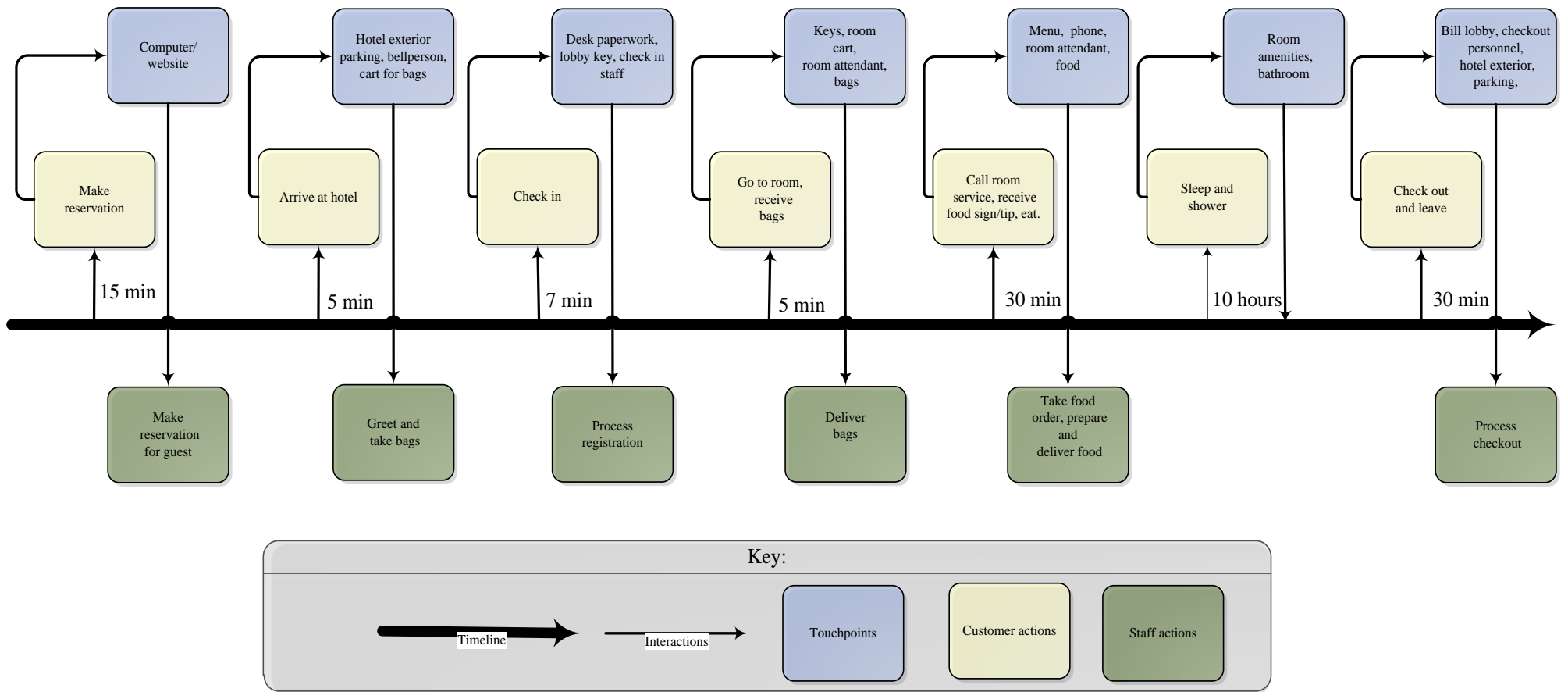
Figure 2.9: Journey to the customer interface model

Source: The concept of JCI (Parker and Heapy, 2006; Segelström, 2010), the service story (Bitner, Ostrom and Morgan, 2008). Note: The boxes in JCI can be replaced with pictures (e.g., Segelström, 2010)

JCI visualises a service system in a different way from the blueprints as it is focused on the interactions between customers and service-system components spread over a timeline. This complies with the UST (Sampson and Froehle, 2006) where only those parts of the process are to be considered a service where a customer provides inputs. However, JCI does not provide a holistic view of service-system design because it provides no detail about the aiding parties' contributions. Similarly it also does not show the back-office personnel, who though they contribute to a service, but they do not directly interact with the customer. For instance, evaluating the customer credit history in the back office of a bank cannot be effectively depicted in JCI.

JCI is in actuality a time-directed graph, which describes the journey of a customer and shows how the customer experiences the service through different touchpoints (www.servicedesigntools.com). So, JCI actually covers the story of one service participant i.e. the customer. However, the service system emerges when multiple participants take their journeys on overlapping timelines to achieve their purposes. So, multiple JCIs will be helpful to explore the service-system design in more detail. In this regard, Kahn and Tallec's (2013) recent gamification of JCI is an important further direction in the development of JCI.

JCI can only be used to forecast and then specify the service episodes on a timeline using the touchpoints as mediators (Parker and Heapy, 2006). However, the question remains regarding how an adaptation within a service system can be incorporated in a service design. This is a difficult question because the actual service-systems' adaptation *process* is not clear so far and therefore cannot be designed. This study aims to understand this grey area in the service-system design literature to uncover how these systems adapt and how the adaptation can be incorporated within designs. This will open new directions to illuminate these flowcharts to represent dynamism within service systems.

c) **Persona Mapping Model**

The persona mapping model (PMM) explains the designing of virtual and service participants as fictional characters in their own contexts to visualise a service system Table 2.3 shows a user persona that is adopted from Hosono *et al*. (2009, p. 544). PMM normally depicts the users to better understand their needs and functionalities in a service system. PMM can also be used as a map or representation of the customer segments in the market. In such a case, a persona profile gathers the attributes of a

social group for whom the service system is to be designed (Cooper, 1998; Long, 2009). For instance, the persona of students can be used to design a specialised service-system for them. PMM presents a service-system design as per the lifestyle, motivations and goals of a perceived segment within a market (Cooper, 1999; Goodwin, 2009; Hosono *et al.*, 2009; Pruitt and Adlin, 2006; Saffer, 2007). PMM developments require pre-market research to identify the segment and to define its context's parameters to be included in a persona (Segelström, 2010). Specialised depository and finance service packages can be designed using PMM by focusing on the parameters of specific personas involved in it. Table 2.3 shows a user persona.

Name: ABC		BASIC LIST OF VALUES:
Age: 36	PICTURE	Sense of belonging
Gender: Male		Self-respect
Family: Wife, Daughter		Fun and enjoyment
DAILY LIFE:	PERSONALITY:	Security
Read internet news, newspapers, business magazines		Being well-respected
Watch TV news programmes	Likes to watch human documentary films	Self-fulfilment
Study new technologies and read books actively to meet business opportunities		Sense of accomplishment
		Warm relationships
CAREER:	MEMO:	
BA, Engineering (2000)	Section manager in 2006	
Manufacturing A company (-2003)	Started to take a anagement of technologies course in 2007	
Manufacturing B company (2003-)		
Worked in R & D departments in both companies		
Now transferred to the sales division	Took compulsory in-house e-learning courses	

Table 2.3: Specific user persona

Source: Hosono *et al.* (2009, p. 544)

The PMM is a more user-centred design model and can ideally be used for service prototyping (Cooper, 1999; Pruitt and Adlin, 2006). Hosono *et al.* (2009) noted that services have unique features of intangibility, simultaneity, heterogeneity and perishability, which make it hard to predict the boundaries of a service system as a process. Hosono *et al* (2009) have therefore suggested designing a service system as set of personas. Persona designs can be developed for all the stakeholders involved within a service system; they can be represented as role personas (Hosono *et al.*, 2009). These are the same as every system that divides the labour among the subjects within a service

activity system and assigns them specific roles (Sangiorgi, 2004 and 2008). Each role/persona has a function list, which denotes the functions that each persona would need to perform for others and for itself (Hosono *et al.*, 2009). These are like the conventional job descriptions but more detailed and specified. Each persona also has a value list it wants to create and have. A user persona has a different and important values list to be realised in future service encounters (Hosono *et al.*, 2009). It is difficult to predict all the real service participants and their contextual value propositions and it is also problematical to specify them in advance within a PMM. The actual value that emerges is always unique and context centric (Lusch, Maglio and Akaka, 2010; Vargo and Lusch, 2011: Vargo, Maglio and Akaka, 2008). Kahn and Tallec (2013) recently used multiple personas within a journey map to evaluate how multiple personas use the touchpoints to realise their diverse value propositions (goals) within context.

d) Storyboard Model

A storyboard is the organisation of illustrations or images to pre-visualise the sequence of a motion picture. The storyboard transforms service narratives into a complete pictorial board (Figure 2.10). The service design is about storytelling and its visualisations (Moggridge, 2008). A service occurs like a series of episodes within a story or movie's script. Storyboards establish a visual language which links the designers and users from different backgrounds through the enhancement of communication (Van-der-Lelie, 2006). Storyboards are originally developed to design movies' scripts, where each scene can be illustrated before transforming them into actual actions (McCloud, 1993) and are originally conceptualised in the Walt Disney Studio around 1930 (Finch, 1999). The news press also uses storyboards to visualise a news story, normally in a comic way by showing a series of pictures with bubble like textboxes. The famous PhD comics use storyboards to visualise, in funny way, the problems a PhD student face in research (http://www.phdcomics.com/comics.php). Figure 2.10 presents a storyboard for a hotel service-system.

Storyboard for a Hotel Service System

Episode 01 Action: Make reservation Actor: Customer Picture / Clip Art	**Episode 02** Make reservation for guest Actor: Employee Picture / Clip Art	**Episode 03** Reservation System process Actor: Employee Picture / Clip Art	**Episode 04** Registration system process Actor: Employee Picture / Clip Art	**Episode 05** Arrive at hotel Actor: Customer Picture / Clip Art
Episode 06 Give bags to bellperson Actor: Customer Picture / Clip Art	**Episode 07** Greet and take bags Actor: Employee Picture / Clip Art	**Episode 08** Take bags to room Actor: Employee Picture / Clip Art	**Episode 09** Check in Actor: Customer Picture / Clip Art	**Episode 10** Go to room Actor: Customer Picture / Clip Art
Episode 11 Deliver bags Actor: Employee Picture / Clip Art	**Episode 12** Receives bags Actor: Customer Picture / Clip Art	**Episode 13** Call room service Actor: Customer Picture / Clip Art	**Episode 14** Take food orders Actor: Employee Picture / Clip Art	**Episode 15** Prepare food Actor: Employee Picture / Clip Art
Episode 16 Deliver food Actor: Employee Picture / Clip Art	**Episode 17** Receive food sign/tip Actor: Customer Picture / Clip Art	**Episode 18** Eat Actor: Customer Picture / Clip Art	**Episode 19** Sleep/shower Actor: Customer Picture / Clip Art	**Episode 20** Process checkout Actor: Employee Picture / Clip Art
		Episode 21 Registration system process Actor: Employee Picture / Clip Art	**Episode 22** Checkout and leave Actor: Customer Picture / Clip Art	

Figure 2.10: Service storyboard model

Source: Concept of storyboard, Segelström (2010); the service story, Bitner, Ostrom and Morgan (2008)

For designing a service system, the designers collect and present a series of drawings or pictures with attached episodic narratives in a sequence to establish a complete service process story. For instance, a depository service can be presented through a storyboard. The steps in the service can be presented as pictures or drawings with the attached narratives. In this sequence the focus remains on how a story develops from the beginning (storyline) and how it goes forwards and thus establishes a continued chain of activities. In storyboards, the focus is always on interactions within each episode of the story (Carroll, 2000). Within these interactions the designers note different possible emotions (Ma, Forlizzi and Dow, 2012).

A storyboard is a bit different from JCI. In JCI the focus remains on the time lapse between two touchpoints whereas the storyboards place more focus on the actual details of events and interactions within each episode (Segelström, 2010). This is the same as when film-makers pay detailed attention to each episode of a film and separate them through episodic intervals.

A storyboard is an appropriate model for getting into the detail of a service story. It also covers the contributions of all the stakeholders because all participants in a service system can be visualised holistically through a complete script, as happens in a film. However, a service system is more complex than that. The storyboard bases on the designers' rational and purposive thinking about future systems whereas the actual service systems emerge heterogeneously (Han, 2010) and the emergent systems may not embrace the designers' teleological or purposeful thinking (e.g., Patel, 2012). Human minds have teleological limitations and may not be able to put the exact detail of the system within a planned design. Simon (1996) termed this limitation as bounded rationality, where a designer designs a system based on the current objectives in mind. This happens because the whole service-system (system of systems) is not within the control of a single entity (Sampson, 2012). Although storyboards are though rich in terms of the specification detail related to the service-system actions, they still cannot cope with the issue of systems' continuous adaptations within their contexts and its embedment within designs.

e) **Process-Chain-Network Diagram**

Recently, Sampson (2012) came up with the concept of a service process-chain-network (PCN) diagram. A PCN diagram more holistically visualises a multiple-entity service-system. Since the PCN diagram is a contemporary service visualisation

approach, it therefore takes into account the concept of the service ecosystem: a multiple-entity systems and interactions between the involved entities. Figure 2.11 shows a health-care service-system designed using a PCN diagram. It depicts a medical diagnosis service-system, which involved (1) a health clinic, (2) a patient, (3) an insurance company and (4) a pharmacy. This Figure is adopted from Sampson (2012, p. 9).

The PCN diagram is based on the supply chain diagram (e.g., Stevenson, 2012) and SBM (Shostack, 1982). There are three core constructs of the PCN diagram. The first is the service process, which emerges when the service creators take sequential actions. These actions are performed by the service creators using the resources. As delivering-the-food: *delivering* is the action and *food* is the resource (Sampson, 2012). Each step in the service process therefore involves at least an action and a resource. Both actions and resources are the core constructs of a service system (Sangiorgi, 2008; Shostack, 1982).

Second is the service process domain, which means all the service steps "that are initiated, led, performed, and, to some degree, controlled by a service entity" (Sampson, 2012, p. 6). Each service entity has a service process domain and in a more abstract sense, each service ecosystem (system of systems) has a meta-process domain, in which all the subsystems operate. The domain reflects the service process area, where the entity has a control (lower or higher) on actions and usage of resources.

Within an overall service process domain, each entity has direct interaction domains, surrogate interaction domains and independent process domains (Sampson, 2012). The direct interaction domain is the venue where a service entity interacts with other co-creating entities. In Figure 2.11, *discussing the disease symptoms with the doctor* is an activity within the interaction domain of a *health clinic* and *patient* entities. This is somehow the same as Shostack (1982) showed as onstage service actions. In a bank, for example, depositing money at the counter fits in the direct interaction domain of the *bank* and *customer* entities.
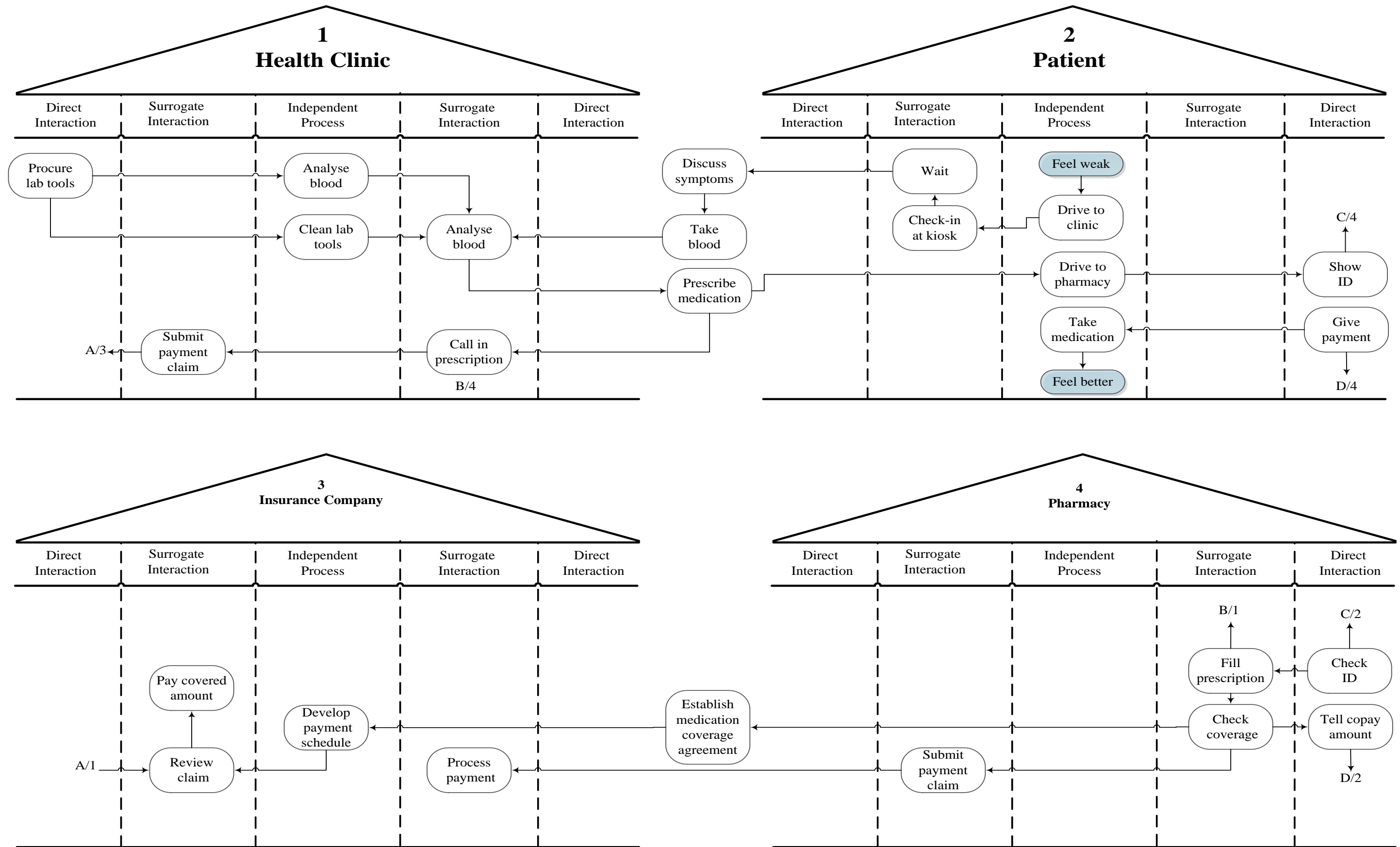
Figure 2.11: Health-care PCN diagram example

Source: Sampson (2012, p. 8)

The surrogate interaction domain is the process's area in which the participant entities apply actions on other entity's resources. For instance, a loan-approving officer evaluating the financial statements (resource) of a customer comes within the surrogate interaction domain of the bank. In Figure 2.11, the analysis of a patient's blood in the health clinic lab is located within the surrogate interaction domain of the health clinic. The independent processing domain is the locale in which the entity performs actions on its own resources. For instance, the cleaning of hospital premises is within the independent process domain (Sampson, 2012).

Along with action resources and process domains, PCN's third construct is control. Each entity has greater control within the independent process domain and it reduces as it moves to the surrogate process domain and further reduces within the direct interaction domain. This control mechanism within the service system presented by the PCN is actually founded in Chase and Tansik's (1983) CCM, who maintained that in high-interaction points, the personnel have lower control and hence lower efficiency and the personnel have greater control where they have fewer interactions.

The PCN diagram provides a holistic visualisation of the multiple-entity service-systems because it incorporates the interactions among multiple entities and thus acknowledges the current conceptualisation service of a system of systems (ecosystem) (e.g., Vargo and Lusch, 2011). It also further segregates the servicescape (e.g., Bitner, 1992) of the system into independent, surrogate and direct interaction zones. The PCN diagram also incorporates the control mechanism within a service system. This mechanism is missing in other design models. However, PCN also focuses on the forecasts and designers' visions about the future and does not provide any room for the emergence and adaptation to it. Also, PCN is very difficult and congested to draw as it requires a lot of effort and space to illustrate all the involved entities. PCN enhances the breadth of the service system by including multiple entities but unlike JCI and storyboards, it does not provide enough depth.

2.2.5 Summary of Literature in Service System and its Design

The objective set for the literature review was to identify the theoretical constructs of an adaptable service-system design and to identify the knowledge gaps for further investigation within empirical part of this research. Table 2.4 summarises the literature to conceptualise the theoretical constructs of a service-system design. The key theories and models are mentioned as the Table's rows and six theoretical constructs are abstracted as the Table's columns. The abstracted constructs or commonalities within

reviewed service theories and models include the service co-creators, the roles and actions, resources and usufructs, rules and control, value propositions and emergence. These constructs are used as the core of the DSD model (along with other empirical constructs) to conceptualise a holistic adaptable service-system design. Each of these constructs is separately discussed and justified in chapter 3.

	PROMINENT THEORIES AND MODELS	SERVICE COMMUNITY	ROLES AND ACTIONS	RESOURCES AND USUFRUCTS	RULES AND CONTROL	VALUE	EMERGENCE
	Service-system theories and models						
1	**Service product perspective** (Smith,1776/1904)	Producer and consumer	Labour	Tangible products		Utility	
2	**Service molecular model** (Shostack,1982, 1987)	Customer, personnel (front and back office), and supporting systems	Intangible elements (services)	Tangible elements (products)			Relationships (bonds)
3	**Customer contact model** (Chase and Tansik,1983)	Customer, front and back-office personnel	Interactions				Change in efficiency
4	**Servicescape model** (Bitner,1992)	Customer and personnel	Behaviours	Physical environments			Effect of physical environment (servicescape)
5	**Service encounters triad** (Cook *et al.*, 2002)	Customer, organisation and personnel	Behaviours				
6	**Service opportunity matrix** (Sawhney, Balasubramanian and Krishnan, 2004)	Organisation	Activities				Market Opportunities
7	**Service activity model** (Sangiorgi, 2004)	Subjects and their attached communities	Division of work	Artefacts (physical and mental)	Rules and norms	Objects and outputs	
8	**Unified service theory** (Sampson and Froehle,2006)	Service entities (multiple systems)	Actions	Inputs (self, belongings and information)	Control	Need	
9	**Service dominant logic** (Vargo and Lusch, 2004a; Vargo, Lusch and Akaka, 2010)	Service co-creators (agents or entities)	Performances	Operant (competence and expertise) and operand resources (physical resources)		Value-in-use	Context
10	**Service ecosystem theory** (Chandler and Vargo, 2011; Vargo and Lusch, 2011; Vargo and Akaka, 2012; Wieland *et al.*, 2011)	Service systems	Interactions	Operant and operand resources	Institution	Value-in-context	Self-adjustment
	Service-system design models						
1	**Service blueprint** (Shostack, 1982)	Customer, onstage personnel, backstage personnel, supporting systems	Actions	Physical evidence		Purpose	Dynamic relationships (bonds)
2	**Journey to customer interface** (Parker and Heapy, 2006)	Personnel and customer	Actions	Physical touchpoints		Goal	
3	**Service persona mapping model** (Hosono *et al.*, 2009)	Personnel and customer	Functionalities list		Rules	Values list	
4	**Service storyboard model** (Segelström,2010)	Characters/actors	Roles	Touchpoints		Aim	
5	**Process-chain-network diagram** (Sampson, 2012)	Service entities	Interactions	Physical resources	Control	Need	Weak control in interactions

Table 2.4: Theoretical constructs of a service-service design

The debate in the literature started with the concept of a service system. The reviewed studies suggested that different combinations of tangible and intangible resources result in various types of service systems, which create basically intangible, heterogeneous, time-perishable and inseparable services (e.g., Palmer and Cole, 1995). The designing and developing of service products can be traced back to the era of Adam Smith, who conceptualised goods as the dominant part of economic exchange (Vargo and Lusch, 2011). In this paradigm, organisations are considered as the producers and customers as consumers of a service assumed with an embedded utility. Shostack (1982) broke down this thinking and suggested separately studying a service design and considered the service as a service system rather than a product. Following this line of thinking related to the relationships between service creators and their responses to physical and non-physical environments have emerged (Chase and Tansik, 1983; Cook *et al.,* 2002; Goldstein *et al.,* 2002; Sawhney, Balasubramanian and Krishnan, 2004).

Proceeding further to explore the complexity of service systems, Sangiorgi (2004, 2008) conceptualised service as an activity system and highlighted the core service-system constructs such as subjects, their objectives, rules, artefacts, division of labour and the surrounding community. Sampson and Froehle (2006) came up with a UST and attempted to conceptualise a service system from the customers' and their inputs' perspectives. The UST conceptualises a service process as a multiple-entity system, within which the service co-creating entities integrate their actions and resources in variably controlled service domains. Vargo and Lusch (2004a and 2004b) came up with a more comprehensive and well-cited perspective of SDL which focused on value co-creation and the use of operant resources within a service system. This perspective has now been extended to a service ecosystem, which conceptualises a service system as an ecosystem that is sensory, responsive and self-adjusting to the emergent environments (Chandler and Vargo, 2011: Vargo and Lusch, 2011, 2013). This adaptation to environments enhances the system's well-being (Vargo, Maglio and Akaka, 2008). This research forwards this line of thinking further to understand the detailed adaptation process within service systems and how it can be incorporated within a service-system *design*.

The design side of service is new and the service designers use flowchart models such as service blueprints (Shostack, 1982), JCI (Parker and Heapy, 2006), persona models (Hosono *et al*., 2009), service storyboards (e.g., Segelström, 2010) and PCN diagrams

(Sampson, 2012). These models have been found to be very rich in terms of providing step-by-step details of a service process but they do not propose any strategy for incorporating the recently acknowledged adaptation within a service system. This is probably because the service system literature has not yet fully uncovered the actual adaptation process used by the system so cannot be specified within a design model.

2.2.6 Knowledge Gaps within Service System and its Design Literature

Two interrelated knowledge gaps have been found in the literature reviewed so far. First is to know how actually a service system adapts to the emergence in operational-level environments and the second is how to embed this adaptation within a service-system design.

First, emergence in the service-systems' environments is of special interest in the contemporary service-system literature and practice. Emergence is the property of a complex system that characterises how a system emerges with novel and complex patterns during the self-organisation process (Goldstein, 1999). This problem stems from the recent debate on understanding the service-dominant nature of economic entities and their conceptualisation as complex ecosystems (e.g., Cabiddu, Lui and Piccoli, 2013; Chandler and Vargo, 2011; Maglio, 2011; Maglio *et al.*, 2009; Mars, Bronstein and Lusch, 2012; Pareigis, Echeverri and Edvardsson, 2012; Patrício *et al.,* 2011; Sangiorgi, 2009 and 2012; Sampson, 2010; Vargo *et al*., 2010; Vargo and Lusch, 2011; Vargo, Maglio and Akaka, 2008).. The perpetual self-adaptation and adjustments of the service system are the system's responses to emergence within a specific environment created by the service co-creating entities and their attached social systems (e.g., economic, legal governance, belief, cultural and market systems).

The service co-creating entities inclusively belong to different broad social systems and hence get affected by them. Vargo and Lusch (2011, pp. 185–186) while commenting on resource networking within service systems argued that "as much as the idea of resource networks contribute to the understanding of value creation and context, its consideration sometimes lacks a critical characteristic of systems, which are dynamic and potentially self-adjusting and thus simultaneously functioning and reconfiguring themselves." In a recent talk, Professor Robert F. Lusch at University at Arizona said that we can clearly see a shift from old and rigid hierarchal command and control structure and long-term strategic-planning to conceptualisation of a very flexible,

adaptive, sense and response and collaborative type of service organisation (Lusch, 2013).

The heterogeneity within services has already been recognised (Han, 2010; Palmer and Cole, 1995; Zeithaml and Bitner, 2003). This heterogeneity in the services has proved to be just a tip of the iceberg. It has since emerged that the whole system of systems (ecosystem) heterogeneously acts to create value within specific contexts (Vargo and Lusch, 2011). There is an obvious need to further excavate the service-systems' responses to emergent environments to know what process the actual service creators follow to establish such complex adaptation. Understanding this point within empirical studies has the potential to uncover the process of service-system adaptation, which could prove a further step in the SDL and service ecosystem debate and will significantly enhance of understanding of how the complex adaptive service systems work and function.

The second related knowledge gap is how to incorporate the adaptation process within a service-system design or to conceptualise how a design for service-system create a locale for the adaptation. Designing a service-system with an embedded adaptation space and process is challenging because the problems and opportunities that a service system address do not necessarily exist at the time of designing the system. The design of tangible objects is simple because its parameters are non-humanistic and can be specified with more certainty and with more detailed specifics. Intangible and emergent interactions within a service system make it complex to design or pre-plan before the actual service creation (Sangiorgi, 2009). Designing futuristic service-systems builds on the premise of creating value for and with the customer in thousands of service encounters occur in future. Such value-in-context or use is always determined by the beneficiary in the future by solving some emergent problem or exploiting an opportunity (Vargo and Lusch, 2011).

The designers can merely visualize, formulate, and choreograph solutions for futuristic service problems (Mager, 2008). In this process a service design can observe, predict and interpret the requirement of a service system and its behavioural patterns and transform these into futuristic services (Mager, 2008). Such visualisation of futuristic service-systems can be inaccurate, incomplete or inappropriate, because the actual service-systems are exposed to emergence within multiple operational environments,

which are hard to predict and incorporate within planned designs (Ullah and Patel, 2011a; Ullah, 2013). The situated service creators therefore require adaptation within designs to create contextual services.

Bellingham and Petehem (2012, p. 38) said that "service companies can no longer work in a command and control model". Bellingham and Petehem (2012) suggested that for sustainable systems the employees should be capable to create contextual solutions. The central bank in Pakistan has also acknowledged the importance of such a decentralised control system to create contextual service solutions. Therefore, it is the central bank's strategic plan for Islamic banking to be revised to employ a more flexible and evolutionary regulatory environment (SBP, 2008). This environment now provides an excellent opportunity for the SFS organisations to design and deliver adaptable service packages. The current framework now encourages financial institutions in Pakistan to establish a collaborative culture that can support and enable adaptation in their service packages.

It is also important to consider the associated risks while addressing the problem of adaptation and its embedment within a service-system design. Risk is the probability that the outcome of an activity may be lower than expected. In SFS, financial and *Shariah* non-compliance risks are considered important (Ahmed, 2011a). The adaptation process could have two possible impacts (one negative and one positive) on the risk exposure of a SFS system. One the one hand, the system could possibly be in more danger if it adapts to opportunities that are risky. On the other hand, adaptation could have a positive impact if the service creators attempt to make the system more resilient to any emergent risky ventures. The second point has an interesting analogy. Just as Mother Nature shows that organisms that are adaptable to their environments are more sustainable (e.g., have less risk of being in danger) than those who do not adapt, "value creation in service systems can only be defined in terms of an improvement in system well-being and we can measure value in terms of a system's adaptiveness or ability to fit in its environment" (Vargo, Maglio and Akaka, 2008, p. 149). It is not the adaptation process that endangers (or poses risks to) the system, but the objective to which the system adapts and the nature of the adaptation.

Other researchers came up with similar insights (Bitner, 2012; Bitner, Ostrom and Morgan, 2008; Cabiddu, Lui and Piccoli, 2013). Sangiorgi (2009, p. 419) suggested

further research in "service-systems complexity; what are the qualities and dynamics of these systems". Similarly, Patrício *et al.* (2011) emphasised on the need of and frameworks for conceptualising the complex adaptive service-system and its design. Vargo and Lusch (2013) have recently stated that the service-creation process is co-creating and co-evolutionary. They proposed that service systems spontaneously sense and respond to spatial and temporal structures, The current research needs to explore this core characteristic of service systems (Chandler and Vargo, 2011; Vargo and Lusch, 2011 and 2013).

This research has therefore set an agenda to understand the *adaptation process in a holistic-service-system design*.

2.2.7 Section Summary

This section (2.2) has provided a review of the literature in the generic service-system concept, the prominent service-system theories and models, service-system design concept and its prominent models. The service-systems and its design constructs are conceptualised by summarising and comparing the commonalities within current theories and models and the current knowledge gaps are discussed. The next section (2.3) contextualises the thesis' argument in the SFS literature.

2.3 SFS-System Design

2.3.1 Introduction

This research investigates the service-system design within the institutional context of SFS in Pakistan. Recently, Stephen Vargo, a leading service researcher and cofounder of the SDL, while giving a keynote talk on topic *Beyond SDL*, said that the service researchers miss the important component of institution or the rules within a service system (CTF, 2011). These rules include social and governance rules (Sangiorgi, 2004) and create and institutional environment for the service organisations to operate in. It is the institutional and governance environment that represents the abstract culture of the organisations in an industry. For instance, the central bank in Pakistan established the evolutionary regulatory framework after recognising the emergence of a more collaborative and evolutionary culture within SFS organisations in Pakistan.

Gummesson (2013) has recently more specifically pointed the need to extend the service research into the context of financial systems and their environments, which are comparatively more regulated and have greater focus on institutionalisation. The implication of such research is expected to know how traditionally institutionalised environments cope with the service-elements, where the adaptation is more likely to occur. Service elements are the intangible and heterogeneous parts of a service system (Shostack, 1982).

SFS is fortunate in this respect because its literature is well focused on the rules within the service system and particularly the *Shariah* rules. However, SFS on the other hand underscore the service perspective and focus more on the jurisprudence (*Shariah* prohibitions) and economic aspects of the service (e.g., mechanisms in partnerships, sale, lease, and agency transactions) (e.g., Jackson-Moore, 2009; Siddiqi, 2006; Usmani, 2002a.) There seem a gap to synthesis these two sets of literatures (service system design and *Shariah* finance) to develop a more comprehensive and robust background theory, which is attempted in this research.

SFS is multi-disciplinary: apart from the core roles of Islamic jurisprudence and economics, there should be a role for service discipline because after all they are *Shariah* finance *services*. *Shariah* and finance aspects are backed up by Islamic jurisprudence and economics, respectively. However, the service aspect is rarely

supported in the SFS context. This research has, therefore, established an in-depth service-system design theory (as per the background literature summarised in Table 2.4). This service-system design perspective is to be synthesised with the SFS models to more rigorously reconstruct the phenomenon from an alternative angle (as shown in Figures 2.14 to 2.17 and summarised in Table 2.9). Such change and enhancement in perspective is considered important for the development of more novel and robust theoretical frameworks through de-construction of conventional thought bound by conventional silos (Newman, 2001; Peim, 2009). Mars, Bronstein and Lusch (2012) have referred to Peter F. Drucker, who "warned that the most dangerous thing in times of turbulence and change is not the change itself, but to operate with yesterday's logic" (p. 271).

Before moving on to the service perspective on SFS models (e.g., partnerships, sales, agency, leasing), it is important to understand the very roots of SFS, which primarily sit within *Shariah*'s jurisprudence and economic systems (Iqbal and Mirakhor, 2008). The review therefore starts with the discussion on *Shariah* philosophy of economic man and how *Shariah* impacts on his or her economic activities including creating and consuming SFS. This review is expected to help the researcher to understand the jurisprudence-economic perspectives of SFS form its origins. *Shariah* compliance within service systems is discussed and key prohibitions are outlined to know how SFS is different from the conventional services.

Social emergence and *Shariah* compliance is discussed to understand how *Shariah* jurisprudence deals with the emergence in the broader spectrum of society in which the service systems operate. This concept helped to understand how *Shariah* consider the adaptation within systems, which is an important construct of the current service systems and is the focal problem addressed in this research. Afterwards the SFS models are reviewed from the service-system perspective, to synthesis *Shariah*-economics perspective with the service-system perspective so to set a robust background theory (Table 2.9). Such a background theory is considered important within an academic research (Phillips and Pugh, 2010; Yin, 2009).

The service-system perspective has enabled the researcher to identify the three limitations of the existing SFS models (i.e., lack of theoretical abstraction, service cocreation and the underneath adaptation process). These limitations are overcomed in

the proposed model (chapter 3), which is the focal theory of this research (Phillips and Pugh, 2010).

2.3.2 *Shariah* Philosophy

$$\text{لَآ إِلٰهَ إِلَّا اللهُ مُحَمَّدٌ رَّسُوْلُ اللهِ}$$

"There is no God but Allah, and Muhammad is the apostle of Allah"
(Kateregga and Shenk, 1997, p. 16)

The above phrase is considered the foundation of Muslims' faith. This faith affects Muslims' activities, including services. In this phrase, a Muslim accepts that there is only one God, *Allah*, the creator and sustainer of the universe and all its contents. There is no one worthy to be worshiped except *Allah* and all His orders will be obeyed in totality. In the second part of the phrase, a Muslim accepts that Muhammad (*SAS*) is the last Prophet of *Allah (SWT)*. This faith implies that life will be spent as per the Holy Book, the *Quran,* and the *Sunnah*, which are the sayings and doings of Muhammad (*SAS*). The combination of both is called *Shariah*.

Shariah literally means the way. It is the revelation that Muhammad (*SAS*) received and practised i.e. the *Quran* and the Prophetic traditions (Auda, 2008; Usmani, 2002a). Along with these primary sources, *Shariah* also includes the verdicts (*Fatwas*) of the *Shariah* jurists (Hasan, 1986). Such verdicts come through interpretation of the *Quran* and Prophetic traditions for emergent (new) matters and situations. These interpretations are made by competent *Shariah* jurists applying *Shariah* juridical principles such as *Ijmah* (consensus of jurists), *Qiyas* (analogical reasoning), *Istihsan* (The preference in conflicting rules) and *Maslahah (*social benefit principle) (Hasan, 1986; Weiss, 1978). The collection of these verdicts is the *Fiqh* (Islamic jurisprudence) (Auda, 2008). Along with *Shariah*'s structural rulings and objectives, the juridical principles take into account the emergent matters to which the *Shariah* is to be applied. The jurists make deductions to classify emergent matters as compliant with *Shariah* or not (Kamali, 1991; Hasan, 1986). The jurists do not make any new laws but interpret *Shariah* for new matters and thus simplify *Shariah* wisdom and discover the *Shariah* rulings for the new situations (Hasan, 1986; Weiss, 1978).

Ontologically, *Shariah* assigns moderate weights to both social and individual rights and objectives (Usmani, 2002a). Its proposed economic system is such that the means of production and distribution are expected to be controlled by the people of high ethical standards and are expected to operate according to equity and fairness rather than market principles (Ayub, 2008; Auda, 2008; Kuran, 1995). Such principles can on some occasions contradict with market principles such as shareholders' wealth maximisation. *Shariah* scholars research for instance *Hikmah* (wisdom) in the *Shariah* belief of life, society, economy, ethics and universe (Usmani, 2002a). In the *Shariah* economic system, every resource is considered created and made available by the decree of the one and only *Allah* (*SWT*) (Usmani, 2002b). *Allah* (*SWT*) alone is the creator and sustainer of all creations including human beings (Usmani, 2002a). Humans are vicegerents on the earth with limited will (Usmani, 2002a: Auda, 2008). For instance, humans do not have will in their own birth, diseases, luck and deaths and many other happenings in the universe. *Allah* (*SWT*) is the source of knowledge and He alone uttered knowledge to humans. This epistemology is grounded in the *Quran* (96:3-5): "Read: And thy Lord the Most Bounteous, Who teacheth by the pen, Teacheth man that which he knew not."

Allah (*SWT*) utters knowledge when humans strive and struggle for it. These beliefs establish a worldview for Muslims and affect their doings. *Shariah* affects three aspects of life, namely faith, morality and daily activities (Laldin, 2006; Chapra, 1995; Haneef, 1997).

Firstly, *Shariah* establishes a faith in one *Allah* (*SWT*), Angels, Holy Scriptures (*Quran, Bible*, Torah and others), the Prophets (Muhammad, Jesus and Moses and others, peace be upon them), life after death, and in the divine decree as stated in the Quran (2:285). Belief in *Shariah* makes some events compulsory for Muslims and restrains from others. For example, a wealthy Muslim is bound to pay 2.5 per cent of his wealth to the poors, assuming he has a specified quantity of wealth that has been spare for him for one whole year. This is called *Zakah* as made mandatory in the *Quran* (2:177).

Secondly, *Shariah* impacts on the ethics and morality of Muslims. *Shariah* has its own version of morality and ethics which stresses humbleness to *Allah* (*SWT*) and His created humanity. *Shariah* affects Muslims' behaviours because it encourages them to

have basic *Shariah* beliefs and financially help needy people, fulfil promises, be true, establish prayers and be patient (Quran, 2:177).

Thirdly, *Shariah* impacts on Muslims' daily matters and relationships with others. *Shariah* commercial law specifically constitutes rules linked with economic transactions including SFS (Ahmed, 2011a; Hallaq, 2004; Obaidullah, 2005). SFS are the economic activities that are governed by the Islamic commercial law (Billah, 2007). Figure 2.12 places the banking and financial activities in the broader spectrum of *Islam*. The three implications on Muslims' lives are closely related with the five core objectives of *Shariah*. These objectives are safeguarding faith, self, intellect, posterity and wealth (Ahmad *et al.*, 2000; Chapra, 2008; Laldin and Furqani, 2013; Obaidullah, 2005).

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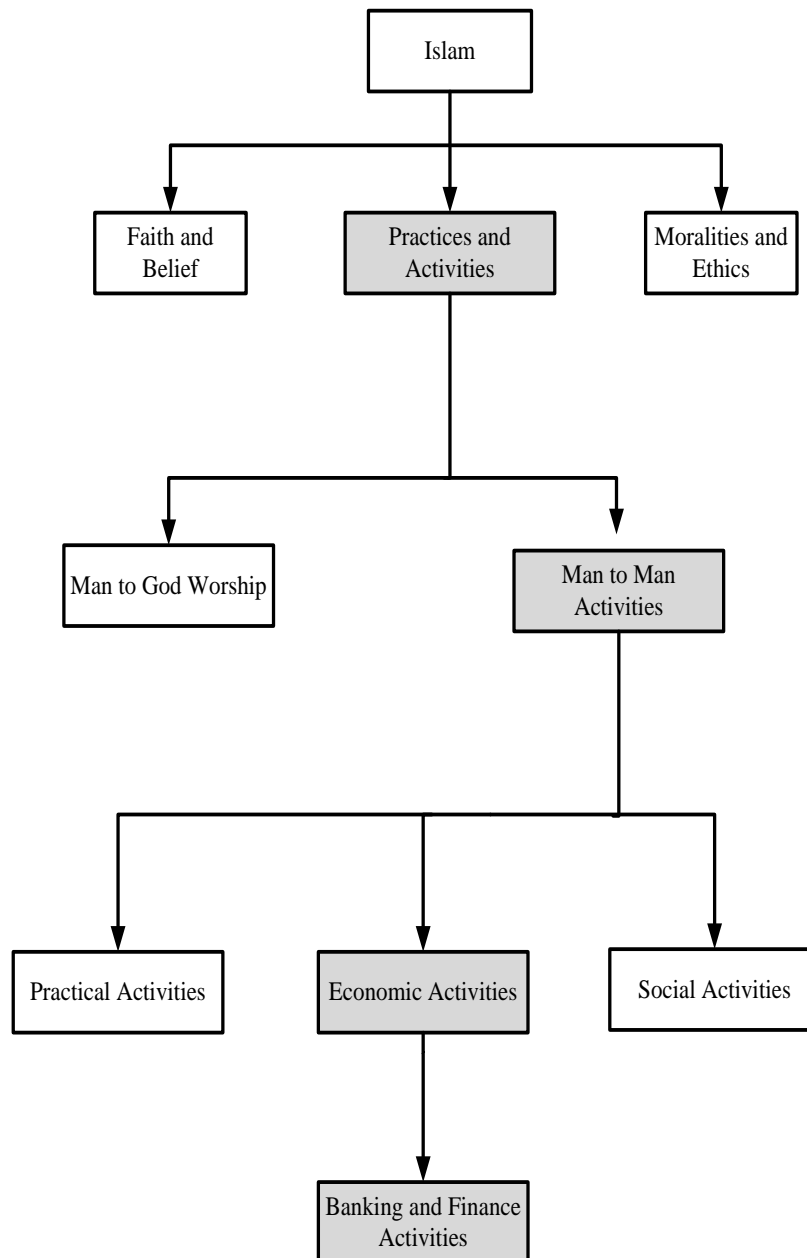
Figure 2.12: Islamic banking and finance

Source: Billah (2007, p. 403)

2.3.3 *Shariah* Compliance

The acts and resources of Muslims are considered *Shariah*-compliant if they are in accordance with the five categories of rulings (*Ahkam:* plural of *Hukam*) prescribed by the *Shariah*. These rulings are obligatory (*Faraz/Wajib*), recommended (*Mandoob*), allowed (*Mubaah*), disliked (*Makruh*) and prohibited (*Haram*) (Hannan, 2004). *Shariah* compliance occurs if the emergent matter e.g., service, occurs in the obligatory,

recommended or permissible categories and it does not contain disliked or prohibited acts or resources.

A service system involves actions and usage of resources which cause value creation (Lusch and Vargo, 2006b; Sampson, 2010; Sangiorgi, 2008). Consequently, service will only be *Shariah*-compliant if none of the involved actions, usufructs and value propositions contradicts with *Shariah* rulings. The mandatory and prohibited rulings (dos and don'ts) are important as their avoidance directly leads to non-compliance with *Shariah* (Kamali, 2006). However, the *Shariah* scholars also encouraged to be compliant with the other three categories to enhance the morality and good conduct in societies (Kamali, 2006; Laldin, 2006). The most cited prohibitions in SFS are interest (*Riba*) and excessive uncertainty (*Gharar*) (Ahmed, 2011a; Saleh, 1992; Usmani, 2002a).

Firstly, interest (*Riba*) in *Shariah* means undue increase. This includes the conventional concept of interest, which is the core of the conventional financial service-system (Usmani, 2002a). It has extensive repercussions and is forbidden by *Allah* (*SWT*) as stated in the *Quran* (2:275): "Those who consume interest cannot stand [on the Day of Resurrection] except as one stands who is being beaten by *Satan* into insanity. That is because they say, 'Trade is [just] like interest.' But *Allah* has permitted trade and has forbidden interest".

Capital or money is a factor of production, the supplier (financer) of which demands interest in conventional financial services. In such cases, the financer demands earnings even if the production of the money is zero or negative. In such an economic exchange of values, the interest arises from an unequal trade cost (Siddiqi, 2004; Saleh, 1992). Prohibition of interest or usury is not unique to *Shariah* as it is also prohibited in the Hebrew Bible - Deuteronomy (23:19): *"You shall not charge interest on loans to your brother, interest on money, interest on food, interest on anything that is lent for interest"*.

Lewis (2009, p. 64) noted that "Islam is today the only major religion that maintains a prohibition on usury (interest), yet this distinctiveness was not always the case. Hinduism, Judaism and Christianity have all opposed usury." For some cases, like charging a high price for credit sale, the earlier religious teachings seem stricter than *Shariah* (El-Gamal, 2008). Dar and Presley (1998) argued that interest/usury is the key

factor for the cyclical fluctuations in economies. SFS designs therefore are not based on conventional loan models which charge and pay interest.

The second prohibition is *Gharar*, which means excessive risk or danger (uncertainty) (Ahmed, 2011a). Services are actions and the usufructs of resources. *Shariah* prohibits all actions and usages that result in highly uncertain or undisclosed outputs for any stakeholders (Al-Yousef, 2005; El-Gamal, 2000). *Gharar* implies a high level of uncertainty and hazard in financial services, where the service stakeholders are not fully informed (Ahmed, 2011a) or the contracts among the stakeholders are incomplete (Suzuki, 2013). Ahmad (2009) argued that *Gharar* is the high risk level in insurance transactions.

Shariah prohibits activities that lead to excessive uncertainty for any party in the financial service (Ahmed, 2011a; Al-Dhareer, 1997; Ahmad and Ahmad, 2009). *Gharar* occurs in the service when the actions are excessively uncertain. Similarly, *Gharar* may also arise when the object for economic actions is not clear due to ignorance of price or invisible objects (Ahmed, 2011a). Several other uncertainties related to ignorance in the service system can lead to *Gharar*, like ignorance of quantity of goods in trade, identity of the goods' attributes and time of payment in a deferred sale (Al-Dhareer, 1997). Some conventional financial services, such as trading of financial derivatives, involve high risk levels, which need to be avoided in SFS (Jobst, 2007). Maysir (gambling) is the extreme form of *Gharar*. It rises in a contract when the benefits to one party come at the other's sweat (Vogel and Hayes, 1998). *Quran* (2:219) prohibits *Maysir* as: "They ask you about wine and gambling. Say, 'In them is great sin and [yet, some] benefit for people. But their sin is greater than their benefit."

Commenting on the gambling-like aspect of the conventional financial system, Sir Ernest Cassell (1852–1921) who was the banker to Edward VII, argued: "When I was young, people called me a gambler. As the scale of my operations increased I became known as a speculator. Now I am called a banker. But I have been doing the same thing all the time." (in Chancellor, 1999, p. ix)

Along with the key prohibitions outlined, *Shariah* also prohibits price control and manipulation in the entitlement to transact at fair prices, equal, adequate and accurate information, mutual cooperation, solidarity and unrestricted public interest (Obaidullah, 2005). *Shariah* also prohibits the usage of prohibited goods in the service, for instance

alcohol, pork and pornographic material are prohibited (Ayub, 2008; Obaidullah, 2005).

Compliance with *Shariah* is more than just prohibitions. In the SFS-system the social justice and fair contribution and distribution of wealth among individuals and society should be the prime objectives of SFS (Presley and Sessions, 1994). These objectives lead to value and prosperity maximisation for all the stakeholders in the system and society. Wealth maximisation is secondary to *Shariah* objectives. Service-system literature also suggests value creation (not profit maximisation) for the service co-creators as an objective of the service system (Vargo and Lusch, 2004b; Vargo, Maglio and Akaka, 2008). Value proposition is therefore included as a core construct of the model presented in chapter three. The construct of rules (including *Shariah* based rules) ensures the controlled emergence of value.

For compliance with *Shariah* and its objectives, the SFS creators enter into contracts (Ahmed, 2011a). SFS contracts are the legally binding agreements for undertaking economic activities. The emergence of SFS is controlled by the service creators through these contracts composed of many underlying (sub)sets of contracts working as the building blocks of an SFS-system (Iqbal and Mirakhor, 2008). For example, under certain legal depository contracts, a bank accepts deposits and advances loans to the customer where both bank and customer have their respective rights and responsibilities.

Most SFS researchers focus on the structure and forms of SFS contracts. To meet emergent service practice requirements, they adapt the conventional economic contracts to design SFS (e.g., Iqbal and Mirakhor, 2008). However, SFS designers pay little or no attention to the real *Shariah* objectives (El-Gamal, 2008; Siddiqi, 2006). For example social justice and fair contribution/distribution of wealth in any economic systems, as an objective of *Shariah,* has received very little attention in designing SFS (Presley and Sessions, 1994). The ideal situation will arise when a service achieves compliance with *Shariah's* structure as well as objectives and neither of these compliances should come at the cost of other. Ahmed (2011a) recently came up with three types of SFS: pseudo-Islamic, *Shariah*-compliant and *Shariah*-based. Pseudo-SFS only complies with *Shariah* in the contract structure but not in the substance of a transaction. *Shariah*-compliant services comply with *Shariah* in structure as well as in the substance but pay

little attention to *Shariah's* social goals. *Shariah*-based services are those that incorporate compliance with structure, substance and *Shariah's* social goals (Ahmed, 2011a).

2.3.4 Social Emergence and Shariah Compliance

Emergence is an inherent characteristic of social systems including the service ecosystems (Chandler and Vargo, 2011). When Muslims encounters with emergent matters and situations the situated *Shariah* scholars interpret the *Shariah*'s rulings based on established juridical principles.

For Muslims, *Shariah* is the divine law which sets objectives and rules for every part of life, including economic and business activities (Ainley *et al.*, 2007; Hasan, 1986; Usmani, 2002b). One of the misconceptions about *Shariah*, particularly in the Western world, is that its followers are bound to follow the law blindly and there is a limited set of static laws prescribed by the *Quran* and *Sunnah* that do not cover the current state of the world. Both the *Quran* and *Sunnah* are the primary sources of *Shariah's* comprehensive set of direct laws. These laws in some cases need to be interpreted by the local *Shariah* jurists of the time and region, so to apply them into the emergent social systems. This practice is not new, when Islam expended from its revelation place of Makkah in Saudi Arabia, the *Shariah* scholars have interpreted the *Shariah* for the emergent situations in different time and regions. For this purpose the jurists have drawn on the Islamic juridical principles (Hannan, 2004; Hasan, 1986). Through these principles, the jurists have discovered the wisdom of *Shariah* and interpreted that for the emergent social systems. The interpretations consider the objectives of *Shariah*, *Shariah's* original rulings and emergent situations (Hasan, 1986; Kamali, 2006).

The *Shariah* economic and financial service-system, as a subsystem of the Islamic social system, operates with the doctrine that everything is permissible unless it is clearly prohibited (Iqbal and Molyneux, 2005). This doctrine puts a minimum ethical threshold on a system and allows it to evolve in response to emergence in different times and regions. This means every economic unit or system is allowed to make wealth and compete for business in the way they want to, unless it is prohibited clearly by the *Shariah* in the minimum threshold of rules. Iqbal (2013, p. 4) supported this view by narrating the saying (*Hadith)* of the prophet (*SAS*): "All conditions mutually agreed upon by the Muslims are upheld, except any condition that would allow what is

prohibited or prohibit what is lawful (Sunan Tirmidhi: 1352)." This is called the principle of permissibility and is only applicable in worldly dealings (*Muamalat)* and not in devotional matters *(Ibadat)* (Ahmed, 2006).

Shariah jurists evaluate emergent matters in situations and reach verdicts (*Fatwas*). The verdicts interpret *Shariah* rulings for the emergent matters and situations. In SFS, the jurists issue verdicts about the new service packages that the SFS organisations want to launch. Behind every prohibition in economic activities and processes, *Shariah* has the objective of social justice. This social justice ensures fair wealth contribution and distribution among factors of production and society (Presley and Sessions, 1994; Hasan, 1986).

Some authors, for example Kuran (1995), criticised the current SFS systems because they do not achieve this objective. Kuran argued that economic behavioural norms of *Shariah* are not explicit and an individual will rationally always prefer self-interest compared to social interest in general. Furthermore, the uniform doctrine of *Shariah* cannot cope with diversity in the economic needs of the people in different places. However, *Shariah* does not bind an individual (though recommends) to go for social interest alone in all cases. A prohibition exists in those situations where individual interest comes at the cost of social or another individual's harm. An economic transaction should create a win-win situation not a win-lose situation like gambling, where the gain of one party is dependent on the loss of the other.

If any emergent finance service has a resemblance with gambling or any other *Shariah* prohibition, it is then be classified by the *Shariah* jurists as prohibited. *Shariah* does not allow the system to adapt to emergent environments that can lead to illegal activities. However, the emergent situations favourable for individuals themselves, cause no harm to society and are within the minimum ethical threshold of *Shariah* can then be classified as *Mubaah* (allowed) by the competent *Shariah* jurists. This process in Islamic jurisprudence allows the system to adapt to emergent environments. This means the openness of the service system or the service-system's adaptiveness to the environment is not against *Shariah* if proper *Shariah* interpretation infrastructure is built within the SFS-system. Related to the coverage of emergent situations and matters, the Islamic jurisprudence (*Fiqh*) provides customised guidance in relation to different times and places keeping in view *Shariah* objectives, ethical standards and

emergent situations. The leader of the *Shafi* school of thought in *Islam* has issued two different rulings in Iraq and Egypt, keeping in view the economic and legal conditions of the said countries and objectives of *Shariah* (Ahmed, 2006; El-Gamal, 2008).

The current service-systems behave like natural ecosystems in which each underlying system such as a customer, the bank and aiding parties adapt to each other and thus create value for each other and for the whole society (Maglio and Spohrer, 2008; Vargo and Lusch, 2011; Vargo, Maglio and Akaka, 2008). If the Islamic juridical system is embedded effectively in these systems, it can enable them to adapt to the environment in compliance with *Shariah*. The discussion so for suggests that *Shariah* and Islamic jurisprudence have principles for interpreting *Shariah* in new socio-economic systems. SFS is part of a broader socio-economic system and can provide principles for interpreting *Shariah* rules for an emergent SFS. These rules can allow an SFS to dynamically adapt to the environment, in compliance with *Shariah*, which is its core value in SFS. The model proposed in next chapter includes the *rules and control* as service-system construct. This construct reflects *Shariah* and other rules applied by the service co-creators to enable control over the emergence of actual service-systems.

2.3.5 Conceptualising SFS within *Shariah* Economic System

Economic activities that are compliant with Islamic behavioural norms are termed as Islamic economic activities. There are two categories of economic behavioural norms guided by *Shariah*, one is related to the production of wealth and the other is the spending or consumption of wealth (Kuran, 1995). Financial services are the economic activities and they are only considered *Shariah*-compliant when they follow the prescribed behavioural norms related to the production and consumption of these services. In service, different economic entities integrate their resources through actions to finally achieve objectives (Sampson, 2012; Sangiorgi, 2008).

The development of the SFS-system started with the Islamic economic system. This is the same as the service system, which has developed with the development of conventional economic systems (e.g., Vargo and Lusch, 2011). The term Islamic economics appeared in the literature around 1940 and rapidly spread and provided a base for other derived subjects like SFS (Kuran, 1995). However, the guidelines for such an economic system have existed in *Shariah* for the last 1400 years (Presley and Sessions, 1994). In 1976, developments in the Islamic economic system and its allied

and subsystems gained momentum with the first international conference on Islamic economics organised by King Abdul Aziz University in Makkah Saudi Arabia (Iqbal and Molyneux, 2005). In this conference a broad framework is proposed for the development of *Islamic* economic activities.

SFS is different from the conventional or capitalist economic activities in its very roots, including the ownership, creation and consumption of wealth (Usmani, 2002a). For example, in the capitalist view man is the ultimate owner of what wealth he has and is allowed by law of the land. But this is not the case in *Shariah* where man is considered a custodian of the wealth until the end of his life. Ultimate ownership of wealth is with *Allah* (*SWT*) alone and He provides and takes wealth from man. *Shariah* considers prosperity in this life and hereafter as the eventual objectives of life in this world. Such prosperity may not essentially come through wealth maximisation, which is the core objective of capitalist economic organisations (e.g., Horne and Wachowicz, 2008). Wealth in *Shariah* is considered one of the *means* to a prosperous life, but not the end in itself (Usmani, 2002a). In *Shariah,* livelihood obtained through wealth is considered a necessity but not the ultimate purpose of human activities and life. In *Shariah* this world and its contents are termed *Al-Dunniyah* i.e. a mean to hereafter (Usmani, 2002a). Therefore, SFS-systems do not adapt to situations when the wealth maximisation opportunity contradicts *Shariah* rules and objectives.

The following section reviews the SFS models from the service-system perspective. In SFS literature, these models are primarily reviewed from Islamic economic and jurisprudence perspectives (e.g., Ahmed, 2006; 2011b; Iqbal and Mirakhor, 2008; Usmani, 2002a). Such change in perspective can enable a researcher to identify the weaknesses of models, which are developed and reviewed from alternative perspectives (Newman, 2001; Peim, 2009). The fusion of Islamic jurisprudence and economics provides bases for the *Shariah* finance models, which are used by the SFS organisations to create services. These models are discussed in the coming section.

2.3.6 A Service Perspective of Shariah Finance Models

In the context of SFS, the service co-creators apply SFS models as planned designs to create real services. A model is a representation of a real or a construction plan (Mager, 2009). SFS models model the service co-creators, their activities, usage of resources and their value propositions. SFS models are in essence the Islamic economic contracts

adapted to create services. They are termed models in this research because they depict the actual services and their construction planes, as models do (e.g., Kühne, 2004).

Since interest, excessive uncertainty and gambling are prohibited in *Shariah* so SFS cannot be designed and created based on the conventional loan models, which are primarily based on interest. Current conventional financial services are mainly based on the loan models; SFS models suggest alternative economic procedures for creating services. In this section the SFS models are categorised into four sections. The core service constructs of the prominent SFS models are abstracted and tabulated. The knowledge gaps are then contextually interpreted.

a) *Shirkah* – Participatory Models

Participatory models are based on partnership contracts that consider the customer and service organisation as partners in owning specific tangible and intangible assets (Abdul-Razak, 2013; Ayub, 2008; Iqbal and Mirakhor, 2008; Obaidullah, 2005; Usmani, 2002a). Through application of *Shirkah* models allow both parties to contribute actions and/or resources to create value. *Shariah* rules related to the partnerships are applied to provide a control to each party. This control enables the parties to exercise their rights and responsibilities related to the actions and the resources they contribute to the system. From the service-system design perspective, the real service creators use these models as planned structures to be applied in future at different points in time-space, to create real services.

There are three mostly-used types of *Shirkah*. The first is the *Musharikah*, which is a joint partnership in permissible assets and ventures. In SFS context, the *Musharikah* is use to establish partnerships between the service organisation (e.g., bank) and customer in *Shariah*-permissible businesses. They distribute the benefits at agreed ratios or equally if not specified (Yousfi, 2013) as both organisation and customer provides the factors of production. The second type is *Musharikah-Mutanaqisah* (diminishing partnership). This model is the customised form of *Musharikah*, which has a diminishing-ownership mechanism (Abdul-Razak, 2013; Jackson-Moore, 2009; Usmani, 2002a). Through this mechanism one partner, mostly the bank gradually decreases its share. The third type is *Mudarabah* (capital and expertise partnership). Through this model one party contributes capital and the other contributes expertise and actions (Obaidullah, 2005; Usmani, 2002a). The profit is distributed as agreed or

equality if not mentioned. I case of loss, the financial loss is to be accepted by the capital provider whereas the time and efforts losses are to be accepted by the working partner (Ayub, 2008; Iqbal and Mirakhor, 2008).

The objective of each type of partnership can be doing business in *Halal* assets or services. The control of the partners within the business varies such as the partnership in actions *(Shirkat-ul-Aamal)* and partnership in assets (*Shirkat-ul-Ammual)* (Usmani, 2002a) requires different types and levels of control. Similarly a *Mudarabah* can be *Muqayyadah* (restricted) or *Mutlaqah* (unrestricted) which means the working partner has restrictions on doing a particular business or not (Usmani, 2002a).

Figure 2.13 put a service system perspective on a *Musharikah* model and show how five theoretical service-system constructs can be conceptualised within *Musharikah* (heads of columns). Table 2.5 provides the description of each service episode.

| Service community | Roles and actions | Resources and usufructs | Rules and control | Value (benefits) |
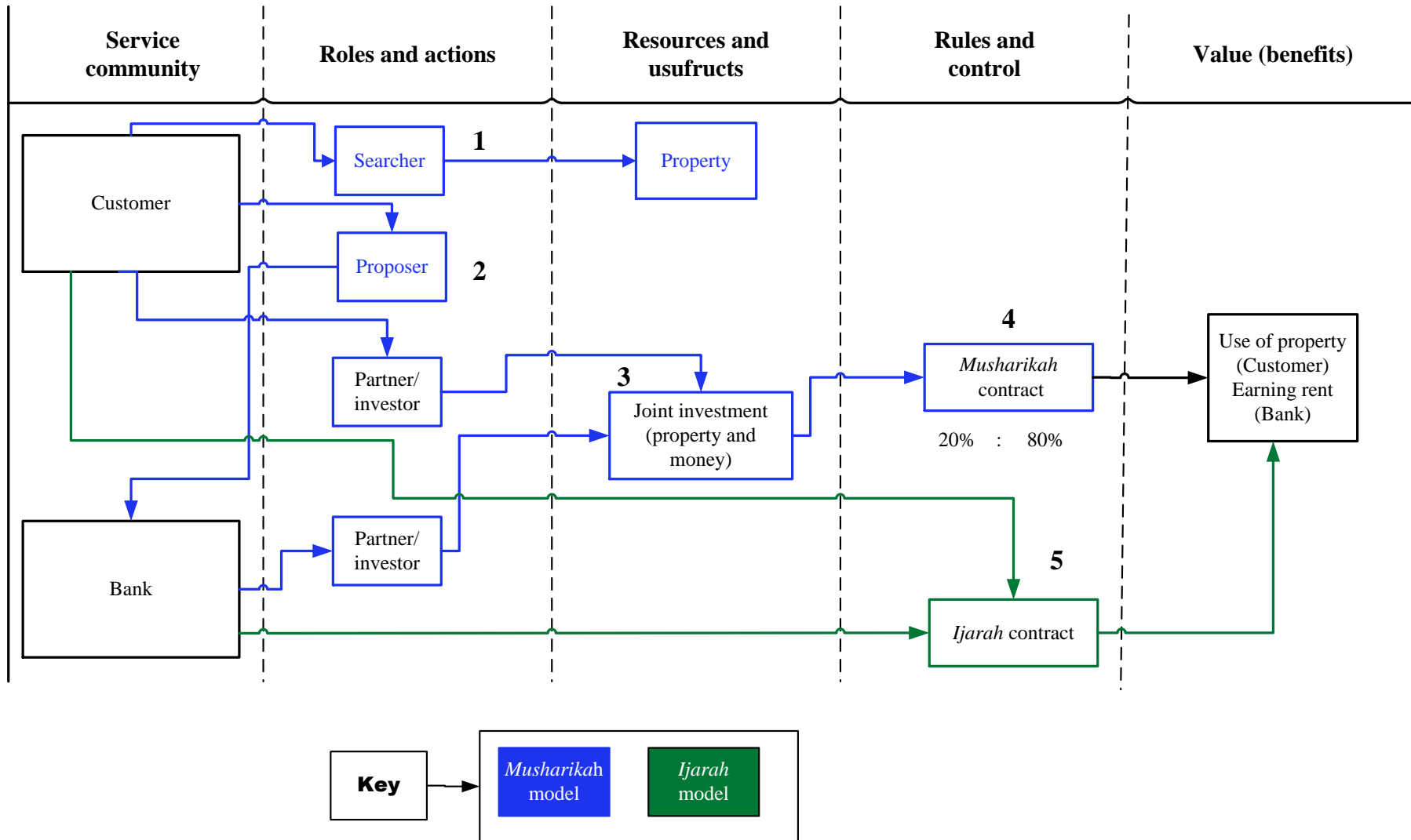
Figure 2.13: A service perspective of *Musharikah* with side *Ijarah*

Sources: *Musharikah* with side *Ijarah* bases on Nor (2008, p. 23). The service-system constructs (vertical dotted lines) base on the general service-system literature (section 2.2.5, Table 2.4)

Activity no.	Description
1	The customer, as searcher, search for a property for which he seeks finance.
2	The customer, as proposer, proposes the bank to create a partnership in the property.
3	The bank, as investor, agrees to invest 80 percent. The customer also, as co-investor, agrees to invest 20 percent in the property.
4	Bank and customers enters into a *Musharikah* contract to define their respective rights responsibilities.
5	Customer and bank enter into a side Ijarah contract. The customer enjoys the benefits of using the property as a residence and the bank receives rent (return) on its part in the property.

Table 2.5: Service episodes within a *Musharikah* in property

Source: Developed based on Nor (2008, p. 23)

In Figure 2.13, a colour code is used to highlight the application of SFS models. The core focus is the *Musharikah* (blue) with the side *Ijarah* (green). The vertical dotted lines put a service-system perspective on these SFS models which synthesis and confirm the existence of the theoretical service-system-constructs in *Musharikah.* The bank and customer are the primary service creators in *Musharikah* and they assume the roles of partners/investors. They use resources such as property and money to invest. They establish a legal control through *Musharikah* and side *Ijarah* contracts. They create value through return on property, rent, for the bank and the usufruct of property for customer. Thus, justify the relevance of generic-service literature within SFS. These generic service-system design constructs are summarised in Table 2.4 based on the 15 prominent service-systems theories and models.

In practice, service organisations design and create SFS based on the participatory models. The Islamic bank of Britain (IBB) offers house financing through diminishing *Musharikah* (IBB, 2011). In this service, the bank partially invests with the customer in the property and gradually reduces its share with each instalment paid by the customer until the bank's investment reaches zero. At the end of the service maturity, the ownership of property completely transfers to the customer. The bank charges rent on its part of the ownership. Banks normally use the participatory models in combination with others to create services.

b) *Bai – Sale Models*

Bai (sale) models are based on Islamic sale contracts. Sale models are the most used SFS models (Iqbal and Mirakhor, 2008; Obaidullah, 2005; Yousfi, 2013) *Murabahah* (cost-plus-sale) model is the dominant type of *Bai,* where the seller disclose the cost of goods in trade (Usmani, 2002b). In SFS context, the service organisation purchases goods from suppliers and then sells the same to customer at marked-up prices (Saqib *et al*., 2013). In Pakistan, murabahah works as alternative to the conventional working capital finance model (MBL, 2011). Other types of *Bai* models are *Bai-Muajjal* (deferred-payment model), *Bai-Salam* (deferred-delivery model), *Bai-Istisnah* (order-to-manufacture sale), *Bai-Tawarruq* (tripartite sale) and *Bai-Musawamah* (sale with undisclosed cost) (Usmani, 2002a). In these variants, the service organisation and customer participations vary in different service parameters such as the asset types, payment time and delivery time. Figure 2.14 and Table 2.6 places a service-system perspective on *Murabahah* to conceptualise the core service-system constructs within *Murabahah model.*
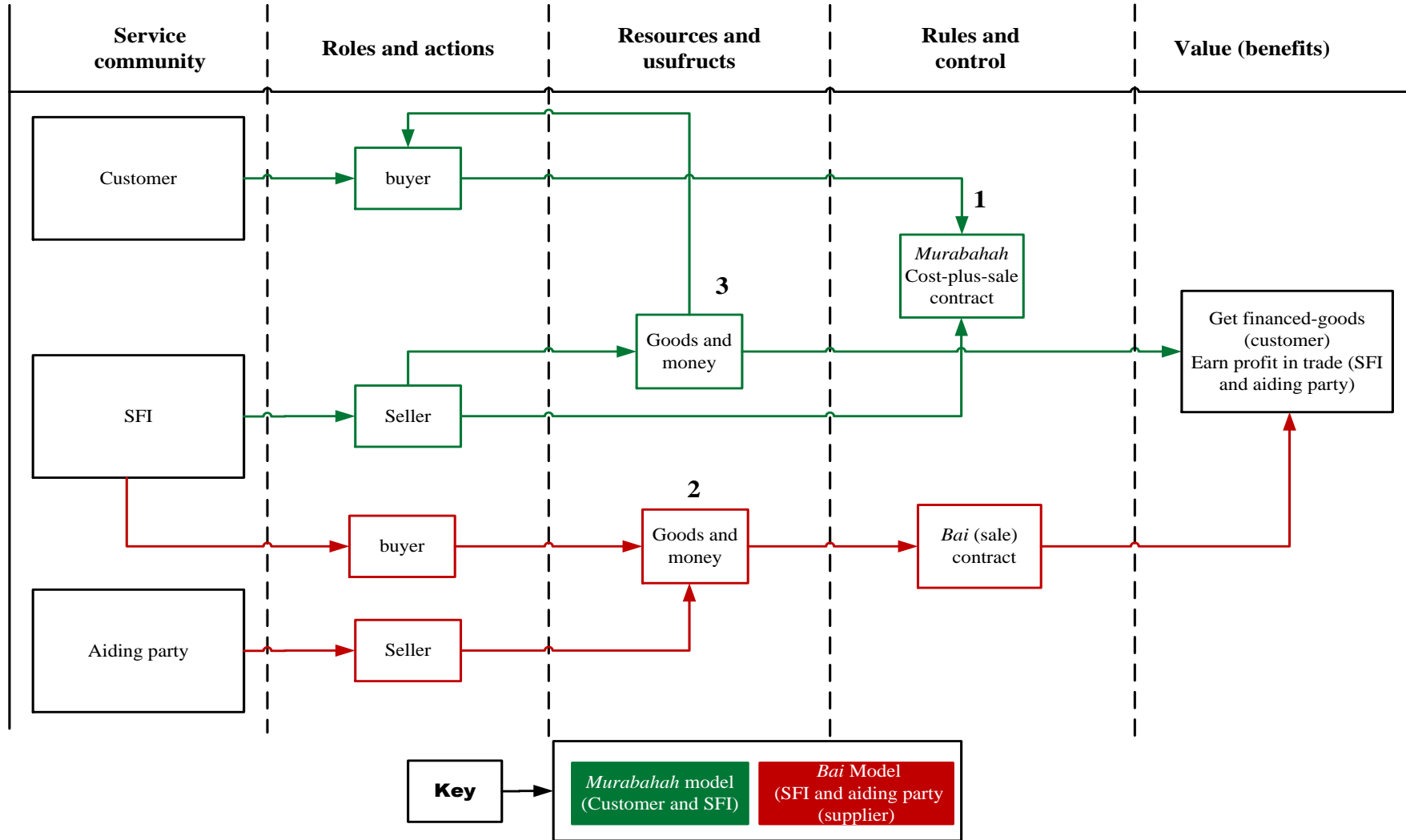
Figure 2.14 A service perspective of *Murabahah*

Source: *Murabahah* model bases on Iqbal and Mirakhor (2008), Prabowo (2009), Usmani (2002a) and the service-system constructs (vertical dotted lines) are based on the general service-system literature (section 2.2.5, Table 2.4)

Activity	Description
1	A customer and *Shariah* finance institution (SFI) sign a cost-plus-sale contract, in which the customer promises that he will buy the specified goods from the SFI.
2	SFI purchases the goods from and aiding party as specified in the contract.
3	SFI sells the same goods to the customer at cost-plus price. Customer gets benefit of getting finance-goods and SFI and aiding party supplier earns profit through sale of goods. Customer pays the due amount to SFI at a future date in lump sum or in instalments

Table 2.6: Service episodes within a *Murabahah* in goods

Source: Developed based on Iqbal and Mirakhor (2008), Prabowo (2009), Usmani (2002a).

Sale models create value through the financing and trading in inventory. The service organisation earns through trade in goods and the customer gets finance for its inventory. The service organisation and customer assume seller and buyer roles. There is also the aiding party supplier role, who supplies the goods. The service creators use different resources such as goods and money to create the service. Legal control is established through sale contracts.

c) *Ijarah* – **Lease Model**

The *Ijarah* (lease) model is normally used for leasing capital assets. In *Ijarah*, the service organisation supplies the usufruct of assets to customers (Ayub, 2008; Iqbal and Mirakhor, 2008; Jackson-Moore, 2009; Obaidullah, 2005; Usmani, 2002a). The service organisation retains the ownership of the lease assets and its usufruct or provision is provided to the customer. The customer pays periodic rent for the use of the assets. The service organisation purchases assets from a third-party vendor. For instance in an *Ijarah* auto lease, the bank purchases an auto and leases that to the customer, who then pays rent to the bank. In practice, *Ijarah* is normally combined with participatory and sale models to create service (IBB, 2011). Figure 2.15 and Table 2.7 set a service perspective on the *Ijarah* model (green) with side *Bai* model (blue).
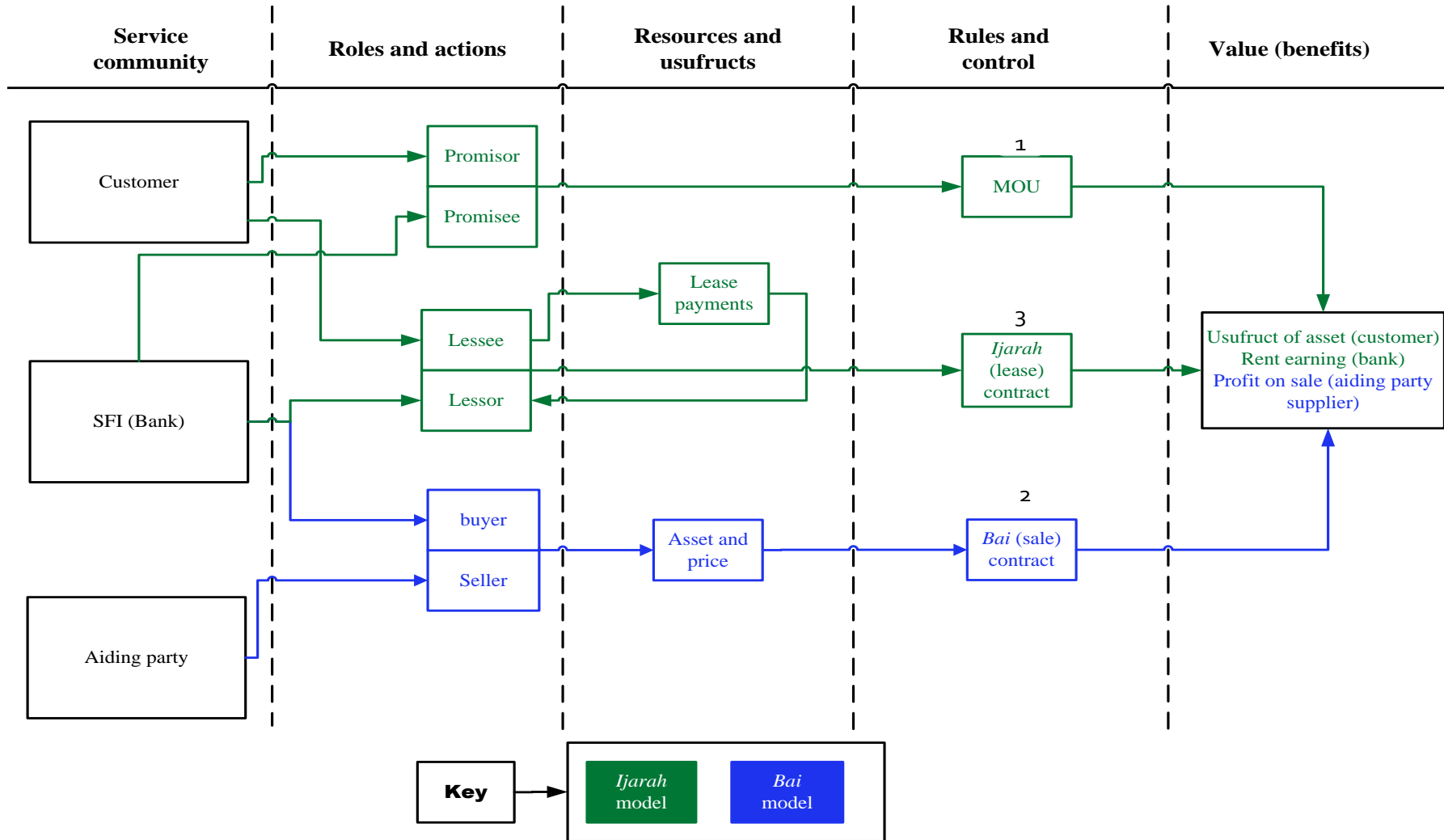
Figure 2.15: A service perspective of *Ijarah* with side *Bai*

Source: The *Ijarah* model bases on Jackson-Moore (2009, p. 49) and the service-system constructs (vertical dotted lines) base on the general service-system literature (section 2.2.5, Table 2.4)

Activity	Description
1	The bank and customer enter a memorandum of understanding in which the customer asking the bank to purchase a specific asset. The customer promises that he will take that asset on lease from the bank.
2	The bank purchases the asset from the seller, and aiding party supplier by making a Bai contract.
3	The bank enters an *Ijarah* contract with the customer for the lease of the asset. The customer makes regular lease payments to bank during the course of the lease period.

Table 2.7: Service episodes within an *Ijarah* in assets

Source: Developed based on Jackson-Moore (2009, p. 49)

In *Ijarah,* both customer and service organisation contribute to creating the service. They assume the roles of lessor and lessee. The service organisation as lessor leases the asset to the customer. The customer as lessee uses the asset and pays rent to the service organisation. The aiding party vendor is involved by supplying the assets. The service creators use resources such as money and leased assets. The Islamic lease contract provides the main set of rules to create a legal control over actions and the usufructs of resources. The service creators create value through transfer of assets' usufruct to the customer.

d) Other Models – *Wikalah* (agency), *Waqf* (endowment), *Hibah* (gift)

In SFS theory and practice, many services are packaged by combining different models. Along with previously discussed models, the service creators also apply *Wikalah* (agency), *Waqf* (endowment), *Hibah* (gift) and other models. The *Wikalah* is used for agency services. In this model one party, mostly the service organisation, assumes the role of agent to perform actions that benefit the other. For instance in SFS, the banks collect, save and transfer the customers' money as agent (Obaidullah, 2005; Usmani, 2002a). One party, mostly the customer, assumes the role of principal for whom the agent performs actions. Similarly, the *Waqf* model is use to accumulate from and distributes funds among the members to promote *Shariah*-compliant social objectives (Karim and Murad, 2010; Mohsin, 2013). *Takaful* companies (alternatives to insurance) use *Waqf* (endowment) to group the customers' contributions in a trust fund from which the members are to be compensated in future (Ali, 2006; Billah 2007). *Hibah* (gift) model is applied to distribute the funds among members (e.g., Jackson-Moore, 2009; Noor and Abdullah, 2009; Obaidullah and Khan, 2008). In Life takaful in Pakistan, the SFS institutions combine *Wikalah, Mudarabah, Waqf* and *Hibah* to build Islamic life

takaful packages. Figure 2.16 and Table 2.8 summarise the key sequential activities prescribed in a *Takaful* model in which combined *Wikalah* (green) and *Waqf* (blue) can be seen.
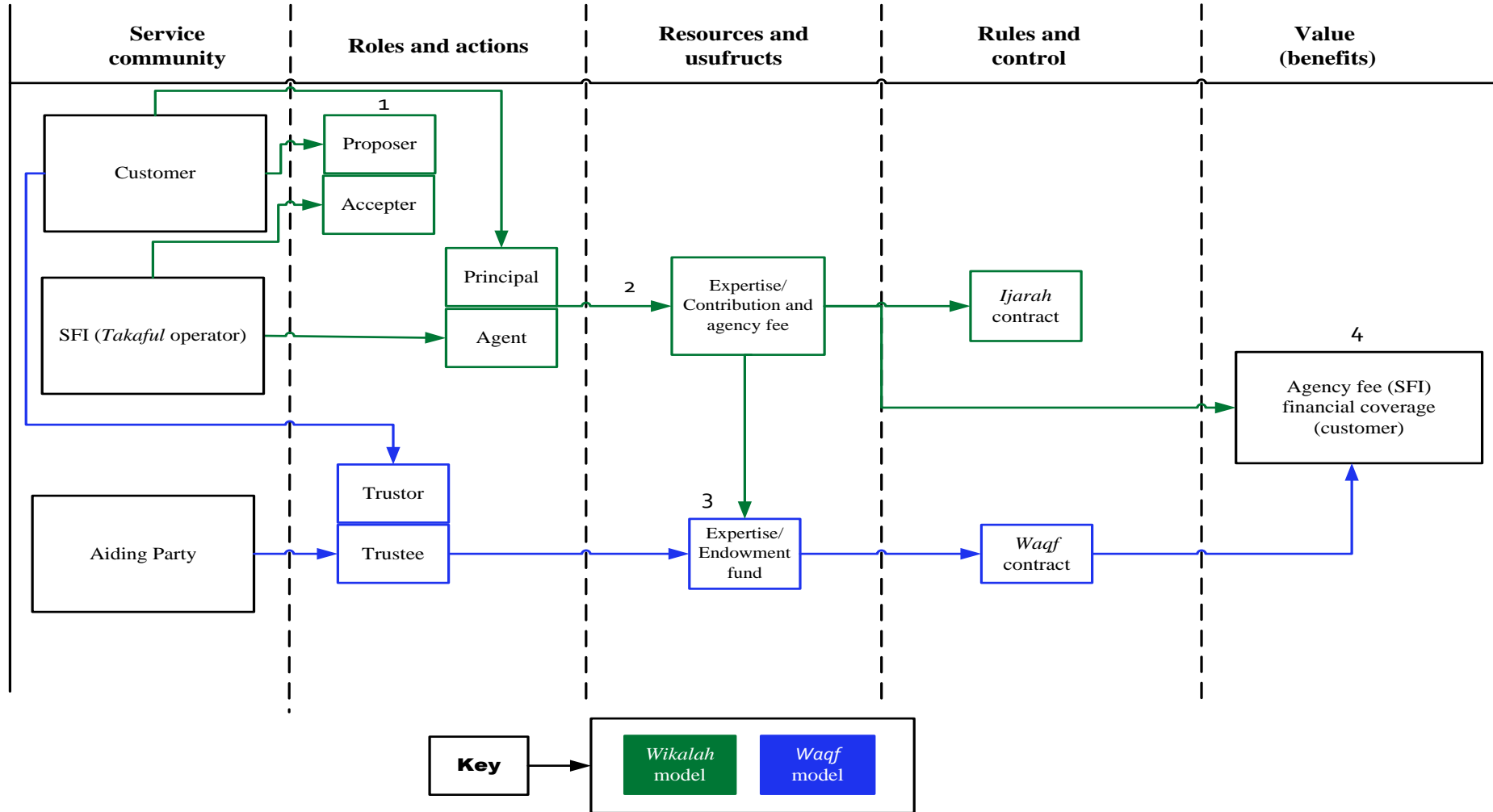
Figure 2.16: A service perspective of *Wikalah* and *Waqf*

Source: *Wikalah* and *Waqf* models bases on Billah (2007) and Usmani (2002a) and service-system-constructs (vertical dotted lines) based on general service-system literature (section 2.2.5, Table 2.4)

Activity	Description
1	Customer proposes the *Takaful* operator to develop a *Takaful* policy for him
2	Takaful operator and customer enter into an agency contract. *Takaful* operator, as agent of the customer, adds and manages customer contribution to the endowment or trust pool. Customer as principal pays fund management fee to the *Takaful* operator.
3	As trustee (independent trust fund controller) take care of the fund under a *waqf* contract.
4	Customer receives financial coverage/benefits from the trust pool and takaful operator receives agency fee.

Table 2.8: Service episodes within *Wikalah* and *Waqf*

Source: Developed based on Billah (2007) and Usmani (2002a)

In the agency model, the service organisation and customer assume the roles of agent and principal, respectively. They use resources such as expertise and assets to complete some tasks to create value. They use agency contracts to establish legal control. In the endowment model, the aiding party and the customer assume trustee and trustor roles. Expertise and money (contributions and fees) are used as the core resources to enable the financial coverage – the core value proposition.

2.3.7 Summary of the SFS Literature

In the previous section, the prominent SFS models are reviewed from a service-system perspective. Five service-systems' constructs are abstracted from these models (Table 2.9). These constructs are the service co-creators, roles and actions, resources and usufructs, rules and control, and value. The constructs will be individually discussed and further justified through relevant themes in the literature in the theoretical model (chapter 3). The purpose of abstracting these constructs from SFS models was to synthesis the service-system design literature with the SFS literature and thus set a comprehensive background theory before establishing a focal theory – the theoretical model.

Traditionally, the SFS models are reviewed by the researchers as economic models or *Shariah* contracts (e.g., Iqbal and Mirakhor, 2008; Usmani, 2002b). This summary is different in a sense that it used the service-system perspective for these models and looked for the service-system constructs in these models. This review therefore established a link between service-system and SFS literatures. These two strands of literature are rarely combined to study SFS. A model is any representation of the real or a construction plan (Kühne, 2004). In this sense, SFS models are the futuristic plans of

real services to be enacted in different points in time-space. This review looked for the commonalities in these models to build a more abstract and theoretically powerful model. Seven prominent SFS models are summarised in Table 2.9 as rows and the five service-system design constructs as columns. The crossing points of rows and columns (cells) establish a contextual triangulation - acknowledge the existence of constructs across different types of SFS models.

All the SFS models are found having the core service-system design constructs as summarised in Table 2.9. As service co-creators, the SFS organisation and customer can be seen as the core service cocreators (column one) within occasional acknowledgement of aiding parties such as suppliers in *Bai* models and trustee in *waqf* model. The organisation, customer and aiding parties are considered the service co-creators in generic service system literature. However, there exists a greater detail of the aiding parties (e.g., Sampson, 2012; Sangiorgi, 2004). Different roles are assumed by the service cocreators which included the capital partner, working partner, investor, buyer, vendor, lessor, lessee, principal, agent, trustor and trustee (e.g., Jackson-Moore, 2009; Obaidullah, 2005; Usmani, 2002a). On the resources side, the SFS models are seem more focused on the physical assets in which the service cocreators establish the economic transactions. These assets include goods and finance (money), which are subject to trade, joint ownership and lease etc. The *Shariah*-based economic contracts of *Musharikah*, *Bai*, *Ijarah*, *Wikalah* and *Waqf* are found the prominent source of rules within the SFS at application/operational level. The value-in-context is created in the form of financial benefits such as fees, financial coverage, usufruct of resources and receiving rents etc.

Model Type		Theoretical Constructs of a Service System				
		Service co-creators	Roles and Actions	Resources and Usufructs	Rules and Control	Value
1	*Musharikah* (**Partnership model**)	Service organisation and customer	Capital partners	Money and other assets (e.g., property)	*Musharikah* contract	Profit share
2	*Musharikah Mutanaqisah* (**Diminishing partnership model**)	Service organisation and customer	Capital partners	Money and other assets (e.g., property)	*Musharikah* contract	Profit share
3	*Mudarabah* (**Capital and expertise partnership model**)	Service organisation and customer	Capital and working partners	Money and expertise (skills)	*Mudarabah* contract	Profit share
5	*Murabahah* (**Cost plus sale model**)	Service organisation, customer and supplier	Seller, buyer and vendor	Money and goods (in trade)	*Murabahah* contract	Profit in trade
4	*Ijarah* (**Lease model**)	Service organisation, customer and supplier	Lessor, lessee and vendor	Money and other asset (e.g., auto)	*Ijarah* contract	Rent/usufruct
6	*Wikalah* (**Agency model**)	Service organisation and customer	Principal and agent	Money and expertise	*Wikalah* contract	Fees/task completion
7	*Waqf* (**Trust/endowment model**)	Service organisation and customer	Trustor and trustee	Money and expertise	*Waqf* contract	Coverage benefits

Table 2.9: Conceptualising the general service-system constructs within SFS context

2.3.8 Interpreting the Knowledge Gaps within SFS Context

Current studies have contributed to advancing the finance and legal contracting theory for SFS (e.g., Ahmed, 2006; Ayub, 2008; Ebrahim, 2000, 2012; Iqbal and Molyneux, 2005; Iqbal and Mirakhor, 2008; Kuran, 1995; Usmani, 2002a, 2002b). However, the service component in the SFS-system is far behind in theoretical and empirical underpinnings. As a consequence, the theory and practice of SFS replaces conventional loan models with SFS models of partnerships, sales, lease and others to avoid interest charge/payment, excessive uncertainty and earnings based on chance (e.g., Iqbal, 1999; Obaidullah, 2005; Usmani, 2002a). From the service-system perspective, the current SFS models are static contracts and lists of doings, which do not address the dynamics of complex interactions among the service co-creating systems. From the service perspective, this research has found the following three interrelated knowledge gaps which are addressed in the proposed Model (chapter 3).

Firstly, SFS models are, in essence, *Shariah* based economic contracts. That is why they forcefully concentrate on the finance and physical assets' ownership and its legal transaction (transfer). SFS models therefore de-emphasise the service aspect the ownership of which does not transfer (e.g., Kotler, 2001). Critically, they do not provide enough detail regarding the soft resources such as competencies (knowledge and skills) contributed by customers and aiding parties in creating a service. The ownership of such resources intrinsically always belongs to its originator and only its usage became service.. These resources are considered the core of contemporary service-systems and goods are seen as peripheral from the service perspective (Lusch and Vargo, 2006a; Sampson and Froehle, 2010; Sangiorgi, 2009). There seems a need to give the due weight to the service elements in the SFS system. In a recent Islamic banking conference in Dubai, one of the challenges for the Islamic banking is noted as the lack of focus on customer service within Islamic banks (Rizvi, 2013). The proposed model (chapter 3, section 3.3) overcomes this limitation by invoking the service dominant logic (Lusch and Vergo, 2004a and 2004b), which places more emphasis on the service elements in a system.

Secondly, the SFS models do not provide enough detail about the contributions made by the aiding parties in the service-creation process. The recent developments in service-system research has challenged the sufficiency of product perspective particularly with the realisation of service-value cocreation within specific contexts (e.g., Cabiddu, Lui and Piccoli, 2013; Vargo and Lusch, 2011; Patrício *et al*., 2011;

Sampson, 2012). The SFS models focus more on the service organisation and customer and their contributions yet they ignore aiding parties' contributions. In the current scenario, the depository service is not possible without the aiding parties such as the visa system, the interbank ATM network, identity evaluators, the internet and mobile phone companies (in online or phone banking). The abstraction level of SFS models is inadequate to conceptualise service co-creators completely. This limitation forces the designers to combine multiple models to design and create services (SFS home finance based on *Musharikah*, *Ijarah* and *Wikalah*). Each model type covers a concrete single type of service or part of a service. The service-systems' constructs are more abstract and can cover this structural limitation of SFS models. A more recent concept of co-creators is extended to SFS theory, which considers the SFS organisation, customer and aiding parties as service co-creators and consumers, because they create value for each other in context (e.g., Sampson, 2012; Vargo and Lusch, 2008a).

Finally and more importantly, SFS models do not offer any design for the emergence in actual service creation environments at the operational level. The SFS designers centrally develop planned designs and apply these in multiple local environments to create services. This approach is not sufficient because the actual value in service is contextually determined by the customers (Vargo and Lusch, 2008a and 2008b). The multiple service co-creators adapt to each other to create this value-in-context (Vargo, Maglio and Akaka, 2008). Therefore, the planned designs cannot completely specify the actual service that emerges in multiple practice environments. In the legal context of SFS, Ahmed (2006) while forcing the necessity of standardisation of legal systems for SFS also recognised the emergent nature of operational/product application level environments and suggested to leave a room for it within product documentation as:

> "One has to be careful, however, that standardized contracts do not get entrenched and rigid. Contracts should be flexible enough to adjust to changing businesses and environment. The flexibility is desirable at both the transaction and market levels. The contracts should be flexible enough so as to adapt to individual transactions. Each transaction has unique features, which need to be taken care of in the documentation. The implication is that the documents will have a core portion and one that is left blank for filling in for individual transactions. The contracts and documentation should be flexible enough so as to evolve to match the changes in the market conditions and environment. This is particularly true in a world witnessing financial innovations and change" (Ahmed, 2006, p. 94)

More recently (Hussin *et al.,* 2013) came to the conclusion that the SFS are closely integrated with the broad macroeconomic systems and real sector which affect it to adapt. Apart from these acknowledgment and need of adaptation to specific environments, the existing SFS models do not *explain any process or mechanism* and its placement within a holistic SFS-system.

The same problem of adaptation to emergent environments is more forcefully recognised in service-system literature (e.g., Cabiddu, Lui and Piccoli, 2013; Lusch, 2013; Patrício *et al.*, 2011; Sangiorgi, 2009; Vargo and Lusch, 2011; Vargo, Maglio and Akaka, 2008). This research therefore builds, evaluates and theorises a more abstract, theoretically and empirically grounded model, which can holistically conceptualise an *adaptable service-system design* in SFS context.

2.3.9 Restating the Research Questions

The following research questions are pulled out from the knowledge gaps.

- How the service creators adapt a service-system design, from theoretical and empirical perspectives, to create heterogeneous services at the operational-level environments of *Shariah* finance organisations in Pakistan?

The following two sub-questions further elaborate on the main research question:

- How does a planned design (service package) provide a locale for the adaptation?
- What process the service creators do follow to attain the adaptation?

These questions are answered by developing, evaluating and theorising the DSD model,

2.3.10 Section Summary

This section has provided a review of the current SFS literature founded in Islamic economics and jurisprudence. *Shariah* mainly prohibit interest, excessive uncertainty and earning based on chance. *Shariah* recognises the social emergence and provides *Shariah* interpretation principles for emergent matters. SFS models replace conventional loan models with partnership, sale, lease, agency and trust, etc. These replacements aim to make the services *Shariah*-compliant. SFS models, however, have three interrelated limitations, which are interpreted as knowledge gaps and are addressed in the proposed model presented in the next chapter.

2.4: Chapter Summary

This chapter presents a detailed account of the generic service-system design literature and contextual SFS literature. Through this review, the theoretical constructs of an adaptable service-system design are identified. The knowledge gaps are identified to be further research in the empirical part.

First, the discussion conceptualises the generic service system through existing prominent service-system models and theories. Afterwards, the construct of design for service systems is conceptualised through prominent service-system design models. The commonalities in fifteen service systems and their design theories/models are abstracted and summarised to conceptualise the theoretical constructs of a service-system design and to specify the knowledge gaps within them (Table 2.4). The core service-system design constructs found are: co-creating community (personnel, customer, aiding parties); their roles and actions, resources and usufructs (operand and operant); rules and control (institution); value-in-context (benefits); and the acknowledgment of emergence or adaptation to context. The gaps in the literature are discussed as to the much-needed knowledge about the complete adaptation process and its place within service-system design.

Second, the thesis argument is forwarded to the SFS literature to contextually understand the service-system constructs and to interpret the knowledge gaps within the SFS context. The review begins with the *Shariah* philosophy and its jurisprudence and economic systems, which create a base for contemporary SFS. Afterwards, the existing SFS models (*Shirkah, Bai, Ijarah* and others) are reviewed from the service-system design perspective. The seven prominent SFS models are summarised (Table 2.9) and three limitations of them are pointed, which are: the lack of theoretical abstraction; the missing service co-creation conceptualisation; and the lack of design consideration for adaptation within service systems. These limitations are overcome in the proposed model (DSD) developed in chapter 3.

CHAPTER 3: THE PROPOSED THEORETICAL MODEL – DEFERRED SERVICE-SYSTEM DESIGN (DSD) MODEL

3.1 Introduction

The second objective of this research is to develop and theoretically support a model (Phase I), that conceptualises an adaptable service-system design. To reach this objective, this chapter synthesises the focal literature and develops a theoretical model, which is named as the deferred service-system design (DSD) model. A model can be used as a brief depiction of the reality (phenomenon) or as a construction plan (Kühne, 2004). According to Pease and Bull (2000, p. 45):

> "A model is the most basic element of the scientific method. Everything done in science is done with models. A model is any simplification, substitute or stand-in for what you are actually studying or trying to predict. Models are used because they are convenient substitutes, the way that a recipe is a convenient aid in cooking."

The DSD is a theoretical model that envisions an adaptable service-system design. DSD is theoretical because it bases on two focal theories (section 3.2) and their synthesised with the theory emerge from the data (e.g., Eisenhardt, 1989). Patel (2012) said that a theoretical model is more robust because it stands on both previous scholarly efforts as well as fresh empirical evidence.

Thinking in terms of models (depictions) helps the researchers to fill the gap between problem and solution (Forrester and Senge, 1980). This research develops the initial DSD by synthesising the literature. In theory, the service researchers have built models by synthesising the literature. This is done by adopting, adapting and bringing together new constructs and linking them to represent the phenomenon (e.g., Chase and Tansik, 1983; Hibbert, Winklhofer and Temerak, 2012; Patrício *et al.*, 2011; Shostack, 1982).

In SFS, Iqbal (1999) and Iqbal and Mirakhor (2008) have also introduced innovative engineering and reverse-engineering concepts for developing SFS designs. SFS designs are used as models to depict or create the real SFS (e.g., Feroz and Goud, 2009). Iqbal and Mirakhor (2008) suggested synthesising the constructs from conventional finance, Islamic economics and jurisprudence. In reverse engineering, they suggested decomposing the conventional finance services into components (constructs) and recomposing these again after removing or replacing the constructs that cause *Shariah* non-compliance. Current SFS models (e.g., partnership, sale, agency, and lease) are primarily based on constructs adopted from Islamic economics and jurisprudence (e.g., Usmani, 2002a and 2002b) and they are used as models of service systems. For

instance, one-tier and two-tier *mudarabah* models (e.g., Ahmed, 2011a) are used to depict a holistic Islamic banking (service) system.

The following section establishes a foundation for the DSD through two focal theories: theory of deferred action and service dominant logic. Afterwards the DSD is sketched and its constructs are justified through extant literature.

3.2 Theoretical Foundation

The model is built by combining seven constructs abstracted from the literature. Each construct is supported through a relevant discussion in the wider literature and empirical examples before its evaluation and further development through empirical case studies. Two focal theoretical perspectives, the TODA (Patel, 2006 and 2012) and SDL (Vargo and Lusch, 2004a; Vargo, Lusch and Akaka, 2011), illuminate the initial and basic conceptualisation of the model. The TODA describes a design style and layout for the system, whereas SDL conceptualises the structural constructs of a service-system. Two design and five service-system constructs are combined to build the model. This approach of combining service system and design theories for developing the service-system design model agrees with Hooker (2004) approach, who argued that design theories provide a *style and level* of designing and knowledge about the object of design comes from its own source. This combination of design and service-system constructs has established a unique theoretical lens through which the literature and empirical findings can be conceptualised into a novel and well-grounded model. The two theoretical perspectives are discussed next.

3.2.1 Theory of Deferred Action

The theory of deferred action (TODA) primarily describes how the designs of systems and organisations adapt to the emergence (Patel, 2006). Emergence is the phenomenon of novel patterns suddenly arising in multiple environments. Patel (2012, p. 135) suggested three design dimensions for adaptable system and organisation designs (Table 3.1).

Construct/modality	Description and interrelation with other modalities
Planned action (p)	This accounts for human rationality or teleological system design. Plans are necessary for effective and efficient organisation and to build enduring structures and processes that result in some quality product or service.
Emergence (e)	Emergence is a constant in social systems and affects and inhibits teleological system design (pure planned action). An emergence creates unpredictable situations or locale. It is sudden and unexpected and makes situations unpredictable.
Deferred action (d)	Deferred action is the response to the effect of emergence on planned action. It is self-organising action by people. Deferred action takes place within planned action to account for emergent locale. It enables people's local interaction and response to emergence which could not be predicted when planning.

Table 3.1: The relationships among the design dimensions

Source: Patel (2012, p. 135)

A system design that incorporates these three design dimensions is termed deferred system model or simply a deferred model (Patel, 2006, 2007 and 2009). The deferred model uses the power of rational thought (planned action) but it also recognises that complex systems and organisations are unpredictable. Therefore, it suggests enabling the deferred contextual actions to adapt to emergent environments. Through deferred action, the eventual system becomes an emergent system (adapted and evolved system) that can better meet the requirements in actual situations.

Service designs, in reality, are futuristic system models designed to be implemented in future to realise the actual services (Mager, 2008). This view about a service system and its design matches the deferred system ontology, which operates in future-oriented time and implies new reality and thus transpires or emerges in future space-time (Patel, 2012).

From the TODA's perspective, the current service designs are planned actions or promised actions. These planned actions are organisational behaviour, which prescribe actual actions as predetermined moves (Patel, 2006). For instance, a depository service design prescribes predetermined actions to be taken by the bank personnel and customers in future time-spaces. Similarly, the SFS models are planned actions, which outline the futuristic actions to be performed by the bank personnel, customer and other parties in different contexts. These actions occur in dynamic multiple operational environments, which impact on predetermined structures (planned designs). There should be deferment points, as field potentials within the planned designs, waiting for

unpredictable details to be specified when they emerge. These designed spaces should remain deferred for specification until the required detail for specifications emerges in real service practice environments. Patel (2012) termed this approach as the functional deferment point (FDP) principle. The local actors, the service personnel, the customer and other aiding parties should make these specifications as active designers. ATM service design can be conceptualised as deferred system, where along with pre-designed cash withdrawals such as £10, £20, £50, £100 or £200, it also has a designed space where a different amount can be specified by the customer. The actual specification within this deferred locale depends on the customer's need, situated terms of withdrawal, and the machine's status at that particular point in time-space.

This research conceptualises a service system as a deferred system and its design as a deferred service-system design (DSD). The central service-system designers (at strategic level) alone cannot develop systems with complete specifics because they are off market (multiple operational environments at branch level). Situated service creators (at operational level) can better cognise the actual service requirements in the real world and can complement the planned design solutions for the local requirements (Bitner, Booms and Tetreault, 1990). Gedenryd (1998, p. 147) argued that the "cognition is not organised around a mind working in isolation ... designers work the best when mind, action and world interact with each other". Different regions, sectors and service types create spiral points on a timeline, where each crossing point represents a unique practice environment (Ullah and Patel, 2010 and 2011a). For instance, working capital finance for a CNG pump in a specific locality and time would require local detail to completely specify a design for the case.

There are four main reasons, which justify the use of TODA in this research. First is the TODA's potential to contribute to the current debate on service-system conceptualisation as a complex ecosystem, which is in essence a self-adjusting and adapting system (e.g., Bentley and Wilsdon, 2003; Cabiddu, Lui and Piccoli, 2013; Chandler and Vargo, 2011; Maglio *et al.*, 2009; Maglio, 2011; Patrício *et al.*, 2011; Sampson, 2012; Sangiorgi, 2009 and 2012; Vargo and Lusch, 2011; Vargo, Maglio and Akaka, 2008; Vargo *et al.*, 2006). This current discussion thread acknowledges the importance of adaptation within a service system. However, it does not explain in detail the adaptation process and its conceptualisation within a holistic service-system design. The TODA proposes an abstract style for arranging the system constructs to design a complex adaptable system. The TODA is successfully applied to conceptualise the

adaptable information systems designs, organisation designs, educational web system designs and learning systems (Dron, 2005; Elliman and Eatock, 2005; Nyame-Asiamah and Patel, 2010; Patel, 2011, Ramrattan and Patel, 2010). Recently, Nyame-Asiamah (2013) in his PhD thesis has applied TODA to develop an "evidence-based framework, the cohered emergent transformation model, for designing and evaluating organisational learning and knowledge management processes" (Nyame-Asiamah, 2013 p. 37). The use of TODA has the potential to bring new insights for service-systems-design literature as well as for TODA itself.

The second reason for using TODA is because it partially answers the research question. It describes how the design a system adapts to the emergence within specific environments (Patel, 2006 and 2012). The main question posed in this research is: how the service creators adapt a service-system design, from theoretical and empirical perspectives, to the operational-level environments of *Shariah* finance organisations in Pakistan? So, the TODA suggests a theoretical design framework for adaptability of systems to environments. However, the TODA does not provide any detail for the service-system's structural constructs, which are necessary for a complete design and contextualisation of the adaptation process. These missing structural constructs are adapted from service-system literature using SDL (Vargo and Lusch, 2004a) as the initial theoretical perspective.

The third reason for using the TODA is because it complements the current planned design approach with a deferred design decision principle. It does not oppose the current planned design approach and considers it necessary but not enough for the complete conceptualisation of adaptable system designs (Patel, 2006, 2008, 2012). Service-system designing is a futuristic activity. The contents of a service design bases on the current observation, exploration and visualisation of designers (Mager, 2008). This approach is purely grounds on the teleological thinking of the designers and does not accommodate emergence (Patel, 2012). The TODA provides insights for the design not just from the teleological thinking of designers but also considers the emergent environments as an important design dimension. The planned designs could not fully reflect real service-systems because the dynamic social world creates unique environments around the service system and force it adapt.

The fourth reason for applying the TODA is the commonalities in conceptualising the phenomenon of system and organisation within both the TODA and service-system literature. Patel (2006) defined organisation as deliberate organised social actions

enacted by the people to achieve predefined purposes. Patel's notion of organisation is the same as the service-system concept (purposive chain of actions) defined by many service scientists (Bitner, Ostrom and Morgan, 2008; Sampson, 2006, 2011; Sangiorgi, 2008; Shostack, 1982). The TODA characterises deliberate organised social actions or organisations as the *complex adaptive system* (Patel, 2011). Service organisations are such complex adaptive and self-adjusting systems where the value contextually emerges (Bentley and Wilsdon, 2003; Patrício *et al.*, 2011; Vargo and Lusch, 2004b). Service-system design has its roots in design (Han, 2010). TODA is a design theory that prescribes a design for adaptive and transformative systems (Nyame-Asiamah, 2013; Ramrattan, 2010). These commonalities in the TODA and service-system literature have not been studied before. This research can establish this relevance and bring fresh insights for both service-system literature and the TODA.

The approach of combining the TODA with service-system constructs is in line with Hooker (2004) who argued that design theories provide a style and level of designing and knowledge about the object of design comes from its own source. Mager (2008) also argued the Design of a service informs the functionality and form of services. This is a scientific habit to combine multiple theories to holistically conceptualise more abstract and theoretically powerful phenomena. As Einstein's unification of theories related to the energy, mass and speed of light resulted in the world's most famous equation $E=mc^{2}$. Combining different theories results in the emergence of new powerful theories and the existing theories become the constructs of the emergent theory (from the newly established and specific perspective).

The next section discusses the SDL's approach to establishing the initial conceptualisation of DSD. This recent and robust service-system conceptualisation is framed within the three design dimensions of the TODA to holistically conceptualise an *adaptable service-system design* within DSD.

3.2.2 Service Dominant Logic

In chapter 2, section 2.2.2 (i), the service dominant logic (SDL) is discussed in detail. This section recalls its salient features, which are used for the initial conceptualisation of a service system. SDL is introduced by Vargo and Lusch (2004a and 2004b) who challenged the conventional product-dominant paradigm and considered the four characteristics of service (intangibility, inseparability, heterogeneity and perishability) as four myths remnant of the goods-dominant paradigm. Their extensive and oft-cited work in the first decade of the twenty-first century has established the SDL to

holistically conceptualise service system (Lusch and Vargo, 2006a and 2006b; Vargo and Akaka, 2012; Vargo and Lusch, 2004a, 2004b; 2008a, 2008b and 2011; Vargo, Maglio and Akaka, 2008; Vargo and Morgan, 2005; Vargo *et al.,* 2010). SDL breaks the conventional perspective of visualising service as produced by the organisation and consumed by the customer. Rather they both co-create and consume the service and value within context.

SDL is more inclined towards conceptualising the collaborative processes among the service organisation, customer and other partners and how these collaborations cause contextual value creation (Lusch and Vargo, 2006a, 2006b; Vargo and Lusch, 2004a). So from this perspective service organisation, customer and aiding parties create a *service community,* who co-create value in the context/use where the service creators apply the designs to create real services.

SDL considers the service as dominant and focus state within economic and social exchanges (Vargo and Lusch, 2008a). This logic defines a service as the application of competences and is a process rather than a bundle of outputs, which normally come in mind with the term services (Vargo and Lusch, 2008a). The core of a service is the operant resource (competence) which uses operand resource (physical) as channel through which the customer experience the service and value. Such value in a service is contextually set by the entity which realises the benefit or value. This means that value is not intrinsic to a service rather it emerges within the use and is perceived and defined by the user (Vargo, Lusch and Akaka, 2010). Thus in this sense, the context or practice environment is core to a service system within which a service co-creators integrates resources through performances (actions) which cause contextual value creation. Since, value contextually arises hence the behaviour and pattern of the involved service system as well.

The current developments in SDL are focused on conceptualising the service system as an ecosystem in which the subsystems or agents within the system adapt to the ecosystem's environment (Chandler and Vargo, 2011; Vargo and Lusch, 2011). In this sense, the service participants (systems of various sizes) and their resources create an ecosystem, in the same way as living and non-living components make natural ecosystems (Cabiddu, Lui and Piccoli, 2013).

SDL is more robust than conventional goods-dominant logic of conceptualising the service-systems' constructs. It reflects the real developments within current service-

systems in practice. In this study, the SDL has helped with the initial conceptualisation of the service-systems' constructs, which are then labelled, extended and supported through relevant themes in the literature as discussed and justified in the coming section.

SDL is applied for four reasons. Firstly, it acknowledges value co-creation by the customer, service organisation and other network partners. This concept fits very well in the current real service-systems. For instance, bank, client and aiding parties such as visa and ATM network partners integrate resources to enable a cash depository and withdrawal service system and thus co-create value. Customers are also the service and value co-creators because they contribute actions and resources such as depositing money, visiting bank and completing forms. Supporting systems such as credit evaluators and regulators perform actions and use resources to complete financing services and create value. Secondly, the SDL perspective is theoretically more abstract thus incorporates other service-system perspectives without creating contradictions with them (e.g., Maglio *et al.*, 2009; Sampson, 2010; Sampson and Froehle, 2006).

Thirdly, SDL gives more weight to intangible resources, such as competencies and expertise, which create value by creating an impact on tangible resources. Tangible resources such as business premises and technology are value-carrying channels and are well researched goods dominant paradigm. This concept reflects in the current status of actual service-systems. For instance in the depository service, the personnel's competencies and skills make the depositor's money more valuable in terms of enhancing security, ease in transaction and management. The currency and debit/credit cards do not have intrinsic value, but what it renders (service) has value for the customer. This nature of a real service-system suggests that both people and physical resources in a system render services (Vargo and Lusch, 2004a and 2004b). This focus on service is aimed to cover the deficiency caused by the greater emphasise of SFS models on tangible assets and transactions.

Finally, the current SDL development towards the conceptualisation of an ecosystem partially contributes to the research aim as it is argued that a service system behaves like an ecosystem and it is emergent, self-adapting and adjusting to its environment. This research further extends this argument by uncovering the detailed *underlying adaptation process* also shows its place within a holistic service-system design

3.3 DSD Model

The proposed DSD model conceptualises an adaptable service-system design through seven constructs. Figure 3.1 illustrates the DSD and Figure 3.2 describes the constructs and its key theoretical sources. The first and second constructs describe a designing style for the system and the other five constructs describe the basic building blocks of a service-system. The DSD argues that i) the service creators apply multiple planned designs within operational-level environments to create real services; ii) the emergent environments *affect* the planned designs in response to which the situated service creators adapt the designs to incorporate contextual requirements; iii) service organisation personnel, customer and other aiding parties co-create a service by forming a service community; iv) the service co-creators integrate roles which inform their actions in a service; (v) the service co-creators integrate resources particularly their usufructs; (vi) the service co-creators apply rules to create a control within the system; and vii) they co-create value (benefits) in context.

Strategic level   ## Operational level

C2a Environment
- Emergence (new pattern)

Service system

C4 Roles and actions
- Personnel's roles
- Customer's roles
- Aiding parties' roles

C5 Resources and usufructs
- Operant (competencies and expertise)
- Operand (Finance and physical resources)

C6 Rules and control
- *Shariah*'s rules
- Industry's rules
- Organisation's rules
- Aiding parties and customers' rules

C1 Planned design
- Partnership models
- Sale models
- Agency models
- Others: Lease, endowment and gift models.

C3 Service co-creators
- Organisation
- Customer
- Aiding parties

C7 Value-in-context
- Benefits

C2b Deferred design
- Adaptation (response)

Figure 3.1: Deferred service-system design (DSD) model – Phase I

Constructs (C)	Key sources (background theory)
C1: Planned design The service creators apply planned designs (SFS models) to create a service	(Patel, 2006, 2010 and 2012)
C2 : Emergence and deferred design (C2a) The emergent environment (specific situation of a service case) **affects** the planned designs to adapt (C2b) in response to which the situated service creators **adapt** the planned designs	(Patel, 2006, 2010 and 2012)
C3: Service co-creators The service organisation (personnel), customer and aiding parties co-create a service by forming a **service community**	(Chandler and Vargo, 2011; Han, 2010; Lusch and Vargo, 2006a; Sampson, 2010; Sangiorgi, 2008; Vargo and Lusch, 2011)
C4: Roles and actions The service creators assume **roles**, which inform their **actions** during the service creation	(Bitner, Ostrom and Morgan, 2008; Kotler, 2001; Sampson, 2010; Sangiorgi, 2008; Shostack, 1982; Zeithaml and Bitner, 2003)
C5: Resources and usufructs The service creators integrate **resources (operant and operand)**, particularly their **usufructs**, to create a service	(Grönroos, 2000; Lusch and Vargo, 2006a, 2006b; Sampson, 2010; Sangiorgi, 2008; Shostack, 1982; Vargo and Lusch, 2004a and 2004b; Vargo and Morgan, 2005)
C6: Rules and control The service creators apply the rules of *Shariah*, regulators, organisation, aiding parties and customers, to create a distributed **control**	(Sangiorgi, 2008; Mattoo and Sauve, 2003; Usmani, 2002a, 2002b; Ayub, 2008)
C7: Value-in-context The service creators create **value-in-context (benefits)**	(Chandler and Vargo, 2011; Lusch and Vargo, 2006a; Mars, Bronstein and Lusch, 2012; Vargo and Lusch, 2004a; Vargo, Maglio and Akaka, 2008)

Figure 3.2: DSD's constructs – Phase I

The seven DSD's constructs are discussed below.

3.3.1 Planned Design

The first DSD construct is planned design which maintains that the service creators apply different types of planned designs within multiple operational-level environments to create services.

Humans as rational beings think and teleologicaly plan actions before their real execution so to achieve purposes (Patel, 2012). Simon (1996) called this phenomenon as bounded rationality, where humans rationally plan purposive actions, which are restricted by their objective orientation. Service designers, normally located within a product development department, develop planned designs (packages) to be implemented by multiple and different service creators so that they can achieve their purposes of service and value creation in different time-spaces. In this sense, a planned design is a design artefact the consequences (i.e. real service) of which occur in the future (Pandza and Thorpe, 2010). A planned design prescribes a service plan to be implemented by different service creators situated in different operational environments (different in time-space). The service packages available with a commercial bank at branch level are the examples of various planned designs which uniquely package the usufructs of a bank's system.

Patel (2006 and 2012) termed such system planning as planned action. "The construct plan action is organisational behaviour devised from some formalism. Each and every thing is specified in advance of its enactment. Planned action prescribes actual actions as predetermined moves" (Patel, 2006, p. 73). The planned action assumes stable organisational structure and processes (Patel, 2006; Ramrattan, Ramrattan and Patel, 2009). A planned design specifies the standardisable service components and assumes uniform environments within multiple and different practice contexts.

According to Mahdjoubi (2003) such a planned design is related to the rational systematic mental processes that naturally occur prior to actual actions. These planned designs are descriptions, prescriptions and illustrations that model multiple futuristic realities (real services). A planned design contains the intended integration of service-system's components. The real embodiment of the service-system components emerges during the actual service encounters in which multiple systems emerge and uniquely integrate their resources to create service and value (Bitner, Ostrom and Morgan, 2008; Shostack, 1982). Chandler and Vargo (2011, p. 43) argued that "multiple systems create meta-layer of context or ecosystems in which they create value. These organisational ecosystems are in most cases emergent. The exception is the growing trend of organisations trying to do more system-wide design and planning at various scales." The current service packaging is the attempt of the organisations to plan and design an emergent service-system.

Current SFS models (e.g., partnerships, sales, lease, agency and endowment models), in theory, are planned designs because they prescribe standard series or sequential actions to be enacted within multiple service practice environments by the personnel and customers in different locations and times.

The planned designs (SFS models) are the *Shariah*-compliant and *Shariah*-based structures of partnership, sale, lease, agency and endowment. These structures are conceptualised as models in this research. These concepts can be represented as contracts from the jurisprudence or legal perspective (e.g., Usmani, 2002a). This research has adopted the term 'model' instead of 'contract' to conceptualise these structures as depictions or planned designs of real service systems (chapter 2, section 2.2.6). This approach agrees with Ahmed (2011a), who used the terms 'one-tier' and 'two-tier' *Mudarabah* (partnership) models to depict holistic Islamic banking (service) systems. Pease and Bull (2000, p. 45) also supported this approach by stating that in science a model is used as a "substitute or stand-in for what you are actually studying

or trying to predict". SFS models are *Shariah*-compliant structures of business, and these structures are conceptualised as substitutes for real service systems. The SFS models are holistically represented within the planned-design construct of the proposed DSD model (see chapter 3).

The planned designs are communicated by the central designers to the actual local service creators in policy manuals, illustrated as brochures, presenters and orally in training sessions. A planned design is bases on the current knowledge and the information forecasts of real service encounters. The current knowledge and forecasts are used by the central designers to visualise, formulate and choreograph solutions for the futuristic service problems and systems (Mager, 2008). In such planned-design activity, the designers observe and interpret service-systems' requirements and their behavioural patterns and transform these to futuristic service-systems (Mager, 2008).

In SFS, the practitioners apply the SFS models as planned designs. A model is the depiction or representation of real or a construction plan (Kühne, 2004). The planned SFS models are embed in a service product by the product development department or team (Ahmed, 2011a). In this research the main SFS models are grouped into four categories: partnerships models, sale models, agency models, and others: lease, endowment and gift models, which are discussed in the literature (chapter 2, section 2.2.6) and are considered as planned designs use by the service creators to create real services.

Recognising the practice of applying planned designs within actual service creation, the first fundamental proposition of the DSD is set as *planned design*, which maintains that the service creators apply planned designs to create the real services. This proposition is aimed to understand how service creators apply these planned designs to create contextual services.

3.3.2 Adaptation: Emergence and Deferred Design

The second DSD construct states that *the emergent environments affect the planned design in response to which the situated service creators (at operational-level) adapt the planned design*.

Emergence is "the arising of novel and coherent structures, patterns, and properties during the process of self-organization in complex systems" (Goldstein, 1999, p. 49). Emergence in a system is the appearance of human events that remains out of the "rational analysis and therefore off-design" (Patel, 2006, p. 116). Mckeown (2011, p.

12) described the emergence as: "for the foreseeable future, the future will be unforeseeable, you can be fairly certain that there will be uncertainty. You can be confident that events will overtake your plans, and that the actions of others will require responses". Emergence is a novel configuration or form that arises through interactions of people within systems and organisations (Patel, 2006 and 2009).

Service systems consist of human beings and their interactions with resources for value creation (Parker and Heapy, 2006). Human beings and substances are complex systems and emerge with different shapes because of these unpredictable interactions. Shostack (1982) used the molecular metaphor to conceptualise the emergence in service system. She argued that a service system is like a molecule, in which unique bonds among the atoms results in the emergence of novel substances (novel services). In the service system, there are tangible and intangible elements and the unique bonds or interactions among them. These interactions between tangible and intangible elements cause a service system to be emergent. The living and non-living substances create a unique ecosystem, which is continuously adapting and self-adjusting with ecosystem' environment (Vargo and Lusch, 2011).

The service co-creating systems make a part of more abstract social and economic systems, forcing it to adapt (Sangiorgi, 2008, 2009). Similarly, the physical surroundings of service practices create a servicescape, which affects the service creators' behaviours which they uniquely reflect in their service actions (Bitner, 1992). These internal and external environments holistically encourage a service system to adapt (Goldstein *et al.*, 2002). The emergent environments affect a planned design thus the need for adaptation arises (Patel, 2012). As a result, a planned design first fits within the service organisation context and then within the broad external environment (Bullinger, 2003). Thomke (2003, p. 71) found that real "service is tailored to individual buyers at point of purchase" because of the contextual factors. The planned-design activity occurs ahead of the real services, so the planned design will logically be short of real service because of human teleological limitations and the emergent nature of actual service encounters (Ullah and Patel, 2011b).

The deferred design principle (Patel, 2012) states that the situated agents should be able to make specifications and adaptations within a planned design. This principle can enable a planned design to incorporate contextual requirements. Emergent environments and corresponding deferred design adaptation can result in continuous growth within a system. Incorporating this deferred design can enhance the design

adaptation capability of service creators and can enhance value for all participants because the service will emerge as per the actual requirements in each service case. Vargo, Maglio and Akaka (2008) argued that value in the service system only arises when the service systems adapt to each other's requirements within context.

The service system should have a mechanism or process to adapt the planned design so to create the required contextual value. Such deferred or situated adaptation process will reflect the real service environment within a service design because the design will improve with improvements in the real system. As Spohrer *et al.* (2008, p. 7) argued, real service-systems are "open systems capable of improving the state of another system through sharing or applying its resources ... and capable of improving its own state by acquiring external resources". Vargo and Lusch (2011) and Cabiddu, Lui and Piccoli (2013) also maintained that the service systems are emergent value co-creating networks. Ahmed (2006) also argued that the documents of SFS products should have a space in which the detail of each transaction can be added, so that these can be customised.

Acknowledging this adaptation to operational-level environment, the second construct that the DSD aims to further explore, is the *emergence and deferred design.* This construct uphold that the operational-level environment affect the planned design in response to which the situated service creators take deferred actions to adapt the planned designs.

3.3.3 Service Co-creators

The third DSD construct describes the service co-creators. The service organisation, customer and aiding parties interact to co-create the service. A unique service-system emerges when various service systems integrate resources and create a system of systems (Maglio *et al.,* 2009; Sampson and Froehle, 2006). These service systems range from an individual person to the whole economy (Maglio *et al.*, 2009) and they can be in any number in different service encounters (service episodes). A large corporation when availing a banking service actually involves numerous individuals from both bank and the corporate entity. But in a case of an individual household, the number of participants is normally lower. The current ecosystem conceptualisation considers the service creators as a community because they adapt and co-create value for each other and thus enhance their survivability like in natural ecosystems (e.g., Vargo, 2013; Lusch, Maglio and Akaka, 2008). In this service community, there are two focal service creators: the service organisation (personnel) and the customer.

However, aiding parties or supporting systems also contribute to the system (Sampson, 2012).

a) Service Organisation

The first and core service creator is the service organisation. A service organisation creates service and value for and with customers (Sampson, 2010; Vargo and Lusch, 2004a). A service organisation divides the labour among the service personnel to create a service (Sangiorgi, 2008). During the service creation, the service personnel integrate organisational resources with the customer's and aiding parties' resources to create a service process (Sampson, 2010). Shostack (1982) divided the service organisation personnel into back-office personnel and front-office personnel. In the back office, the personnel have more control over the service process, whereas in the front office the personnel interact with the customer and aiding systems so they have a loose control over the service creation process (Case and Tansk, 1983; Sampson, 2010, 2011). In SFS models, the service organisations are the Islamic commercial banks, *Takaful* companies, Islamic investment banks (e.g., Ariff and Iqbal, 2011; Yousfi, 2013), leasing companies, *Mudarabah* companies and asset management firms (SECP, 2013).

b) Customer

The customer is part of the service community because he integrates his resources and determines the value during the service creation (Vargo and Lusch, 2004a). The customer may include a client, decision-maker, consumer or a representative of an actual client (e.g., the manager of a client company). The customer can be an individual or an entity (Sampson and Foeale, 2006; Sampson, 2001). Customers mostly determine the actual service requirements in a service system (Bitner, Ostrom and Morgan, 2008; Vargo *et al.,* 2010). During service creation, a customer also performs actions and uses his resources to interact with the service organisation and aiding systems. Therefore, the customer significantly contributes to a service system and value creation (Sampson, 2010 and 2012). These contributions include resources such as money, information and even the customer himself (Sampson and Froehle, 2006; Sampson, 2010 and 2011).

In a banking depository service, a customer performs actions such as visiting the bank and ATM machines. He also contributes resources such as money, which become part of the finance system. In *Musharikah*-based SFS, a customer integrates his resources with the organisation's resources to co-create and share value (profits). Similarly, in *Mudarabah*-based inventory finance a customer contributes actions to negotiate the

financing, prepare documents, pay instalments and make arrangements related to the supply of goods (Usmani, 2002b). The concept of self-service is the recognition of the customer's growing contribution in the service creation.

c) Aiding Parties

The service organisation and customer outsource many parts of the service to aiding parties. Aiding parties are the support systems that integrate its resources with the organisation's and customer's resources to complete a service (Bitner, Ostrom and Morgan, 2008; Sampson, 2012). These contributions can be peripheral value-adding or can be essential core parts of the service (Sawhney, Balasubramanian and Krishnan, 2004). Smart, Maddern and Maull (2009) argued that the effective service delivery to customers is enabled by the internal and external supporting systems.

In a debit card service, the visa system adds its service with the core banking service to enhance its value for the service community. Similarly, in auto finance, the insurance companies add value by arranging insurance coverage for the financed auto. Though current SFS models acknowledge the contributions of some of the aiding parties such as suppliers of goods in *Bai* (sale) models (Usmani, 2002a), they do not offer enough detail of all the supporting parties in a service system. For instance the theoretical *Takaful* models do not offer any detail about the contributions of outside doctors (who evaluate the medical tests and medical history of the clients), the banks (who manage the cash flow in the *Takaful* process) and the couriers (who establish communication between the parties). In actual SFS practice, the service creators use separate SFS models to design aiding parties' contributions.

So, the third DSD construct is captioned as *service co-creators*, which state *that the service organisation, customer and aiding parties co-create a service.*

3.3.4 Roles and Actions

The fourth DSD construct maintains that *service creators assume roles which inform their actions* in a service system. Actions and performances are the core of a service system (Grönroos, 2000; Sampson, 2010; Shostack, 1982; Zeithaml and Bitner, 2003). Service-system designers accumulate various similar and related actions and prescribe these in roles. The division of labour principle applies here because every service cocreator performs specialised actions (Sangiorgi, 2008).

The designers distribute the roles among the service organisation (personnel), customer and aiding parties. In health service-systems, the patient, doctor, nurse and pharmacist have particular roles that inform their respective actions in specific service encounters (e.g., admitting a patient). The job descriptions or personas outline the roles and actions. The account opening officer, the credit evaluator and the cashier are various roles assumed by individuals within a banking system. In Islamic auto leasing, the bank assumes the role of lessor and the customer becomes a lessee (e.g., Iqbal and Mirakhor, 2008; Jackson-Moore, 2009; Usmani, 2002a, 2002b). The aiding parties also assume roles and actions and integrate these with service personnel to establish a service system (Bitner, Ostrom and Morgan, 2008; Sangiorgi, 2008). Roles are just like characters in a film describing what each actor will do during film making.

Service creators or systems can range from individuals to economies (Maglio *et al.,* 2009). However, the roles at concrete pragmatic level are always assumed by the individuals, commonly named actors (Vargo, Lusch and Akaka, 2010). Broad systems divide their roles until they reach concrete practicable actions. A service creator can have different and multiple roles in a single service-system or can have a single role in multiple service-systems. The roles in general can be mutually inclusive. Each role puts a different perspective on the same individual or entity. As Vargo and Lusch (2011, p. 186) argued, *"the CEO of a firm, the head of a household, a carpooling parent, an individual grocery shopper, a politician, etc. are not fundamentally different kinds of entities; they are all just people going about the business of their daily lives, and trying to improve them".* The roles in a service system distribute the responsibilities to efficiently and effectively create the services (Hammer, 2002).

Enactment of roles results in actions, which are the intangible elements in a service system through which the participants interact with tangible resources (Shostack, 1982). Service creators apply their competencies through actions to create an impact on the physical resources (Vargo and Lusch, 2004a; Vargo, Lusch and Morgan, 2006). In phone banking, both service personnel and customer take actions to create an impact on the resources such as phones, mobile phone network, accounts system and currency. Service creators take temporal actions that create a service-creation process (Grönroos, 2000; Mager, 2009; Sampson, 2010). These sequential actions on a timeline normally lead the service creators to achieve their objective of value creation (Vargo and Lusch, 2004a). Service actions do not always occur in a sequence but multiple service creators

can operate concurrently and can create different parts for a service case at the same time (Sangiorgi, 2004).

Sometimes the service creators take actions in response to each other's actions. In this process they inform each other's actions. Imagine the money transfer service system in which a customer takes action by visiting the bank or accessing his bank account online. He provides the required information for the money transfer service. In response to the customer's actions, the bank's personnel take action to actually transfer the money. The customer's actions inform the personnel's actions related to the different parameters of the service system such as the amount, the account and the location where the money is to be transferred. The fourth DSD construct is the *roles and actions* which state that the *service co-creators integrate roles to inform their actions in a service system.*

3.3.5 Resources and Usufructs

The fifth DSD construct describes the usage of resources in a service system. The service creators integrate resources, particularly its usufructs, to create a service.

These resources include operant resources (competencies), which the service creators apply to the operand (physical resources) to enable value creation (Vargo and Lusch, 2008). In online banking, the skills for using technology are operant resources whereas the technology is an operand resource. From the service perspective, the operant or intangible resources are the core of a service system because they create an impact on operand physical resources, which cause value creation (Vargo and Lusch, 2004a). A fund manager uses his expertise and competencies (operant resources) to invest customers' money (opened resource) thus creating an impact (profit making). The medical services are worthy mainly because of the doctors' competence and expertise, which they apply to the physical resources such as hospital premises and surgery instruments. In a commercial banking service, the competencies possessed by the personnel, customer and aiding parties are the operant resources spread over in a service ecosystem. The integration of these specialised resources creates synergy for value creation.

The service community integrates the intangible resources with physical resources to establish a service system (Sampson and Froehle, 2006). The operand physical resources exist in a banking service system can be the debit/credit cards, cheques, currency, premises, banking networks and online facilities. These create a holistic

physical locale or servicescape which affect the way the service creators behave (Bitner, 1992). The service creators use these physical artefacts or operands in their surroundings to facilitate their actions within a service system (Sangiorgi, 2004). The customer uses an ATM card and machine to withdraw currency and the personnel use computer systems and bank premises. Physical resources are the tangible elements and the touchpoints in a service system through which the service creators experience a service (Han, 2010; Shostack, 1982). Parker and Heapy (2006, p. 27) maintained that "emotionally charged interactions with public services happen between four walls where furniture, fixtures, fittings and the design of information play a significant role in shaping people's experiences".

Vargo and Lusch (2011, p. 184) indicated that the service creators obtain the resources "from private sources (e.g., self, friends, family), market-facing source-creators (i.e., from other entities, through barter or economic exchange), or from public sources (i.e. collective access from communal and governmental sources), or, most likely, through the service provision of all of these, often simultaneously". Service creators are the resource integrators because they mix up their resources to come with service and value. During the service creation, both benefactor and beneficiary take part in this resource integration and also create new resources in the process (Vargo and Akaka, 2012). In the banking service, a bank and its customer jointly create a cheque, which in itself becomes a new resource.

In SFS, the service organisation and customer integrate expertise and financial resources to create economic value compliant with *Shariah* (Iqbal and Mirakhor, 2008; Obaidullah, 2005; Usmani, 2002a). Through the application of the *Murabahah*, the service creators reciprocally exchange financial and physical resources to create a *Shariah*-compliant value through trade in inventory (Jackson-Moore, 2009).

The service co-creators mostly contribute the usage of resources and normally do not result in transfer of ownership (Kotler, 2001). Only the usage of the resource becomes part of the service. In SFS, Usmani (2002) termed this as the *usufructs* of resources, which means a legal right of use or usage. The experts in service systems do not transfer the ownership of their expertise and competencies and the commercial banks do not transfer the ownership of their ATM machines or online banking networks. The usufructs of these resources become the service. However, there are exceptions to this, such as the ownership of money transfers in the banking service or the ownership of goods in sales-based working capital finance (*Murabahah*) (e.g., Ahmed, 2011a;

Usmani, 2002a). Similarly, the ownership of food items transferred to customers in a restaurant service-system. These resources and its usufructs in a service system help to establish the service streams (Chandler and Vargo, 2011).

So, the fifth DSD construct is set as *resources and usufructs*, which maintains that *the service creators integrate resources, particularly their usufructs, to create a service*.

3.3.6 Rules and Control

The sixth DSD construct states that service creators apply rules to create a control in the service system. A rule is "an established standard, guide, or regulation; a principle or regulation set up by authority, prescribing or directing action or forbearance" (The Law dictionary, 2013). Sangiorgi (2008) argued that the service creators apply formal and informal rules within a service activity system. The rules specify dos and don'ts within a service system and they apply to all components of the system. For instance who can and cannot participate, what actions are allowed and what are not, similarly what resources can be used and what cannot and what value can be created and what not.

Service designers outline the rules to be applied to create control for the service creators. For instance, the application form for a depository service comes with a set of terms and conditions to be adhered to while creating an actual service. Stephen Vargo, the co-author of SDL, argued that the service-system's conceptualisations need to explore further the rules or institutions within service system (CTF, 2011). There are different levels of rules. At abstract level, the international standards and industry regulators apply their rules. For instance the central bank implements the regulatory laws and economic and monetary policies, which affect the services offer by the banks in the country. Financial service is among the most regulated industries because of the public interest and the amount of risk involved in it. Mattoo and Sauve (2003) argued that compared to the trade in goods, the services are more affected by domestic regulations. Similarly, the service organisations apply its own organisation service policy and rules into the service. These rules are mostly related to the management of their part in the service system.

Discussions on the application of rules are dominant in SFS theory, where alongside the regulators' and organisation's rules, the service creators also apply *Shariah* rules (Ayub, 2008; Iqbal and Mirakhor, 2008; Usmani, 2002b). These rules are compulsory and put restrictions on specified doings and resources to enable *Shariah* compliance. This compliance may be in the service structure, in service substance or in both

(Ahmed, 2011a). They rules applied in SFS are either explicitly stated within *Quran* or *Sunnah (Nus)* derived by the *Shariah* scholars of time-space basing on the objectives of *Shariah* (Laldin and Furqani, 2013).

Sangiorgi (2004) argued that the service creators apply formal and informal rules within the whole activity system. That means that every participant within a service does follow its own rules as well as other participants' rules. Kahn and Tallec (2013) recently gamified the customer journey and tried to show how all personas within a service system work within defined imaginary rules. In practice of SFS for instance, along with the rules of *Shariah*'s, regulator's and bank's rules, the actual service also take into account the rules of the aiding parties (e.g., courier company, interbank network companies, and cash carriage company).

The sixth DSD construct set to investigate is *rules and control*, which maintain *that service creators apply rules to create a control within a service system.*

3.3.7 Value-in-context

The seventh and final DSD construct is value-in-context. The purpose of every service system is to create value, which means to improve the well-being of the service co-creators and the society in general (Grönroos, 2008; Sampson, 2012). A service-system design includes value propositions to be realised in multiple service encounters. Value or benefit creation is the objective of subjects within a service system (Sangiorgi, 2008). Finance service-systems create values and benefits through savings, investments, finances, leases and financial coverage. Service organisations and supporting networks co-create value with and for the customer (Vargo and Lusch, 2008a; Vargo, Maglio and Akaka, 2008). In SFS these values serve as needs and purposes of service products and can be categorised as necessities, complementary and luxuries (Ahmed, 2011a).

Value can be conceptualise in two ways i.e. value-in-exchange and value-in-use (Vargo and Morgan, 2005). These are different perspectives to conceptualised where the value reside. Value-in-exchange means that the organisation creates intrinsic and embedded value in products (goods and services), which can be exchanged within the economic transaction of goods and services (Vargo and Lusch, 2004b; Vargo and Morgan, 2005). From this perspective value assume to be an intrinsic part of outputs. Value-in-exchange can occur in physical goods because the goods can store and retain the embedded value.

Value-in-use arises during the service creation (Vargo and Lusch, 2004b; Vargo and Morgan, 2005). A service is perishable and is produced and consumed simultaneously, therefore, they cannot store intrinsic value (Han, 2010; Palmar and Cole, 2005). Adam Smith in "The Wealth of Nations" argued that services are intangible and do not have the capacity to store value. Goods on the other hand can store the value, which can be used in future (Smith, 1776/1835 in Vargo, Lusch and Morgan, 2006, p. 30). Service systems are needed to focus on value-in-use, which emerges during actual service-creation processes and is context specific (Vargo and Lusch, 2004b; Vargo and Morgan, 2005).   The concept of value-in-use is now further extended to value-in-context in service ecosystem debates. Vargo, Maglio and Akaka (2008, p. 146) said that "the service systems are dynamic configurations of resources, in which the value is co-created and evaluated as value-in-context" (Vargo, Lusch and Akaka, 2010, p. 138). Value-in-context not just conceptualise that value emerge in use but also argue that it is affected by the surroundings (Lusch, 2013). For instance, the benefit of having a car *Ijarah* may be highly valued by a customer, if his context (e.g., a change in customer's family) forces him to have a car.

The finance service packages are the service offerings or planned designs. They are only a list of documents, charts and brochures and do not contain intrinsic service value, therefore they are not service products. They are only design artefacts to be applied for actual service and value creation. The actual service and value is only realised when the service organisations co-create the real service with the customer and aiding parties. The service co-creators as individuals or groups (families, firms and nations) co-create value during the service creation and consumption (Vargo, Maglio and Akaka. 2008). In the auto finance service, the service co-creators integrate actions and resources to make the finance possible: they co-create and consume the overall value (e.g., benefits to customer, bank, and aiding parties). Since multiple participants co-create the service, therefore every participant has his or her own value proposition (receiving and giving) in the context of overall service value propositions. The SFS-system offers value propositions through *Shariah*-compliant savings, investments, finances, financial coverage and leases.

Every service system contains value propositions. Such "creation of value is the core purpose and central process of economic exchange" (Vargo, Maglio and Akaka, 2008, p. 145). Current organisations are deliberate and purposeful actions (Patel, 2006 and 2012). The robust service designs actually develop value congruence among service

creators so that the service creators' efforts remain mono-directed and hence effective in value creation. Recently, Mars, Bronstein and Lusch (2012) took an analogy from the natural ecosystems to think of how the value creation works in context. They argued that agents in a system can come up with plus-plus, plus-zero, plus-minus and minus-minus interactions. In plus-plus, the co-creators create benefits for each other; in plus-zero one party unilaterally creates value for the other; in plus-minus, one party creates benefits for the other and the other creates damage; and finally, in minus-minus interactions, the agents harm each other. If we consider this ecosystem analogy for a service system then all service co-creators are bound within the rules to create plus-plus interactions. However, individual service encounters could be plus-zero, plus-minus, minus-minus. For instance, in a service episode in which the customer pays money, it creates a plus-minus situation if we consider it as a stand-alone service episode. However, in the larger context the organisation balances the value by creating alternative benefits for the customer.

 The seventh and final DSD construct to be evaluated in empirical studies is the *value co-creation* within context.

3.4 Chapter Summary

In this chapter, the DSD is conceptualised through service-system literature, SFS literature, TODA and some empirical examples. The chapter begins with introduction of how the scholars within service-system design develop frameworks and models to describe and represent real service systems and their designs, to justify the approach used for developing the pre-empirical DSD.

The initial theoretical perspective, based on TODA and SDL, is set to frame and squeeze the wider literature into seven pre-empirical constructs. Seven DSD constructs are outlined and discussed within the relevant threads of literature. The conceptualisation of the DSD was continuous. It has been rigorously developed and revised in different phases of the research. Different versions and parts of the DSD were presented and published within symposiums, workshops, conferences and journals (see appendix 1). The next chapter presents the detailed research methodology that is designed and employed to empirically evaluate and further extend the DSD.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 Introduction

This chapter discusses, in detail, the overall journey of how this research is undertaken, starting with the ontological and epistemological stances of the researcher to the detailed research steps undertaken to achieve the four objectives set for this study. Discussion is started with research paradigms of positivism, constructivism and pragmatism. A pragmatic approach is adopted and justified. Pragmatism inhabits both positivistic and constructivist beliefs of theory evaluation and theory building by giving a greater focus to the research problem. Through pragmatism, the researcher has outlined three epistemological roles for himself. These roles are i) Developer of the DSD model (conceptualisation) ii) evaluator of the DSD model (data collection and analysis) and iii) contributor to theory and practice (discussions and conclusions).

A qualitative approach is adopted and justified for this research. A multiple case study strategy is designed and justified to evaluate and theorise the model. The number of cases, unit of analysis, study protocols, data collection methods (focus group discussions, in-depth narrative interviews, service visualisations and documents) and data analysis and reporting methods are explained and justified in detail. The research quality is ensured through principles of validity, reliability and practice relevance/utility. For ethical considerations, the ethical principles adopted by Brunel University are applied.

4.2 Research Paradigms

The methodological choices of a researcher need to be guided by a specific scientific research paradigm. The "paradigms are overall conceptual frameworks within which some researchers work, that is, a paradigm is a world-view" (Healy and Perry, 2000, p. 118). "A paradigm shapes the formulation of theoretical generalisations, focuses data gathering, and influences the selection of research procedures and projects" (Lovelock and Gummesson, 2004, p. 21). The paradigms such as positivism, constructivism and pragmatism are perspectives established by the core beliefs shared by a school or same-thinking researchers. The research paradigm primarily establishes assumptions about the nature of reality (ontology) and how the knowledge about the reality can be obtained (epistemology).

A research paradigm formulates a set of researchers' beliefs and assumptions about some aspects of the world and the nature of knowledge (Collis and Hussey, 2003; Oates, 2006). The ontological position reflects researchers' assumptions and beliefs about the nature of the world in general and the object of study in particular (Becker and Niehaves, 2007). Ontology is the science or analysis of what is, which means "the kinds and structures of objects, properties, events, processes and relations in every area of reality" (Smith and Welty, 2001, p. iii). Epistemology is the science and analysis related to the understanding of how human beings cognise (Becker and Niehaves, 2007). Epistemology addresses the question of how a person can reach a true cognition. Both ontological and epistemological assumptions establish a paradigm: "set of basic beliefs (or metaphysics) that deals with ultimate or first principles" (Guba and Lincoln, 1994, p. 107). These abstract principles establish worldview of a researcher about the world around him, his place within it and the range of possible relationships (Guba and Lincoln, 1994). Three research paradigms of positivism, constructivism and pragmatism are discussed below to situate an appropriate mind set before outlining the detailed research design.

4.2.1 Positivism

Positivism assumes that reality is independent and universal. A positivist researcher remains neutral and objective in relation to the object's reality under study (Collis and Hussey, 2003; Easterby-Smith, Thorpe and Jackson, 2008; Robson, 2002 and 2011). To obtain knowledge about the object, a positivist prefers experimental methods to test some pre-stated hypotheses or observations. This setting leads to deductive argumentation, in which a positivist closes a particular theme into one of two possible outcomes i.e. valid or invalid or in more familiar words acceptance or rejection of hypothesis (Gillham, 2000; Hoepfl, 1997; Saunders, Lewis and Thornhill, 2012). Hypotheses are the testable propositions that describe the differences or relationships between events or concepts (Saunders, Lewis and Thornhill, 2012).

A positivist believes that science starts with the observation raised by the sense organs in an unbiased mind as a belief value. Such observation is then objectively tested for its occurrence under a wide array of conditions. A significant amount of occurrence increases the validity of belief or observation. In such research, the logical structure of the argument in hypotheses is to be establish in such a way that the validity in one observation leads to the invalidity of a counter-observation and vice versa (null and alternative hypothesis). The positivist normally prefers to use quantitative data

collection methods such as questionnaires, counts of experiments and tertiary databases. For analysis purposes, the researcher number or quantify the observations using statistical tools and techniques such as regression, correlations, exploratory factor analysis and structural equation models. To report the results, the researcher use figures, tables and statistical summaries. He generalise the results from sample to population to theorise the findings (Bogdan and Biklen, 1998; Charles, 1995).

4.2.2 Constructivism

"Constructivism or social constructivism (often combined with interpretivism) … is typically an approach to qualitative research" (Creswell, 2013, p. 8). The constructivist believes that reality is subjective and socially constructed by the people in the situation, according to their beliefs and value systems (Andrade, 2009). Constructivist's research values the research participants, contexts and subjective interpretations of reality (Gray, 2004). The constructivist believes that science starts with observations in an individual's mind who values the relevant contexts (Patton, 2002). In contrast to a positivist, a constructivist prefers to use qualitative data to build inductive arguments about a phenomenon (Creswell, 2003; Creswell and Clark, 2007; Saunders, Lewis and Thornhill, 2012). In inductive argumentation, a researcher goes from concrete to abstract and draws more or less probable conclusions about the phenomenon in each theme that arises from the data.

In constructivism, the researchers and observant or participant co-create knowledge about the object or phenomenon. A constructivist researcher derives and explores the phenomenon by interpreting the words and meaning contributed by the participants. Constructivists believe that researchers and participants collectively construct the meaning (Teddlie and Tashakkori, 2010). The constructivist normally uses qualitative data collection methods such as interviews, focus group discussions, documents and observations. Qualitative data is sometimes complemented by surveys and other quantitative data. This order is deemed opposite within positivism (Golafshani, 2003). The constructivist evaluates the data through qualitative-data-analysis techniques such as discourse analysis, hermeneutics cycles and qualitative content analysis to build theories.

4.2.3 Pragmatism

Pragmatism is a research paradigm where the researcher do not stick to any one research belief system and value both theory evaluation and theory development until

they help to address the research problem. A pragmatist gives more value to the research problem and selects the methodological options based on that. "Pragmatist researchers focus on the 'what' and 'how' of the research problem" (Creswell, 2003, p. 11). In this process, a pragmatist first attempts to understand the problem through *what* questions and then goes for methodological options through questions of *how* the knowledge can be obtained by creating solutions models and frameworks for the problems. The pragmatists believe that the knowledge about the real world could be obtained through multiple scientific methods (Mertens, 2005, p. 26).

The research problem and question is centric within pragmatic paradigm and the pragmatist applies all possible approaches to understand and address the problem (Creswell, 2003). A pragmatist chooses the methods which are most likely to provide insights into the question. One of the founders of pragmatism, William James, argued that a pragmatist try to interpret each notion of the phenomenon by focusing on its consequences for the problem (James, 1907/1981).

Slater (2008) came up with the phenomenon of realist pragmatism, which equally values theory and practice consequences while addressing a focal problem. This research value both service systems and design theory with focus on research problem: adaptation process within service-system design. As consequence, this research extends theory as well as produces practice implications. So, the stance taken by this research is more near to the realist pragmatism.

Tashakkori and Teddlie (1998) suggested that it is more appropriate for the researcher to think of the philosophy as a continuum rather than opposite positions. Pure constructivism and pure positivism are the two extremes of theory building and theory testing/evaluation. A Pragmatist focuses on answering the research question (problem) and as a consequence normally builds as well as evaluates theory.

This research takes the realist pragmatist stance to address the focal research problem. Healy and Perry (2000) showed the philosophical continuum base on the criteria of theory building and theory evaluation/testing. Figure 4.1 conceptualises pragmatism as the middle point in the constructivism-positivism continuum. At the middle point of the continuum (pragmatism), this research has adopted, adapted and conceptually linked the focal theories to develop a theoretically and practically important model, to answer to the research question. Within the analysis, the adopted constructs are evaluated

(confirmed) and new constructs are added from the empirical case studies, which results in theory development.
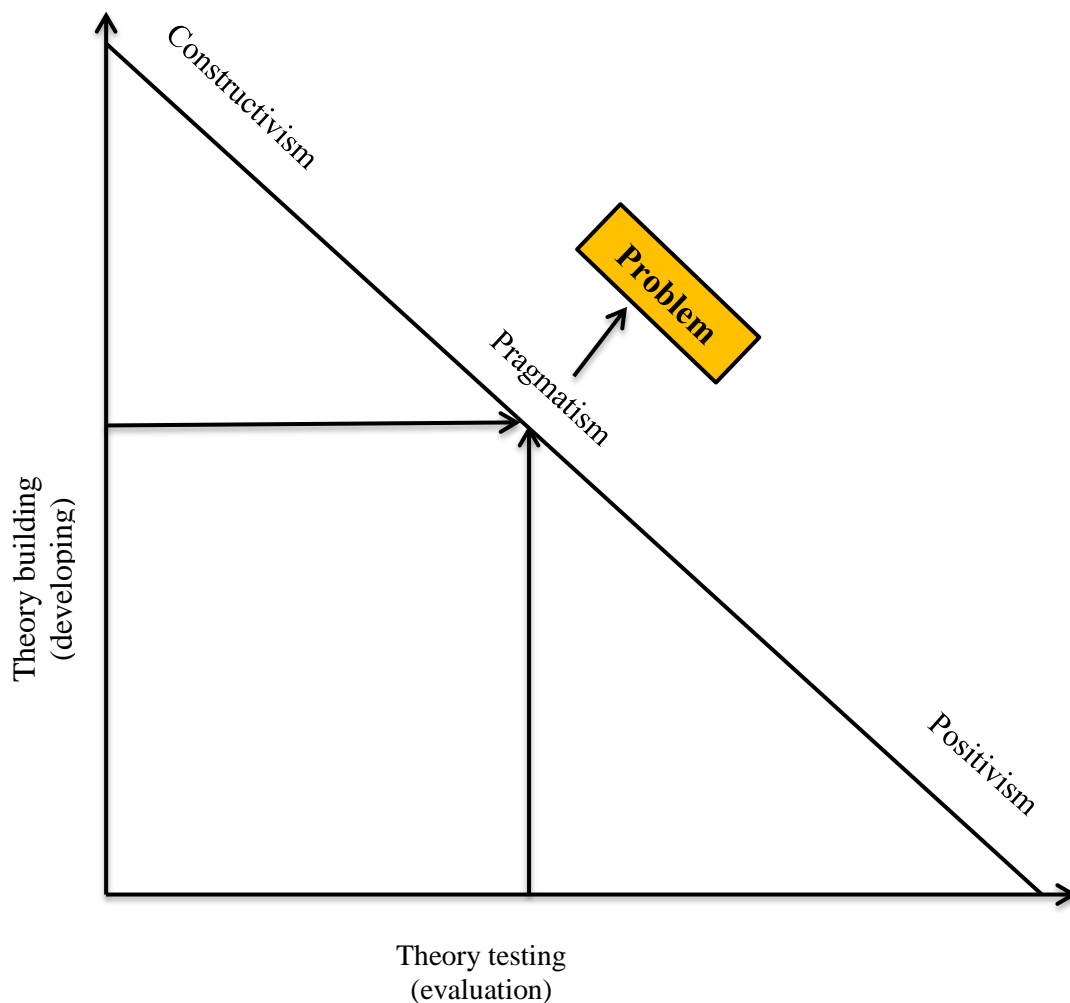
Figure 4.1: The researcher's philosophical stance

Source: Adopted with changes from Healy and Perry (2000, p. 121)

4.2.4 Justification for Adopting Pragmatism

The pragmatism is selected for five reasons. Firstly, the research is motivated by a problem, which is of both theoretical and practical importance. The origin of the problem is service practice as well as theory. The real service encounters or practices occur in multiple practice environments at operational level. There is little theoretical and practical knowledge about adaptable service-system design. As a consequence, pure theoretical development is not the sole aim as a business research should have practical relevance (Van-Aken, 2004, 2005). This research therefore is focusing on the problem and as a consequence, it evaluates as well as develops the theory.

Secondly, the phenomenon of *adaptable service-system design* is emergent and resides within actual service practice. The real service-system design and consequent services cannot be strictly specified as pure socially constructed or universally existing realities. This hybrid and practical nature of service-system design persuaded the researcher to be a pragmatist because some components of the service-system design change even within the same social groups and some remain constant. The phenomenon of service is has generic attributes as well as contextual considerations (e.g., finance, health, retail contexts).

Thirdly, the objectives set for this study require both inductive as well as deductive argumentations to evaluate and develop the focal theories. The focal theories of SDL and the TODA give partial answers to the research questions, so they are prescribed and evaluated within the empirical studies. However, new themes are allowed to emerge which caused extension in DSD and hence the focal theories. These extensions are made through induction and are necessary to fulfil the conceptualisation of the actual adaptation process and its embedment within a service-system design. Saunders, Lewis and Thornhill (2009, p. 127) argued that "not only is it perfectly possible to combine deduction and induction within the same piece of research, but also in our experience it is often advantageous to do so". This approach agrees with Creswell (2003) who argued that a pragmatist focuses on research problem and combines different approaches to research the problem.

Fourthly, service-system design research in general and SFS research in particular are new and practical areas of research. The research paradigms within these contexts are yet to be developed and established. Currently the researchers argue about the economic and practical significance of services and SFS (Ostrom *et al.*, 2010: Bullinger, Fähnrich and Meiren, 2003). The service researchers therefore come with more pragmatic models focused on particular problems (e.g., Shostack, 1982; Sampson, 2012) The current SFS models are also more prescriptive models in nature and are developed based on the practical needs of the SFS industry (e.g., Usmani, 2002a; Ayub, 2008). The *Shariah* scholars and product development departments purposely adapt the SFS models to actually create solution-based service packages. Following these pragmatic trends within the literature, this research has also adopted a pragmatic approach to come up with a solution model. The resulting DSD therefore focally answer the research question and as a consequence both evaluate as well as develop the theory.

Fifthly, pragmatism is preferred because it does not in reality oppose constructivism and pragmatism but embraces the values of both, unlike pure constructivism and positivism where the beliefs are in contrast. Pragmatism is therefore theoretically and empirically more powerful because it relies on adopted theories as well as data constructs and thus minimises theory or data-skewed bias.

4.3 Researcher's Epistemological Roles

Epistemology shows a researcher's approach to obtaining knowledge (Healy and Perry, 2000). As a pragmatist, the researcher has defined the following three epistemological roles for himself to undertake this research.

4.3.1 Developer of DSD Model – Conceptualisation

Through this role the researcher reviewed the extant literature to understand the core constructs of service and SFS-systems designs and the knowledge gaps. This review established the background theory and context for the thesis argument. Conceptualising this background theory is important for establishing a context for the focal theory (Phillips and Pugh, 2010). Proceeding further, the theoretical constructs are adopted, adapted and linked to illustrate the pre-empirical DSD – Phase I. The pre-empirical DSD is used as the focal theory in this research. Having such focal theory before empirical investigation is important to develop and guide the overall data collection and analysis process (Yin, 2009; Phillips and Pugh, 2010; Han, 2010).

4.3.2 Evaluator of DSD Model – Data Collection and Analysis

Through this role, the DSD is initially evaluated through focus group discussions among fourteen SFS personnel to pilot the main research questions and abstractly confirm the DSD constructs. For detailed evaluation and further development of the DSD, a multiple case study strategy is employed. The seven DSD constructs are rigorously evaluated in four SFS organisations. The constructs are confirmed and further extended through empirical findings. This approach agrees with Robson (2011) who emphasised that real-world research involves some form of theory evaluation as well as development.

4.3.3 Contributor to Theory and Practice – Discussions and Conclusions

Through this role, the findings within four case studies are abstracted in cross-case synthesis and discussed in relevant literature threads. Based on the cross-case findings and discussions, a post-empirical and extended DSD – Phase II, is developed. The post-

empirical DSD is an empirically confirmed and extended version of pre-empirical DSD developed through literature. In conclusion, the theory and practice implications, limitations and future research directions are discussed.

4.4 Research Approach

After placing the research into a paradigm and defining the researcher's roles, the next question for a researcher is whether to approach the research problem quantitatively or qualitatively (Myers, 1997; Saunders, Lewis and Thornhill, 2012). This section briefly discusses the quantitative and qualitative research approaches and justifies the use of the qualitative research approach.

4.4.1 Quantitative

The quantitative approach can simply be conceptualised as the whole process of identifying, gathering, analysing, interpreting and presenting (reporting) the numerical information (Teddlie and Tashakkori, 2010). This approach primarily aims to test "objective theories by examining the relationship among variables" (Creswell, 2009, p. 4). The quantitative approach is developed and mostly used within the natural sciences and within the positivism paradigm (Saunders, Lewis and Thornhill, 2009). This approach involves rigorous quantitative measurements to conclude whether the thesis statements/hypotheses are valid or invalid (Atkinson and Hammersley, 1994: Sarantakos, 2005). The findings of such research inquiries come as summaries of numerical information. Such numerical findings may prove or disprove the relationship between variables or their differences (Teddlie and Tashakkori, 2010).

Through the quantitative approach, the researcher often collects large amounts of data as a sample from the population to objectively test the hypotheses and make inferences and judgments about the population. The quantitative approach normally has little consideration for the context because the research assumes that the reality is objective and free of context. The common methods used within a quantitative approach are survey questionnaires, quantitative repositories, quantitative account of events, the results of laboratory experiments and simulations (Myers, 2009; Saunders, Lewis and Thornhill, 2012; Teddlie and Tashakkori, 2010).

4.4.2 Qualitative

The qualitative approach involves the activities of identifying, gathering, analysing, interpreting and presenting (reporting) the narrative or more descriptive information

(Teddlie and Tashakkori, 2010). In this approach the researcher focuses on "exploring and understanding the meaning individuals or groups ascribe to a social or human problem" (Creswell, 2009, p. 4). The qualitative approach builds meaning on the observations and experiences reported in the narratives and discussions (Bruce, Pope and Stanistreet, 2008; Teddlie and Tashakkori, 2010). The qualitative approach enables a researcher to conceptualise a phenomenon from the participants' perspectives rather than strictly imposed hypothesis-like structures. In this process the research develops meaning for the constructs rather than making statistical generalisations (Gibbs, 2002). In the qualitative approach, the researcher analyses the rich descriptive account of the phenomenon (Teddlie and Tashakkori, 2010). Qualitative data are commonly associated with constructivist paradigm, but it is possible to use quantitative data in constructivism and use qualitative data in positivism (Myers and Avison, 2002; Yin, 2009; Kaplan and Duchon, 1988). In pragmatism the selection of the approach varies according to the research problem (Creswell, 2009 and 2013), aim and objectives (Mason, 2006).

4.4.3 Justification for Adopting the Qualitative Approach

This research employed a qualitative approach to evaluate and further develop the DSD model. There are five primary reasons for adopting qualitative methods.

Firstly, the aim of the research is to conceptualise a holistic service-system design. Qualitative methods provide much more detailed information than what is available through quantitative data collection methods (Boyce and Neale, 2006). The in-depth narratives about actual service-systems have enabled the researcher to develop an accurate and complete perspective of a real service-system design and its adaptation to specific environments. Luna-Reyes and Anderson (2003) maintained that the model developing and evaluating process includes non-linear variables for which numerical data normally do not exist. Even if such numerical data are found it "often does not cover a wide enough range to reveal extreme values or saturation points" (Sterman, 2000, p. 585).

A qualitative approach creates enough room for the participants to convey their practical service conceptualisations that they have developed through experiences. Forrester (1992) reported that the most broad and completed source of information is the mental database of the active players in the real world. The amount and quality of information reduces as it is converted into written and numerical databases. As shown

in Figure 4.2, in quantitative data at the end, the small amount of information does not provide enough depth to form a holistic service-system design concept. Qualitative data on the other hand provide a broad base to comprehensively understand the phenomenon.
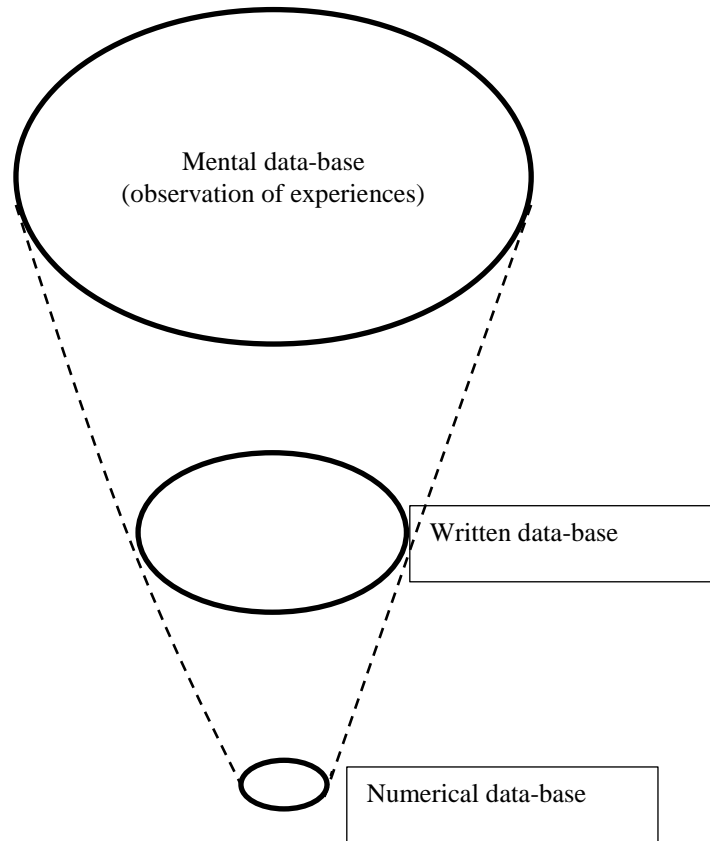
Figure 4.2: Mental data base and decreasing content of written and numerical data bases

Source: Forrester (1992, p. 56)

Randers (1980) argued that a researcher should not restrict to the literature and numeric data as these represent only a fraction of total knowledge available about the problem. A more rich and comprehensive knowledge related to the reality exists in the minds of those who have experience with the system (Forrester, 1992). This research has therefore interviewed the experienced SFS personnel to narrate their experiences supported with documents and service visualisations. Luna-Reyes and Anderson (2003, p. 288) stressed that "both interview and focus group techniques recognise the complexity associated with the problem domain". These methods provide opportunity for an interviewer to probe further into a subject to extract more details about the phenomenon. These approaches also allow the research participants to explain the phenomenon in more depth.

Secondly, studying the environment or context is essential for understanding the phenomenon of adaptable systems and their designs (Patel, 2012). The qualitative approach provided a context-rich view of the phenomenon. This enabled the researcher to understand the context of each service case and thus provided reasons for the adaptation within service systems. The quantitative approach in contrast pays little attention to the contexts (Yin, 2003).

Thirdly, qualitative approaches provide a more relaxed atmosphere for the participants because people feel more comfortable having a conversation about their programme as opposed to filling out a survey or giving responses to more imposed structures (Boyce and Neale, 2006). The service personnel are asked to narrate their own recent experiences, which provided them with a controlling hand and they felt more comfortable.

Fourthly, the data obtained through the qualitative approach delivers explanations about the similarities and differences in the findings (Easterby-Smith, Crossan and Nicolini, 2000). These explanations allowed the researcher to clearly support why something occurs similarly or differently in particular situations. While developing and evaluating the DSD, more attention is paid to the complexity and dynamics within actual service practices. The qualitative methods enabled the researcher to understand why the actual services vary within specific environments. These variations from standard and planned designs are actually the service-system's adaptations into environments. Finding this adaptation was the core objective of this research.

Finally, the qualitative approach is selected because this has been successfully used in service design research. Han (2010) used narrative interviews and visualisations in multiple case studies to understand the differences between theoretical principles of new service developments and new service-product development practices. Segelström (2010) used interviews and visualisations in case studies to understand what types of service visualisations are used by the service managers. Similarly, Sangiorgi (2008) used interviews within case studies to conceptualise the service design as activity-system design. Palvia *et al.* (2003) also used and suggested the qualitative approach for developing and evaluating models and methods. McColl-Kennedy *et al.* (2012) used focus group discussions and narrative interviews to understand service value creation within the health service.

The qualitative approach also has weaknesses, which are important to be known in order to minimise their impact on the study. Firstly, qualitative data are considered both costly and labour intensive. Qualitative data collection is time intensive because of the tasks such as conducting interviews, transcriptions, analysis and the development and evaluation of themes (Boyce and Neale, 2006). Secondly, the qualitative approach brings data that have a high level of uncertainty and irregularity (Luna-Reyes and Andersen, 2003). If the qualitative methods are not properly integrated (configured) with the problem domain, then it can create a gap between the model of the problem and the problem modelled (Goldstein *et al.,* 2002). Thirdly, the qualitative approach is considered biased on the part of the research participants because they normally try to show that their systems work properly to show their competence. This happens because they have more open room to answer the questions compared to the closed-ended questions in surveys. A researcher also influences the qualitative discussions due to his own mindset about the phenomenon that he develops within a prior framework (Boyce and Neale, 2006). Finally, findings of qualitative data are considered less generalisable compared to quantitative results. However, the concern for qualitative research is analytic generalisability, which is a concept development rather than testing an existing concept through wider statistical samples (Yin, 2003).

To reduce the labour and time required in using the qualitative method, the data management software, Nvivo 9 is used, which has helped in efficiently reducing, segregating and displaying the data. Participants' bias is reduced by designing questions that neither lead to weaknesses nor strengths of participants and systems. The narrative format of interviewing is adopted, which requires stories of actual events and does not reflect opinions, which have a high tendency towards participants' bias. The researcher's bias is reduced by complementing interviews with service visualisations and documents. This enabled the researcher to understand the real service stories orally, then visualise some of them with participants and also confirm some aspects through documents. This triangulation for understanding the real systems has reduced the researcher's bias because the experiences are more forcefully communicated by the participants through multiple methods.

The service visualisations enabled the participants and researcher to transfer the information about the actual system visually. Services are illustrated and confusions between participants and researcher are reduced before leaving the scene (e.g., Han, 2010). This approach is in line with Kirk and Miller (1986) who stated that qualitative

approach is a tradition in which the researcher, mainly, watches and interacts with the participants in their own environments and at their own terms. To enhance the analytic generalisability (transferability) of findings, a multiple case study design is used. Multiple case study design is the most rigorous case study design because it creates a repeated chain of evidence in multiple contexts and also provides opportunity of cross-case synthesis and discussion to theorise the findings (Yin, 2003, 2009 and 2012). In cross-cases synthesis, the findings in four case studies are abstracted and discussed within the context of the wider literature to enhance the theoretical and abstraction level as well as practical relevance of the DSD.

4.5 Research Strategy

The researchers in social science normally use strategies such as phenomenological study, grounded theory study, case study, narrative analysis and, critical qualitative research (Merriam, 2002). This research adopted and justified a multiple embedded case study, which is comparatively established within service and its design research (e.g., Sangiorgi, 2008; Han, 2010; Segelström, 2010). The following section discusses the multiple case study strategy and its justification.

4.5.1 Multiple Case Strategy

The DSD model is evaluated using the multiple case study strategy. Individual cases are analysed to evaluate and extend the DSD and cross-case synthesis and discussion is made to abstract and theorise the DSD. A case study is the analysis of persons, events, decisions, periods, projects, policies, institutions or other systems that are studied through one or more methods (Thomas, 2011). According to Yin (2009, p. 18), a case study is an empirical inquiry that investigates "a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident". Each case study focuses on a specific context and content to either conceptualise a grounded phenomenon or evaluate an initially developed framework (Stake, 2006). This focus is also expressed by the literal meaning of the term *case*, where the stress is on "the containment of a case study" (Thomas, 2011, p. 12).

Based on case studies' structure, Yin (2003 and 2012) has classified case designs as single holistic design, single embedded design, multiple holistic designs and multiple embedded designs (Figure 4.3).

Single-case design   Multiple-case design

Holistic
(Single unit of analysis)

Embedded
(Multiple units of analysis)
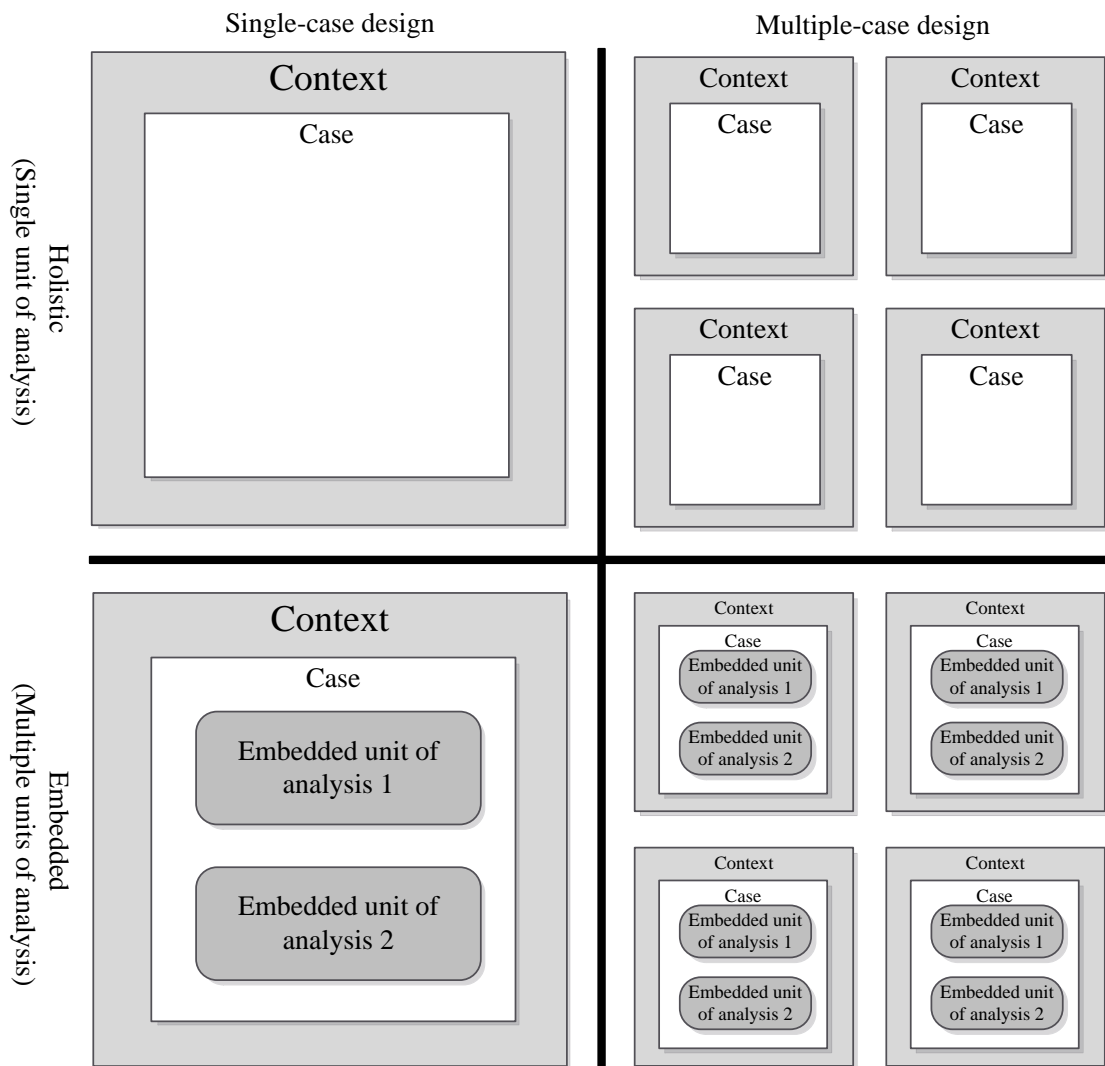
Figure 4.3: Four types of case study design

Source: Yin (2012, p. 8)

The embedded cases are called complex cases because the single case has multiple units and research focuses on these embedded units (Gilgun, 2010). An alternative perspective put forward by Stake (1995) distinguishes between intrinsic and instrumental case studies. Within intrinsic studies, the case in itself remains the focus and the researcher attempts to conceptualise the deep and contextual phenomenon. In an instrumental case study, a case is used to understand some concept and uses the case as evidence to evaluate and further develop the concept or framework. This present research has adopted the multiple embedded case methods (Yin, 2009 and 2012). The case studies are more instrumental in nature because they are used to evaluate and further develop the concept presented within the DSD. Table 4.1 outlines the advantages and disadvantages of using the case study strategy.

Advantages	Disadvantages
a. Focused on specifics of complex social situations (phenomenon).	a. The credibility of generalisations made from its findings.
b. Encourages the use of multiple methods in order to capture the complex reality under scrutiny.	b. Often perceived as producing soft data. Gets accused of lacking the degree of rigour expected of social science research.
c. Fosters the use of multiple sources of data. Enhances the validation of the data through triangulation.	c. Boundaries of the case can prove difficult to define in an absolute and clear-cut fashion.
d. Studies the phenomenon in natural environment.	d. Negotiating access to case study setting can be a demanding part of the research process.
e. No pressure on researcher to impose controls or to change circumstances.	e. The presence of the researcher can lead to the observer effect.
f. Fits in well with the needs of small-scale research through concentrating effort on one research site (or just a few sites).	
g. Theory-building and theory-testing research can both use the case study approach.	

Table 4.1: Advantages and disadvantages of case study

Source: Denscombe (2010, p. 62)

Along with maintaining the benefits and strengths of using case study, some measures are taken to reduce the effects of weaknesses congenital within a case study research. Frist, the case study is normally accused of having a weak statistical generalisability and lack of rigour. However case study is considered appropriate for naturalistic or analytic generalisability (Stake, 2006; Yin, 2003). This research primarily aims to conceptualise (develop) a holistic service-system design within a real business environment (context), so analytic transferability is important then statistical generalisation in this research. Multiple case studies and multiple data collection methods are used to enhance the external validity (transferability of findings). Multiple embedded case study design is the most rigorous case study design compare to its alternatives of simple holistic, simple embedded, and multiple holistic (Yin, 2009).

A narrative format of interviewing is used which covers the complete service story including any parts of the phenomenon occur outside of the organisations. This narrative format of interviewing has also reduced the researcher's and participants' bias

because the stories of real experiences are narrated rather than subjective opinions which are considered softer and more vulnerable to bias. The researcher got help from the sponsor educational institution and the alumni to access to the case study settings and the participants, thus the case study limitation of difficulty to access is also overcomed.

4.5.2 Justification for Adopting Multiple Case Strategy

The case study strategy is selected mainly due to five reasons. Firstly, multiple case studies are selected because they provide relatively different and multiple contexts for model evaluation and development and establish a chain of evidence, which enhanced the analytic generalisability (transferability) of findings (Yin, 2003 and 2009). This repeated evidence worked like multiple experiments in natural science (Yin, 2003). The selected SFS organisations provided different contexts for evaluation and development of the DSD.

Secondly, multiple case studies are selected because of the nature of the research questions. Yin (2003, p. 1) argued that a "case study based strategy of analysis best works when researcher is confronted with 'how' or 'why' questions and the focus is on a phenomenon with some real life context". The main research question addressed in this inquiry is how the service creators adapt a service-system design, from theoretical and empirical perspectives, to the operational-level environments of *Shariah* finance organisations in Pakistan? This research question primarily focuses on *how* the agents within a service system adapt to their environments and *how* they embed this adaptation within a design for service system. Also, the research is particularly focused on the real-world service encounters within which the service co-creators adapt to their contexts. Robson (2002) also agreed that a case study is a serious and respectable research strategy for real-life research.

Thirdly, Creswell (2008) also stated that case study strategy works better when a researcher investigates processes and actions flows which are considered more contextual. Real services are temporal actions that create processes and events (Chase and Tansik, 2007; Sampson, 2010; Sangiorgi, 2008; Shostack, 1982). A service occurs as a series of actions in which different resources are used (Grönroos, 2000). When multiple entities integrate their activities they establish a holistic service-system (Sangiorgi, 2008). So, this nature of a service system fits well for a case study research.

Fourthly, the case study approach is adopted because the context/environment and system adaptation to it is the core construct of the DSD. Hevner *et al.* (2004) stated that a case study is the appropriate strategy for evaluating the models in depth for business environments. The case study strategy closely incorporates the context and the influences on the phenomenon under study (Gilgun, 2010). Recently, Yin (2012) maintained that case study is suitable for evaluation because the actual processes and actions to be evaluated actually occur within some real context.

Finally, the case study method is used because it is relatively well-established within the service researchers and users community. A strategy for evaluating models varies and depends on the community in which the models are aimed to be implemented (Manson, 2006). In the pragmatic paradigm, the choice of a particular research strategy for evaluation such as case study mainly depends on the aims and the objectives of the study (Creswell, 2003). In service-system literature, researchers have successfully used case studies to evaluate and further develop the models and frameworks (e.g., Cabiddu, Lui and Piccoli, 2013; Han, 2010; Sangiorgi, 2008; Segelström, 2010; Zomerdijk and Voss, 2010).

4.6 Case Study Design

This section outlines the detailed structure of the case study design to illustrate the actual research steps undertaken.

4.6.1 Selecting the Cases

For a multiple case study design, a researcher first needs to select the case organisations or any other type of contextual units from which the evidence needs to be collected and analysed. In a natural science, the researcher selects a sample from a population. "A sample is a portion that shows the quality of the whole" (Thomas, 2011, p. 62). In a case study, the conventional positivistic tradition of selecting a sample from the population is not valid and applicable because a case study does not aim to make generalisations to the population (Yin, 2003). A case study is meant to evaluate and further develop the concept in question (Thomas, 2011). This research uses case studies to evaluate and develop the DSD.

In this study, service organisations are purposively selected. In a case study research, the researcher selects the case organisation and embedded case units to enable replication of evidence (Eisenhardt, 1989: Yin, 2003). Han (2010) purposely selected service consultancy organisations to evaluate and develop the new service-product

development framework. Sangiorgi (2008) purposely selected case study organisations to conceptualise the service design as a design of activity system design.

The number of cases involved in a study is a trade-off decision. The researcher may select many cases studying them superficially or select one to study more intensively (Gerring, 2007). In general, three or four cases are considered as the optimum level (Han, 2010; Sangiorgi, 2008). Within this level the research can maintain the optimum level of concreteness and abstraction. In this study the following four SFS organisations are selected:

a. Islamic Commercial Bank (ICB)
b. Islamic Life *Takaful* (ILT)
c. Islamic Leasing Service (ILS)
d. Islamic Mutual Funds (IMF)

ICB is an Islamic commercial bank that accepts deposits for the purpose of lending. ICB replaces conventional depository and lending services with the Islamic modes of investments and finance, which avoid key prohibitions of *Shariah*. ICB is the first and comparatively bigger case as commercial banking is the prominent type of financial service.

ILT is an alternative to a conventional life insurance service. ILT creates trust-based financial coverage and side investments for customers. The selected ILT primarily focuses on health-, education- and retirement-related coverage.

ILS is the Islamic leasing service organisation, which creates an alternative to conventional lease services. ILS retains the ownership of the lease assets and charge rent on the assets' usufructs. Eight interviews are conducted to conceptualise the embedded real ILS services

IMF is the Islamic mutual fund service organisation, which creates investment services within *Shariah*-compliant money and capital markets through investment portfolios. IMF provides returns on mutual fund units and charges an agreed management fee.

Before initiating the main cases studies, three pilot focus group discussions are conducted with various SFS personal, to test the issue questions, abstractly confirm the initial concepts and to familiarise with the real service organisations (section 4.7.1). The insights from focus groups are then used to select the format of interviews (narratives) within cases, rephrasing of the issue questions and selection of participants

within cases. Figure 3.4 illustrates the structure of focus groups and the four cases studies. P is for participant.

Pilot Focus Group Discussions

FG - I	FG - II	FG - III
P1: Manager business development (Lease) P2: Marketing manager (Lease) P3: Senior officer operations (Bank) P4: Senior officer operations (Bank)	P5: Branch manager (Bank) P6: Incharge *Ijarah* (Bank) P7: Incharge *Murabahah* (Bank) P8: Regional sales manager (Bank) P9: Sale manager (Mutual fund)	P10: Personal banking officer (Bank) P11: Senior manager operations (Bank) P12: Branch manager (Bank) P13: Operations officer (Bank) P14: Operations officer (Bank)

Case I: ICB	Case II: ILT
P15: Branch manager P16: Operations manager P17: *Ijarah* manager P18: *Ijarah* officer P19: *Ijarah* officer P20: Investments manager P21: Investments officer P22: Accounts opening manager P23: Accounts opening officer P24: *Murabahah* manager P25: *Murabahah* officer	P26: *Takaful* consultant P27: *Takaful* consultant P28: *Takaful* consultant P29: *Takaful* consultant P30: Operations manager P31: *Takaful* consultant P32: *Takaful* group manager P33: *Takaful* group manager P34: Regional head

Case III: ILS	Case IV: IMF
P35: Lease manager (*Ijarah*) P36: Lease officer *(Ijarah)* P37: Credit manager (*Musharikah/Mudarabah*) P38: Credit officer (*Musharikah/Mudarabah)* P39: Credit officer (*Musharikah/Mudarabah)* P40: Auto lease officer *(Ijarah)* P41: Credit officer (*Musharikah/Mudarabah)* P42: Investment manager	P43: Investment consultant P44: Investment consultant P45: Investment consultant P46: Investment consultant

Figure 4.3 Cases' structure

These case organisations are introduced within individual case analysis (chapter 5, sections 5.2.1, 5.3.1, 5.4.1 and 5.5.1, respectively).

4.6.2 Units of Analysis

A case study is a comprehensive research strategy (Creswell, 2003; Stoecker, 1991; Yin, 2009). This strategy requires determining the unit of analysis for an inquiry. The unit of analysis can be an individual, event, entity, decision, programme or an implementation process (Yin, 2003). A unit of analysis reflects the level at which the

research is conducted or the objects are researched (Blumberg *et al.*, 2011). According to Swanborn (2010) a case study unit be determined at the micro level (individual person), meso-level (organisation and departments) and macro level (large communities and nations).

To evaluate the DSD, four distinct SFS organisations are selected as multiple meso-level case units. Within each organisation, the actual service cases are evaluated as micro-level embedded units of analysis. For instance, a completed auto-lease-service for a particular customer A is considered as an embedded unit within ICB. The following three levels of abstractions (inductions) are made to theorise the findings from basic embedded units (service cases).

a. At the data-collection level, each individual service case within the single narrative interview is the focused.

b. At the individual-case-analysis level, the findings are abstracted to each service organisation (e.g., ICB). Each individual case organisation is presented as meso-level unit of analysis and four cases are used to establish the required chain of evidence (e.g., Yin, 2003).

c. At the cross-case-synthesis level, further theoretical abstraction is made by cross-synthesising the findings from four case organisations and are supported from the wider literature. The abstracted findings are ultimately enfolded into a post-empirical DSD – Phase II.

Denscombe (2010) argued that good case study research has to provide clear vision related to the units of analysis. The hierarchical approach applied in this research (from concrete service units to cross-case analysis) is grounded on the well-established qualitative norm of induction, where the argumentation stream goes from concrete to abstract. This approach is theory building within case studies (Eisenhardt, 1989). However, there is a soft deduction side (theory evaluation) in this study because the pre-empirical DSD applies a theoretical structure and guided data collection and analysis. This duality of argumentation is necessary for evaluating and theorising the DSD, as aimed in this research.

4.6.3 Case Study Protocol

After selecting case organisations and units of analysis, the researcher then needs to develop a detailed case study protocol (Eisenhardt, 1989; Johnston, Leach and Liu,

1999; Yin, 2012). The case study protocol for this research included the interview guide, the participants' information and consent sheets, the ethical approval forms and service visualisations (Appendices 2, 3, 5 and 6). The researcher informed participants in writing and orally about the continuing title of the research, information about the researcher, contact details, research purpose and its possible implications. The participants are requested to participate voluntarily in the in-depth narrative interviews and visualisation of service. Interviews are recorded in audio format and then transcribed for the analysis. For visualisation of the service system, one completed service story is selected and visualised to holistically understand how different components of a service system integrated within an individual case and how it adapted to the case environments.

4.6.4 Access to the Case Organisations

In a case study setting, accessing the case organisation is an important research task. The researcher requests to spend a considerable time within an organisation to collect the data (Yin, 2009). For this study, the researcher used personal contacts to access the selected SFS organisations and the personnel who participated in the research. The researcher works as a lecturer in a public sector institute in Pakistan. The contacts with the SFS practitioners are developed during their visiting lectures and seminars at the employer's institute. The institute's alumni currently employed in SFS organisations participated in the research and they introduced the researcher to their colleagues who are found relevant to the research (following a snowballing principle).

Formal research engagement requests are made to the relevant authorities in the participating organisations to allow the research as per the details provided in the research participants' information sheets. Voss, Tsikriktsis and Frohlich (2002) argued that the primary participant in the selected case organisation should be able to allow the researcher to conduct the research in organisation premises and point out other relevant and potential research participants within the organisation. The primary participants in each SFS organisation are the area managers, regional managers and branch managers. They are interviewed first and with their guidance the research is forwarded to other participants following a snowballing principle.

4.7 Data Collection

After designing the case studies, a researcher looks for the appropriate methods and sources to collect the empirical evidence. In a case study setting, Yin (2003) has

recommended to use the methods such as documents, interviews, observations and physical artefacts (Yin, 2003). Using these methods, a researcher looks for what people say, what the researcher sees them doing, what they make and what documents and records show (Gillham, 2000). In service design research, recently visualisations have been used for data collection. A service visualisation is a design-based way of inquiry to conceptualise the data through illustrations (Han, 2010; Segelström, 2010). In visualisation, a researcher and participant illustrate actual service experiences to have a closer and more holistic look at the phenomenon.

In the case study setting, the researcher normally collects data through multiple methods to develop a detailed perspective of the situation (Gillham, 2000; Yin, 2012). The multiple methods converge on the same fact and thus enable triangulation and enhance the validity and reliability of the findings (Yin, 2003). Figure 4.4 conceptualises convergence of multiple methods on the same fact.
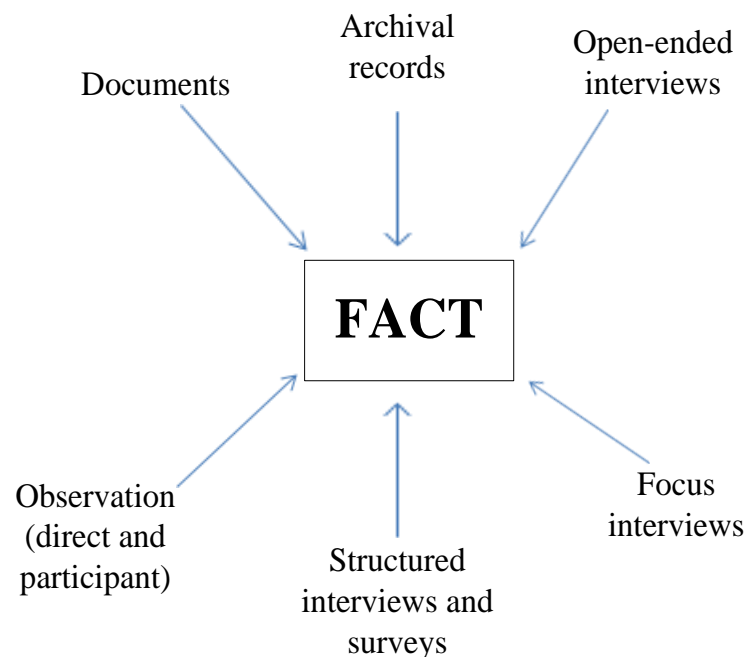
Figure 4.4: Convergence of evidence

Source: Yin (2003, p. 100)

Figure 4.4 shows how multiple methods enable a researcher to access the same facts (if they exist) through multiple methods. This research used four methods for collecting evidence about the same fact: focus group discussions, in-depth narrative interviews, service visualisation and document reviews. This triangulation enabled the research to more confidently access the knowledge about the adaptable service-system design within the SFS context.

4.7.1 Focus Group Discussions

Morgan and Spanish (1984, p. 254) defined focus group discussion as a "small group discussion that explores topics selected by the researcher and is typically timed to last no more than two hours. Focus group participants are usually led through the discussion by a moderator who is often the researcher" This research conducted focus group discussions to pilot the initially developed interview questions and also abstractly confirm the initial drafts of the DSD model. Three focus group discussions are conducted in which fourteen SFS personnel participated (participants' profiles are attached in appendix 4). Abstract findings of the focus groups are presented before the case study analysis.

The ideal duration and number of participants in each focus group is unclear in literature. However, conducting focus group discussions in consecutive sessions has been established (Denzin and Lincoln, 2000; Grudens-Schuck, Allen and Larson, 2004). For this research, a series of three focus group sessions are conducted in which four, five and five SFS personnel participated, respectively. The series format of focus group sessions is important for enhancing the reliability of data collection methods and hence the validity of findings through replication. The series format provides room for a researcher to think about the preceding discussion's outputs and clarify the doubts before going to the next discussion. Some authors like Cook *et al.* (2002) used the term panel discussion for the same kind of research inquiry.

Participants in a focus group needed to be relevant and knowledgeable in the topic of discussion. These focus group discussions are conducted before collecting data within case studies. Purposive selections are made to choose the experienced and on-the-job SFS personnel from the selected organisations. The following open-ended questions related to service-system constructs are put forward for the discussions:

- **a.** How the service designing and service practice occurs in SFS organisations?
- **b.** Who participates in service creation?
- **c.** What role does each participant assume in the service creation?
- **d.** What resources do the service creators use in the service creation?
- **e.** What rules do the service creators apply during the service creation?
- **f.** For what values and benefits do the service participants create the service?

The themes that emerged in the discussions provided abstract and contextual explanations for the DSD constructs. Also, it is noticed that the participants preferred to

explain the real service experiences through narratives and examples. This motivation is then used as a factor for selecting in-depth narrative interviews within case studies.

Grudens-Schuck, Allen and Larson (2004) suggested that homogenous groups work better than diverse and heterogeneous groups. The significant differences among participants could affect the quality of the data because they will incline censor and edit their ideas and opinions (Grudens-Schuck, Allen and Larson, 2004). Furthermore, diverse groups do not remain focused on the issue and it is difficult to comprehend the views and the themes generated. However, avoiding all these drawbacks through keeping homogeneity in focus group sessions comes at the cost of losing the opportunity of comparing and contrasting different perspectives on the phenomenon. This research has maintained optimum level of heterogeneity and homogeneity in the three focus groups. All the participants were from the SFS finance and were located at the branch level. However some differences were maintained related to the types of service in which they were involved.

The data provided valuable insights about the actual service practices but at the same time brought the problem of data management. Grudens-Schuck, Allen and Larson (2004) noted that compared to other types of data collection methods, focus groups generate more surprises for the researchers because the participants are not restricted to the given A, B, C options as happens in survey research. Krueger and Casey (2000) therefore concluded that focus groups produce the most naturalist data about reality. To manage these surprises, the first session is arranged with four participants. The subsequent two sessions are adjusted for the vocabulary and narrative tendency in the first session. This process reduced the gap between the initially drafted DSD and the evidence brought by the participants.

4.7.2 In-depth Narrative Interviews

After completing the focus group analysis, refining the DSD and research questions, the research within case studies began. In-depth narrative interviews are selected as the primary evidence. In total 32 in-depth narrative interviews are conducted (Table 4.2). "In-depth interviewing is a qualitative research technique that involves conducting intensive individual interviews with a small number of respondents to explore their perspectives on a particular idea, program, or situation" (Boyce and Neale, 2006, p. 3). The number of interviews in each case study is based on the size of an organisation and the saturation principle (Bowen, 2008). When enough repetition of themes is found in

each case, then the next case study is started. Four different types of SFS organisations are selected to ensure the necessary level of contextual differences. These differences in context are important to establish a repeated chain of evidence within different contexts, thus enhancing the validity of findings (Yin, 2003).

Total	Interviews
a. Islamic Commercial Bank	11
b. Islamic Life Takaful	9
c. Islamic Leasing Service	8
d. Islamic Mutual Fund	4
Total	32

Table 4.2: Number of case studies and participants

The total number of participants in this research is 46 (32 in interviews and 14 in focus group discussions). These participants are coded as P1 to P46 (P = participant) as shown in section 4.6.1, Figure 4.3. The quotes cited within the analysis and discussions are traced through these codes. Appendices 4 and 5 tabulate the participants' profiles and their codes.

The number of participants in this study is justified through the saturation principle and convention within service literature. The saturation principle is applied for both number of case studies and the number of interviews in each case study (e.g., Bowen, 2008). When enough repeated findings are observed with minimal marginal contributions, then interviews in each case study are stopped. Similarly when enough repeated findings are found across the cases, then then case studies are stopped.

The literature in service systems and design also guided the researcher to decide about the number of participants: Han (2010) used 10 in-depth narrative interviews to understand the service design practices of UK service consultancies; Segelström (2010) used 17 interviews to understand the use of service visualisations in service design practice; Stickley *et al.* (2010) used 7 interviews to assess the mental health services of student nurses; and Sangiorgi (2008) used 14 interviews to conceptualise the service design as activity system design in the case study setting.

Interviews is an important method of data collection, particularly, in a case study setting (Rubin and Rubin, 2012; Yin, 2003). Interviews are therefore use as the core data collection method in this research. Since the phenomenon of service (unit of analysis) occur as start-to-end temporal action-flow, so the narrative format of

interviewing is selected. The narrative format of interview has the potential to generate information in the sequence in which the action flows proceed in a service creation. A tendency of participants toward narratives has also been observed in the pilot focus group discussions.

A narrative means a "cognitive process that organises human experiences into temporally meaningful episodes" (Polkinghorne, 1988, p. 1). In these narrative interviews, the storytellers or the participants referred to specific service experiences which they encountered. These stories included the description and interpretation of specific real service episodes within a context (Helkkula, 2010). These episodes are embedded within particular circumstances that created frames (Gee, 1991). In this research, the frames of real services cases are the specific operational environments and contexts to which the system adapts. The episodes and frames are the same concepts used in stories for dramas and films.

Narrative interviews are also called episodic interviews because they account for a number of episodes. The sequential placements of episodes represent a completed story (Flick, 1997; Han, 2010). In these narrative or episodic interviews, the expert participants create episodic knowledge which "comprises knowledge that is linked to concrete circumstances (time, space, persons, events, situations)" (Flick, 2000, p. 77). The main question posed in this research requires close contextual knowledge of the actual service process and how the service creators within each episode of service actually adapt to the frame or context. Experienced SFS personnel are interviewed about specific service cases in which their roles were the most prominent. Their positions within narrated service case allowed them to interact with the customer, back-office personnel and aiding parties. Each interview is particularly focused on single service case. However, the participants made general comments on different critical episodes of the focal case and provided references from other similar cases.

In case study settings, Stake (2006) suggested having a list of *issue questions* before conducting the interviews. After taking the initial introductory information (tabulated in appendix 5), the following issue questions are used as a guide to ensure that the narratives and discussions covered the topic area.

  a. Please explain a service package you are dealing with. How did your organisation design and practice this service package?

    b. Please narrate a complete story of an *actual service case,* which is created based on the service package you explained in question one.

    c. In the service case you narrated, who participated in service creation?

    d. In the service you narrated, what are the core roles and actions performed by different participants?

    e. In the service you narrated, what resources are used?

    f. In the service you narrated, what rules are applied?

    g. In the service you narrated, what benefits or values are created?

A detailed interview guide, participant information sheet and participants' profiles are attached in appendices 3, 4 and 5.

The narrative format is kept interactive to ensure the participants' interest (Han, 2010). The in-depth but focused interviews enabled the researcher to motivate a conversation on crucial service episodes (e.g., Burgess, 1984). Knowledge, about the facts within service episodes, is constructed through human interaction (e.g., Rorty, 1980).

Key norms of in-depth narrative interviews are taken into account while collecting the data. For instance the questions are left open and flexible in terms of their structure and sequence. The discussion is kept interactive where the reasons, evidence and opinions about different episodes of the service story are discussed. For this purpose, probes are used for penetration, exploration and explanation of the narratives and discussions.

The discussions about different service episodes are started with the surface level issue questions (Stake, 2006). The discussions gradually deepened through subsequent contextual conversations. Questions are adapted and sequenced as per the convenience and context of the narratives. Narrow and specific probes are used to explore the critical episodes where the service system is found to be adapting to the specific-case's environment. These probes are also recommended by Rubin and Rubin (2012). The questions are kept simple, short and focused on particular service case units. Leading questions and double questions containing two or more types of information or leading to more than one direction or situation are avoided. Time is provided for the participants to think, recall the event and describe it in full. Full attention is paid to the participants to understand the actual service case and rightly and timely intervene when necessary. This close attention and response also encouraged the participants to go into the detail of the narratives (e.g., Han, 2010).

4.7.3 Service Visualisations

The interviews are complemented with service visualisation or blueprinting of a complete service story to holistically illustrate an *adaptable service-system design* within each case. Han (2010, p. 65) visualised the episodic interviews of service designers in a case study setting. In the visualisation process, she used service visualisation charts and sticky pages to pictorially show the actual new service development process (using persona icons for the participants). Through visualisation, she developed illustrations of the new service development processes and compared them with new product principles, to find the gaps (Han, 2010).

This research also utilised the visualisation and the most completed service story in each case organisation is visualised and blueprinted on A1-sized visualisation charts with the help of sticky pages. A conventional service blueprint is adapted for this study (e.g., Bitner, Ostrom and Morgan, 2008; Shostack, 1982). A grid is added to the normal blueprint to enhance the focus on each service encounter or episode narrated by the participants. Figures 4.5 show adapted blank visualisation sheet, sticky pages and a pilot service case for the real *Ijarah* lease service. The selected story is divided and tabulated into service episodes and then the same episodes are visualised. Thus four service blueprints are developed that complement the interview findings and enhance the validly of findings. The A1-sized blueprints are then transformed to A4-sized MS Visio based blueprints to enhance the clarity, visibility and to conveniently embed them within the thesis.
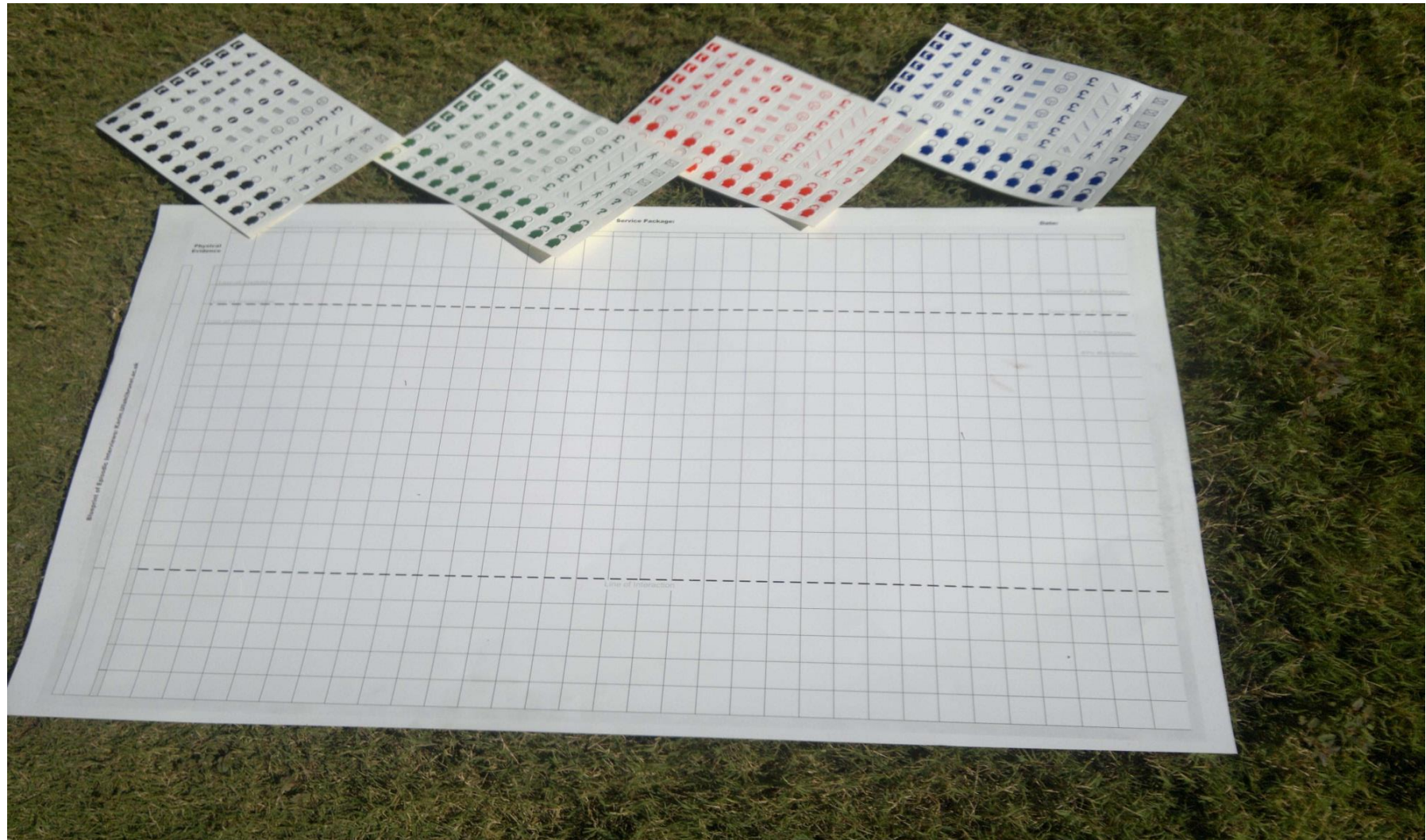
Figure 4.5: Visualisation sheets and sticky pages

Source: Adopted with modification from Bitner, Ostrom and Morgan (2008, pp. 76-77)

Service blueprint is adapted and used because it is flexible and its layers or lines of activities (horizontal lines) can be adapted and named as per the nature of the actual service. Furthermore, each part of the service can also be separately blueprinted (Bitner, Ostrom and Morgan, 2008). The blueprints/visualisations converge on the same facts that are addressed in narrative interviews, so enhanced the validity of the findings (Han, 2010). Visualisations enabled the researcher to *see the context* of actual service practice (Chandler and Vargo, 2011). The visualisations also reduced the dependency on language to access the facts. Misunderstandings raised in interviews are cleared through the drawings of service episodes. Service visualisation techniques enhanced the participants' focus and interest in research (Han, 2010).

A set of sticky pages as shown in Figure 4.5 is adapted and printed to represent the service creators, their actions and different resources. These sticky pages are pasted on the A1-sized blank service blueprints sheets to visualise the real service cases in focus. A colour code (red, blue, green and black) is used to differentiate customers' contributions (green), organisations' contributions (red) and aiding parties' contributions (blue). Black sticky pages are used to highlight the emergent and unplanned parts in actual service cases, showing the adaptation of system into specific contexts. The service visualisations are developed with the help of selected research participants who narrated the specific story blueprinted.

Bitner, Ostrom and Morgan (2008, pp. 79-81) developed nine guidelines for developing service blueprints. Table 4.3 enlists these principles and their applications during visualisation of real SFS.

Principles	Application (in visualisation of SFS)
1. **Decide on the company's service or service process to be blueprinted and the objective**	Four service organisations are selected and within each a single and most completed service story is selected to blueprint.
2. **Determine who should be involved in the blueprinting process**	After conducting the interview, the participant and the researcher took part in visualising the same service case. The participant, who narrated the story, is selected as the primary participant and other relevant personnel are consulted to clarify different service episodes of the blueprinted service case.
3. **Modify the blueprinting technique as appropriate**	The traditional blueprint is modified to effectively retrieve the required detail of actual service cases. A grid is added to the conventional blueprint to create further focus on participants' actions and coloured code is developed for different categories of service creators and emergent service parts.
4. **Map the service as it happens most of the time**	The most completed story in each organisation is selected for blueprinting so that it covers the core and most commonly occurring service episodes.
5. **Note disagreements to capture learning**	The disagreements in service visualisations (compared to planned designs) are noted and highlighted through black sticky pages to conceptualise the adaptation
6. **Be sure customers remain the focus**	The customer is an important service co-creator. The service visualisation is therefore initiated from the customer activities shown on the top of the blueprint sheet. All other activities are linked to the customer activities.
7. **Track insights that emerge for future action**	While developing the blueprint, alternative ways of creating service actions were pointed out by the participants. They discussed how they take different actions in different contexts, showing adaptation of system to different environments.
8. **Develop recommendations and future actions based on blueprinting goals**	The goal of developing the blueprints in this study is to confirm the findings in narratives and to the selected service cases. These findings contributed to the detailed fourteen practice implications and recommendations made in the conclusion chapter.
9. **If desired, create final blueprints for use within the organization**	The final versions of the four service visualisation can serve as training toolkits for the service personnel. However, they have not yet been used by the organisations as this is not within the scope of this research.

Table 4.3: Service blueprinting principles and its application

Source: Developed based on Bitner, Ostrom and Morgan (2008, pp. 79-81)

4.7.4 Documents Review

Documents review is another qualitative method that the researcher can use to complement the core data collection methods to establish the triangulation (Yin, 2003).

Documents are particularly helpful in understanding the case setting and the context. Documents normally provide direct visual and/or verbal evidence for the findings. In this research, focus group discussions, in-depth-narrative interviews and visualisations are used to triangulate the findings. However, some critical parts of real cases are further confirmed through products offering documents, brochures, blank forms used in the service, policy manuals and webpages. Most of these documents were available in the promotional materials and helped in the initial understanding of the service packages (planned designs). Some components of the real services are confirmed by the participants by showing the documentary evidence. These documents are occasionally referred to as additional evidence during the analysis.

Combining all these qualitative methods agrees with Yin's (2003) principle of triangulation to enhance the validity of findings through convergence of multiple methods on the same fact.

4.7.5 Reflections on Data Collection and Transcription

The data collection, transcription, and analysis phases, particularly those related to the narrative interviews, were the most rigorous and challenging phases of the research. The researcher and participants encountered many unexpected problems, which are resolved and reported in this section. The strengths and weaknesses of the qualitative methods have already been discussed in section 4.4.3. This section is focused on the unique experiences and challenges that the researcher and participants faced during the data collection and transcription phases.

Initially, during the focus group discussions, the researcher observed that the participants were not comfortable with some of the terms used in the issue questions (e.g., 'value') (see section 4.7.1). This issue led to more impulsive explanations from the researcher. In the first focus group, the researcher determined how the practitioners regarded the phenomenon and what words they frequently used in their discussions. The wording of the issue questions was then amended in the next two focus group discussions. As a result, researcher and participants found it easier to follow each other's arguments.

From the methodological perspective, the pilot focus group discussions had three advantages. Firstly, the participants were found to be more inclined towards quoting real service examples and narratives from their experiences. This insight was then used as one of the reasons for choosing narrative interviews as the core data collection

method later in the cases. Secondly, the insights from the focus groups helped the researcher to rephrase the issue questions to gain deep narratives of actual service cases (see section 4.7.2). Thirdly, the focus groups helped the researcher to become familiar with *Shariah* finance practice. This familiarity affected the selection of interview participants. The discussions revealed that the personnel at the operational level, who directly interact with the customer and aiding parties, can provide rich insights into the phenomenon of adaptation of service-system design in the operational environments of organisations. The participants also provided some references for the main data collection phase (interviews).

The main data source in this research was, however, the in-depth narrative interviews (see section 7.4.2). The insights from focus groups were helpful; however, the researcher and participants encountered new challenges and realised some new benefits. First challenge that the researcher observed was that in spite of providing the written research protocol (participant information sheet, issue questions, etc. – see appendices 2, 3, 5, and 6) to the research participants, the researcher felt that there was a need to orally explain how the narrative interviews actually work and that the anonymity of the participants, their organisation and their customers would be maintained in reporting the findings of the research. The research ethics protocol (see section 4.10) was then orally explained in detail before starting the interviews. The principles of autonomy, benefice, justice and non-malfeasance were explained to the participants. It was explained explicitly that the data would be anonymised before reporting it in the findings or any other outputs from the research. This anonymity was also promised while getting ethics approval from the research ethics committee of the School (see appendix 2).

The pre-interview oral discussion about the nature and operation of narrative interviews and ethics enhanced the level of trust from participants, though such a detailed pre-interview session was not planned. The participants were relaxed and trustful in most parts of the interviews. The data reported in chapters 5 and 6 and in appendix 7 were passed through three filters before becoming part of the thesis. The first of these was that the participants said they would attempt to uphold anonymity, particularly that of customers, during the interviews. The second was that the researcher, while reporting the data within the thesis, removed information that could lead to the identification of participants, the organisation and its customers. The third filter involved removing further information after the viva voce (as per the recommendation of the examiners) so

as to minimise the chances that the thesis would lead to the identification of participants or the case organisation.

The second challenge that the researcher observed in interviews was the unstructured process of the interview. The questions used in the case protocol proved to be somewhat superficial. For instance, when the participants were asked the question "In the service you narrated, what rules are applied?" the participants provided every detail of particular types of rules (e.g., a prudential regulation for the reserve requirements in a service type). The probing questions that the researcher had predicted it would be necessary to ask were also found to be insufficient and sometimes irrelevant in the context of narrative. For instance, the probe "Were there any rules of the third party in the case?" was found insufficient as richer and contextual detail emerged in each interview. Therefore, short probes from the flow of narratives (e.g., "How do you update the service package when the central bank changes these prudential regulations that you just pointed out?") were asked by the researcher to avoid straying away from the subject and to get the required depth of information.

It was also observed that the objective questions and probes received short answers. For instance, the question "Who participates in the service?" was objectively placed to obtain data related to the pre-empirical (a priori) construct (i.e., service co-creators). This question generated data, mostly, in the form of short lists of service co-creators counted by the participants and some short explanations. However, the questions that aimed to elicit narratives received much lengthier answers. For instance, the most detailed answers were received in response to the question "Please narrate a complete story of an actual service case, which is created based on the service package you explained in question one".

There seemed to be some bias from the participants, as occasionally they tried to show their competence and authority in relation to the service system by praising what they had done in the case. This problem is also noted by Boyce and Neale (2006). However, the positive side of the narrative process was that the participants were very enthusiastic and relaxed and had a sense of control during the narrative phase, whereas a clear decrease in interest was found in the final and concluding questions, such as "What benefits were created in the service you narrated?"

The third challenge was the transcription and re-contacting the participants to confirm the transcription of their narratives was accurate. There were multiple challenges during this phase. The first challenge was dealing with the language of data. The interviews

were mainly in Urdu, which is the official language spoken in Pakistan. However, Pakistan's official written language is English. This unique situation created pros and cons. On the negative side, the data were received with mixed language. For example, a sample quote is: "…customer **nay pehley** helpline **ko** call **ki jahan,** customer service person **nay usko is** regional office **ka** contact address **our** number **dia"**…/P17. In this sample quote, the words in bold are in Urdu. In plain English, this narrative quote can be translated as "…the customer has first called the helpline, where the customer service person provided the contact address and number of this regional office"…/P17.

A closer observation of the interviews revealed that, most of the time, the participants used English for nouns and Urdu for verbs and interjections. This happened, presumably, because the official written communications (e.g., documentations and emails) within the organisation were in English, whereas informal communications were in Urdu (and some in Pashto as well). So, the parts of the narratives that were dealing with actions (actual doings) were communicated in Urdu, whereas the names of objects, places and titles of personnel were communicated in English.

The positive side of this situation was that the researcher is familiar with such mixed language, as the same mixed language is used within the universities in Pakistan. The researcher achieved his bachelor's and master's degrees in Pakistan, and is now working as lecturer of Islamic finance in the country (currently on study leave). The researcher used the same mixed language, because the books used in relation to previous degrees and teaching experience were in English, whereas informal discussions with students (and previously with teachers) occurred in Urdu and sometimes in English. The trend of mixed language in the whole sub-continent of south Asia (including Pakistan) can be traced back to the age of colonialism, when Britain as occupier introduced English as medium for education and official work, and English is now further promoted by the people who obtain degrees from universities in Western countries and who work there.

The researcher developed a two-phase solution to this problem of mixed language. Firstly, the data were translated into plain English and transcribed. Fortunately, these were narratives (accounts of real events) rather than subjective opinions of the participants, so there was less risk of subjectivity (from the researcher's standpoint during transcription) being introduced during the partial translation. Secondly, a reverse translation was attempted; however, that was challenging in this research because of the mixed language. One transcript was translated into plain English and reverse translated

into plain Urdu. The participant was also contacted to ask if he could read the transcripts (plain English and Urdu) for any mis-transcription. He refused to read the whole transcript, but agreed that he could confirm over the phone if the researcher would orally re-narrate the whole story. So the first transcript was confirmed over the phone by the participant. This oral re-narration of the story was found to be very effective because it occurred in very natural mixed language. The re-narration is generated from the plain English transcripts to ensure that these English transcripts communicate the same narratives that the participants told in the original interviews. The English transcripts were used in re-narration because these were used in the data analysis chapters.

To confirm the rest of transcripts the researcher went back to the field and contacted the participants to find out whether reconfirming transcripts would be convenient for the participants or not. Among all the participants, only ten agreed to meet again. From the English transcript, the stories were re-narrated in Urdu (with occasional English for nouns) by the researcher to the participants; thus, resolving small confusions. Thus, out of thirty-two transcripts, eleven were confirmed. The recordings of the other twenty-one transcripts were listened to again by the researcher to ensure the words were accurately identified and translated.

Two other measures during the interviews helped to reduce the impact of language difference and ensure the validity of findings. Firstly, since these were narrative interviews, more contextual probes were used in the interviews, which emerged from the answers of the participants (see appendix 7 for sample transcripts). These probes ensured that the researcher and participants had the same understanding about the narrative of the actual case. This periodic conversation during the story minimised the risk of mistranslating the core 'narrative' because researcher and participants synthesised their understanding of the narratives from time to time. This synthesis helped to resolve many ambiguities in the minds of participants and researcher. The second measure that helped to reduce the effect of language difference on the validity of the findings was the use of visualisations (see section 4.7.3). The service visualisations enabled the participants and researcher to transfer the information about the actual services visually. Services are illustrated, and confusions between participants and researcher are reduced before leaving the scene (e.g., Han, 2010). However, visualisations were only made for the four most comprehensive interviews,

representing the four cases, respectively. Multiple methods were used, which converged upon the same fact; thus, the validity of findings was enhanced (e.g., Yin, 2003).

4.8 Data Analysis

A "qualitative data analysis means making sense of relevant data gathered from sources such as interviews, on-site observations, and documents and then responsibly present what the data reveal" (Caudle, 2004, p. 417). The data analysis process involves "three concurrent flows of activity: data reduction, data display, and conclusion drawing/verification" (Miles and Huberman, 1994, p. 10). These data analysis steps are interactive and simultaneously start with data collection in a case study research (Yin, 2003).

The primary purpose of data analysis in a qualitative research is to gain an understanding of the phenomenon under study (Boeije, 2010). In this research, the purpose of analysis is to evaluate and further extend the DSD model developed in chapter three. In qualitative research, a researcher mostly uses abstract analytical approaches such as content analysis, discourse analysis, hermeneutics and grounded theory (Creswell, 2003; Rubin and Rubin, 2012). These approaches set an overall style and attitude for conceptualising what the data reveals. Within these abstract and umbrella analytical approaches, a researcher can then apply his own detailed analysis process to define the concrete analysis steps (action plan) to actually execute and conduct the analysis (Han, 2010; Sangiorgi, 2008; Segelström, 2010). This research has selected and justified the narrative discourse analysis method.

4.8.1 Narrative Discourse Analysis – NDA

This research has employed NDA as an umbrella approach to generate empirical discursive themes to confirm and extend the DSD. Crystal (1992, p. 25) defined a discourse as "a continuous stretch of language (especially spoken) larger than a sentence, often constituting a coherent unit, such as sermon, argument, joke or *narrative*" (*italic* is the researcher's emphasis). Discourse is a broad term and it refers to all written and spoken words (Wood and Kroger, 2000). The blend of narrative and discourse is called narrative discourse which means "an account of events, usually in the past, that employs verbs of speech, motion, and action to describe a series of events that are contingent one on another, and that typically focuses on one or more performers of actions" (Bones, 2010, p. iv). The fusion of narrative approaches and

discourse analysis is then called narrative discourse analysis (Stickley *et al.,* 2007) or NDA.

A discourse analysis reveals the hidden detail behind the text and therefore it is often termed analysis beyond the sentence (Tannen, 2007; Widdowson, 1995; Iedema, 2003). This means that the focus of analysis is not the face or the text but the events described by the text. Focus group discussions, In-depth narrative interviews and visualisations produced the narrative discursive resources (talks, text and visualisations) grounded in contextual service episodes (events). In discourse analysis, the researcher main focus is on what people do and use the oral and written instances to interact with the reality (Potter, 2004). In this study, the focus of analysis is to understand the actual service cases, and discursive resources are used as the medium for understanding them.

NDA allows a researcher to obtain more insights or unacknowledged meaning behind the text. In other methods such as content analysis or conversational analysis, the focus remains on the text, turns in participants' conversations and the sequence in which the conversation is organised (Heritage, 2004). The data methods used in this research have encouraged the participants to inform the research with oral histories of particular service cases (contextual discourses). Thus, the participants have actually provided the discursive resources to describe their service experiences. The discursive resources are considered very rich for understanding experiences (e.g., Bryman and Bell, 2003).

The NDA establishes an approach to access the data but did not suggest any concrete data analysis steps or mechanism to be followed for execution of the actual data analysis process. Figure 4.6 illustrate the detailed data analysis method.

STEP 1: REFLECTION OF BACKGROUND THEORY

| Service-system design literature | SFS literature | Theory of deferred action |

STEP 2: THEORETICAL NODES

|Planned design | Emergence and deferred design | Service co-creators | Roles and actions | Resources and usufructs | Rules and control | Value-in-context |

STEP 3: EMPIRICAL NODES

Data reduction: Selecting the evidence-rich narrative quotes
Data display: Showing the slected narrative quotes and graphs generated in NVIVO 9
Conclusion drawing/verification: Intepretating the narrative quotes and summaries of findings into theoretical and empirical nodes

| Three focus groups (Pilot) | Islamic Comm. Banking case | Islamic Life *Takaful* case | Islamic Leasing Services case | Islamic Mutual Funds case |

STEP 4: THEORISING THE FINDINGS

Cross-case synthesis and discussion with relevant literature

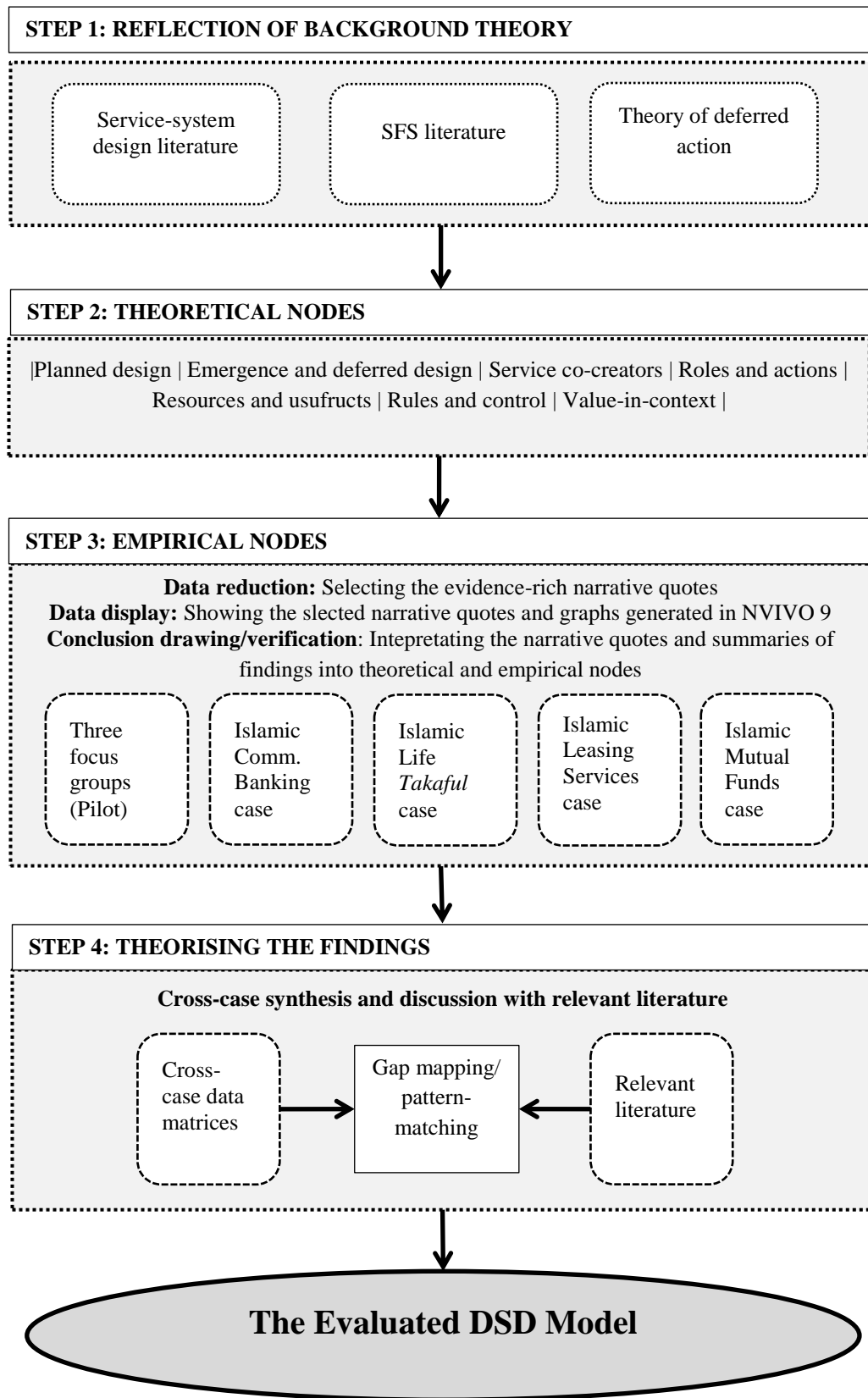| Cross-case data matrices | → | Gap mapping/ pattern-matching | ← | Relevant literature |

The Evaluated DSD Model

Figure 4.6: Data analysis method

Source: Developed based on Han (2010), Miles and Huberman (1994), Phillips and Pugh (2010), Stickley *et al*., 2007, and Yin (2009).

The researcher adopted an open-minded approach to allow emergent themes through open nodes to further extend the DSD (focal theory). However, there is a difference between an open mind and an empty mind (Charmaz, 2005). The researcher should not go to the field with an empty mind and should develop a pre-empirical framework to guide the data collection and analysis (Yin, 2003). In this study, the data collection and analysis is guided through the DSD constructs. The background literature and focal framework has guided the data analysis. The seven theoretical nodes are developed to establish an initial frame of mind about the data analysis. Such a mental model or focal theory is considered important within case study research to collect the relevant data and also create a focus within analysis (Yin, 2009).

After collecting the data three analysis steps of Miles and Huberman (1994) are used to execute the formal analysis of empirical narratives within each case. These steps are: reducing the data, displaying the selected evidence and drawing conclusions. Firstly, the data is reduced and segregated into structural and open codes for the DSD. Structural codes have confirmed the theoretical constructs and the open codes have further extended the DSD through empirical findings. Secondly, the data is displayed through narrative and discussion quotes and Nvivo 9 graphs. Thirdly, the quotes and graphs are interpreted and conclusions are drawn.

Proceeding further, the participants' versions of service-system constructs are synthesised with the researcher's and theoretical versions of the constructs and meaningful conclusions are drawn to further confirm and expand the DSD. Potter (2004) referred to such integration of participants' and researcher's conceptualisations within discourse analysis as:

> "A discourse analysis emphasizes the way versions of the world, of society, events and inner psychological worlds are produced in discourse. On the one hand, this leads to a concern with participants' constructions and how they are accomplished and undermined and, on the other hand it leads to recognition of the constructed and contingent nature of researcher's own versions of the world" (p. 202).

To integrate theoretical (researcher's pre-empirical model) and practical themes within narrative discourses, Han (2010) developed and applied the gap mapping method where she suggested comparing the evidence from practice with theory and to draw conclusions related to the gaps. She used gap mapping to find the gaps between theoretical principles of new product development and its practical versions in the new service development practices. She used narrative interviews and visualisations as data

sources. Gap mapping is similar to the pattern matching method suggested by Yin (2003) within a case study research.

For this integration of practice and theory based themes, Han's (2010) gap mapping approach is adapted for this study. The researcher's initial conceptualisation is posed within the seven DSD constructs. These constructs are cross-compared with the empirical themes and conclusions are drawn. Within such discourse analysis, a researcher selects specific pieces of evidence and shows them against the theoretical theme followed by an interpretation. This interpretation is also called a commentary which is used to that extract an understanding from a specific data (Luna-Reyes and Andersen, 2003). In such cross-comparison of themes, the theory and practice cross-inform each other.

4.8.2 The Use of Nvivo 9 Software

To conduct the actual analysis, the audio recorded narratives and discussions are transcribed into plain text and imported into four case study files developed in Nvivo 9. Nvivo 9 is a qualitative data management and analysis software from QSR, which is used to reduce and segregate data into nodes/themes. The DSD has seven theoretical constructs, so seven a priori or structural nodes are developed each representing a construct. This theoretical view before the empirical study is necessary for guiding the analysis (Han, 2010; Yin, 2009). With an open mind, themes are found during the analysis. Such coding of constructs is the process of segregating and combining the data for deductive and inductive themes (Gibbs and Taylor, 2010). The new themes resulted in the extension of the DSD; the novel empirically established planned design typology (PDT) and deferred adaptation process (DAP). The new nodes also added underlying detail or second order nodes to the existing theoretical constructs of roles and action, resources and usufructs, rules and control and value propositions.

During the transcript reading, the data is reduced and relevant narratives and discussions are transferred to a priori and a posteriori nodes. This is the data reduction and segregation phase suggested by Miles and Huberman (1994). Within the scope of the research, new patterns are allowed to emerge particularly within each node. This approach helped the researcher to understand the phenomenon with greater depth. The deductive approach is employed to evaluate the DSD (a priori nodes) and the inductive approach is employed to extend the DSD (a posteriori nodes).

Flick (2009) pointed out the three benefits of using qualitative data analysis software. These benefits are time saving, increase in quality of research and improvement in data presentation. These advantages come as a researcher is freed from the manual and clerical tasks of managing the large amounts of qualitative data (John and Johnson, 2000). However there are disadvantages of using the data analysis software, as a researcher is more focused on the patterns and codes and thus the concern for context normally fades out. Similarly, time and energy spent on learning to use computer packages increase the distraction and reduce the focus on research and analysis (John and Johnson, 2000). The impact of these disadvantages is reduced by only focusing on the three main functions of Nvivo 9: source management, node making and developing construct diagrams. No further functions of the software are used to maintain a focus on the actual research and save time.

4.8.3 Reporting the Findings

The presentation and reporting of the data is an important part of the research inquiry because this actually links a researcher and phenomenon with the reader. Creswell and Clark (2007, p. 129) suggested three components of presenting the findings, which are followed in this research:

a. **Written interpretation of the findings:** Interpretation is explaining the meaning of the data and the relationship with the theoretical propositions. Within each case study, DSD constructs are sequentially interpreted.

b. **Illustration of points by quotes:** To support the theoretical statements and claims made within the interpretations, participants' quotes are shown as primary evidence. These quotes are distinctively shown with a smaller font size and marginally more cantered to the page, so to differentiate them from the main interpretations and conclusions.

c. **Use of visual models, figures and tables:** To present a holistic view of the findings, Nvivo 9's model diagrams are displayed for both *a priori* and *a posteriori* nodes. Each case study is concluded with a detailed visualisation of a real service story. Within the cross-case analysis, the data is further abstracted into tables and matrices to cross-compare the findings. At the end, the findings are squeezed into a post-empirical DSD – Version II.

4.8.4 Justification for Adopting NDA

There are four primary reasons why the NDA method is used.

Firstly, NDA is adopted because it establishes a focus on the contextual events and experiences beyond the text and language used within the data. NDA focuses on the actual doings and events represented within discursive resources (Potter, 2004). In Uygur's (2009, p. 105) words, "discourse analysis expands readers' horizons and helps them to understand unacknowledged motivations behind the phenomenon in question". Through NDA, a concrete and detailed knowledge about service practices is obtained because it is more focused on data analysis, which takes into account contextual information of time, location and other necessary parameters that create a frame for the narrative discourse. Such focused data analysis has offered a deep understanding compared to the abstract knowledge offered by the focal theory. NDA has therefore bridged the gap between practice (service cases) and theory (DSD model). Luna-Reyes and Adersen (2003) highlighted this gap between model and data as shown in Figure 4.7. Luna-Reyes and Adersen mentioned that qualitative data analysis methods such as discourse analysis can be used to fill this gap.

Figure 4.7: A pictorial representation of the gap in the incorporation of textual information into system dynamics models

Source: Adopted with changes from Luna-Reyes and Adersen (2003, p. 284)

The empirically based DSD constructs are concretely obtained through narrative discourses. NDA integrated the participants' and researcher's versions of the phenomenon (Potter, 2004). This integration and synthesis of theoretical and practical themes in NDA helped the researcher to configure the DSD with practice, which has reduced the gap between the model and the problem modelled. This approach agrees with Forrester and Senge (1980, p. 416) who argued that the "model must not contradict knowledge about the structure of the real system so that there should be no gap between model and the problem modelled". Other qualitative data analysis methods such as content analysis and conversation analysis focus on more linguistic characteristics, which reduce the focus on actual experiences and events beyond the words (Heritage, 2004).

Secondly, NDA is used because of the nature of the actual service. A real service occurs as a temporal process (Sampson, 2012). This process consists of a series of

actions and events which leads to achieving particular objectives. This sequential occurrence of actions is well-suited for being described and analysed as a story or narrative. Moggridge (2008), while talking about prototyping services with storytelling, explicitly said that service conceptualisation is like storytelling and is about narratives of actual service processes.

Thirdly, NDA is used because of its successful use within service research. Stickley *et al.* (2007) used NDA to understand the experiences of mental health services in the UK. Han (2010), Helkkula (2010) and McColl-Kennedy *et al.* (2012) also used different formats of discourse analysis within service research.

Finally, NDA is adopted because the primary evidences collected were in the form of discursive resources. The discursive resources included the narratives and related visualisations and documents. The availability of these rich discursive resources has encouraged the researcher to adopt NDA. This method reduced the researcher's and participants' biases as actual stories are described.

4.9 Ensuring the Research Quality

A scientific inquiry is expected to ensure the research quality through executing a rigorous research process. The quality in case study research can be established and evaluated through different approaches. Conventionally, validity and reliability are the two core parameters for evaluating the quality of a scientific inquiry. However, these norms are not strictly applicable to the qualitative nature of service-system research (Han, 2010). Guba and Lincoln (1994) suggested the criteria of credibility, dependability, conformability and transferability for qualitative research while Yin (2009) suggested validity, internal validity, external validity and reliability. Malterud (2001) proposed the criteria of relevance, validity and reflexivity. The pragmatists also value utility and the problem's relevance to the research outputs (Van-Aken, 2004, 2005). This present research has used validity, reliability and problem's relevance/utility as three-point criteria to establish quality in this inquiry. These three points cover most of the quality issues captured in other terms such as transferability, conformability and credibility.

4.9.1 Validity

Validity is the level that a researcher actually investigates what he intended to investigate or collected the right data from the right sources (Oates, 2006). According to Gagnon (2010, p. 6) internal validity ensures that "the description of the

phenomenon is an accurate representation of the observed reality". External validity ensures to "produce results that can be compared and contrasted with other cases" (Gagnon, 2010, p. 6). This also refers to the transferability of findings to other cases' contexts (Yin, 2009). Construct validity "show that the abstract terms and meanings are applicable over time and across sites and populations" (Gagnon, 2010, p. 6). Triangulation is a common and effective technique used by qualitative researchers to enhance validity in service research (Han, 2010). The following four steps are taken to ensure the internal, external and construct validity in the research:

a. To ensure internal validity, multiple methods (focus groups, interviews, visualisation and documents) are converged on the same fact (Yin, 2009). This means the intended reality is accessed and assessed through multiple methods, so is confirmed with greater confidence. Similarly, the interviews are conducted in the narrative format, which more forcefully reflects the real service experiences. The quotes shown as evidence are not the subjective opinions but descriptive accounts of real events.

b. During conceptualisation, the initial draft of the DSD is evaluated through focus group discussions to see whether the core research questions actually trigger the targeted phenomenon or not. Based on the findings, questions are adjusted for the case studies.

c. To ensure external validity, the DSD is evaluated in four relatively distinct cases. Cross-case analysis is used to compare and contrast the findings. An optimum level of depth and breadth is maintained. The cases are diverse enough to enhance the external validity (transferability) of findings and are similar enough to maintain the necessary focus in the study. This is a triangulation established through multiple cases.

d. To ensure the construct validity, abstract vocabulary is used for the concepts (constructs). The selection of wording is based on the repeated and common language in service system theory, SFS theory and practice, for instance, the *construct rules and control*, which include contextual *Shariah* rules. These generic terms are used to enhance the applicability of the DSD across multiple services' contexts.

4.9.2 Reliability

Reliability is another important parameter to ensure and evaluate the research's quality. A research inquiry is reliable if it is possible to repeat the study and achieve the same results (Gray, 2009). Internal reliability establishes that "other researchers would arrive at essentially the same conclusions if they analysed and interpreted the same evidence … external reliability shows that another independent researcher looking at the same cases or similar cases would arrive at essentially the same results" (Gagnon, 2010, p. 6). Reliability is almost the same as conformability of the findings or that the results are possible to be confirmed by others. Based on Healy and Perry (2000) and Yin (2009) the following measures are taken to ensure the reliability in this research:

a. The research design is explained in detail. A complete research path from research paradigm to the actual reporting of findings is explained. This detail can enable the independent researchers to conveniently follow the method to confirm the findings.

b. The case studies' data bases are developed in which the evidence such as interviews, audio transcripts and visualisations are recorded. Nvivo 9 software is used which helped to more reliably trace and link the data quotes within analysis.

c. Relevant data quotes, matrices and data figures are displayed to directly link a reader with the participants' narratives or voice reflecting their experiences. This process reduced the researcher's bias.

d. Each participant quote in the data display is coded and linked with the participant's profile attached in appendices 4 and 5.

e. External reliability is enhanced by using uniform methods in four cases.

4.9.3 Problem Relevance and Utility

This research is problem-centric and pragmatic. The three epistemological roles of developing, evaluating and theorising the DSD are designed to come up with a concept that is important for theory as well as practice. The current qualitative researches suffer from utilisation problems because they over-focus on theory developments and testing and offer less practical solutions (Van-Akan, 2005). Utility and problem relevance is used as a research quality criterion along with conventional validity and reliability. The following steps are taken to enhance the practical utility of the research outputs:

a. A theoretically and practically important problem is researched. The need for its solution model is voiced in theory as well as in practice

b. A pragmatic paradigm is selected to approach the research problem (Creswell, 2003). Contemporary theories are synthesised with empirical findings to come up with a theoretically and empirically grounded DSD.

c. The multiple case study strategy is applied which studies the phenomenon within real business environments (Hevner *et al.*, 2004). As a result, the outputs have relatively greater practice relevance compared to abstract theory testing research.

d. Based on the DSD, fourteen detailed practice implications and recommendations for service and SFS practice are discussed in the conclusion chapter.

4.10 Ethical Considerations and Principles

Responsible scientific research pays due consideration to the ethical side of a research inquiry. The Brunel University ethics committee has assessed and approved this research. Statement of ethics approval is attached in appendix 2. Brunel University's latest code of ethics has the following objective:

> "To achieve a balance between safeguarding the dignity and rights of the research participant and providing a supportive and protective ethical environment within which the university researcher can seek to further the boundaries of human knowledge. (Brunel University Code of Research Ethics, 2010, p. 2)"

The Brunel University ethical guidelines are founded on the following ethics principles, which are followed in this study.

4.10.1 Autonomy

The participants in the research are informed about their autonomy for their research participation. Detailed information about the researcher and research was provided to them in the participant information and consent sheets (appendix 2). This information sheet is also orally explained to the participants before taking their consent. Participation in research after reading the information sheet is considered as implied consent.

4.10.2 Non-Malfeasance

This research activity is not against any known law and rules within the country of research or outside at time of conducting the research. All phases of data collection are completed in the work premises of participants with permission of the organisation and

authoritative participants and within the rules of organisations. The research activity did not increase or decrease threats to participants' health or any other aspect.

4.10.3 Beneficence

Participants are informed about the benefits of the research to the field of service and SFS practices. The possible practice implications of the research are also discussed with the participants.

4.10.4 Justice

This principle expects the researcher to ensure that the research activity should not lead to any unjust outcome for any individual, whether participating or not. Neither the research activities nor its output could cause any injustice to the participants or to anyone else.

4.11 Chapter Summary

This chapter provides a detailed account of the research methodology developed, justified and applied in this research. Three research paradigms of positivism, constructivism and pragmatism are discussed. The researcher took a realist-pragmatist stance to investigate the problem. This stance allowed the researcher to assume three roles for developing, evaluating and theorising the novel DSD (model) through a qualitative research approach.

A multiple case study strategy is developed to conduct the empirical research. Four SFS organisations in Pakistan were purposely selected for evaluation and further development of the DSD. Key research design parameters are explained and justified. These parameters include the case selections, the unit of analysis, case protocol and accessing the case organisations.

Thirty-two in-depth narrative interviews are used as the core empirical source. The findings are also triangulated through three focus-group discussions, four service visualisations (blueprints of four cases) and some document reviews.

The narrative discourse analysis method is justified and used to conceptualise the data through data reduction, interpretation and conclusion-drawing steps. The qualitative data-analysis software, Nvivo 9, is used to develop the theoretical and grounded nodes to evaluate and further extend the DSD.

The concepts of qualitative validity (internal, external, construct) reliability (internal and external) and problem relevance/utility are explained and their application within this research are discussed to ensure the research quality. Ethics principles of autonomy, non-malfeasance, justice and beneficence are applied to conduct an ethically credible piece of research.

CHAPTER 5: ANALYSIS AND FINDINGS

5.1 Introduction

This chapter reports the analysis and findings of pilot focus group discussions and detailed case studies. The aims of this analysis are to i) evaluate and ii) further develop the DSD model. The analysis is divided into two sections. The first section reports the findings from the focus group discussions and the second section then reports the findings from the four individual case studies.

5.2 Focus-Group-Discussions' Analysis

5.2.1 Introduction

The aim of focus group discussions is to pilot the interview questions and complement the theory with abstract findings before detailed evaluation of the DSD in case studies. The focus group provided the initial abstract findings related to the seven DSD constructs, which are discussed below.

5.2.2 Planned Design

The first question put forward for discussion sought to understand how the service community plans or designs the service. The following narrative shows the development and application of planned designs:

> Every financial institution has a product development department. The experts there design service packages and send these to the branches to put into practise…/P7.

In planned designs, the designers plan certain procedural steps that the local employees and customers are expected to follow, as explained in this narrative:

> We receive a list of activities to be done by employees and customers. For example to open an account, first the customers have to visit the bank and bring the required documents. We then verify the customer's source of income and so on…/P13.

The planned design for the credit approval is explained underneath:

> We have been provided with a sequence of activities to complete the credit approval. Like at this level, the credit controller negotiates and makes a credit proposal with the customer, then forwards that to the head office with the branch manager's recommendation, and then they make a decision to approve or refuse…/P5.

In SFS there are two levels of planned designs, one of which is designed by people in head offices. A further detailed version of the planned design is developed by the local or situated service creators. The situated service creators *design* the concrete and detailed functional steps for themselves to actually adapt and apply the design to create

the service. The central designers in head office only specify superficial detail, for example to make a credit proposal and its mandatory headings. The situated service creators then design the actual contents of the credit proposal based on the actual service requirements that emerge in the practical environment.

5.2.3 Adaptation: Emergence and Deferred Design

The second research question sought to understand how emergence occurs in service practice environments and what deferred designs emerge that result in adaptation in a service system. Information prompts the adaptation or migration within service practice:

> Our menu of services grows as new needs of the customer emerge. We modify our service by adding new facilities, options and benefits for customers [inclusion] ... and could also withdraw some features [exclusion] which do not remain attractive…/P7.

Inclusion and exclusion in service components is a continuous process of deferred designing, which leads to adaptation in service systems. The circumstances of service creators differ and their different value propositions and capabilities result in varying contributions i.e. roles, resources and rules. These differences force the planned design to evolve at the service practice level. The service absorbs new actions and processes and excludes others.

Authority or decision power related to the initiation and undertaking of the adaptation process is distributed throughout the service system. Employees working at different levels of the organisation possess different levels of authority related to different parts of the adaptation process. For instance, in the context of a bank, the designers at a strategic level (e.g., at the head office) are authorised by the country's central bank to adapt the standard designs provided by the central bank. This enables the designers at strategic level to mould the models into different service packages. Similarly, the personnel at the operational level (e.g., in branches of a bank) are also given the authority to make adaptations to a service design. They are authorised to embed the detail of each service encounter within the design provided to them by the designers at the strategic level. This authority to adapt the service design at the operational level enables personnel to create customised and tailored services for each service case.

The business development and strategy manager described the emergence of new value propositions and explained how this affected the planned design to adapt:

> In *Mudarabah* we invest money in fixed assets of businesses … if the customer informs us about any new type of assets. He wants us to invest in we evaluate the new

> opportunity and restructure our service to adjust for such opportunity. We send such designs to the headquarters for approval, where the result could come as approval of our recommended service design or disapproval with recommended changes. We did this recently for financing imports of CNG pumps…/P1.

This narration describes how opportunities emerge in the market, triggering the service co-creators to adapt the service to fit the benefits. However, adaptation needs to be considered carefully in order to comply with *Shariah*.

Evolution in roles and resources of the service co-creators impact the planned design's ability to adapt. Evolution can be observed in the same service compared at two different times, as described by the senior operations officer:

> With new methods and tools, the service becomes more and more sophisticated. If you compare the banking of 1976, when I joined the bank, and now, you will see that almost 90 per cent of the service structure is different. Like now we do not have those manual typewriters to prepare the ledgers, handwritten passbooks to maintain records of cash withdrawals, coins issuance against cheque process. All these practices are now replaced with ATM, debit card, internet transfer and mobile banking…/P3.

Regulators and organisational rules change, which affect the planned design's ability to adapt as described by the manager of credit and marketing:

> The prudential regulations continuously change, even some time two or three times in a month they send us SROs [statutory regulatory orders] to replace some documents or wording in contracts. Similarly, the organisation's policies and standards evolve with time which impacts the ways we provide the service ... however you will see these changes are different in different countries, and in different financial sectors…/P2.

Adaptation and evolution in service varies in different regions and sectors:

> There is no doubt that service adapts and evolves over time; however, you cannot say that this evolution is uniform in all the regions where we operate. Like our recently built kiosk system for accepting utility bills works successfully in urban areas but not in our rural branches. Compared to customers and the staff in rural areas, the customers and personnel in urban areas quickly adapt to the technology ... In some sectors such as capital market investments, the service evolves more rapidly than the conventional depository services…/P4.

The data showed that planned design adapt due to the effect of environment of service system constructs such as need/value, rules, resources. Enactment of planned design in different time-space also affects it to adapt.

5.2.4 Service Co-creators

The third discussion point is put forward to understand the service co-creators. Three categories of service co-creators emerged: financial institution, customer and aiding parties. The financial institution and customer are the focal service co-creators:

> In depository services the main parties are the bank and the customers, which can be households, organisations and government agencies…/P12.

Customers can be households who interact with bank personnel or systems to co-create service. The institutional customers (organisations and governments) interact with the service organisation through their respective personnel and systems. Institutional customers are categorised based on ownership structure, sector of business, duration of service contracts and profitability status of the organisation:

> We have different types of service packages [planned designs] for sole proprietors, firms, corporations and salaried persons [ownership-based typology] ... the service features also cater for the business of client organisations, whether they are manufacturers, traders or service providers [sector-based typology]. Similarly we also have short-term and long-term financing customers and non-profit organisations…/12.

Customers are sub-categorised by age:

> The account for minors is operated by their legal guardians ... we have special service packages for retired customers…/P3.

Aiding parties provide necessary goods or other auxiliary service components that constitute parts of a service package, as discussed by the manager at the car *Ijarah*:

> In Islamic auto leasing services, the customer and the investment bank are the direct participants. However, other parties such as the vendor and *Takaful* company also participate by supplying and insuring the vehicle, respectively…/P6.

There are other members of the service community who facilitate particular specialised steps in the service creation:

> The [name of a credit information agency] which is a department of the [mame of the central bank], helps every bank in generating the credit history reports of customers ... [City name] Development Authority verifies the ownership of securities such as land or house ... Accredited valuators valuate the assets that we [bank] take as mortgage or pledge [from customer]…/P13.

This narration identifies the aiding parties' contribution to the system by generating credit information reports, verification of ownership documents and valuation of assets. These service components are added by aiding parties i.e. credit information agency, city development authority and valuator/surveyors. The development in technology and interbank networks enables institutions to outsource various specialised parts of the services to the aiding parties.

5.2.5 Roles and Actions

Service creators have roles which specify the *actions* that the service creators exercise during the service co-creation. Central service designers accumulate and group the related actions to form a role e.g., cashier, depositor, and partner:

> The depository customer is the capital partner and the Islamic bank is the working partner. We manage the customer's money and generate profits that we both share…/P3.

> Certificate of *Mudarabah* is a fixed term investment scheme ... the customer is the capital partner and the financial institution is the working manager…/P1.

> In *Musharikah* deposits, the bank and customer become partners in a joint investment in *Shariah*-permissible business…/P1.

Capital partner is the role assumed by the customer (capital contributor), which indicates the actions that the customer will need to perform in the service e.g., arranging and investing capital. The bank is the working manager, which performs roles such as evaluating business opportunities and investing the funds. In each service case, bank and customer assume the roles of *partners* in joint investment, where both integrate their resources for a joint venture.

In some service packages, each member of the service community could assume more than one role:

> *Ijarah* car lease is a consumer finance service based on three models i.e. agency, lease and sale models. The agency model operates when the bank as principal appoints the customer as agent to search and purchase a vehicle for the bank. The lease model operates when the bank as lessor leases the vehicle to the lessee i.e. customer. After the last instalment in the lease, the final sale model operates when the bank as seller sells the vehicle to the buyer/customer at salvage value…/P6.

This narration shows that the bank assumes three roles: principal, lessor and seller of the vehicle. The customer also assumes three roles of agent, lessee and buyer of the same vehicle. The enactment of these six roles creates six sets of *actions* constituting the service. The service design provides detailed guidelines for these actions. The situated service creators translate abstract roles to inform their concrete service practice. They divide each role into sub-roles, a process which continues to create concrete service actions:

> In *Mudarabah* certificates the bank as manager of funds works to manage the investment pool. The customer as investor needs to make all the investment arrangements…/P2.

The role of depositor is narrated as:

> The depositor [customer's role] first fills the form and other required documents and when the account is open then he deposits the money. For withdrawal of money, he uses cheques, ATM and debit card [customer's actions]…/P14.

The underlying actions in the roles of lessee and lessor are discussed as:

> The lessee arranges monthly instalments and deposits the same in the bank [lessee's actions]. The bank as lessor only starts charging instalments when it actually hands over the vehicle to the customer [lessor's actions]…/P6.

The roles and actions of aiding parties are also narrated:

> In *Ijarah* auto ... we appoint a *Takaful* operator to arrange *Takaful* [Islamic alternative to insurance], which covers the cost of the vehicle if any damage occurs [*Takaful* operator's actions]…/P6.

The *Takaful* operator is the role assigned to a company specialising in the Islamic alternative to insurance (*Takaful*). This supporting role added value to the core auto lease service.

Roles do not explicitly specify all actions and the details of every action and movement exercised by role enactors. For management purposes, designers further divide roles into the concrete level of service practice. Following narrative show the roles and sub-roles, within the co-creation of investment service:

> The bank is the manager of the investment pool [investment bank's role] and it does through employees, where each employee performs a set of closely related tasks. Like a *financial analyst* [sub-role] analyses the stock market performance to make an investment decision regarding the investors' money [actions]. Each employee works as per his or her job title and job description ... similarly our customers, particularly the institutional investors [customers' roles], use their employees [sub-roles] to perform their responsibilities, for example their evaluators [sub-roles] evaluate our performance to decide whether we are worthy and credible to invest with or not. Their accountant [sub-role] keeps records of the investment inflows and outflows that link with our service [actions]…/P1.

This division of roles moves from abstract to concrete service practice. The bank divides its role into different departments, the department divides among personnel. Personnel divide the roles into actions such as filling forms or greeting clients. Banks divide the role of financer for larger finance by forming financing consortiums.

Aiding parties also exercise their roles in the service:

> If the depositor gives us a cheque from another bank, then our operation manager sends the cheques to the local clearing house of the central bank through a secure courier service. The clearing officer of the central bank then credits the payee's account in our bank and debits the payer's account in the other bank…/P8.

Courier and clearing officer are sub-roles assumed by the aiding parties.

5.2.6 Resources and Usufructs

The service creators use resources like expertise, premises, information systems and other physical assets. Normally, they do not consume the resources but its usufruct or provision becomes a mean for value creation. For instance, the ATM is not the service but its usufruct, the electronic process that dispatches money from the cash machines filled by the cashier, is. This resource and its usufruct connects the customer to the cashier, and thus the ATM usufruct links the actions of the cashier and customer to efficiently and effectively provide money from bank to customer. The usage of resource

expertise and physical resources is confirmed by the manager of working capital finance:

> Head office trains us [employee competence development] in the use of the cheque processing system, debit/ATM card machines, online money transfer system, standing order system and direct debit order system etc. ... every employee develops skills related to his specialisation, like our financial evaluators are experts in evaluating the financial statements for the customers…/P3.

The service personnel attend periodic training sessions to develop their competencies that they require for their work. The research found that each member of the service community uses its own resources as well as other members' resources to create different parts of the service. A regional sales manager discussed how customers use their own as well as the bank's resources to co-create service:

> In online and phone banking, the customer accesses our system [bank resource] through his/her phone, internet-enabled personal computers [customer's resources]…/P8.

The bank and customers provide usufructs of personal and bank phones and computers to co-create service. Third parties like internet service providers or mobile phone and internet companies aid in the interactions between customer and bank by providing the usufruct of internet or mobile networks. Aiding parties also use expertise and physical resources in the service system:

> Independent valuators use their expertise and market links to evaluate the customers' assets that we intend to accept as mortgage or pledge. Similarly [the credit information agency name] has an interbank network and repository through which they produce credit information reports that we use to evaluate each customer case…/P12.

Aiding parties such as the valuators and the credit information agency provided usufructs of their resources too. Resources like premises, apparatus and expertise are not consumed in service, but its usufruct supports the service creators' actions. Exceptions are erosion in some resources due to use or one-time use of items or the depreciation in physical assets.

5.2.7 Rules and Control

Formal and informal rules are applied in the service creation. National and local regulator bodies provide prudential regulations. The service organisations transform these regulations into local rules which define legally enforceable economic rights and responsibilities for the service creators. Service creators also design and apply their own service standards and rules for managing the organisation's work. The manager of working capital discussed how they cater for prudential regulations of the central bank and other organisational rules:

> In working capital finance, first we sign a *Murabahah* finance contract provided by the Islamic banking department of [the central bank name]. The rest of the documentation such as master financing agreement, agency agreement, letter of agency, letter of hypothecation, letter of lien set-up, letter of funds disbursement, letter of arrangements, letter of continuity are designed by us reflecting the terms and conditions on which we both [bank and customer] agree…/P7.

The following narrations reveal the minimum threshold rules for the service design and practice:

> In taking deposits the investment bank and customer sign a *Qard-e-Hasnah* (interest-free loan) contract, which is a prudential regulatory requirement…/P11.

> In auto finance the [the central bank name] requires us to sign a diminishing partnership contract, provided by the Islamic banking department of SBP…/P5.

The service co-creators also incorporate their respective rules, standards, values and norms to build a control in the service system.

5.2.8 Value-in-context

In financial services, the service co-creators created contextual benefits such as safekeeping of money, financing house purchase and transferring money. This value creation is the object of the service system. A service package has at least one value proposition but could have multiple, like depositing money for safekeeping, making convenient transactions and building credit history. A senior operations manager described the value propositions of the service co-creators in inventory finance service:

> In *Murabahah* inventory finance, the customer wants to buy goods, the bank wants to finance the goods, the vendor wants to supply the goods, and the *Takaful* operator wants to create *Takaful* the same goods. So, we all join hands to create this service…/P4.

The value proposition in goods works as the object for the service system, each member of the service community derives different value from the same object, which binds them to co-create service. The manager of car *Ijarah* discussed how an auto as the object of *Ijarah* auto lease service persuades the service community to co-create service:

> I will tell you the layout of the *Ijarah* auto lease. The bank buys the vehicle from vendor and the customer takes this vehicle on lease from the bank. Since the vehicle remains in the ownership of the bank, therefore if any damage occurs, the *Takaful* company will cover the damage of the vehicle, for which the bank pays a premium…/P6.

The value propositions are attached with the vehicle, which attracts the customer, bank, vendor and *Takaful* company to co-create the service. They and their contributions are directly or indirectly linked with the car leasing, which motivates them to create the service. Money is used to compensate any imbalance in contributions. For instance, the vendor contributing the vehicle is compensated with money. The bank and aiding

parties are compensated for their respective contributions of financing and arranging *Takaful* for the vehicle. Customers get the vehicle as compensation for actions and money.

Trade in shares, bonds and other securities also works as value proposition in service system, as discussed by the branch manager:

> For *Mudarabah* certificates, the investment pool is the centre of service. The customer invests his/her money into it and the investment bank manages it. We also outsource some of our functions such as trusteeship of this investment pool, so as to minimise the risk…/P12.

The completion of tasks or advisory functions and supporting the creditworthiness could also become value propositions in a service system, as discussed by the regional sales manager:

> The service could be for collection of fees or bills ... Customers own the receivables but we collect and manage this collection for them. Similarly, we provide advisory and credit standing services, like issuance of letter of credit, to support customer credit standing in imports…/P8.

Each service system has at least one value proposition in the form of savings, finances, investments, advisory functions and supporting creditworthiness, etc.

5.2.9 Focus Group Discussion Summary

This section has presented the findings of the focus group discussions. The findings have confirmed the seven DSD constructs and further details and specifics have emerged in the data. Also, the research questions and language are synchronised for the case studies.

5.3 Individual Case Analysis

5.3.1 Introduction

This section presents the individual case studies as a chain of evidence to evaluate and further extend the DSD. In individual cases' analysis, a greater weight is given to the participants' voice (quotes) along with necessary interpretation and conclusions. Afterwards, in-depth discussions on each construct are made in the most comprehensive chapter: cross-case synthesis and discussion. In the in-depth discussions the empirical evidences and literatures are synthesised and to develop a novel post-empirical DSD – Phase II.

Each case study follows the following pattern of discussion topics as depicted in Figure 5.1. C stands for constructs of the DSD Model.

```
┌─────────────────────────────────┐
│        Case introduction        │
└─────────────────────────────────┘
                 ↓
┌─────────────────────────────────┐
│               C1                │
│          Planned design         │
└─────────────────────────────────┘
                 ↓
┌─────────────────────────────────┐
│            C2 (a &b)            │
│  Emergence and deferred design  │
└─────────────────────────────────┘
                 ↓
┌─────────────────────────────────┐
│               C3                │
│        Service co-creators      │
└─────────────────────────────────┘
                 ↓
┌─────────────────────────────────┐
│               C4                │
│         Roles and actions       │
└─────────────────────────────────┘
                 ↓
┌─────────────────────────────────┐
│               C5                │
│       Resources and usufructs   │
└─────────────────────────────────┘
                 ↓
┌─────────────────────────────────┐
│               C6                │
│          Rules and control      │
└─────────────────────────────────┘
                 ↓
┌─────────────────────────────────┐
│               C7                │
│          Value-in-context       │
└─────────────────────────────────┘
                 ↓
┌─────────────────────────────────┐
│    Case blueprint (visualisation)│
└─────────────────────────────────┘
                 ↓
┌─────────────────────────────────┐
│          Case summary           │
└─────────────────────────────────┘
```
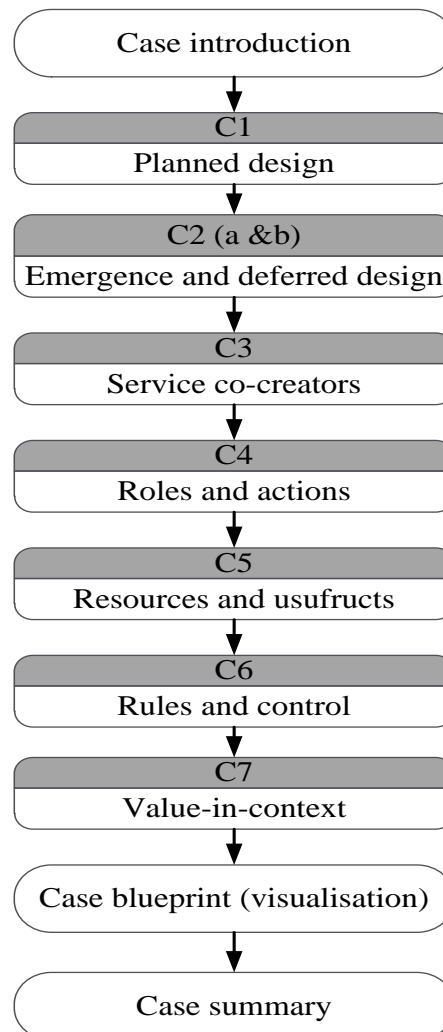
Figure 5.1: Case studies reporting structure

The narrative and discussions quotes are used the primary evidence with occasional reference to documents.

5.3.2 Case I: Islamic Commercial Bank – ICB

a.   ICB Introduction

The selected ICB is a leading Islamic commercial bank operating in Pakistan. It is governed by a board of directors, a *Shariah* supervisory board and an audit committee. The CEO and deputy CEO, who work under the board of directors, supervise the branch network (in different regions), the business segments (e.g., corporate and investment banking, consumer banking) and the support systems (operations, service quality, organisation communication, etc.).

The ICB designs and creates the services within the banking regulatory framework established by the central bank of Pakistan. The central bank has an Islamic banking department, which issues model contracts for the Islamic banks in Pakistan. The banks then apply these model contracts in different service packages. Similarly, as a company, the ICB complies with the regulatory framework of the companies' regulator in the country.

The selected ICB has divided the service packages into personal banking and business banking. Personal banking includes various types of depository, consumer finance and asset management service packages. Business banking includes the depository, finance and advisory service packages for the business entities. The ICB claims to offers *Shariah*-compliant services, therefore it does not apply conventional loan models because of interest and other prohibitions in *Shariah*. Instead, it applies alternative SFS models of *Shirkah*, *Bai*, *Ijarah* and others to create the services.

One regional office, the biggest banking branch of the bank in the north region, is selected as the *ICB case*. Eleven in-depth narrative interviews are conducted with personnel specialising in depository and financing services (participants' profiles and guide questions are attached in appendix 5).

The participants are experienced and well-placed in their positions, enabling them to contact other service personnel, customers and aiding parties participating in the services. The personnel also participated in the service visualisations and are shown the documents as evidence for the support of different service episodes that they narrated.

During the interviews, the participants have contributed narratives and discussions on real service experiences (specific service cases e.g., an auto finance service story of customer A). Contextual questions are also asked about each service case. Discussions

are held on the important episodes, where the service system is found to be adapting to specific environment of a focused service. Interviews are audio recorded, transcribed, reduced, segregated, displayed and conclusions are drawn to validate and further inform the DSD. Nvivo 9 qualitative data management software is used. For each construct of the DSD, Nvivo illustrations are developed (parent and child nodes), which reflect the validation of existing constructs and the emergence of new constructs.

The following seven DSD constructs are evaluated and further extended:

b. Planned Design

The first DSD construct is that *service creators apply planned designs to create real service.* The service creators are found applying planned designs as described in the DSD. However, there is further depth in this construct. A planned-design typology is found as shown in Figure 5.2:
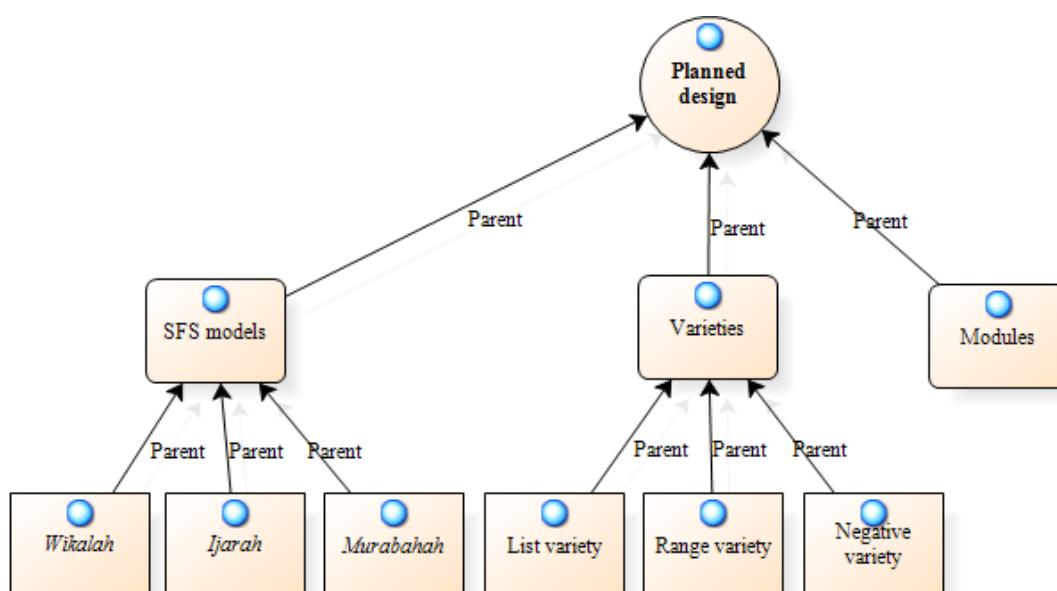

Figure 5.2: Planned design in ICB

Firstly, the data showed that planned SFS models are applied by the service creators in practice to create real service. SFS models specify the service creators, their contributions and benefits in advance of actual service creation. SFS models of *Wikalah, Ijarah and Murabahah* are applied as planned designs:

> This is the case of the *Murabahah* working capital finance ... the package is designed by the product development and *Shariah* compliance department in head office. They send us the package and we practise it in 225 branches ... the core of this service is *Murabahah* [cost-plus sale]; the bank sells goods to clients on deferred payments. The *Wikalah* [agency] model also applies because the customer as agent makes supply arrangements with the supplier on our behalf…/P24.

> This is an *Ijarah* case for corporate customers. We received the format from the head office and accordingly provided the service to the customer…/P19.

> The Islamic department of [the central bank name] provides model *Murabahah* contracts, the head office includes these contracts in the service packages and we then follow these at the branch level…/P25.

Secondly, planned varieties are designed centrally in the head office and applied at the branches to create heterogeneous services. Varieties in planned designs exist for those service-system parameters for which the concrete specifications depend on the inputs from situated service creators located within multiple practice environments:

> I told him [customer] that four maturity options are available in this Islamic investment package. These options are three months, six months, one year, three years and five years. Based on his needs, the customer has specified one option…/P21.

> The credit proposal formats are designed by the head office, which vary for different customers such as corporate, SMEs and proprietors. This customer was an SME…/P25.

> The personal banking officer has informed the customer about different account types and cash withdrawal options such as ATM or cheques…/P20.

> The auto leasing packages provide options such as the types of leasable vehicles... Different types of vehicles such as cars, vans and trucks can be selected. Also we lease used vehicles of different models, not older than five years ... both locally manufactured as well as imported vehicles can be leased. Normally in the first meeting with a customer, we specify the vehicle. Based on its price, the leasing and amortisation schedule is then designed. In this case the customer was interested in a new [brand name of a Car] …/P18.

The above varieties are termed *list* varieties in this research because a list of variations in the system are predicted and designed within the planned service packages. The brochures and package presenters showed further list varieties. For instance, different *lists of documents* are found to be submitted by different types of entities such as public limited company, private limited company, profit and non-profit organisations and foreign and local companies. Planned list variety is also used for the mortgageable assets and properties. The credit policy manual showed that both residential as well as commercial properties can be mortgaged against the finance. Similarly list variety is designed for the payment method to the vendors involved in auto leasing and working capital finance. The payments can be made through demand draft, crossed cheque or pay order.

For some parameters of the service system, neither single option nor a list variety is found to be the appropriate planned design strategy. For instance, how much finance will be used in each service case? Making a list variety of amounts is not an appropriate design because real values occur in such large ranges that make it inconvenient to design it as a list. Therefore, *range varieties* are planned in which varied real values are expected to occur within two extremes:

> A customer aged 18 to 60 is eligible for the finance ... I showed this brochure to the customer, which shows that any used vehicle from one month to five years can be leased … security deposits range from 10 to 50 per cent… /P17.
>
> The investments start from PKR50000 up to unlimited and the maturity of the investment ranges from 1 month to 7.5 years…/P21.
>
> There are ranges of finance, for example PKR75million to PKR150million for an SME. Any finance exceeding PKR150million is a commercial case…/P24.

This variety is named as *range variety* because the designed variations are specified in different ranges, in which the actual value is expected to occur during the actual services. Brochures have also confirmed that range varieties can be planned for the customers' age, leased vehicle life and the cash amount of security deposits.

For some service-system parameters, range variety is not an appropriate planned design. For instance, in *Murabahah* working capital finance, the list of goods to be financed cannot be predicted and listed or ranged in advance because such a list can be as long as number of goods that exist in an economy in a given time-space. New types of business opportunities arise and new goods emerge in the markets. It is therefore not convenient or appropriate to list or range all these emergent goods in advance of actual service creations. So, instead of a planned list and range design, a list variety of what cannot be financed is planned. This phenomenon is termed *negative variety* in this research (taking an analogy from negative-goods-list in international trade). This negative variety ensured the system remains open to accept any emergent goods acceptable for finance, except the negative listed goods:

> In *Murabahah* finance different kinds of goods can be financed except alcoholic drinks, smuggled goods and pornographic content. Periodically we receive a list of prohibited goods for which we do not provide finance…/P24.

The emergence of any of these negative listed varieties results in migration of the planned design and the rejection of the service.

Thirdly, modularity is planned in advance of actual service creation. Isolated service modules are planned that are added and deducted by the situated service creators in multiple service practice environments. Modules are small independent service units (such as an SMS service module) which can be added or deducted to the main planned design (e.g., depository service package). This planned modularity helped the service creators to create tailored services by combining various available modules:

> SMS banking is an optional service that can be added to any type of service such as deposit or remittance etc. ... This customer asked for SMS banking to receive real-time transaction information for the account ... An ATM is an optional service for the company accounts. The customers in this case did not apply for the ATM service because that was a business entity [module deduction] but they opted for internet banking [module addition]…/P22.

> We add *Takaful* and tracker facilities with the auto lease. These are outsourced services…/P17.

SMS, ATM and internet banking are planned system modules that can be attached to depository service packages and similarly the *Takaful* and tracker service components are modules for the auto lease service.

To sum up, in the ICB system, the actual service creators have applied planned designs to create real services. There is depth in these planned designs as a planned design typology is found. Firstly, SFS models are applied as part of planned design. Secondly, planned list, range and negative varieties are applied to meet the predicted variations in the real service-system. Thirdly, planned modules are applied to create tailored services by combining different modules.

c.   Adaptation Process: Emergence and Deferred Design

The second DSD construct maintains that *the emergent environment affects the planned design in response to which the local service creators take deferred actions to adapt planned design*. The data has confirmed the existence of the emergent environment and corresponding deferred design to deal with the adaptation. However, further adaptation steps are found in-between the emergence and deferred design. As shown in Figure 5.3, the circles reflect the emergence and corresponding deferred design. The squares below show the mediating steps that emerge as the adaptation process.
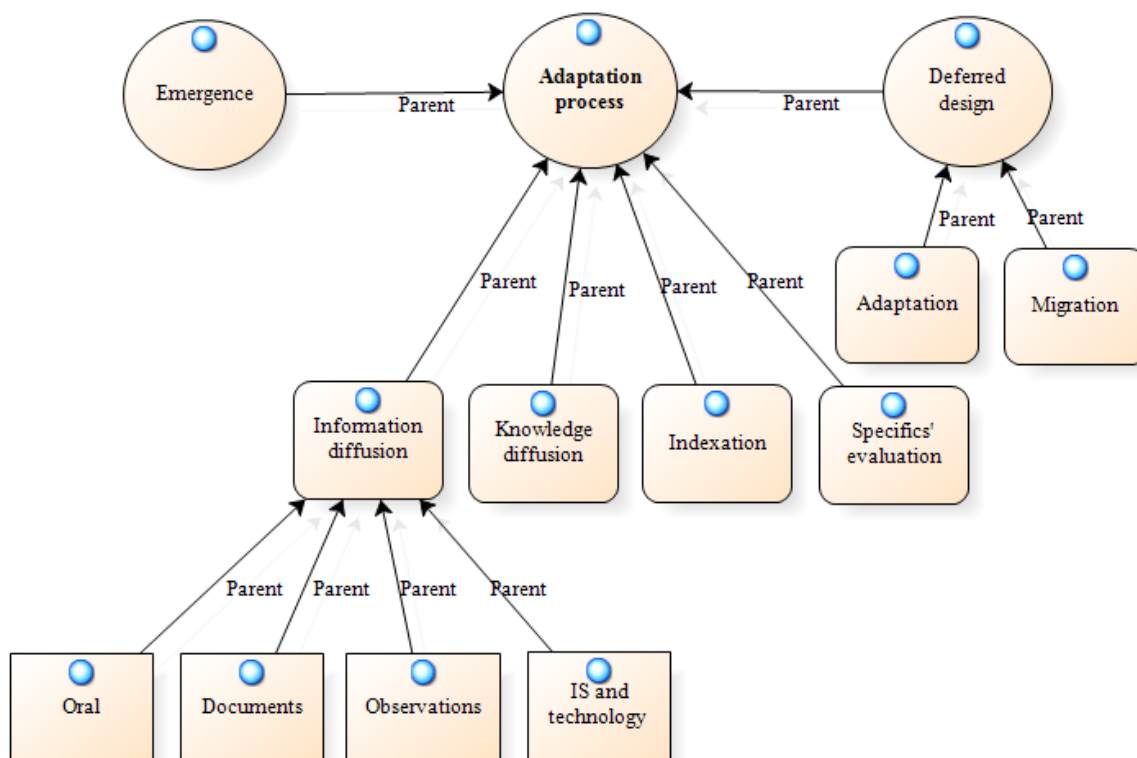
Figure 5.3: Adaptation process in ICB

The emergence and corresponding deferred design for adaptation are discussed first. Afterwards, the design adaptation steps that exist in-between emergence and deferred design are discussed.

The actual service-system is part of social and economic systems. At each service encounter, these broad systems created an emergent environment. The situated service creators incorporated the local social values and norms and thus adapted a planned design:

> Our society is such that individuals establish family relationships and use these relationships to influence the service. One of my friends said to the customer, go to particular bank and meet with S who will serve you well if you mention my name … customers share experiences within their social circle and community. Family, friends and the colleagues of the customers become the potential customers and we treat them as per our social norms ... this customer is referred by someone from rural areas, where people offer tea and food to guests for respect. So, I also decided to offer him tea and respect the social values. This is part of our culture and we treat customers well…/P18.

The structure of the social system has influenced the situated service creators to add additional actions and resources (social referral system and arrangements of tea and food).

Joint family system has provided an opportunity for the situated service creators to adapt the planned design to enhance the security of finance:

> The service format requires evaluation of individual customers only, but I also take into account the family financial position because in this case the whole family share their income and expenses. This made the case strong ... in this region people believe in strong married life and joint family systems. We, therefore, sometimes clip the husband's and wife's salaries to reduce the risk of default. In the family system the partners strongly accept each other's liabilities…/P19.

The structure of the family system has influenced the situated personnel to adapt the planned design by including the evaluation of the family's financial position.

In another case, customer reputation among the villagers has motivated the personnel to adapt the planned design of a credit proposal:

> In this case my colleague told me that the directors of this customer's company are from the same village he belongs to. They are very trustworthy people following *pokhtoonwali* [Local Pathans' code of life]. Based on this, I changed the standard format of credit proposal to show their trustworthiness among the villagers and how this will have high possibility of financial recovery. I also mentioned how this case will enhance the bank's reputation among the villagers…/P19.

In another case, the planned *Murabahah* finance design is adapted to better meet the specific customer requirements and the emergent market situation:

> The customer explained his business and the market situation of the food items he was dealing in. We changed the *Murabahah* process flow design by adding and deducting steps to adjust for the supply of the food items he was interested in financing. Every customer's case is different; the process flow design for our auto-parts finance case was different from this food-items finance case because the industries, regulators and suppliers were different …/P25.

The service creators customised the planned *Murabahah* process flow design. Credit policy documents showed that service creators can customise and adapt the process flow design for each customer (deferred design) and should send that back to the product development and *Shariah* compliance departments for the approval of the adapted design. The adapted process flow then contains detailed steps based on the emergent and unique situation of each service case.

In another case, the deferred design decisions are made to adapt the planned design for an underage customer and a one-year-old company:

> Deviations from service packages are allowed. In one case the client was younger than the required 20 years of age. To overcome this, we took more security/down payment. In another case, the company was one year old, so year-wise comparative financial analysis was not possible, which is required in the standard procedure. We solved the problem by taking proforma [projected] financials for the coming year ... for every deviation the amendments depend on the situation of a particular case and nature of deviation we take…/P19.

The planned system parameters of minimum age and comparative years' financial analysis are adapted to meet the requirements of particular cases.

In another case, further service steps are added due to the urgency of the depository customer:

> The new customer deposited money with the cashier. His account was opened but not yet authorised for transaction. Authorisation from operations managers takes about 20 to 25minutes after opening the account. The customer was in hurry, so the cashier manually recorded the transaction and later transferred the amount to the customer account…/P23.

The additional step of manually recording the transaction is added due to the specific situation of this case.

On another occasion, the customer had previous finance arrangements from other banks. This situation caused the manager to adapt the planned design by adding further service steps:

> His credit report showed that he owes PKR243million funds-based and PKR330million non-funds-based. The head office asked me to provide further details of these funds. In response, I took information from the customer and relevant financing banks and designed an additional proforma report. This report showed details like how much funds were taken from which bank, when and in what circumstances…/P19.

The development of the proforma report for the customer's previous finance from other banks was not part of the planned design. The actual detail of this part of the process emerged during the actual service creation and was then included in the system. This process caused adaptation in the service system for this particular case.

The emergent aiding parties' environments also affected the planned design to adapt:

> We financed oil supplies for a construction company. The suppler failed to make the supply due to shortage of oil products in the country, so we changed the supply duration and redesigned the *Murabahah* process flow…/P24.

The situation of the oil industry and the suppliers caused the carriage company to fail in their supply. This specific situation affected the service creators to adapt the planned design.

In another case, the planned design is adapted for the emergence of a new information system:

> [The brand of an information system] was introduced to replace the [brand of an old information system]. Depository packages were transferred to the new system and the finance packages such as *Ijarah* will be transferred soon ... this will make the service process more effective…/P22.

In another case, the internal interactions among the personnel, customer and aiding parties caused emergence and resultant deferred design for adaptation:

> The head office sends standard proforma for credit proposals. I then develop the actual detail in the proposal through discussions with internal staff, customer and suppliers of goods…/P24.

The planned credit proposal designs sent by the head office defer the functional detail to the situated service creators. This functional detail in the credit proposal is based on the emergent interactions among the service co-creators.

The various selections within varieties also caused adaptation and migration in the planned design:

> He (customer) selected the lease of a used [brand] car. He benefited because no supplier booking and excise registration was required for that car so these steps were not involved in this case. The supplier was known to the customer, so he came to the bank himself…/P18.

> For investments we open both fixed and checking accounts. The customer already had a checking account, so we skipped the opening of the checking account…/P21.

The specification of a used car in this lease service resulted in the deduction (migration) of service steps such as supplier's booking and excise registration. Similarly, in the investment service, the planned opening of the checking account is skipped (migrated) because the customer already had a checking account.

The specific situations also resulted in complete migration of the planned design or rejection of the service:

> The customer's salary slip showed the marketing arrears paid to him by the employer. Our financial evaluator said this was not his regular income. His remaining income was not enough for the facility he asked for, so the case was closed and no financing was made…/P17.

> The customer's business was strong and profitable but he did not maintain any bank accounts. Due to this lack of financial history the case was not advanced…/P19.

The planned design also migrated when the emergent environments are found inconsistent with *Shariah* and other rules in the system:

> Credit policy contains internal and state bank regulations. Everybody wants to have a car but we reject the cases that do not comply with rules ... we look to *Shariah* regulations and if anything is going against it, we reject the case…/P17.

To sum up, a planned design is exposed to the emergent environments and the local service creators took deferred actions to adapt the system. The service systems and service creators are part of and interact with the social systems, family systems, market systems and individual systems and their contextual factors. The service creators are found either adapting or migrating from the emergent environment.

The data has shown four design adaptation steps between emergence and corresponding

deferred design. These sequential steps are i) information diffusion ii) knowledge diffusion iii) indexation and iv) specifics' evaluation.

As shown in the previous section, the first event in the adaptation process is the emergence in the specific environment of a service case (a unique situation). In response to such an emergent environment, the situated service creators diffused new information in the system. Service creators seek and deliver new information to understand the emergent environment and consequent new service requirements. This information diffusion occurs orally, through documents, observations, information systems and other technology. The following narratives show the oral information diffusion in the service system:

> We interact and exchange information with supporting parties and the customer, which creates an overall image of the case and its situation…/P19.

> This was a first meeting with a customer where we exchanged information and agreed on different alternative options…/P25.

> The customer and account opening officer have discussed and exchanged information through questions and answers. A customer normally looks for information related to the available service packages and we look for the customer-related information…/P20.

The information diffusion has also occurred via exchange of documents. Empty spaces in forms and templates allow the situated service personnel, customer and aiding parties to exchange the information:

> The customer has brought two references, bank statement, salary slip and utility bills. This is the information gathering process through which we can better understand the situation and better serve the customer…/P17.

> He [customer] came with all the documents required for account opening ... information in these documents goes to the relevant employees and departments so that they can make informed decisions…/P22.

> Since this was a partnership firm, I provided the required list of documents that the customer's firm needed to submit to the bank ... I also provided service brochures and terms and conditions that will apply in the service…/P25.

Information diffusion has also occurred through observations of live situations and documents:

> The area manager told me to visit the customer's business and observe their stock and trading myself. These observations were done to reasonably decide about the amount of financing…/P18.

> The risk management unit marked an observation on funded and non-funded facilities obtained by the client from other banks…/P19.

> The manager of the legal department observed that the quotation provided by the customer is a photocopy, which was then communicated to the relationship manager and customer to replace that with the original one…/P17.

Information diffusion has also occurred through information systems and other technology. The information system, telephones, faxes and email systems link up the service creators and enable them to diffuse information:

> The account opening officer inputs the data into the information system. The information then reaches the concerned departments such as ATM, debit card and cheque-producing departments and even to the third parties such as central bank, visa and interbank network…/P20.

> We send the customer's information to head office through our information system. They then assign an account number to each customer…/P22.

> We discussed the options in *Ijarah* on the phone and then I faxed the related brochures to him for the detailed information…/P18.

The information diffusion resulted in knowledge diffusion. The service co-creators used the information to understand or in other words developed the knowledge about the emergent environment and new service requirements:

> Through information I understood that this was a good financing opportunity because the customer had a very short and efficient cash cycle…/P25.

> We asked for informal information related to a customer's work, to better understand his situation before deciding about service options…/P24.

> In initial meetings, the customer wants to understand the available service packages and the personal banking officer wants to know about the customer and his needs…/P20.

> One of my colleagues had know-how in the industry in which we were aiming to invest. So, I called him to get feedback on the industry's profitability trend…/P24.

After the knowledge diffusion, the situated service creators indexed the available planned designs with real service requirements.

> When we fully understand the service requirements, we then compare and index the case with the available service packages [planned designs]. Like *Murabahah* finance package we have corporate, commercial and SME options. After understanding the company and its requirements, I specified this company as an SME …/P25.

> I compared the customer's particulars with the criteria and found the customer as salaried depositor. So, within the available options, I selected *no-minimum-deposit-option* because salaried accounts are exempt from minimum deposit requirements…/P16.

> The customer said that he wanted to save his money for one year. I looked at the investment options and found *Mudarabah* one-year investment certificate, which was best suited to the customer's need, so I offered that to him…/P21.

During this indexation, the service creators compared planned models, varieties and modules with real service-system parameters. They also highlighted the new requirements for which the existing planned designs needed adaptation or migration.

After indexing the real service-system with planned design (and vice versa), the service creators applied the available competencies and expertise to evaluate the specifics of the case, so that they can be embedded within a planned design.

> Personal banking officers are the experts. They evaluate the personal needs and suggest possible solutions for the specific cases …/P20.
>
> *Murabahah* finance includes a comprehensive evaluation of a customer's needs and the circumstances. As expert in *Murabahah*, for this case I made a trend analysis of the niche industry in which the customers were dealing, I particularly focused on the areas where the customers have their construction sites. Based on all this analysis I amended the standard *Murabahah* flow design for this case…/P24.

To sum up, the data showed that the real service creators interacted within broad social, economic, market, family and other allied systems. These systems created an overall environment for each service case. The situated service creators adapted the planned designs (models, varieties and modules) to meet the service requirements in specific environments. This adaptation process starts with emergence in the situated environment. In response, the service creators diffused information orally, through documents, observations, information systems and other technology. Information diffusion resulted in knowledge diffusion because the service creators comprehend new information about the emergent environment and new service requirements. Based on the new knowledge, the service creators indexed real service requirements with available planned models, varieties and modules (and vice versa). They applied the available competencies and expertise to evaluate and then make specifications and adaptations in the planned designs. As a result they come up with a deferred adapted design or migrate off.

d.   Service Co-creators

The third DSD construct maintained that service organisation, customer and aiding parties co-create service. In this case the ICB, customer and aiding parties are found to co-create the service (Figure 5.4). Firstly, the ICB was found to be the core service creator. ICB made this contribution in the form of designing and applying the planned designs to create the real services with customers and other aiding parties:

> The product development and *Shariah* compliance department located at head office designs our service packages. We at branch level deliver the service based on these packages. In each service case we work as a team…/P19.
>
> As an Islamic bank, we provide *Shariah*-compliant financial services to customers ... every department of the bank are involved in the services. Like the legal department takes care of all the legal arrangements in each service. The accounting and finance department disburse the funds…/P24.
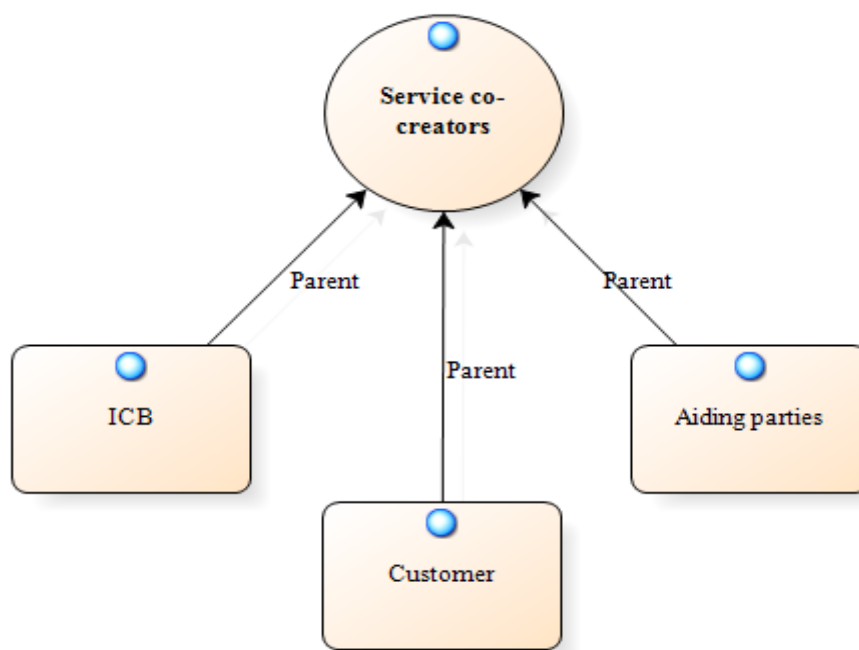
Figure 5.4: Service co-creators in ICB

Secondly, customers co-created the service with the ICB and aiding parties:

> The customer has some responsibilities in every service. In one *Murabahah* finance case, the customer was a partnership firm. In this transaction, we sold goods to this firm. The purchasing officer of the customer's firm worked. He linked up the bank with the goods supplier. Similarly, the financial matters were handled by the firm's accountant…/P25.

> In this auto finance service, the vehicle and its supplier were chosen by the customer. The vehicle was with a local car dealer known to the customer. All the valuations happened there. The customer arranged the meeting time and coordinated the valuator and supplier…/P18.

Thirdly, the aiding parties also contributed to a service:

> *Murabahah* is actually a goods buying and selling transaction. This service is incomplete without important tasks of goods vendors, chartered accountants, registrar of firms, registrar of mortgages, goods couriers, credit valuators, lawyers and payer and payee banks…/P25.

> In auto leasing, along with bank and customer, the auto supplier, tracker company and *Takaful* company are the parties. They supply the vehicle, install trackers and provide *Takaful* coverage…/P18.

> In deposit service, third parties such as [name of the national identity registration agency] verify customers' identity. [Name of a company] facilitate the interbank cheque clearance and interbank ATM network connects all the cashpoints…/P20.

The aiding parties completed many parts of the services. Their contributions normally included the supporting tasks such as the preparation of financial statements, registration of mortgages, the supply of financed goods, etc. So, the bank, customer and aiding parties together co-created the service in each case.

e.   **Roles and Actions**

The *roles and actions* element of the DSD maintains *that the service creators assume roles, which inform their actions in each service case*. Every service creator assumed at least one role describing his or her potential actions in a service system (Figure 5.5). Firstly, ICB assumed a role(s) in every service case. The main role is further divided and distributed among different departments and further among the individual personnel:

> In *Murabahah*, the bank's role is that of seller because primarily we sell goods to the customer at a marked-up price, which he pays in future. This role needs to be specified in each service case. Like in this service, the bank is the seller of food items ... different employees act to make the sale possible. For example the role of regional coordinator is coordinating the branches with head office. Two legal officers from the legal department are responsible for preparing the legal documents…/P25.

> Every employee is assigned a specific role in the depository service ... the personal banking officer (PBO) fills in the account opening form for the customer. The verification officer has online access to [The name of a national identity registration agency] to verify the customer's identity… The manager of operations reviews the form and attaches documents to make a case file. He also assigns an account number…/P20.

> Many staff members participated in *Ijarah* auto lease like I [*Ijarah* Manager] made a profile of the customer and sent it to branch management committee members who evaluated that. Then the file went to the area manager, regional coordinator and finally *Ijarah* department, in which the business manager, product manager and consumer finance head worked on different aspects of the case…/P17.

The ICB assumed roles such as depositee, financer, seller, lessor and investee. The title *bank* in itself is a generic role that refers to the *banking tasks* of thy entity. ICB applied the principle of division of labour and divided its task among different departments and ultimately among the individual employees, who operate at the concrete level of service creation.
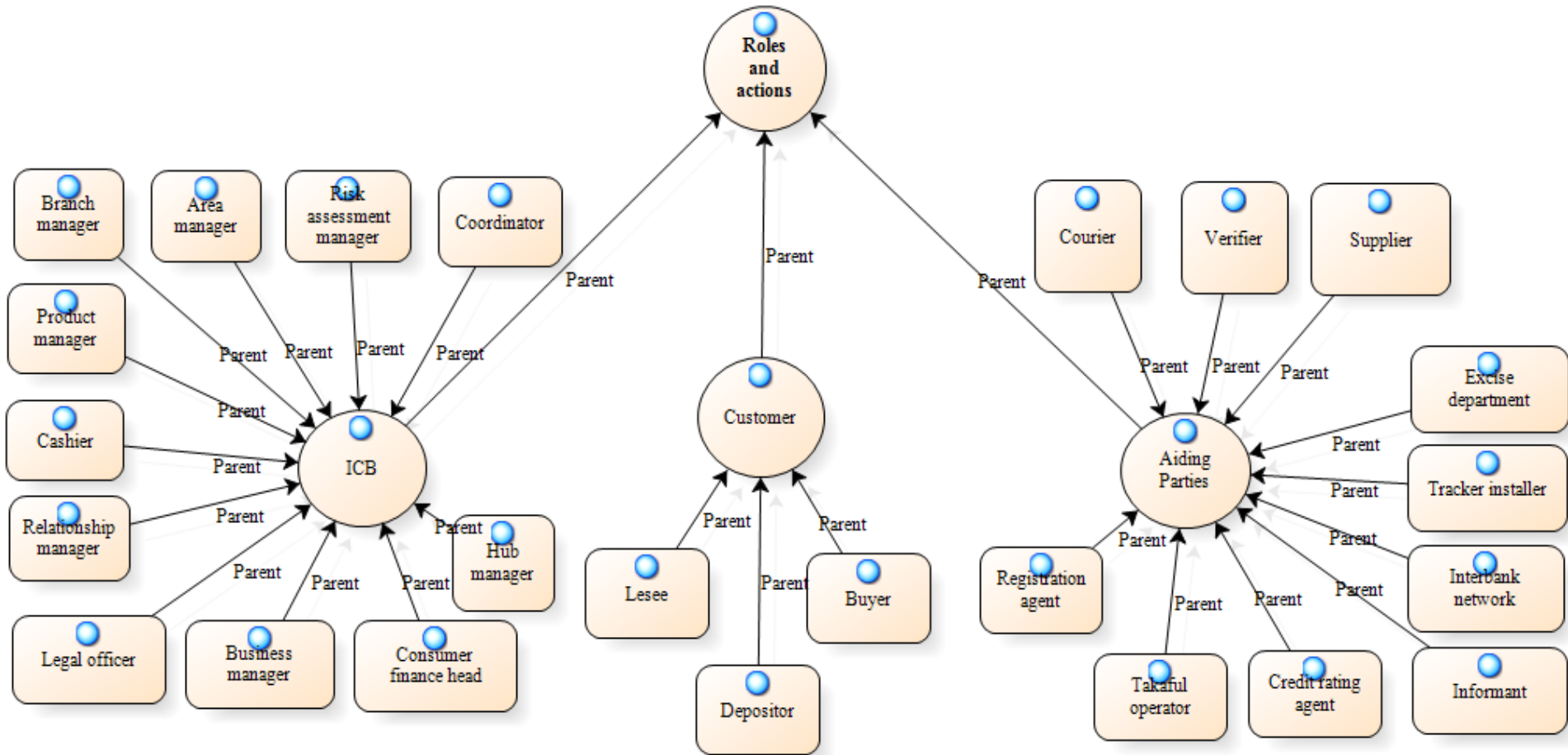
Figure 5.5: Roles and actions in ICB

Secondly, the customers assumed roles to contribute actions in a service system. A corporate customer divided its role into sub-roles:

> The client was a company, so its director had participated in the initial meetings related to decisions regarding different service options. The company's finance advisor and accountant then took part on different occasions such as arranging the required documents, depositing the security and disbursements of finance funds etc…/P17.
>
> The customer was the lessee in this case, so he came and signed the lease documents ... He deposited the down payment ... He also brought a quotation for the leased car…/P18.
>
> The customer was the depositor and he had the right to withdraw the amount any time he wanted to… He filled the cheque, took a token number from the machine, which assigns his order in the queue... He waited for some time and on his turn, he handed over the cheque to the cashier to collect the cash…/P22.

The customer assumed roles of depositor and lessee. These roles or their sub-roles inform specific actions to be performed by the actor within a specific service case.

Thirdly, the aiding parties also assumed roles to inform their actions in the service system:

> This was a used vehicle to be leased. For used vehicles, we do valuation from third parties ... I therefore called to the evaluator company and provided the detail of the vehicle. The evaluator company has then taken the vehicle pictures, determined its price as PKR 1350000 and sent us a complete valuation report…/P18.
>
> For evaluating the customer credit history, the [name of a credit information agency] sent the customer credit history report. Based on this report we have determined different service options for the customer…/P24.
>
> The customer has provided the property documents to be mortgaged. I took legal opinion on the property ownership from our independent legal advisor. The legal advisor also mortgaged the property with the registrar of mortgages…/P25.

The evaluators, the credit information agency, the legal advisors and the registrar of mortgages are the aiding parties, who uniquely integrated these roles and actions with ICB and customers to create a service in specific environments.

f.   Resources and Usufructs

The fifth DSD construct maintains *that the service creators use resources, particularly its usufructs, to create a service*. A typology of resources is found in this case (Figure 5.6):
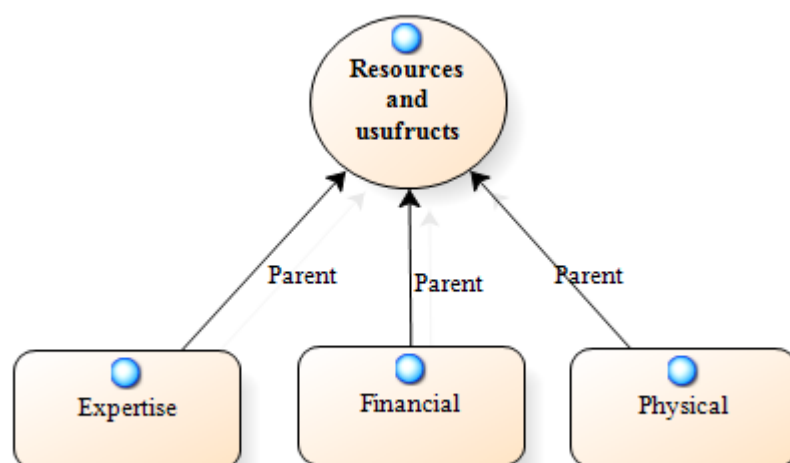
Figure 5.6: Resources and usufructs in ICB

Firstly, competencies and expertise are applied. These soft resources helped the service creators to analyse, evaluate and assess the service cases.

The relationship officer, credit manager, legal advisor, chartered accountant, technical staff and staff in the product development and *Shariah* compliance department applied competencies and expertise:

> Every service creator uses competences and expertise. I [relationship officer] use my skills to maintain customers, the credit manager uses his financial and credit expertise to evaluate the customers' financial position. Third parties, such as our legal advisor, give his expert legal opinion on the property we mortgage. Similarly the chartered accountants are the financial experts who evaluate customers' financial statements. Similarly our technical personnel maintain the systems, so that we work efficiently ... *Shariah* auditors use their expertise to ensure *Shariah* compliance ... customers have experience and expertise in the businesses in which we invest. They use their expertise and earn profit that we share…/P25.

> The personnel in the risk management unit are experts in credit risk analysis. They do detailed credit analysis to determine the risk level in each case…/P19.

Secondly, financial resources are used. Financial resources are the value potentials, physical and non-physical artefacts, which are acceptable as money or near-to-money (liquid) assets within an economic exchange of values/benefits. These resources exist in different forms such as cheques, bank drafts, payment orders, ATM cards, e-money and currency:

> The customer deposited a cheque for the down payment ... the accounts department made the payment order of PKR487000 in the name of vendor. Similarly, the customer paid a fee to the excise department for the registration of the vehicle…/P17.

> He can withdraw cash through the ATM or cheque book ... online shopping can be made through embedded debit card ... The cashier receives the cheque and verifies the signatures through signature card stored in the system. He debits the customer's account and pays the cash ... in electronic transfers we do not physically transfer the cash but make an e-money transfer…/P20.

Cheques, bank drafts, payment orders, ATM cards, e-money and currency are identified as financial resources because these are used as value potentials within the economic exchange of values that occurred during the service creation.

Thirdly, physical and technological resources are utilised:

> In this service, we used the computers and information systems such as [the name of an IT system] ... we used mobile phones, fax, emails and networks ... the suppliers supplied goods that we sold to the customer at a marked-up price. Our appointed carriage company used lorries to move the goods to the customer's warehouse ... The customer's properties were used for the mortgage…/P25.

> To facilitate customers, we use technology for ATM, debit card and credit card services. Customer can promptly contact us using their computer, phone and fax…/P23.

The typology of resources is found in ICB. Firstly, the service co-creators used competencies and expertise, such as financial expertise, trading expertise and risk analysis expertise. Secondly, financial resources used to exchange values. These resources included the currency, bankers' cheques, pay orders and demand drafts. Thirdly, they used physical and technological resources such as interbank networks, phone, fax, computer systems, information systems, vehicles, properties and goods are used.

g. Rules and Control

The sixth DSD construct maintains that the *service creators apply rules to create a control within a service system*. Four types of rules are applied within the ICB system (Figure 5.7). These rules are *Shariah* rules, regulators' rules, organisational rules, and aiding parties' and customers' rules:
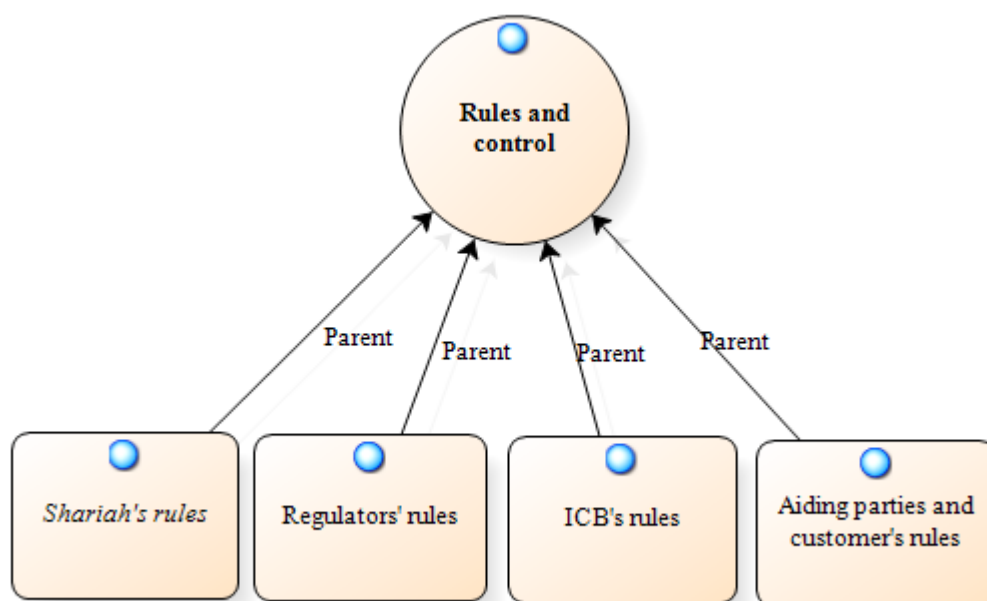
Figure 5.7: Rules and control in ICB

Firstly, *Shariah* rules are applied. The *Shariah* compliance and product development departments (SCPD) interpret *Shariah* rules within each planned design:

> Every service package comes with a list of *Shariah* rules and verdicts (*Fatwas*). When we evaluate service cases we ensure that each and everything we do complies with *Shariah*…/P25.

The brochures of different packages and credit policy documents showed the application of *Shariah* rules. The situated service creators also liaised with SCPD for further guidance related to the emergent *Shariah* compliance issues.

Secondly, regulators' rules are applied. Mainly the rules of banks' regulator and the companies' regulator are applied:

> The Islamic banking department of the [the name of banks' regulator] develop these model contracts, which contain the rules to be followed in different services…/P23.

> Since this customer was a company, the head office asked for the resolutions to be passed by the directors of the company related to this service. The resolutions are required by the [the name of companies' regulator] and the company law. The chief accountant of the company brought the resolution copies attested by the [the name of companies' regulator]…/P19.

Thirdly, the ICB also applied its own organisational rules. These rules are mostly related to the service management:

> For each service package, we develop a specific list of rules and terms and conditions. For *Ijarah* finance, there is a car *Ijarah* department which makes the package of policy rules and terms…/P17.

> The bank's rules for ATM mention that if the customer does not collect the card within 30 days then the bank will destroy it…/P20.

The bank's internal credit policy document showed the abstract policy guidelines for the services. These rules are then specified for each service package and finally for each service case. It is important to note that organisational rules come within the regulators' and *Shariah* rules and normally consist of further interpretations of the abstract *Shariah* and regulators' rules.

Fourthly, aiding parties' and customers' rules are also applied in the service system:

> The tracker company applied its rules, terms and conditions related to the tracker installation in the leased vehicles. These rules were considered while preparing the credit proposal for this auto lease case…/P17.

> The depository customer was a firm ... we selected partner Z as signatory because it was mentioned in their registered partnership deed that Z will manage the banking for the firm. We studied the customers' legal documents to ensure that we did not violate any of their rules…/P22.

To sum up, four inclusive types of rules are applied in the ICB system to create control. These rules include the *Shariah* rules, the regulators' rules, a bank's own rules, aiding parties' and customers' rules. The existence of these rules from multiple entities shows a shared control of service co-creators, within a service system.

h.   Value-in-context

The seventh and final DSD construct maintains that *the service creators create value within a service system*. The value motivates the service co-creators to participate in the service system. The value is created in terms of different economic and non-economic benefits. Planned designs contain value propositions (proposals) which are expected to be realised in the actual service encounters or service practice. In the ICB system, the value is created in terms of *Shariah*-compliant savings/investments, returns, finances and others (Figure 5.8):
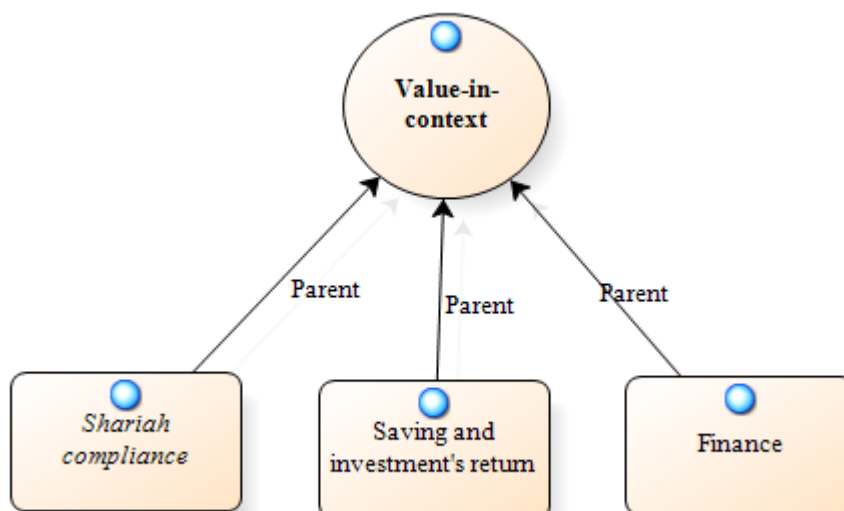
Figure 5.8: Value-in-context in ICB

Firstly, *Shariah* compliance is a value proposition for Muslims. Service creators in the ICB system are found to be interested in *Shariah* compliance occurred not just because it is mandatory, but also because it ensures compliance to service-creators' belief and value system:

> Our main focus in the service is to circulate the money in *Shariah*-compliant ways in the economy and to earn money, which is classified as *Halal* [permitted] by *Shariah*. This is the depositors' money and we promise them that this money will be invested in *Halal* business, so we try to fulfil that promise as well ... we make joint ventures with *Takaful* companies because they also want to promote *Shariah* compliance. So we only provide their *Takaful* coverage for auto leasing ... People in this part of the world are more religious and therefore they value our services…/P17.

> This customer is employed in the air force ... He was looking for *Shariah*-compliant savings options and he selected the term deposit receipt…/P21.

> The client told me that he has been interested in Islamic banking for a long time but he has limited information…/P24.

The policy manual and the prospectus of the bank showed *Shariah* compliance as a value proposition. This is categorically specified in the vision and mission statements and in the CEO's statements.

Secondly, value is created through savings, returns on investments, business transactions and salary receipts:

> In the beginning, we ask the customer about the purpose of opening the account to know the customer's savings and investments needs to offer a best package. We offer different packages for business transactions, for receiving salaries, and for savings and investments…/P20.

> The term deposit receipts [TDR] are for the long-term investments for which we pay high of return. The investment will be fixed and agreed period of time…/P21.

Thirdly, arranging finance is also considered a value proposition in the ICB system:

> He [customer] said that he needed finance for an [brand] car. We do not provide loans due to the concept of interest, but we can fulfil the customer need of having a car through lease…/P18.

> The primary benefit of *Murabahah* is that the customer will have running finance for the working capital…/P24.

To sum up, ICB offers value propositions to be realised during the service. *Shariah* compliance, savings, investments and finance are found to be the core value propositions in the ICB service. The brochures also showed other value propositions such as receiving and managing salaries, transfer of money, making payments, etc.

i. ICB Blueprint

Among the eleven narrative interviews, the one most complete narrative is selected for the detailed service-system-blueprinting. This blueprinting has further confirmed the findings. Each episode of the selected story is discussed in detail to get the depth of the actual service-system that emerged in the chosen story. Table 5.3.1 summarises the 29 episodes of the *Murabahah* finance service story narrated by P24. This service is availed by a construction company. The construction company was looking to finance diesel, petrol and bitumen to use in the construction of bridges and roads (Table 5.1).

E. No.	Description
1	Relationship manager visited the construction company and met its managing director and offered the finance service options.
2	The relationship manager of the bank, managing director and finance manager of the construction company discussed the possibilities of a finance facility in the context of the company's situation and the available alternatives in the market. They agreed to finance diesel, bitumen and petrol, which the company used in its road and bridge construction projects. They agreed to do that through the *Murabahah* model. The relationship manager asked for specific documents to be submitted by the company.
3	An administrator in the construction company obtained attested copies of memorandum of association, article of association and form 29 from the companies' registrar. He also collected different documents from the banks, utility providers and suppliers. The finance manager of the company provided all the required documents to the relationship manager in the bank.
4	The relationship manager in the bank sent the company information to the regional coordinator of the bank. Based on the information, she got the credit information report from the credit information agency of central bank and provided the same to the relationship manager.
5	The relationship manager started writing credit proposal based on the information he obtained in discussions, documents and credit information report. He customised and specified the *Murabahah* proposal for the company. Different options in the *Murabahah* are selected that best suited the company and situation of the industry and bank.
6	For further information, the relationship manager and area manager of the bank visited the construction company's offices located at three construction sites. They met with the workers and checked the use of material they were looking to finance. This information further

	highlighted the actual service requirements and helped the relationship manager to tailor the agreed *Murabahah* model further.
7	To get information related to the construction industry and supply of petrol, diesel and bitumen in the country, the relationship manager contacted the chamber of commerce and the suppliers and contracting agencies of the customer. He also contacted different departments of the customer's company to get detailed insights before the selection and specification of different options (varieties) in the facility and also add new options to appropriately develop a robust *Murabahah* proposal.
8	The relationship manager developed the proposal based on the needs and situation of the customer and market and sent that to the branch manager for his review and recommendations.
9	The branch manager reviewed the case file and forwarded it to the area manager for his expert review.
10	The area manager evaluated the case file and raised some queries, which are answered by the relationship manager.
11	The dispatcher sent the file to the regional coordinator of the bank via courier.
12	From the credit information report and financial statements of the company, the regional coordinator of the bank found that the company is financially weak. She contacted the relationship manager and raised her concerns over the issue. The relationship manager contacted the finance manager of the customer's company and both developed answers to this query. They responded in writing that the customer is a strong company because they have construction contracts and projects from government agencies and expect positive cash flows in the near future. They also sent copies of these contracts and projects to the regional coordinator of the bank.
13	The regional coordinator again sent a query that the credit information report shows some delayed payments in the customer's history. The relationship manager and the customer justified it. They developed an answer that these delayed payments happened when there were financial crises in the whole economy, so they are affected as well. These delayed payments did not reflect an internal weakness of the company.
14	The regional coordinator raised another issue that the property offered by the company for the mortgage is not registered in the name of construction company. This property was owned by the father of the company's directors. The relationship manager contacted the director and then through him he contacted the directors' father. The father agreed on mortgaging the property. The regional coordinator is informed about his consent.
15	The regional coordinator sent the case to the commercial department for further evaluation and approval. They approved and sent the file to product development and *Shariah* compliance department (PDSC).
16	The PDSC manager customised the *Murabahah* finance process flow structure for this specific case as detailed in the file. He sent the customised process flow design to the relationship manager to check whether the customer agreed with the proposed design or not.
17	Customer recommended some amendments (change in goods supply duration) the relationship manager adapted the process flow design and sent that back to the product development and *Shariah* compliance manager for approval. The PDSC manager approved the amendments. The relationship manager and customer signed the adapted process flow and sent that back to head office.
18	The PDSC department sent the whole file back to the relationship manager via courier. PDSC listed the post-sanctioned formalities and legal requirements to be fulfilled. The relationship manager forwarded the file to credit assessment manager to see that no rules are violated.
19	The credit assessment manager called the external legal advisor to obtain his legal opinion on the ownership of property that the customer presented for the mortgage against finance. The

	external legal advisor also had the legal documents for mortgaging the property with the registrar of mortgages. The father of the directors, who was the owner of the mortgage property, visited the registrar of mortgages to show his consent for mortgaging his property with the bank.
20	The credit assessment manager called the *Takaful* company to arrange *Takaful* (alternative to insurance) for the mortgaged property and the goods they aimed to trade in.
21	The directors and finance manager of the company signed the undertakings and personal guarantees against the finance. The construction company purchase officer provided three suppliers' names, from whom they wanted to purchase petrol, diesel and bitumen.
22	The purchase manager of the company requested bitumen from supplier A. The relationship manager in the bank forwarded the request to the operations manager. The operations manager prepared a demand draft for the amount of purchase. The draft is made in the name of supplier A.
23	The purchase officer of the company took the demand draft and sent that to supplier A. A copy of the demand draft is also given to the carriage company who supplied the goods to the customer.
24	The supply is suspended due to shortage of oil supply in the country, and the damage of one of the carriage company's oil tankers. The purchase manager of the company requested amendments in the *Murabahah* process flow design to increase the duration of supply.
25	The relationship manager amended the process flow design and increased the supply duration from 17 days to 25 days, which is approved by the PDSC department. The relationship manager sent the amended *Murabahah* process flow design to the purchase manager of the company.
26	The carriage company picked the goods from the supplier and supplied these to the company's construction sites.
27	The relationship manager went to the construction sites and checked that the goods are supplied as specified. He also sold these goods to the construction company at a marked-up price.
28	After five months the relationship manager will send a letter of maturity to the customer reminding them of the repayment date of finance.
29	The customer will pay the due amount at the end of the sixth month, by depositing a cheque with a cashier.

Table 5.1: Service episodes in an ICB case

In Figure 5.9, the service story is blueprinted to develop a snapshot of how the real service-system emerged in this specific service case. The number on the chest of icons matches with the rows in Table 5.1. Each row explains the specific visualised episode. Colour code is used: red for ICB contributions, green for customer contributions, blue for aiding parties' contributions and black for the emergent and deferred service episodes. These black episodes reflect the system's responses and adaptation to the specific environment of this particular case. Different roles assumed by the ICB employees, customer company and aiding parties are also shown on the right-hand side of the blueprint. The use of expertise, financial and physical resources are evident and shown on the top of the blueprint. The applications of rules are shown on the bottom of

the blueprint and value creation is also highlighted as goods financed and sold to the customer.
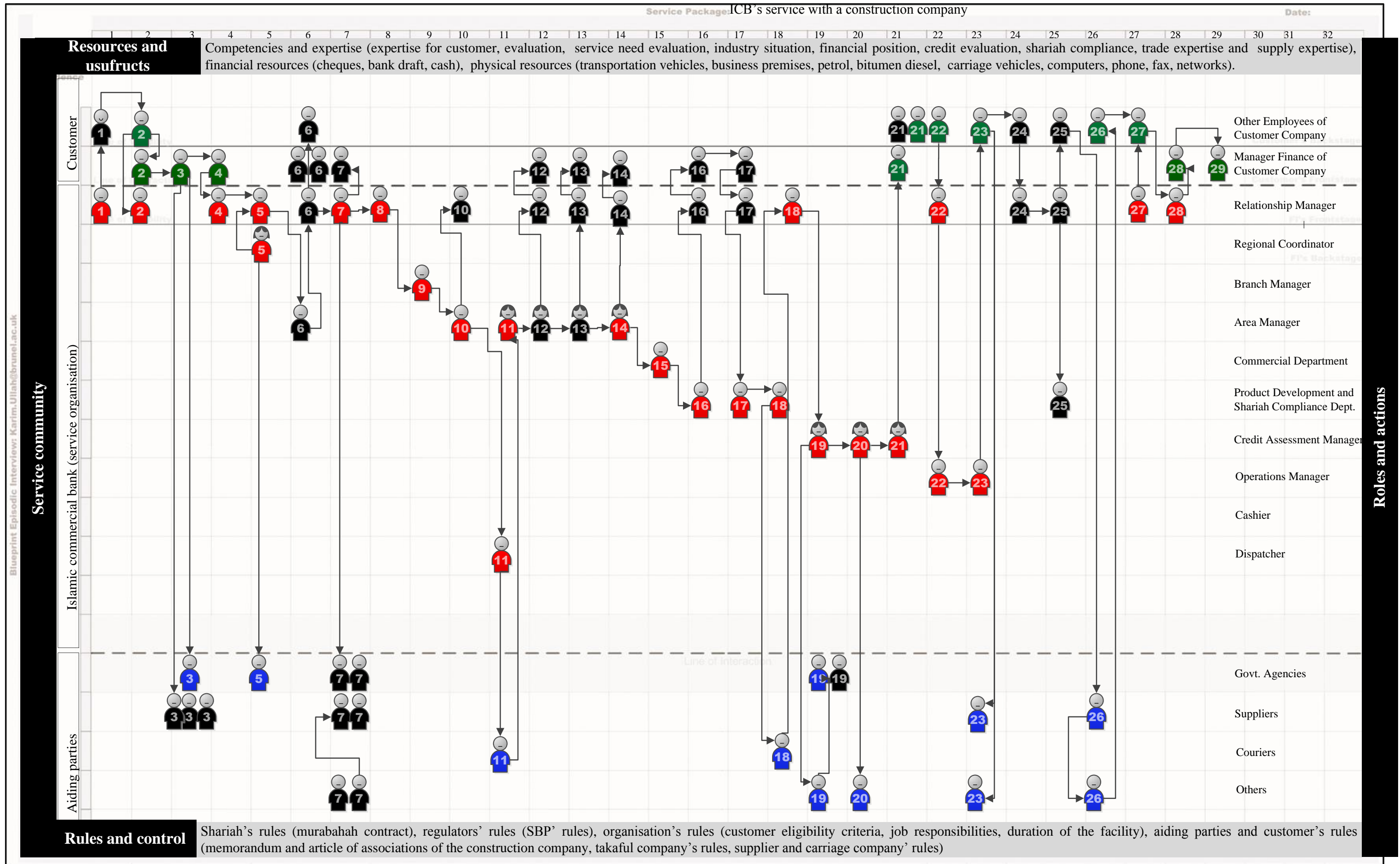
Figure 5.9: The blueprint of real Islamic banking service case

j.   ICB Summary

This chapter presented the analysis of first case study of ICB. Within the ICB system, three types of planned designs, namely SFS models, varieties (list, range and negative varieties) and modules, are applied. The emergent environment and corresponding deferred design for adaptation in a planned design is evident. The adaptation process starts with emergence in social, economic and market systems creating an emergent environment. In response, the service creators diffuse new information in the system, which results in knowledge diffusion. Through new knowledge, the service creators compare and index real service requirements with planned designs to make specifications and design new solutions for the emergent requirements. Service creators use their competencies and expertise to make these deferred specifications and adaptations. The planned design also migrates when the real system goes against the rules and the service creation is not viable.

The actual service is co-created by the bank, customer and aiding parties such as regulators, couriers, *Takaful* companies and vendors of goods. Each service creator assumes at least one role that informs his/her actions. The institutional participants divide their roles among the departments and employees. Expertise, financial and physical resources are used. *Shariah* rules, regulators' rules, bank's rules, aiding parties' and customer rules' are applied. Value is created through *Shariah*-compliant savings, investments, finances and others such as money transfer and salary collection/payments.

5.3.2 Case II: Islamic Life *Takaful* – ILT

a. ILT Introduction

This chapter presents the case of the ILT service organisation as second evidence of the DSD model. The selected ILT is an alternative to a conventional insurance service and is a *Shariah*-compliant risk mitigation and risk sharing service. ILT is based on the *Shariah* principal of mutual financial cooperation among fund contributing members (customers). The ILT organisation establishes a trust or endowment (*Waqf*) fund to which the members contribute money based on the Islamic concept of *Tabarru* meaning brotherhood. Through *Tabarru,* the ILT protect themselves in terms of financial support from a common trust fund. One part of the members' contributions goes to the investments in stock markets and the other part goes to the trust fund. The investment funds generate *Shariah*-compliant incomes and the trust fund is used for members' financial coverage related to health, education and travel. The ILT organisation merely manages the trust funds as an agent and charges a fee for its service. It is the trust fund that pays the claims to the contributors and ILT manages it.

ILT is risk sharing among the members of the trust whereas conventional insurance is risk transfer from customer to insurance company. The *Takaful* organisation works as an agent or operator of the trust funds, whereas in conventional insurance the company works as guarantor of certain promises. The *Takaful* organisation does not own the trust fund whereas the conventional insurance company does. At the end of each financial year, if there are any surplus funds remaining in the trust fund (after fulfilling the claims in the year), then the ILT can distribute these among the members (customers) with the approval of *Shariah* board. In case of deficit, the ILT extends an interest free loan (*Qard-e-Hasnah*) to the Trust fund to overcome the deficit. Another level of protection against any future deficit is the re-*Takaful*. The trust fund (manage by the takaful company) has some re-*Takaful* arrangements with the global *Takaful* companies to get coverage for any future deficits in the trust fund.

The ILT also manage the members' contributions to investments pools for a management fee. The experienced fund managers at the ILT invest the money in diversified *Shariah*-compliant stock portfolios to generate revenue for the members. A trustee company secures these investment portfolios. The trustee and maintains back-end portfolio accounts of all investment companies in Pakistan.

The selected ILT is a leading *Takaful* company in Pakistan, which lies within the non-banking finance sector. This non-banking finance sector, including *Takaful* companies, is registered with and regulated by the by a commission established by the government. An independent *Shariah* board also supervises the ILT services to ensure *Shariah* compliance.

The selected *Takaful* organisation operates in general *Takaful* and life *Takaful*. In this research, the life *Takaful* services are studied to evaluate and further develop the DSD. Life *Takaful* services include health, education and travel coverage. ILT positioned itself as an SFS organisation and avoids interest and excessive uncertainty, which are believed to exist in conventional insurance services. The research is focused on life *Takaful* services for two reasons. Firstly, compared to general *Takaful*, life *Takaful* is the more established and vanguard service upon which the company is positioned. Secondly, it ensures the required level of focus for this specific case.

Nine in-depth narrative interviews of *Takaful* personnel are conducted to evaluate and further extend the DSD. The narrative discourse analysis method is used to analyse the narratives and discussions. Seven DSD constructs are used as guiding nodes for the analysis in Nvivo 9. Further nodes are developed to understand in depth real adaptive service-system design within ILT practice. The most complete service story is selected to blueprint the ILT system in further depth.

The next section discusses the seven DSD constructs within ILT context.

b. Planned Design

The first DSD construct is that *service creators apply planned designs to create real service.* The service creators are found applying the planned designs to create real ILT services in different environments. Three types of planned designs are applied as shown in Figure 5.10.
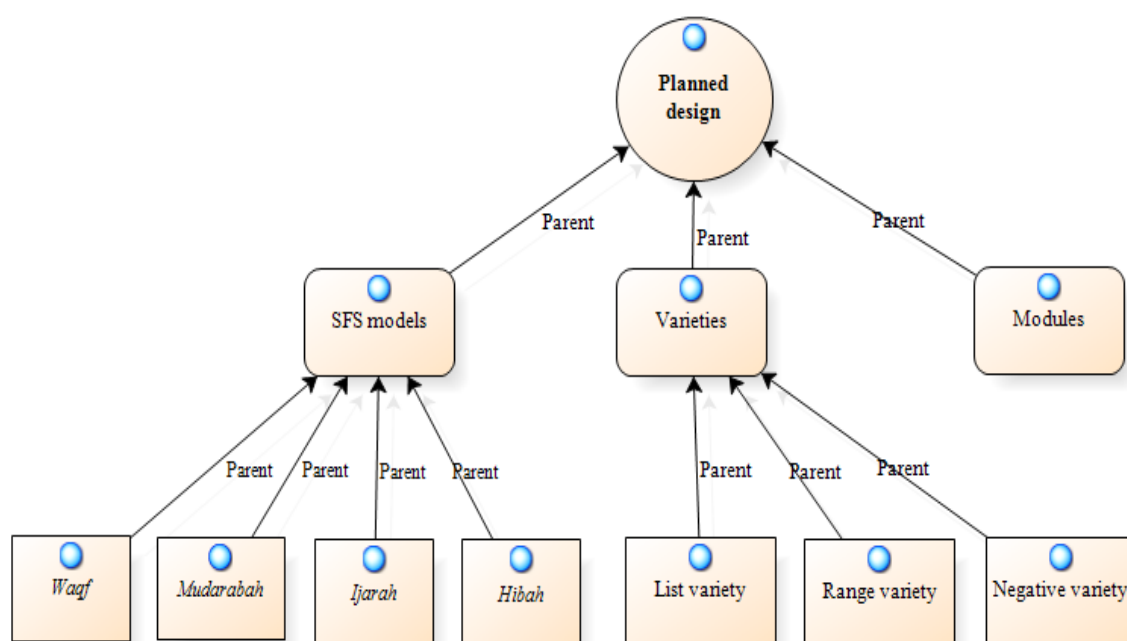
Figure 5.10: Planned design in ILT

Firstly, the SFS models of trust, partnership, agency and gift are combined and applied as planned designs.

> Four core Islamic models are applied in this *Takaful*. First, *Mudarabah* [partnership model] is applied because the *Takaful* company and customer have established partnership in the investment part of the service. The customer is the investing partner and we [*Takaful* organisation] are the managing partner. Similarly *Wikalah* [agency model] is applied because the customer is the principal and the company is the agent who manages the trust funds for an agency fee ... *Waqf* [trust model] is applied to create benefits and coverage for the members. *Hibah* [gift model] is used to distribute the surplus money in the trust fund among the members…/P32.

Documents have also confirmed the application of planned SFS models. A presenter is designed to show the planned SFS models they aimed to apply in different service packages. Similarly, the ILT organisation webpage also showed the application of planned SFS models. The planned SFS models are designed centrally in the head office (at the strategic level) and are applied in local branches to create actual services:

> The actuarial and investment departments at the head office together design the packages. They combine *Mudarabah*, *Wikalah* and *Waqf* with aging and investments mechanisms ... They then send the service structure to *Shariah* board. The *Shariah* board study it using *Shariah* principles. They approve and send it to different branches with the *Shariah* approval certificates [*Fatwas*] and full documentation. At branch level, we then apply these service structures to provide the services…/P26.

Secondly, planned varieties are applied for different service-system parameters. These varieties are planned to meet the predicted variations in actual service requirements. The planned *list variety* can be seen:

> We have three funds called conservative, aggressive and balanced funds ... currently six sectors are available as investment options in these funds ... based on the market situation and customer requirements we make a selection from these options…/P32.

> Different options are available for the customer nominees or the beneficiary. The nominee can be husband/wife, brother/sister, father/mother or son/daughter. In case of client death, the company pays the benefits to the nominee ... During the policy period, various withdrawal options are also available. The customer can withdraw a lump sum in instalments, or can allow the company to pay fees on behalf of the customer, such as university fees when they are due…/P31.

> There are three options for winding up the policy: firstly, if the client himself decides to terminate the policy due to his personal circumstances; secondly, when the policy matures; and thirdly, when the *Takaful* organisation terminates the policy…/P30.

Brochures have further showed the *list varieties* for the customer types, contact modes and payments modes. A *list variety* is also found for the benefit types such as family protection, education, death coverage and disease coverage. Similarly, a *list variety* is planned for the renewal service, which can be done quarterly, semi-annually or annually.

Range varieties are also found for the service-system parameters such as the amount of investments and age of customers:

> We have a range of investments, starting with PKR20000 up to any amount depending on the package and customer's earnings ... Different age groups have different criteria and benefits. Those who come within the age range of 18 to 39 and taking protection up to PKR2million are not required to take any medical tests…/P30.

The brochure for group health *Takaful* showed a customer age range of 18 to 59. Any emergent customer falling within this range is considered eligible for the service. However, ILT also explicitly mentioned that *the entry may be relaxed in special cases*.

Negative varieties are also planned:

> We do not offer investments in conventional bonds or other interest-based funds because we are a *Shariah*-compliant company. Similarly, policies cannot be designed if the customers have certain critical illnesses, the list of which is provided by the head office…/P27.

Thirdly, planned independent modules are applied to create tailored services. These modules are addable and deductible from and to the core service:

> Then I added an investment top-up facility to the *Takaful* plan. I showed him [customer] how he can save temporary savings in this top-up facility…/P27.

> There is one core plan and the client can add other benefits like health coverage, six main organ coverage, waiver of contribution in case of permanent disability, accidental death benefit and many others. These benefits can be added and deducted to and from the standard plans…/P31.

> There is always one main plan and many additional options can be added to it. In the education plan, education coverage for a child is always there and is the core, but other

> services such as disease coverage or disability waivers of contribution can also be added to this plan…/P30.

The *Takaful* service is planned by the central designers at the head office and is then applied by the situated service creators at operational level to create the actual service. Planned SFS models, varieties (list, range and negative) and independent modules are applied. Brochures showed that designers in the actuarial department and on the *Shariah* board create exemplary services to effectively communicate the planned designs to the situated personnel, customers and aiding parties.

c. Adaptation Process: Emergence and Deferred Design

> We do not have the complete details of each service case until we meet with the customer … a lot of information is missing that we require to determine our future work, like if the customer is married or unmarried, how much he earns, how much he spends, how much he has in savings, what and how much are the liabilities. We customise the *Takaful* plans for each customer based on this and other information that we come across …/P28.

The second DSD construct maintains that *the emergent environment affects the planned design, in response to which the situated service creators adapt the planned design.* As reflected in the above quote, the situated service creators wait for the information about the emergent service requirements and adapt the planned designs or packages accordingly.

Four mediating adaptation steps (information diffusion, knowledge diffusion, indexation and specifics' evaluation) are found between emergent and deferred design (Figure 5.11). First, the emergence and corresponding deferred design are discussed. Afterwards, these mediating steps are discussed.
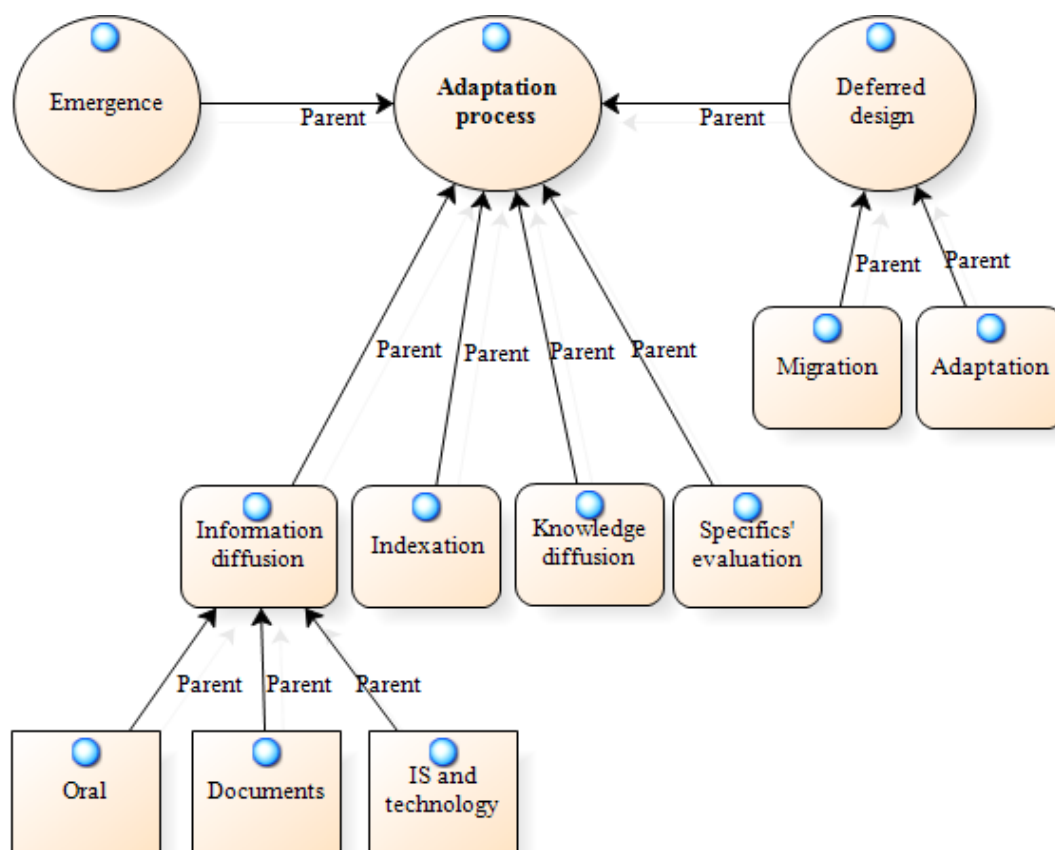
Figure 5.11: Adaptation process in ILT

The ILT service-system is found to be an inclusive part of local religious systems, social systems and family systems. The situated service creators are the inclusive members of all these systems. They interacted within these systems and caused adaptation in the planned design:

> This customer wanted a ten-year *Takaful* plan because he was having family, a child. So, we selected an education plan for his child and added family benefits as per his family requirements. So, the actual service catered for customer affordability and his family structure…/P26.

> References are powerful and effective tools for us in marketing these services in this region because here people have strong relationships with each other and they share common values ... we therefore accommodate the customer's values and explore his social circle to identify new customers…/P33.

> Our customer's father died. We purchased *Surah Yasin* [religious scriptures] and visited their house and encouraged the people to recite that for the success of the customer's father in hereafter…/P28.

Visiting the customer upon his father's death and distributing religious scriptures is not in the planned designs. Similarly, adjustments of service-system parameters for a specific structure of the customer's family are the deferred designs that led to adaptation in the planned design.

The institution of friendship and family inspired the planned design to adapt:

> My first cousin and the customer both come from Mardan [city]; they both travel to university every day by public transport. They developed a friendship on the way. One day they discussed *Takaful*. My cousin provided my reference to the customer. The customer then called me and said that he expects a good service as he is the friend of my cousin…/P31.

This referral system is locally developed and included in the specific service case.

The government system encouraged the planned design to adapt:

> The case was finalised and the customer was required to pay the instalment, but the customer said he needed to wait for a week or two to pay the due instalment. This happened because he was expected to pay these instalments from his salary fund maintained by a government agency and withdrawal of the fund was delayed by the agency. We therefore rescheduled the service. When he received that fund then he deposited the money and we completed the process…/P27.

The customer was part of the government agency and that delay in release of funds, initiated by the agency, caused an adaptation in the specific service case in which the customer participated.

The market system also affected the planned design need to adapt:

> The *Takaful* units' prices are linked to the stock prices in market. As the stock prices and market indices go up, the unit prices go up and we accordingly redesign our investment fund portfolios for the trust and customers…/P30.

The environment also forced the service creators to migrate some parts or the whole planned design:

> I introduced the company and myself to the customer. He himself told me to make a plan of PKR500000 per year for him. This case did not take a long time as he was already aware of the *Takaful* industry and *Takaful* services. So, I decided to exclude the initial service steps of introducing the *Takaful* plans and went straight to the investments…/P33.

> They [customers] have fourteen days cooling-off period in which if they are not happy with the policy and rules they can claim back their contributions and can wind up the policy [migration]…/P34.

The above narratives and discussions show that the *Takaful* service creators interact with each other and with the inclusive social, religious, family, market and government systems. The unique integration of these systems with the *Takaful* system creates a specific environment, which forces the planned design to adapt.

The adaptation and migration in planned designs started with emergence in local service practice environments. In response, the service creators diffused information about the emergent environments and real service requirements within each case.

Service creators used four channels for the information diffusion. Firstly, they diffused information orally in their discussions:

> We [service personnel] have a detailed discussion with a customer to obtain information about the family history, all the dependents, the occupational details, like what the earning sources are and what the income per month and per year is, then the expenses to determine the suitable savings options. We also take information for the future requirements of the customer. He may be looking for his children's education, house financing or any other objective that he may want to fulfil in future. Similarly, what investment has the customer made before, what return is he getting from that, so that we can offer better than that…/P30.

> First, he [customer] asked about the company. I discussed the details of the Islamic financial institutions' deals as an Islamic alternative to insurance, Islamic investments and Islamic mutual funds…/P31.

The service creators also used documents to diffuse information. Forms are filled in and circulated in the service systems. Similarly, printed documents are circulated in the system to enable information diffusion:

> The operations manager collected the letter of medical requirements. This letter contains information related to the client's name, national identity card (NIC) and the required medical tests…/P29.

> He [*Takaful* consultant] must give me [operations manager] a filled in proposal form, valid NIC, customised *Takaful* plan, and filled in financial questionnaire…/P30.

> During the discussion with the customer, I [employee] opened the presentation pack and presented what the company does, when it starts working and what areas the company focuses on…/P31.

Information systems and other technology such as telephones, fax, emails and webpages are used for information diffusion:

> This information we gathered also reaches the head office via information systems, phones, fax and emails…/P33.

> I was asking questions from customer and accordingly I was entering the information in the planning system. This information was visible to all the concerned employees…/P27.

> He said that he had heard about *Takaful* and also got basic information from the company's website…/P29.

Service creators diffused information regarding what they know and that is required by others and vice versa.

Information diffusion results in knowledge diffusion in the system, the knowledge about the emergent practice environment and real service requirements:

> I [*Takaful* consultant] have started fact-finding to know the customer's situation. I tried to understand the customer's financial position to design an appropriate *Takaful* policy for him…/P32.

> Based on the information, I took 15 to 20 minutes to understand the customer's needs and the overall situation of the case, based on which I selected and designed different *Takaful* policy options…/P26.

> Every customer is unique and has different needs. We visited the customer to get to know him and his needs and designed the *Takaful* policy accordingly…/P28.

> If you are unable to read the customer's mind and do not understand the customer's needs then you will not be able to complete the service and retain the customer…/P31.

Based on understanding/knowledge of a specific environment and service requirements, the situated service creators indexed real service requirements with planned SFS models, varieties and modules. This indexation helped them to specify the appropriate options for the emergent service and create solutions for new service requirements that do not exist in the planned designs:

> We match customers' needs and interests with our available options in different *Takaful* packages. The point is that you should not divert the direction of the customer, but should move your options in the direction of the customer…/P31.

> When I learned about the overall situation of the case, then I asked myself what plan would be better for him and what supplementary benefits should be added. So the exact and specific *Takaful* plan was designed based on the data we received during the discussions and through documents…/P33.

The indexation enabled the situated service creators to make comparisons of planned designs and real service situation. As a result they come up with specific planned design parameters and detail of actual case that they think will be applied in the particular service.

As next step, the service creators applied their competencies and expertise to evaluate the specifics of the case:

> The *Takaful* consultants do financial analysis of the customer based on the design contributions and benefits schedule ... Each service case passes through financial, legal and medical assessments. The experts in these departments make decisions about their relevant parts of each service case…/P30.

> When I compared customer requirements and our policies' options, through my experience I understood what options would work better for this customer…/P33.

Takaful consultants are the situated service designers/creators who designed specified plans within the centrally designed abstract service packages. They did so by entering the necessary details of the actual service requirements and context. The local personnel got regular trainings to apply new planned designs (packages) and design local solutions. When the situated service creators found any mismatches between planned design and real emergent service-system, then they contacted the central designers at the head office to create more effective responses (deferred design). The planned designs came with software packages that have blank spaces to seek the required

contextual information to create specific service solutions. For example the purpose of each service case needs to be specified in the system. This specification initiated other specifications among different varieties, modules and designs of new service components.

To sum up, multiple inclusive systems such as society, family, governments, market, service organisation, customer and aiding parties set the direction for the adaptation. Interactions among these abstract inclusive systems caused emergence in service practice environments, which triggered the new service requirements. In response to this emergent environment and new service requirements, the situated service creators diffused information orally, through documents and information systems and technology. This information diffusion resulted in knowledge diffusion because the service creators used the information to cognise their participations in the specific service case. Through knowledge, the service creators indexed the planned designs and real service requirements. They applied the locally available competencies and expertise to evaluate the possible specifications in the planned designs or designed new solutions, which bring about the overall adaptation or migration in the planned designs.

d.   Service Co-creators

The third DSD construct maintains that the service *organisation, customer and aiding parties co-create service.* The ILT organisation, customer and other supporting parties are found to co-create the *Takaful* service (Figure 5.12). The sizes and types of these service creators varies. However, at operational level, there are always individuals who interact with other individuals or other resources to create a service:
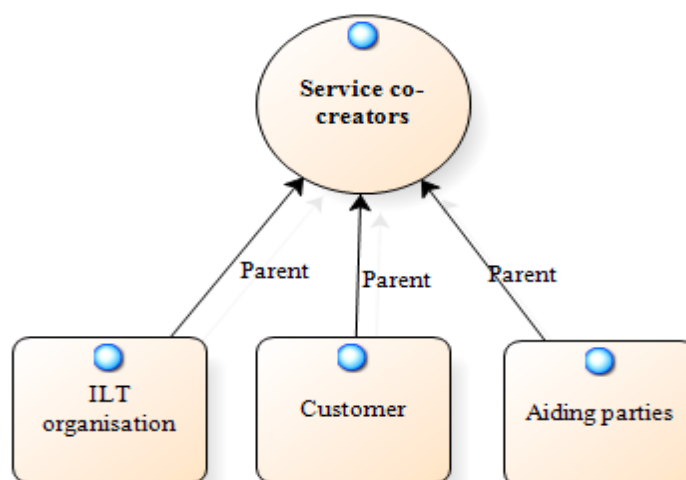

Figure 5.12: Service co-creators in ILT

Firstly, the core service creator is the ILT organisation and its personnel:

> At the core, we are trust fund and investment managers, who create benefits for the customers in terms of financial coverage from the trust funds and taking advantage of investment opportunities in the stock markets…/P30.
>
> Our organisation is committed to serving customers. For this customer we worked as a team to meet his needs…/P33.

Secondly, the customer is also a service co-creator because he integrated his actions and resources with the system:

> The customer and his friend took their time to read the brochures and presentation details to make decisions about the different service options to be included in the customer's policy ... the customer arranged documents from different sources and provided these for evaluation. He also made his first financial contribution to the trust fund and investment accounts…/P33.
>
> The customer visited his bank to collect and bring us his bank statement. We needed this statement for his financial evaluation. Similarly, he contributed the first instalment to start the investment. His wife's signatures were required and we were about to close the office so we [investment consultant and customer] together visited his house where his wife signed the documents…/P27.

 Thirdly, the aiding parties have contributed to the service system:

> The customer was required to do medical tests before approval of the *Takaful* policy. So the third-party doctor and his personnel were involved in this service. Similarly the courier was involved who sent the customer's documents to the head office and sent back the approval to the customer. The customer's bank was involved for clearing the cheques and issuance of bank statements…/P33.

The brochures for different service packages (planned designs) have also confirmed the contributions of the ILT organisation, customer and aiding parties. On behalf of the *Takaful* organisation, the actuarial department, *Shariah* department, benefits distribution department and funds management departments contributed to the system. The customer made contributions such as arrangement of documents, doing medical tests and contributing money. The aiding parties such as doctors, banks, couriers and trustees also contributed in terms of completing specialised tasks. These tasks included conducting the required medical tests of the customer, clearing of cheques and posting documents.

e. Roles and Actions

The fourth DSD construct says that service *creators assume roles, which inform their actions in a service system* (Figure 5.13). Service creators possessed specialised roles in a *Takaful* service. The *Takaful* organisation primarily assumed the roles of investment manager and agent. These roles are further divided into multiple departments such as actuarial department, new membership benefit department, accounts and finance

departments. The departments further divided their roles into individual personnel such as *Takaful* consultant, operations manager and fund manager.
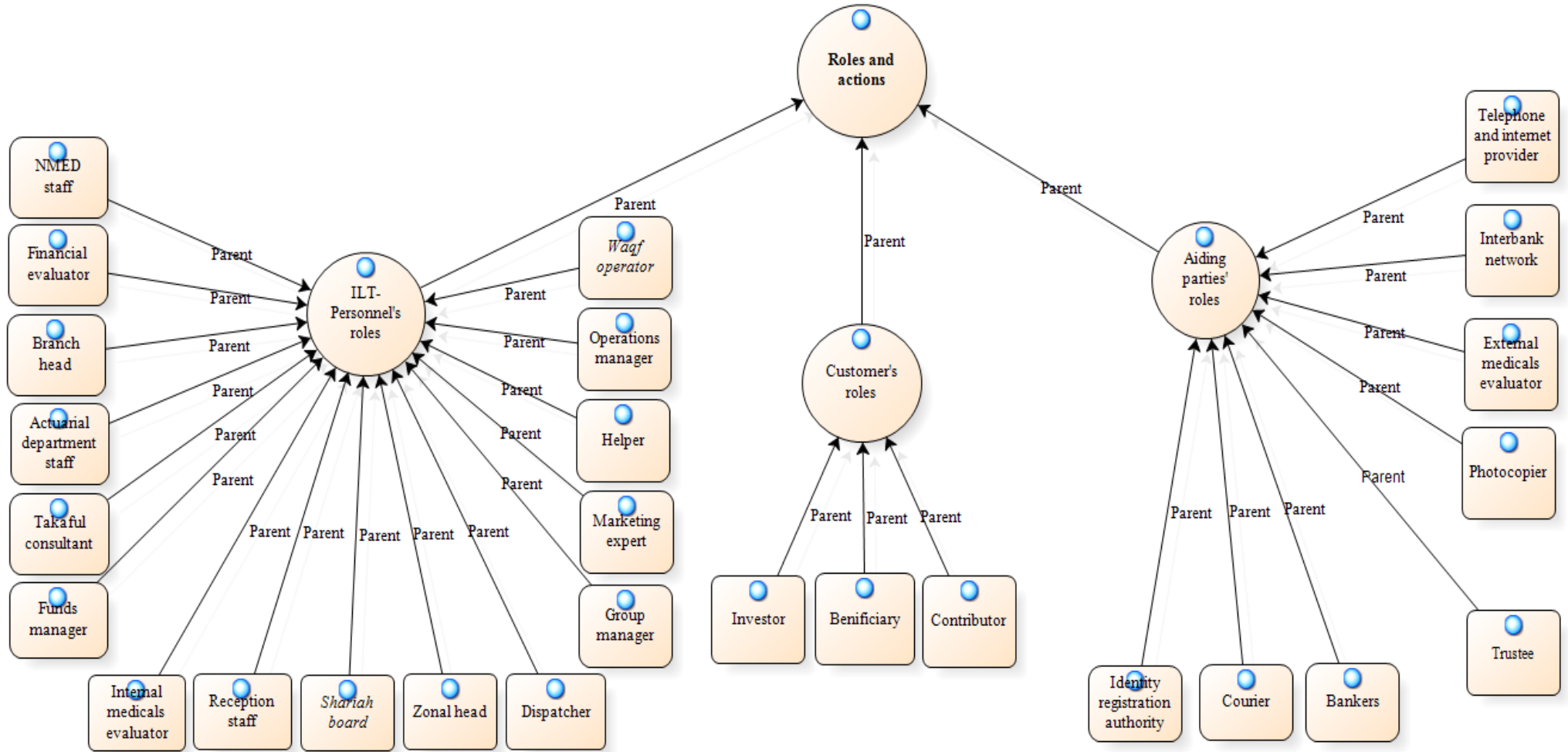
Figure 5.13: Roles and actions in ILT

Firstly, the ILT organisation divided its roles among different personnel. They then enacted their specific roles to create actions (services):

> Our organisation is a manager of the investments and agent of the customer. As customer's agent we manage contributions and distributions to the trust funds. Similarly as investment manager we manage the customer's stock portfolios. These functions are performed by different employees of the organisation…/P33.

> The executive branch officer also titled operations manager was involved in this service… all the documents submitted by the customer were signed by him…/P27.

> The dispatcher is responsible for carrying cash to the bank and dispatching the post to the courier…/P28.

> This is the responsibility of the *Takaful* consultant to send a copy of the policy documents to the customer ... the renewal collection is also made by the *Takaful* consultant…/P30.

> The receptionist is responsible for receiving the client and then guiding him towards the relevant *Takaful* consultant…/P28.

Secondly, the customer has assumed roles of contributor/principle, investor and beneficiary:

> The customer is in itself a role assumed by an individual or institution like firm and even companies. In this case the customer was an individual and specifically an investor and principal, because his core contribution was the investment in the funds we manage. So our role is manager and agent …/P33.

> The customer is a contributor as well as beneficiary of the *Takaful* policy and trust fund. First he makes a contribution to the trust fund and then he is entitled to financial coverage and other benefits. After selecting the benefits the customer has to fulfil the related responsibilities. For instance he has to complete documentation, must conduct medical tests and contribute money…/P30.

Thirdly, there are multiple aiding parties, who assumed roles within the service system:

> I sent a request to the doctor that this is our customer and asked him to do M and U medical tests for the customer. These are the specialised service components we outsource…/P30.

> The independent trustee company have a control of the trust funds our role is only as an manager to make investments on behalf of the trust fund as well as separately for customer…/P30

> Both payer and payee banks performed important roles in this case because they managed the overall cash flow in the service…/P26.

> The courier then posted all the documents to head office and similarly they then delivered approval and policy documents to the customer once approved…/P29.

The *Takaful* organisation, customer and aiding parties assumed roles within the service system. The *Takaful* organisation assumed the roles of investment manager and agent of the customer. These roles are actually enacted by the employees through their roles such as *Takaful* consultant, executive branch officer, dispatcher and receptionist. The customer assumed roles such as investor, principal, contributor and beneficiary. Aiding parties assumed the roles of banker, doctor and courier.

f.   **Resources and Usufructs**

The fifth DSD construct maintains *that service creators use resources, specifically its usufructs, to create service.* In this case, the service creators use competence/expertise, and financial and physical resources (Figure 5.14).
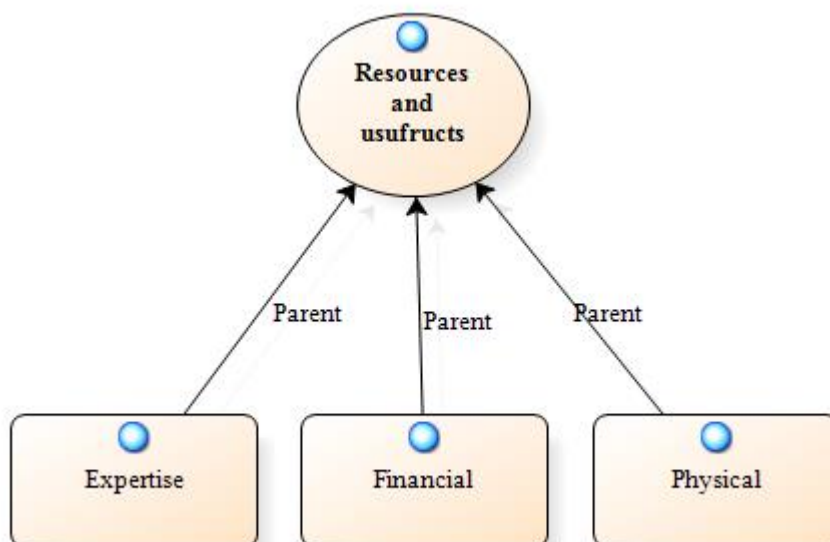
Figure 5.14: Resources and usufructs in ILT

Firstly, service co-creators have used their competencies and expertise:

> I used my financial know-how to make the client understand about different coverage and investment options…/P31.

> *Takaful* consultants readily understand the customers' needs. They are trained to develop skills and expertise to identify customers' needs and accordingly design *Takaful* polices for them…/P28.

> He liked our service because of our expertise in *Takaful* and investment management. He did not have time and expertise to invest on his own…/P33.

Secondly, financial resources are used:

> The customer paid PKR 300000, so his bank statement was required which he brought…/P33.

> The customer trusted in us and invested his money through our services…/P27.

> I attached the cheque to the customer's file and handed that to the operations manager…/P29.

> I told him [customer] that the cheque needed to be drawn in the organisation's name and that it should be crossed…/P31.

Thirdly, physical resources, particularly technology, are used in creating the service:

> I made two alternative plans for the customer in computer systems ... we are connected to the head office through our information system…/P26.

> We normally contact customers via phone, fax and email. We use computers to design the *Takaful* plans…/P28.

> We use public as well as private transport to visit customers…/P29.

During the interviews, the researcher observed the use of physical resources such as business premises, transportation, computers, food and drink, stationery items, electricity, internet and mobile phones.

g. Rules and Control

The sixth DSD construct maintain that *service co-creators apply rules to create a control within the service system*. Four categories of rules are applied in an ILT service-system (Figure 5.15):
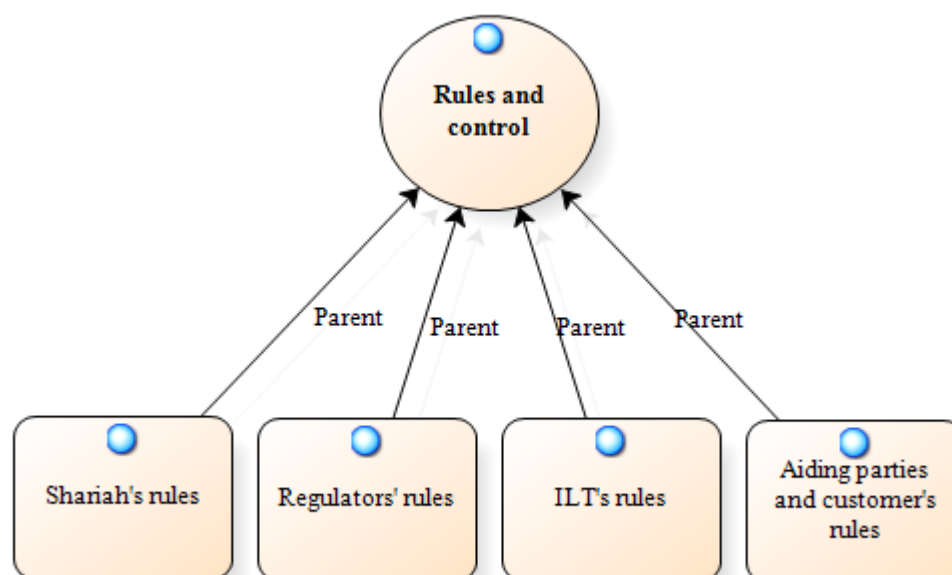
Figure 5.15: Rules and control in ILT

Firstly, *Shariah* rules are applied through Islamic economic contracts:

> The trust fund is established through trust or *Waqf* [*Shariah* rules]. I explained these rules to the customer. These rules should be known and clear to all parties because the contributions made to the trust fund cannot be refunded after a cooling-off period…/P27.

> The core set of rules for this service is developed through *Mudarabah*. These rules are clearly mentioned in bullet points in the forms we [customer and *Takaful* personnel] have discussed. As per these rules the customer has a 14-day cooling-off period in which if he is not happy with the *Takaful* policy, then he can claim back his contribution and wind up the policy ... The culture in this organisation is created based on the *Shariah* concept of *Tabarru* [brotherhood principle] ... *Shariah* compliance can even be observed in behaviours and in the language we use…/P33.

Service policy guidelines showed that a *Shariah* board supervises *Shariah* rules for the existing and new services.

Secondly, the regulators' rules are applied. These rules are related to i) company matters and ii) non-banking finance matters:

> As per SECP's rules, *Takaful* companies must have re-*Takaful* arrangements. For this purpose we have re-*Takaful* engagements with globally established *Takaful* companies and groups [also printed on the back of presentation packs and brochures]…/P32.

> Currently we work within the 2005 *Takaful* rules, issued by the ministry of commerce applied by the SECP…/P33.

Thirdly, the *Takaful* organisation has also applied its own rules. These rules are related to routine service-system-management.

> In *Takaful* policy, sales targets are given to every *Takaful* consultant and there are related targets ... there is a rule that the documents must be arranged in a specific sequence and compared with the checklist before sending these to head office…/P34.

> The management have complete service policy and rules. For instance there are rules for service opening and closing times, the file submission duration and the required documents. They are regularly changed and communicated to us by head office…/P26.

The operations manager showed the departmental manual, which outlined the organisational rules for all departments taking part in the service creation.

Fourthly, aiding parties' and customers' rules are applied in the service. The *Takaful* organisation and aiding parties have contracts specifying rules for the aiding parties' contributions. These contracts are made with doctors, banks, internet companies and couriers. In these contracts the aiding parties have also included their own rules and terms related to their contributions:

> We have contracts with doctors. These contracts include the rules related to medical liabilities and privacy. The doctors have their rules and we follow these rules when doing the medical tests for the customers. These tests are used to determine the accurate policy coverage…/P29.

> The courier has a contract with us for postage files to and from head office. As per their policy they maintain receipts of all the post and we also keep records which we match at end of each month…/P27.

> We design group *Takaful* for families and institutional customers such as employees of an organisation. We give concessions and design plans as per the human resource policy of the organisation…/P32.

Four types of rules are applied within the *Takaful* service-system. These rules are *Shariah* rules, regulators' rules, organisational rules and aiding parties'/customers' rules.

h.   Value-in-context

The seventh and final DSD construct maintains that *service creators create value in a service*. The planned designs contain value propositions that the service creators aim to

realise in future. In a *Takaful* service, the values or benefits are created in the form of *Shariah*-compliant investments/profits and financial protection/coverage (Figure 5.16).
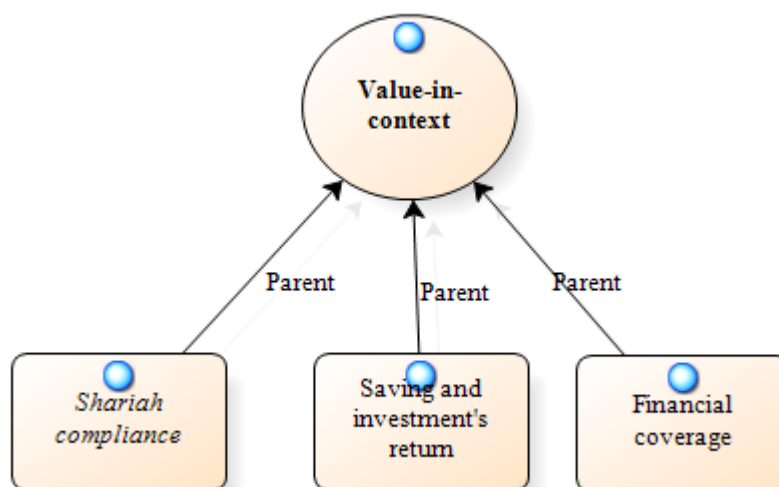
Figure 5.16: Value-in-context in ILT

Firstly, *Shariah* compliance is found as a value proposition within the *Takaful* service:

> Ninety per cent of the customers come because the service complies with their religious beliefs. They avoid conventional insurance because of *Riba* and *Gharar*…P28.

> If you read our vision and mission that we will comprehensively comply with *Shariah* values and beliefs. We and our customers both want to be *Shariah*-compliant, so we ensure that in each part of our service is *Shariah* compliant…/P34.

> The worldly benefits will definitely come through our services, but we aim to be *Shariah*-compliant ... one of our objectives is to spread the *Shariah* message of *Tabarru* (brotherhood)…/P33.

Secondly, the ILT service has created financial value through savings and profits on investments:

> The main purpose of this customer was to invest his savings in *Shariah*-compliant stocks and to earn *Halal* (*Shariah*-compliant) profits. We have two parallel fund pools i.e. investment pool and trust pool so this need was fulfilled through the investment pool…/P26.

> This customer was a professional medical doctor. His aim was to invest his savings for his retirement age so I developed a *Takaful* plan dominated by contributions to the investment pool…/P33.

Thirdly, value is created through financial coverage:

> This service is designed for those clients who have worries about financing their children's education ... After evaluating the customer, I designed a sixteen-year coverage plan for this customer…/P31.

> I realised that the customer was interested in financial coverage for family health and child education so both these needs were covered in the *Takaful* plan…/P29.

> In this case the customer's objectives were health coverage and investments…/P33.

In ILT, *Shariah*-compliant savings/investments, returns, and financial coverage are found as value propositions.

i. ILT Service Blueprint

In this section the most detailed service story is selected for comprehensive visualisation of the service system that emerged during the ILT service. In this story, two individual customers M and T obtained *Takaful* policies together. Table 5.2 shows the detailed episodes of the real service created in this specific service case. The specific story also highlights the application of planned designs and adaptation of specific episodes to the context of this specific case. The involvement of the service co-creators, the *Takaful* company, customers M and T and aiding parties is evident. Their roles and actions are divided into sequential service episodes. The use of expertise, and financial and physical resources are evident within each episode. Compliance to rules, specifically *Shariah,* can be seen. Value creation through financial coverage and investments are also evident.

E. No.	Service Encounters
1	The *Takaful* consultant received a call from his cousin, telling him that his friend (cousin's friend) needs a savings plan for his retirement. The consultant's cousin provided the contact details of the potential customer, named M.
2	*Takaful* consultant called M, who suggested 11:00am for a meeting. The *Takaful* consultant left from (a city in Pakistan) around 8:00am to visit M at his work premises in (another city in Pakistan). The consultants used a private vehicle.
3	The *Takaful* consultant met with M at his work premises. *Takaful* consultant's cousin, M and their two other friends were also present. The *Takaful* consultant introduced the company, the *Shariah* board and the available service packages (planned designs). The whole process of investments, trust funds and earnings are explained to the customer. The difference between *Takaful* and insurance is explained to M. SECP licence and *Shariah* board certificates are showed. M discussed his earnings and spending position. Based on this discussion, the *Takaful* consultant realised that M is basically interested in a *Takaful* policy to save money for his retirement age.
4	The *Takaful* consultant opened his laptop and entered M's information into a spread sheet to customise a proforma *Takaful* policy for M. The *Takaful* consultant specified a 12-year plan for M and showed that to him.
5	M then asked questions like what if he wants to withdraw the savings before maturity. Can he withdraw part of or the entire amount? How will the *Takaful* company invest his money in *Shariah*-compliant businesses? These questions are answered by the *Takaful* consultant.
6	The two friends accompanied with M were also asking questions. They asked about if they have extra savings and want to invest. Then the *Takaful* consultant changed the *Takaful* design by

	adding a top-up facility to the plan and showed that to them and explained how they can save their temporary savings in the top-up facility attached to the regular plan.
7	M agreed on the customised *Takaful* policy. The next step for M was to deposit the first financial contribution to the trust fund and investment account. M said that he needed to wait for a week or two as he had filed an application for his salary fund withdrawal from the government. Then M, his friends and the *Takaful* consultant took a traditional lunch and then the consultant left for his office.
8	The *Takaful* consultant followed up the case for two months and contacted M four times to progress the case. But the case remained pending due to the delay in government funds.
9	When the funds are released, M called the *Takaful* consultant. The *Takaful* consultant went back to M. M also introduced his ex-colleague named T to the *Takaful* consultant who was also interested in the *Takaful* policy. He was aware about the service packages (planned designs) as he had already discussed that with M. T was now retired and had a clothes business.
10	The *Takaful* consultant customised two similar *Takaful* plans for M and T. They prepared the documents: trust contracts, agency contracts and policy plans. The consultant explained all the terms and conditions to both M and T. Both M and T deposited PKR20000 each. They discussed the case for two more hours.
11	The *Takaful* consultant prepared two separate case files for M and T and sent these to the operations officer.
12	The operations manager checked the cases, issued provisional receipts to the customer and prepared the files for dispatching to the new membership assessment department (NMAD) located at head office.
13	The investment amounts for both the cases are deposited into a commercial bank with references to the cases.
14	The courier posted the files to NMAD located at the head office of the *Takaful* company.
15	The employee at NMAD called to M and T to confirm the details of their proposed policies and to ensure they have given informed consent.
16	Both M and T called the *Takaful* consultant to say that the head office had contacted them for information and verification.
17	NMAD analysed the cases and approved the policy for T without any conditions whereas they attached medical test requirements for the policy of M.
18	After three days, the courier delivered the policy files from head office to the operations manager, who informed the relevant *Takaful* consultant.
19	The *Takaful* consultant called M and told him about the medical test requirements and requested him to come and have a check-up with an independent doctor.
20	M decided to come after three days. The *Takaful* consultant made an appointment with the doctor. The *Takaful* consultant and M met at the agreed location near the doctor's clinic.
21	The supporting staff at the medical centre of selected doctor filled in the required forms and checked M's NIC with the details on the medical requirements letter. The doctor checked M's weight, pulse, blood pressure and some other tests. M and the *Takaful* consultant went back to the ILT office.
22	M left the office and took his ex-colleague's (T) approved policy file with him. M then

	delivered the approval policy file to T.
23	The Dr sent M's tests, in s sealed envelope, to the operations manager who then forwarded the tests to the medical team at head office via courier.
24	The medical team evaluated M's tests and classified him as overweight and sent the information to NMAD.
25	NMAD adapted the earlier designed *Takaful* plan and increased M's contribution to trust funds by 50% (this is termed life load). NMAD sent the adapted *Takaful* plan to the operations manager via courier. The operations manager then informed the *Takaful* consultant about the adaptation to the *Takaful* plan for M.
26	The *Takaful* consultant called M and asked him about the adaptation in the *Takaful* plan. The *Takaful* consultant emailed an amendment form to M. M printed the form and agreed with the amendments in the plan. He sent the signed amendment form to the *Takaful* consultant via registered post.
27	The *Takaful* consultant received the amendment form and handed that to the operations officer. The operations officer then sent it to the NMAD through courier.
28	The NMAD sent M's approval documents to the branch operations officer via courier, who forwarded these to the *Takaful* consultant.
29	The *Takaful* consultant called M to request he collected the documents. M came and collected the approval documents from the *Takaful* consultant. His *Takaful* is now operational.

Table 5.2: Service episodes in an ILT case

Figure 5.17 shows the service story in blueprint to develop a snapshot of the real service-system. The number on the chest of icons matches with the rows in Table 5.2 Each row explains the specific episode in visualised form. Colour code is used: red for ILT contributions, green for the customers' contributions, blue for aiding parties' contributions and black for the emergent and unplanned service episodes, which led to the adaptation in planned designs.
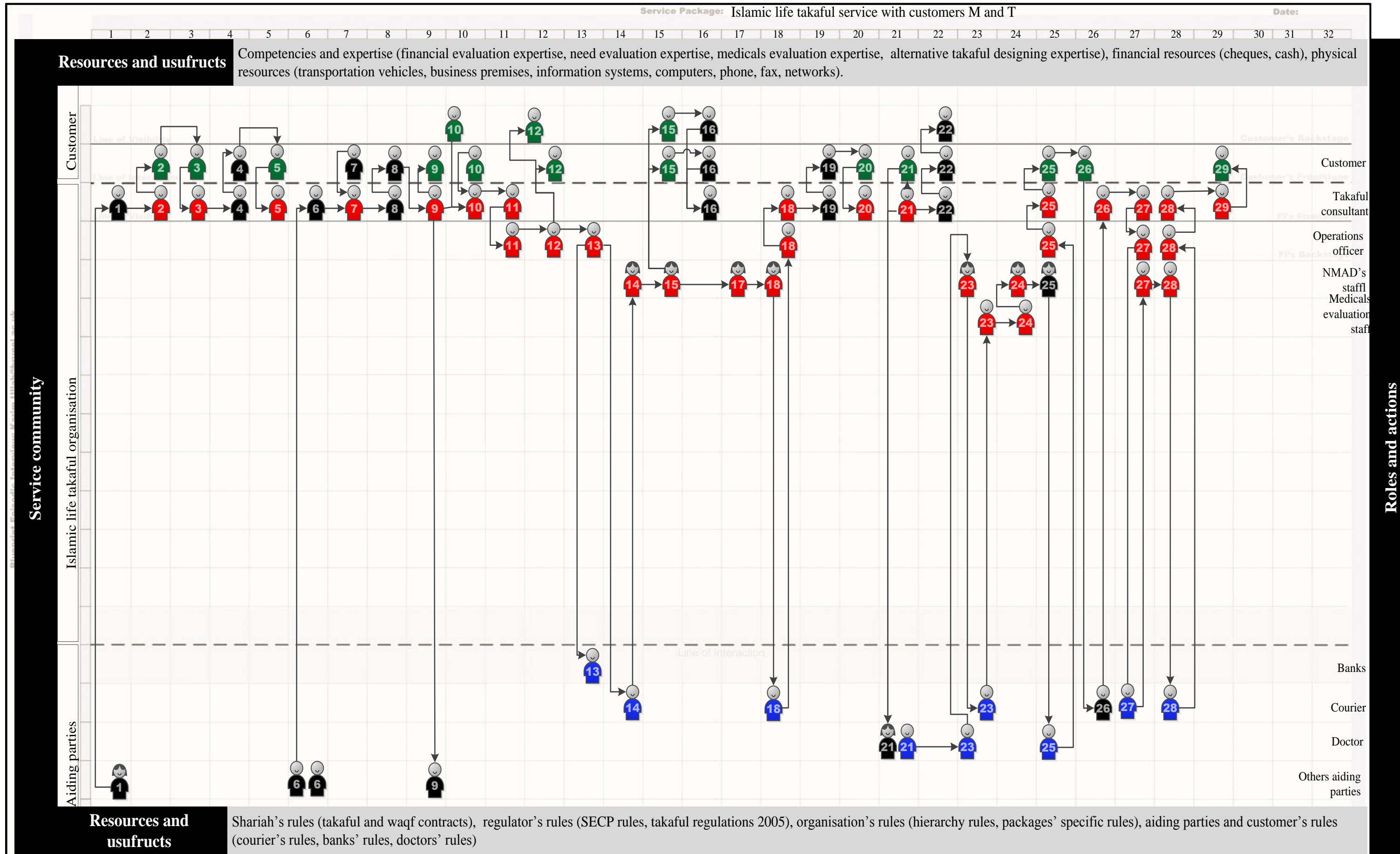
Figure 5.17: The blueprint of real *Takaful* service case

j.   ILT Case Summary

This chapter presented the case of an ILT service organisation as second evidence for the DSD. The situated service creators have applied the planned SFS models (*Mudarabah*, *Waqf*, *Wikalah*), varieties (list, range and negative) and independent modules to create service. The situated service creators adapted these planned designs into specific case environments. The adaptation started with emergence in environment. In response the service creators diffused information about the specific environment of a service case and emergent service requirements. Information diffusion resulted in knowledge diffusion in the system. Through new knowledge, the service creators indexed real service requirements with available planned designs and vice versa. They applied competencies and expertise to make specifications, adaptations and migrations of planned designs. The ILT organisation, customer and aiding parties are found to co-create the services. They assumed roles to perform specialist actions in services. The service creators used competences/expertise, financial and physical resources in the service. They applied *Shariah* rules, regulators' rules, organisations' rules and aiding parties'/customers' rules to create a control within the service system. Value propositions are found as *Shariah*-compliant financial coverage, savings and investments.

5.3.3 Case III: Islamic Leasing Service – ILS

a. ILS Introduction

This chapter presents the case of the ILS organisation as the third evidence for the DSD. The selected ILS organisation is registered with SECP as an Islamic leasing *Mudarabah* company. The ILS organisation started its business in 1992. This organisation is mainly involved in financing the working capital and capital assets of business proprietors' firms and companies. The ILS organisation used the SFS models of *Ijarah* (lease), *Musharikah* (capital partnership) and *Mudarabah* (capital and expertise partnership). In the *Ijarah* model, the ILS organisation leased assets such as industrial equipment, carriage vehicles, cars, computer hardware and office equipment to its customers. In *Musharikah* and *Mudarabah,* the ILS organisation made investments within working capital such as inventories of customer organisations. *Mudarabah* is also used for savings and investment services. These SFS models are alternatives to the conventional loan and lease models.

One regional office with the attached branch is selected as *the case*. Eight narrative interviews with personnel are conducted to evaluate and further develop the DSD. The interviews are particularly focused on specific service cases. However the participants also quoted examples from other cases and made general discussions on specific episodes related to the real stories. The participants showed the relevant documents as support for their narratives and discussions. The one most detailed story is tabulated and blueprinted for the in-depth understanding of the real service-system, which emerged during the service creation. The findings are supported through quotes, Nvivo 9 illustrations and the service blueprint. These findings are presented below.

b. Planned Design

The first DSD construct maintains that the *service creators apply planned designs to create a real service.* In the ILS, the service-product development department located at the head office made the abstract and initial planned designs. The service creators located at multiple local branches then applied the planned design to actually create the services. The planned designs are found as service packages, which show the intended services to be realised in the future service encounters. The service creators applied three types of planned designs namely the SFS models, varieties and independent modules (Figure 5.18).
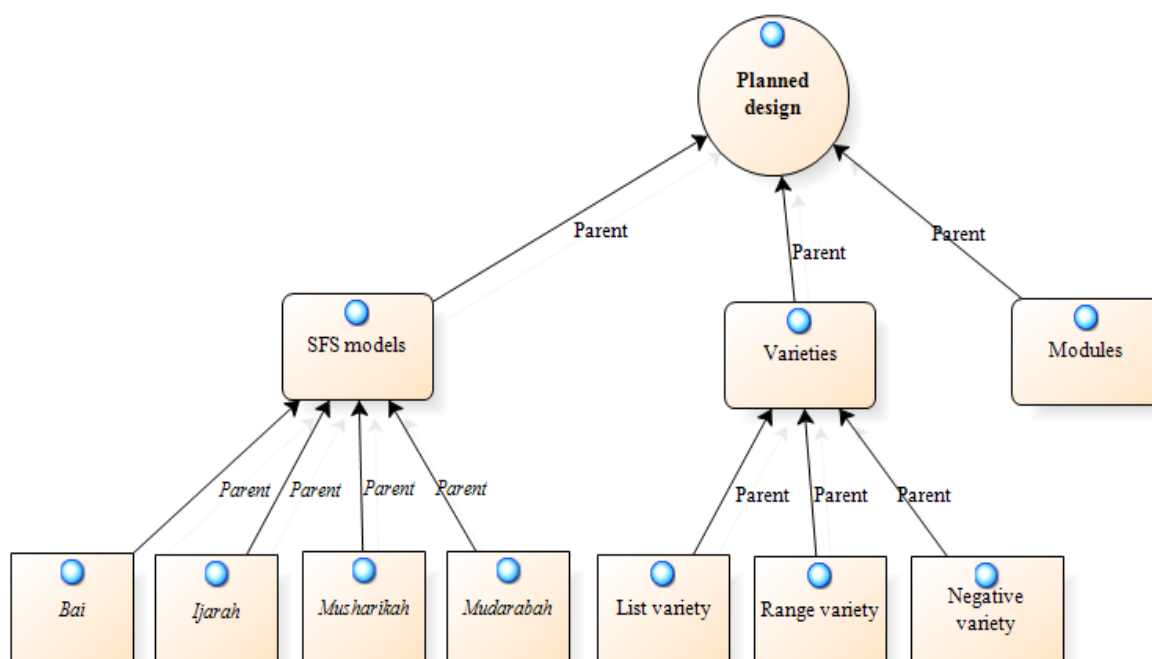
Figure 5.18: Planned design in ILS

Firstly, SFS models are applied to create the service. *Ijarah* and *Bai* models are applied to lease machinery:

> The manager of the company came and asked for financing. The customer was a biscuit producing company. Its manager simply said they needed money to run their business. They were running in cash shortage. I told him that we do not provide money on interest as this is an Islamic leasing company. He said that they already have new machinery. I then told him that lease back is the solution, so we purchased the machinery from them and leased that back to them based on *Bai* and *Ijarah* [sale and lease]…/P42.

The *Musharikah* model is applied to the finance inventory:

> We financed the customer's inventory using the *Musharikah*. We [customer and ILS organisation] jointly invested money in the inventory. The customer will need to pay back both the principal amount plus proportional return on sales…/P37.
>
> This was the case of *Musharikah*, so we paid an amount to the customer to purchase assets ... In long-term *Musharikah* the client will pay back our investment in instalments…/P39.

The *Mudarabah* model is applied to create a savings and investment service:

> Based on *Mudarabah* we create savings and investment opportunities for the customers. We do this in the form of certificate of *Mudarabah*. In this investment service, the customer can contribute money and our experts invest these to earn. We both share the profits. The investment starts at PKR5000 and increases in multiples of PKR 5000…/P42.

Secondly, planned varieties are applied to meet variations in actual service requirements. *List varieties* are used when simple lease and lease back models are applied. In a simple lease, the ILS organisation first purchases an asset from outside

suppliers and then leases the same to customers. In the sale and lease back variety, the ILS organisation first purchases the assets from the customer and then leases the same assets back to the same customer:

> I told the client that he had two options in this service which were the direct lease and sale and lease back…/P35.

Further depth in list variety is created by offering a lease for both new and old assets:

> There is a difference between new and old lease back ... If the asset is new in a lease back case, we demand its quotation because the payment is to be made to the supplier ... if the asset is old then payment is made directly to the customer because he became the direct seller of the assets as well…/P36.

Similarly, a list variety is designed for the documents to be submitted by individuals, firms and companies:

> We require a different set of documents from individuals, firms and companies. This customer was a registered company. I therefore asked for the NICs of directors, the articles and memorandum of association, form 29, form A and the national tax number…/P41.

Form A and form 29 are the company documents that contain information related to the company shareholders and company resolutions. The ILS personnel do not obtain these documents from the individual clients and the firms. The documents showed a *list variety* for partnership documents, which includes the partnership deed, partnership registration certificate and financial statements.

List varieties are also found for the returns payment periods and modes of payments:

> For meeting different customers' needs, we provide income payment options as monthly, quarterly, half yearly and yearly. The income can be transferred to them online or by cheque ... This customer said that he needed the profit on a monthly basis, so every month our head office credits his account for the profit…/P42.

Range varieties are also designed and applied for the service parameters such as amount and periods of investments:

> In the certificate of *Mudarabah*, the investment range starts with minimum of PKR5000 and goes up in multiples of 5000. The range for the maturity periods is 3 months to 5 years…/P42.

Negative varieties are also designed for the service parameters such as the prohibited assets and modes of finance:

> As Islamic leasing *Mudarabah*, we do not finance assets prohibited by *Shariah*, such as pork and alcoholic products. We have a list of such prohibited goods. Similarly, *Halal* assets [permitted] can only be financed through methods which do not involve any prohibited element such as interest ... we avoid these prohibitions and accept other opportunities for investments and financing…/P35.

Thirdly, individual service modules are designed and applied. These service modules

are added to and deducted from the core services. The service creators combine multiple modules to create tailored services:

> This customer was an importer, so we combined some components of *Ijarah* and some of *Musharikah* to finance his imports. For example we invested money with him through *Musharikah* [partnership] and facilitated his imports through *Ijarah* [agency] ... After two months the customer came again and said he wanted to purchase raw material from a local supplier in Lahore [city in Pakistan]. We added this part of the service using *Murabahah*. In this part we purchased the raw materials from a supplier and sold these to the customer at a marked-up price…/P42.

> They [customers] come across a financial problem or opportunity for which we create solutions by combining different *Shariah* based service components…/P40.

The actual service creators applied planned SFS model, varieties and modules to create real services.

c. Adaptation Process: Emergence and Deferred Design

The second DSD construct maintains that the *emergent environment affects planned design in response to which the situated service creators adapt the planned design*. The real ILS service-system is found to be an inclusive part of broader systems which encourage it to adapt. The service creators adapted and migrated the design to create or reject emergent services. This deferred designing is established through information diffusion, knowledge diffusion, and indexation and specifics' evaluations. These four adaptation steps mediate the emergence and deferred design within a holistic adaptation process (Figure 5.19).
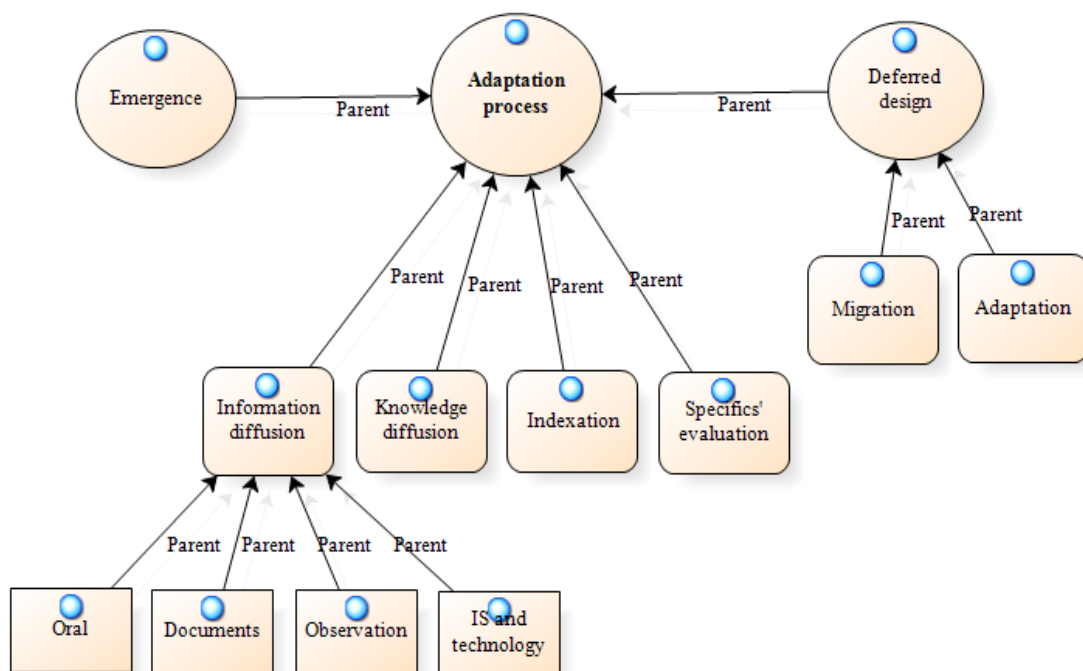

Figure 5.19: Adaptation process in ILS

First, *the emergence and corresponding deferred design* are discussed and afterwards the mediating adaptation steps are discussed.

The emergence in practice environment is caused by the market situations in multiple countries (particularly in China, Pakistan and Afghanistan). This emergent environment has affected the planned-design's need to adapt:

> Our client was O corporation, which was in the motorcycle assembly business. It imported parts from China and then assembled these in Pakistan and then supplied the motorcycles to Afghanistan and in Pakistani markets. Unfortunately some of his parts were blocked with suppliers in China and customers in Pakistan and Afghanistan. So, they asked for financing them to match the cyclical nature of these specific markets. We changed the normal *Musharikah* for this case. A new proposal was developed keeping in view his expected cash flows, business cycle and the situation of the motorcycle markets in China, Pakistan and Afghanistan ... We invested PKR 8 million in the business for six months…/P38.

The service creators also belonged to the broader social and family systems, which affected the planned-designs' ability to adapt:

> In this case, the customer was a family friend of R who is our zonal committee head ... so the zonal committee head himself provided most of the information about the customer and became the referee as well. This was good for the customer, because normally the customer needs to arrange an outside referee known to the ILS organisation. So our social relationships affect the actual service we provide…/P37.

> The situation of this customer was different. His job was in Peshawar and his wife was in Karachi … the customer put instructions to pay the profit monthly and to directly transfer that to his [customer] wife's account in Karachi. So, we customised the standard procedure and decided to pay the return through our head office in Karachi, where the interbank transfer is local and free…/P42.

> Both brothers [customers] were present here at the branch but one as lessee and second as guarantor ... their family relationship is accepted as a base for the guarantee…/P36.

The social institutions of family, friendship and brotherhood have affected the adaptation of the planned designs (reference inclusion, transfer arrangement to wife's account and guarantee arrangements).

The government system also affected the adaptation of a planned design:

> We financed the customer's imports of CNG gas cylinders. During the imports, the client mistakenly violated some excise rules and the excise department (government agency) issued a notice to stop the sale of those cylinders. For three months there was no business and the client failed to make the scheduled payments. So, we redesigned the payment stream for this case…/P42.

The health industry in which the customer company operates also affected the planned-design's need to adapt:

> This company was dealing in pharmaceutical products. This was a new case for me. I did not have any specific list of documents for such a company so I decided to change the standard list of documents by taking information from the clients. They mentioned the products' NOCs [No objection certificates] that they had acquired from the health ministry. They also explained that they had approved specific maps for the production

units, which ensures the minimum health requirements during the production of medicine. After knowing about them, I added these new documents to the standard list of documents we need for a lease proposal…/P41.

A client company dealing in security services had its own unique environment which enabled the planned design to adapt:

This was a security company so we confirmed that this company had security clearance with the security department. When they came to us and discussed the credit proposal with me I told them that I will need confirmation from our head office about whether we can finance securities companies or not ... For such new cases we search for information to design a credit proposal. We have our friends and colleagues from whom we take information. So, regarding this case our chief executive's brother helped me. He has his own security company in Lahore. He provided some information on the industry and the documentation of the company based on which I contacted the head office and they agreed to finance. So then I developed a credit proposal for them. In normal cases we first develop the credit proposal and then send it to head office…/P39.

The involvement of the security department, the chief executive's brother, the sequence of developing a proposal and contacting head office occurred because of the specific nature of this customer's company.

The investment service is linked with the money and capital markets so the returns on investments adapted to the market's situations:

We do not pay fixed interest on the *Mudarabah* investment certificates. The returns on these certificates mainly depend on the market index and particularly on the performance of back-end stock portfolios…/P42.

The aiding parties also affected the ability of the planned design to adapt:

After receiving the order to manufacture the car, the manufacturer normally produces and supplies the vehicle within six months. During this time the supplier increased their prices two times once by PKR50000 and another by PKR84000. The customer said he could not pay the second increase. The company agreed to give him a grace period of two months and his payment schedule was redesigned…/P40.

The supplier company, which is an aiding party in the service, affected the planned schedule of payments to adapt.

The emergent need of existing clients also forced the planned design to adapt:

We have financed this client through *Musharikah*, against which he mortgaged the property. Recently, the client also asked for a letter of credit that he needed for the imports. Since we are not a commercial bank and cannot offer this service we discussed this and designed a solution with the help of an Islamic commercial bank. I issued a letter of comfort to the commercial bank and said that this importer is our [ILS] client and we have his mortgage. We asked the bank to open an LC [letter of credit] for the client. We [ILS organisation] provided a guarantee against the LC, as we already had the customer's mortgaged property…/P41.

The specific situation of service also caused migration (exclusion) of some service components:

> We normally collect guarantor's NIC, source of income, and bank statements. In this case the guarantor was our existing client. We had already made his evaluation in his own case, so we excluded the evaluation of guarantor in this case and did not ask the customer to bring the guarantor's documents…/P40.

The planned service processes are migrated (excluded) by merging the down payment with the disbursement amount:

> From the customer we collected one cheque for his down payment in the lease and also collected post-dated cheques that we would cash in future to collect the amount we had invested in the lease. In this case, at the request of the customer, the accounts and finance department deducted the down payment directly from the approved lease amount. So a cheque for the remaining amount was sent in the name of the client. Instead of two, one transaction was made in this case…/P35.

Some situations caused complete migration or refusal of the service creation:

> The customer's income was PKR100000 and his expenses and liabilities were PKR70000. The instalment of the facility was due to be PKR32000. He also had to support his family. I rejected the case because though the customer's cash flow was good it was heavily blocked by his liabilities and family expenses and therefore was not viable for the company …/P40.

The social, family, market, government, aiding parties and customer created emergent practice environments for the ILS to operate within. In response to such environments, the service creators adapted or migrated the planned designs.

Four underlying adaptation steps are evident between the emergence and deferred design. These steps are information diffusion, knowledge diffusion, indexation and specifics' evaluation. The adaptation started with the emergence in the practice environment. In response, the service co-creators diffused information within the system. This information diffusion occurred orally, through documents, and information systems and technology. The service creators orally diffused the information:

> I asked the client questions related to his business and his lease needs. Like what is the investment of the owner in the business, how much financing have they taken so far? The customer also talked about the current market situation and business opportunities. Similarly the customer also asked questions about the service packages we offer. This information exchange is necessary to understand actual service requirements in each case…/P37.

> The customer told me that the shipment was coming from China. They were in shortage of funds and they told us [ILS] to invest in the shipments …/P38.

The service creators also diffused information through documents:

> The customer brought two additional documents related to the sale agreement and sale invoices. These documents provide detailed information about the supplier and goods that will be financed…/P41.

> This was a *Musharikah* case so the *Musharikah* agreement, demand promissory note, letter of continuity, undertaking and personal guarantee were read and signed by the

> customer. The directors of this customer's company also provided their personal guarantees in writing. Once the information was collected, a detailed credit proposal was developed…/P39.

> The client also owned some houses that he rented. We included this information in his credit proposal and attached the rent agreements that he had with tenants…/P40.

Observation is used for information diffusion:

> After completing the field visit to the customer's premises, I compiled my observations and made some amendments within the lease proposal. During the field visits we made a separate observation report and attached that to the case file…/P40.

Information systems and other technology are used for information diffusion:

> The customer was on the phone and was telling me his particulars and requirements. I was entering the data into the information systems. Based on this data, the system instantly produced the possible service alternatives that the customer could take so I informed the customer about the options…/P36.

> She asked basic questions on the phone and my colleague faxed her some service brochures for further detail…/P37.

Information diffusion in the system resulted in knowledge diffusion because the service creators used the information about emergent environments and actual service requirements:

> None of the staff members or the customers has complete knowledge of each and every thing in the service so we help each other to better understand each case and provide the appropriate service. As in this case the customer was a security company and the inventory they asked us to finance was new for us. Our chief executive's brother, who also has a security company, provided the valuable inputs…/P39.

> We share our understandings of the business and the industry. If the area manager or any other staff member knows the industry, we share knowledge with each other. We also contact our references in the industry to get information about the industry in general…/P41.

Based on the emergent knowledge, the service creators compiled an indexed the real service requirements with available planned designs and vice versa.

> In a service proposal, we create solutions based on our understanding of the actual service situation and the service packages we have. We match these two to select the best service package and also amend or combine many packages to meet the service requirements. In this case the customers said that they already have two factories and they recently established a third factory for which they needed funds to operate. I understood that they had new assets in the factory, so I matched this with available service packages and selected a lease back package. Through lease back we purchased the machinery from them and leased that back to them…/P41.

After indexing the real service requirements with planned designs, the service creators applied the relevant competences and expertise to evaluate the deferred design specifications and adaptation/migrations. The central credit committee used their expertise and analysed the customer circumstances to evaluate the possible adaptation of payback period.

> As the customer said that his cash cycle was four months and he would be able to return the money in four months, we specified the payback period as four months and sent this to the credit committee. The personnel at the central credit committee are experts. They analysed the customer and market situation and said that it is highly unlikely that the customer would be able to pay within the specified four months so they proposed changing the credit proposal and to increase the payback period from four months to six months, which we did…/P38.

The service creators used their competencies and expertise for credit evaluation:

> We designed this document internally to evaluate the income, assets and liabilities of the customer ... Our experts evaluate this information to decide about the service options, acceptance or rejection of the proposal…/P40.

The emergent environment is created by market, social, family, governmental and industry factors. The emergent environment affected the adaptation of the planned design. In response, the service creators make deferred/situated design decisions during actual service encounters. In these situated or deferred designs, the service creators made specifications within planned designs, selection within alternative varieties and combination of multiple service modules and additions/subtractions of service components. These deferred design actions resulted in tailored services. There are four underlying steps between emergent environments and the deferred design: information diffusion, knowledge diffusion, indexation, and specifics' evaluation.

d. Service Co-creators

The third DSD construct maintains that the *service organisation, customer and aiding parties co-create service*. In this case, the ILS organisation, customer and aiding parties are found to contribute to the service (Figure 5.20).
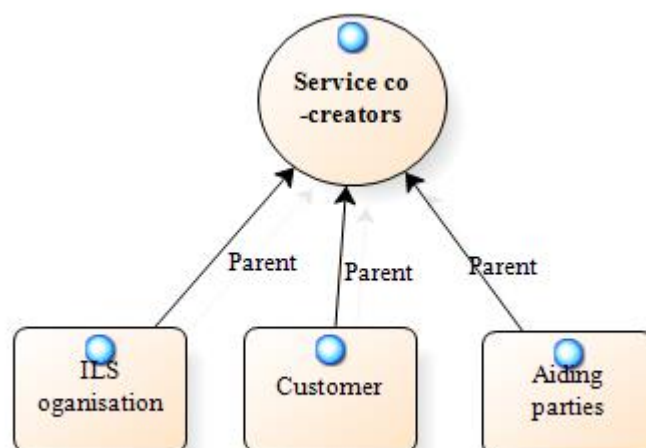
Figure 5.20: Service co-creators in ILS

Firstly, the ILS organisation contributed to the service. The ILS contribution can be cognised in terms of contributions made by its departments and personnel:

> We are specialised in leasing, finance and investment services through *Ijarah*, *Musharikah* and *Mudarabah* ... Every one of us has a part in these services, such as the central credit committee evaluates and approves the cases…/P37.

> To efficiently deliver the service, different staff members are linked to ultimately complete the service and fulfil the customer's need…/P36.

Secondly, the customer contributed in service creation:

> All these documents are arranged by the customer. Besides this, he made arrangements for mortgaging his property against the *Musharikah*-based finance…/P38.

> The customer brought his bank statement and the utility bills…/P40.

> The customer then took the original LC and documents from the commercial bank and handed these over to the carriage company who transferred the goods from the sea shipment company to customer's warehouse…/P41.

> The customer visited us and received the disbursement cheque ... The payments for the mortgage and charges for registration were paid by the customer…/P36.

Aiding parties also contributed to the service:

> The customer's NIC was verified by the [name of the national identity registration authority]. His national tax number was verified by the [name of the taxation authority]. The registrar of mortgages registered the customer's property as a security mortgaged against this facility…/P40.

An aiding party, in this case a lawyer, contributed to the service:

> The approved lawyer verified the property ownership with the [name of a city development authority]. He then made his legal opinion on the ownership of property to be mortgaged. The lawyer and customer then went to the registrar of mortgages to register the mortgage…/P37.

Documents showed further contributions of other aiding parties such as goods clearing agent, regulators, *Takaful* company, excise department, banks, couriers, credit evaluators and asset evaluators.

e. Roles and Actions

The fourth DSD construct maintains that *the service creators assume roles which inform their actions in service*. Various roles and their execution into actions are evident in the ILS (Figure 5.21).
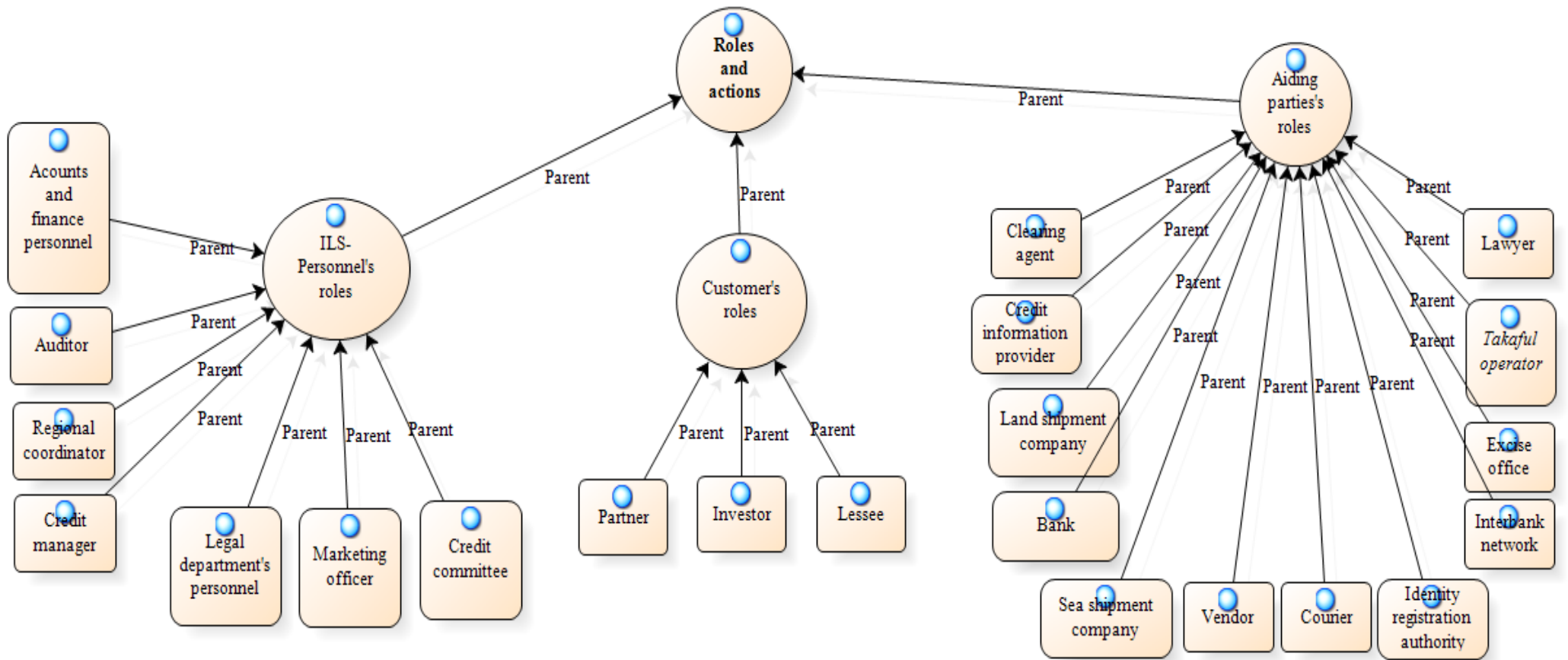
Figure 5.21: Roles and actions in ILS

Firstly, the ILS personnel assumed roles, which lead them to particular actions in a service case. These are the sub-roles of the ILS organisation:

> Overall our organisation is a lessor and partner in the service, because we lease the assets and make investments with customers and the customer makes investments with us ... every employee has his own role in the service ... As auto lease manager, I collected the required documents from the customer and third parties, based on which I prepared the lease proposal and sent that to the regional coordinator…/P40.

The regional coordinator is the role for coordinating regional offices and the central office:

> We send the proposal to our regional coordinator. Her work is to coordinate the regional offices with the central office. She accumulates cases from all regions, categorises these and then forwards these to the relevant departments at head office…/P35.

The zonal or regional committee is a collective role assumed by a group of employees:

> There are three personnel in the zonal committee. They thoroughly discuss to approve, reject or recommend changes in the proposals. If the case comes within their approval limits they decide about it otherwise they recommend it to the central committee…/P36.

The personnel in the audit, accounts and finance departments assumed roles in the service:

> After completing the audit and approval, the auditor sent the disbursement card to the accounts and finance department. There the accountant made the disbursement cheque…/P37.

The documents showed the personnel roles in the legal department who checked the legal documentation of each case.

Secondly, the customer assumed roles to inform his or her actions in a service:

> In this case the customer was a lessee as he took the assets on lease. He performed different tasks such as arranging the rental documents, visiting the bank to arrange his bank statements and going to the registrar for mortgage registration …/P40.

Customers have assumed the roles of investor or investment partner:

> *S* is an existing long-term customer. In this service he was an investor because he purchased two *Mudarabah* investment certificates, one for himself and one for his wife. In each of the accounts he placed an investment of PKR500000…/P42.

Documents showed that the customer performed actions such as visiting the service organisation, arranging a guarantor and witnesses and arranging documents from the bank, tax authority and registrar of firms.

Thirdly, aiding parties also assume roles to informed their contributions to the service:

> We have independent assets evaluators. I contacted them to evaluate the machine that we aimed to lease back. They evaluated the machine and prepared a report that showed the machine's specifics, market value and forced sale value…/P36.

An aiding party, a commercial bank, has played its role:

> The bank issued a customer's bank statements, which were used to confirm and analyse the customer's cash flow and income ... all the payments in this service were made through the bank…/P40.

The goods clearing agent, shipment company and carriage company have assumed roles:

> I issued a letter to the clearing agent with a copy of the shipment documents. The agent cleared the goods from the sea shipment company in Karachi. The customer then hired a carriage company who transferred the goods from sea the shipment company to the customer in Peshawar…/P41.

Documents showed further roles assumed by the aiding parties. The courier moved documents between regional offices, the coordinator, head office and customers. The interbank network agency cleared the interbank cheques involved in the service. The national identity registration authority verified the national identities of customers, guarantors and witnesses. The taxation authority verified the national tax numbers of customers and collected tax involved in the transactions. The *Takaful* company arranged *Takaful* coverage for the leased and mortgaged assets and goods. The tracker company installed trackers in leased vehicles. The excise department registered the leased vehicles and issued clearance.

f.   Resources and Usufructs

The fifth DSD construct maintains that the service creators use *resources*, particularly its *usufructs*, to create a service. In the ILS, competencies/expertise and financial and physical resources are used (Figure 5.22). The service creators interacted with the resources and the provision of usufructs contributed to the service.
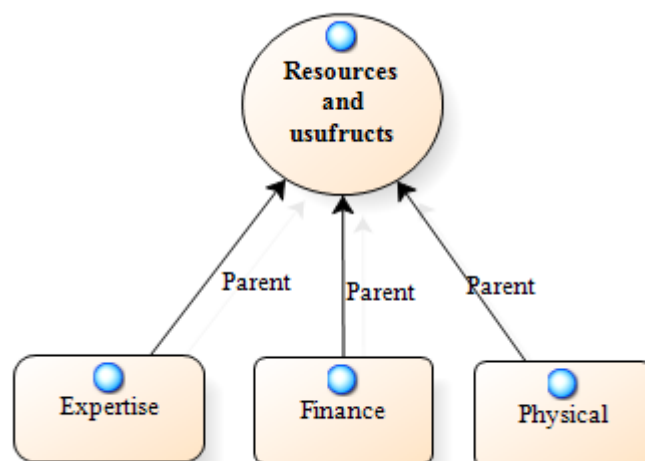
Figure 5.22: Resources and usufructs in ILS

Firstly, the service creators used competencies and expertise as core resources:

> Based on the expertise we developed a list of documents that helped us to evaluate this case. When the regional coordinator reviewed the case, she identified further documents that addressed certain aspects that we ignored at the operational level…/P39.

Experienced personnel used competencies and expertise to design customised services:

> Normally the experienced employees are more competent at bringing tailored services for each case…/P41.

The customer as service co-creator is also expected to apply his expertise:

> The person must have experience and expertise in his business because we become partners in his business and if he has good expertise then the risk of loss will be reduced…/P35.

Secondly, the service creators used financial resources:

> In this case, two buses were leased. Our financing portion was PKR6.6 million ... This financing amount was above the zonal committee limit of PKR1.5 million so they recommended the case to the central credit committee…/P35.

> The customer made a down payment in cash, which we deposited into the bank … for the repayment of finance we took post-dated cheques from him. We cashed these cheques on the due dates…/P36.

> They [customers] started the business with PKR8 million and we also invested PKR8 million with them through a *Musharikah* agreement…/P38.

Thirdly, the service creators used physical and technological resources:

> Bikes are given to the operational level marketing staff to visit the customers. Different types of cars are given to the managers and regional managers depending on their ranks. Similarly fuel limits are allowed to visit the customers or carrying out any other organisational work…/P40.

They used information systems and other apparatus:

> I sent the customer's details to the head office through our centralised information system ... head office is connected with the [name of a credit information provider], which provides the credit history of the customer ... [the name of a national identity registration authority] provided us with an identity verification machine which is linked with [the name of a national identity registration authority] database…/P36.

> We regularly discuss different service issues with the regional coordinator by email, phone and fax…/P37.

The customer used his property for a mortgage:

> The customer offered his property as a mortgage ... the customer needed to have some owned assets in the business so that his interest remained in the business in which we invest with him…/P40.

The service creators primarily used three types of resources within a service system: competencies and expertise, financial resources and physical/technological resources.

g. **Rules and Control**

The sixth DSD construct says that *service creators apply rules to create a control within a service system*. In the ILS system, four types of rules are applied to create this control (Figure 5.23).
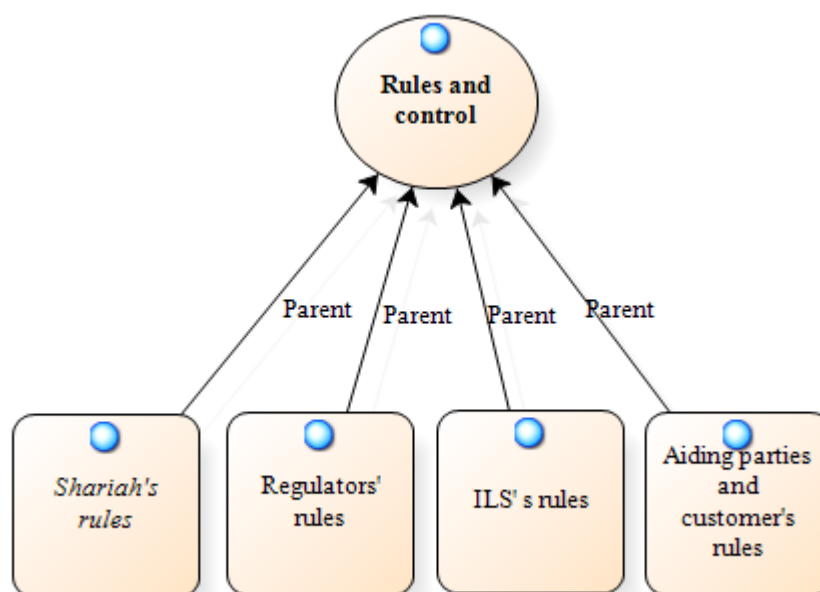
Figure 5.23: Rules and control in ILS

Firstly, the service creators applied *Shariah* rules:

> All the *Shariah* rules, terms and conditions are mentioned in the *Ijarah*, *Musharikah* and *Mudarabah* contracts that we sign with the customer…/P39.

Secondly, the regulators applied their rules:

> The [name of the companies' regulator] issues statutory orders for regulating the non-banking finance industry. Like nowadays we can only invest up to 20 per cent of our

funds in each sector. These rules affect the customers as well. Currently we have completed our quota for the CNG sector, so we cannot serve any other customer from the CNG sector until our investment in this sector goes below 20 per cent…/P42.

We work as per [the name of the companies' regulator] regulations related to the non-banking finance companies ... mortgaging the property is the requirement of [the name of the companies' regulator] rules…/P41.

Thirdly, the ILS organisation applied its own rules:

Our head office developed rules for each service package. In this auto finance case, installing the tracker to the car was essential as per the rules for this package. The rules state that if a leased vehicle is greater than 1000cc then a tracker must be installed in the vehicle ... We make complete legal documentations for each case…/P36.

I provided this brochure to the customer, which shows the terms and conditions to be followed ... These brochures are developed by the product development department in head office…/P38.

Fourthly, the aiding parties and customers applied their rules:

This was a security company ... they have their own rules and contracts with their own customers to whom they provide security services. We demanded their memorandum and article of association [rules] and NOCs, which they took from the interior ministry, to assess that the transaction was not against the rules of the security company and interior ministry…/P39.

Registrars, excise company and commercial banks applied their rules:

The mortgage was registered with the registrar of mortgages. Their rules require that the owner should personally present his consent for mortgaging the property. The customer therefore went to the registrar's office and recorded his consent …/P38.

The excise rules and regulations were followed in the registration of the vehicle ... all the cash receipts and payments were managed by the commercial banks. So for these activities the rules of commercial banking were followed…/P36.

In the ILS, the service creators applied four types of rules to create a control in the service: *Shariah* rules are applied through *Ijarah*, *Musharikah* and *Mudarabah* contracts; regulator applies their rules; the ILS organisation has their own rules; and the aiding parties' rules and customers' rules are also applied to establish a distributed control in the system.

h. **Value-in-context**

The seventh and final DSD construct maintains that the *service creators create value in the service*. The ILS offers value propositions in the form of *Shariah*-compliant leases, finance, savings and investments (Figure 5.24).
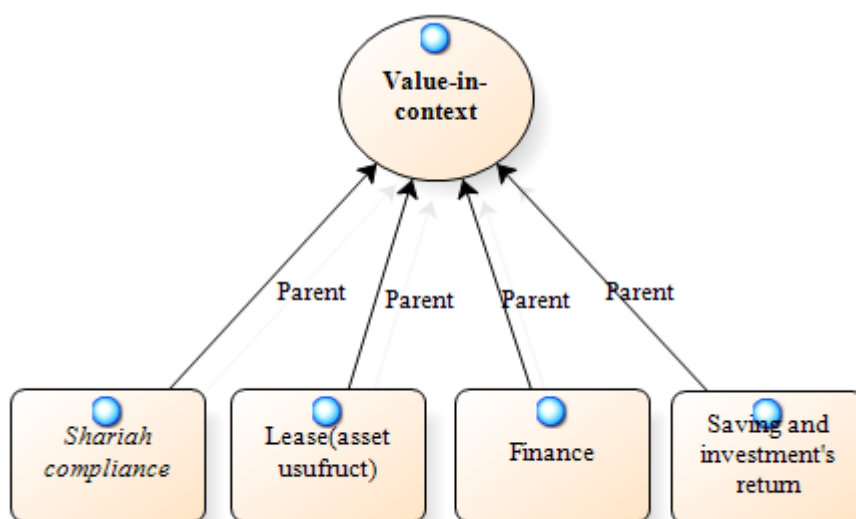
Figure 5.24: Value-in-context in ILS

Firstly, the service creators communicated the *Shariah* compliance as the value proposition:

> In all investments, financing and leasing services we aim to remain compliant with *Shariah*. This is clearly stated in our vision and mission. You can see these *Shariah* quotes that we framed on the walls, so we really mean to follow these in our services…/P38.

The organisation's vision and mission statements explicitly stated *Shariah* compliance as the core value proposition. The colours, pictures and text in brochures also reflected the fact that the service creators treat *Shariah* compliance as a strength and value in their offerings.

Secondly, the ILS is originally a leasing service so usufruct of physical assets is considered a value proposition:

> The service was designed with the objective to lease and lease back fixed assets. We leased two buses to the customer ... customer use buses and we receive lease income…/P35.

Value is created through the lease of wheel-balancing machine:

> This customer aimed to lease a wheel-balancing machine so we made the arrangements to make that lease happen…/P36.

Thirdly, financing is found as a value proposition in the *Musharikah*-based services:

> We do partnership with the customer in. As in this case we did in the imports of motorbikes' spare parts and we will share the profits…/P38.

> This was a security company and they were looking to arrange finance for security guards' uniforms, so we invested with them…/P36.

Saving and investments (and profits) are found to be a value proposition in the *Mudarabah*-based service:

> The customer told me that he has some savings to invest ... so I suggested him to take *Mudarabah* investment certificates. We invest their money in *Shariah*-compliant businesses and to generate *Halal* earnings for them…/P42.

In the ILS, the value is primarily created in the form of *Shariah*-compliant leases, finances, savings and investments.

i.   ILS Blueprint

This section looks at the most complete service story that emerged during the actual service creation and was selected for blueprinting of the service system. This is a story of a pharmaceutical company (N). The story is narrated by P41. Table 5.3 shows the detailed service episodes that emerged in this case. The story highlighted the application of planned design and its adaptation to this specific service case. The service episodes emphasised the service co-creators (ILS organisation, the company and aiding parties) and different roles assumed by them. Similarly the use of expertise and financial and physical resources are highlighted. Compliance with rules can be seen in specific episodes. Value is created in the form of finance and lease of assets.

E. No.	Description
1	The managing director (MD) of a pharmaceutical company N visited the ILS organisation and met with the *Musharikah* finance manager. MD said that his company had financing arrangements with some conventional banks but now the company had decided to convert to Islamic modes of financing.
2	MD said that they already had two factories and they had recently established a third factory and needed finance for routine operations. He also showed an interest in LCs for the company's imports.
3	The *Musharikah* manager asked questions related to N such as its history, business and market.
4	Based on the assessment of this new information, the *Musharikah* finance manager offered two services. First, he told MD that since N had new machinery, a lease back would be an appropriate option. In lease back, the ILS organisation would purchase the machinery and lease it back to N. N would then pay lease rental on the usage of the machinery.
5	Now the case involved leasing, the *Musharikah* manager also invited the *Ijarah* lease manager to his office and discussed the case with him in front of MD.
6	To open LCs the *Musharikah* manager told MD that since the ILS organisation is not a commercial bank, they could not directly open LCs. The *Musharikah* manager came up with a new solution and told MD that he would make arrangements with an Islamic commercial bank through *Musharikah*. So, for N two service packages (*Ijarah* lease and *Musharikah* finance) are combined to create a specific service package.
7	The *Musharikah* manager and MD met again and agreed that the property of the new factory would be mortgaged against both the lease and finance for LCs.

8	As N is registered as a private limited company, the *Musharikah* manager asked MD to bring NICs of the company directors, national tax number of the company issued by the FBR, the articles and memorandum of association (company rules), latest form 29 submitted with the companies' regulator and the company's bank statements.
9	MD brought the national tax number (NTN) from the national tax authority, attested copy of form 29 from the companies' regulator, and bank statements from the respective companies.
10	This case of a pharmaceutical company was new for the *Musharikah* manager, so he asked MD what other industry-related documents they have. MD mentioned some NOCs from the health ministry, approved ventilation maps and the health ministry inspection reports. The *Musharikah* manager asked for these documents as well, which are then brought by MD.
11	MD also brought the list of suppliers from which they purchased raw materials. The *Musharikah* manager asked for factory property documents to be evaluated for the mortgage.
12	The property is located in the industrial state owned by the city development authority (CDA). The CDA has leased this property for 99 years to N. MD collected an attested copy of the property documents from the CDA. The leased documents showed that the factory owner could mortgage the property against finance. On the request of the *Musharikah* manager, MD also collected specific NOCs for mortgaging the property in favour of the ILS organisation.
13	The CDA issued a specific NOC for the mortgage of the property in favour of the ILS organisation. MD brought the NOCs to the *Musharikah* manager. As per the CDA rules, if in future N wants to mortgage the property with any other financial institution, they then must cancel it with the ILS organisation first.
14	The *Musharikah* manager sent the property documents to an independent evaluator to evaluate the property and determine the value.
15	The evaluator evaluated the property, prepared and sent a detailed report to the *Musharikah* manager showing the current market value and forced sale value of the property. The customer paid the evaluation fee.
16	The *Musharikah* manager sent the property documents to the lawyer for a legal opinion on the mortgaged property. The lawyer sent his opinion report to the *Musharikah* manager. The customer paid the legal opinion fee.
17	The *Musharikah* manager prepared the list of documents and filed the case. He consulted the area manager, *Ijarah* lease manager and his contacts in the industry to prepare a comprehensive case proposal, which combined both *Ijarah* lease and *Musharikah* finance.
18	The *Musharikah* manager and lease manager together made two proposals for the credit limit through lease and *Musharikah* arrangements. Two sets of documents are prepared for this case.
19	The *Ijarah* lease manager asked for two additional documents: sale invoice of the lease machinery and sale agreement, which are brought by the client.
20	For processing the case further, the *Musharikah* manager sent the files to the accounts department and the regional coordinator via courier.
21	The regional coordinator reviewed the case and forwarded it to audit department. The auditors evaluated the financial matters of the company and the attached *Musharikah* and *Ijarah* proposals.
22	The audit department sent audit observations to the central credit committee.
23	The regional coordinator also forwarded the case files to the central credit committee.
24	The central credit committee approved the case and sent that back to the regional coordinator. The regional coordinator then forwarded the approved case to the *Musharikah*

	manager and *Ijarah* manager via courier.
25	The *Musharikah* manager coordinated with MD, the lawyer and an ILS representative to mortgage the property with the registrar of mortgages. The lawyer prepared memorandum of deposit and title deed (MOTD) as per SECP regulations. He also prepared the mortgage agreement between ILS and N. They went to the registrar's office and registered the mortgage. MD paid the mortgage fee.
26	The *Musharikah* manager issued a letter of comfort to the Islamic commercial bank to arrange LCs for N. The ILS organisation guaranteed the repayments. MD went to the bank and issued LCs. MD forwarded these to the suppliers to import raw material.
27	N was required to make a down payment/security payment before receiving the full disbursement cheque. As per the client's request the full finance amount is reduced to take account of the security amount.
28	The *Musharikah* manager communicated the request to the accounts and finance department. They sent a disbursement cheque for the net finance amount.
29	N imported some raw material. The supplier's bank sent the shipment documents to the collaborating Islamic commercial bank, who issued LCs for N. The bank forwarded shipment documents to the ILS organisation.
30	MD also brought a copy of the shipment documents to the *Musharikah* managers, which are forwarded to the accounts department. The accounts department matched the shipment documents received from the bank and from the customer and released the payment to the bank. The bank made the payment to the supplier's bank, which in turn made the payment to the supplier.
31	MD took the shipment documents from the *Musharikah* manager. MD handed over the documents to a goods clearing agent who cleared the goods from the sea shipment company. A carriage company then transferred the raw material to the company. The customer will pay back the amount to ILS in future due dates.

Table 5.3: Service episodes in an ILS case

In Figure 5.25, the service story is blueprinted to develop a snapshot of the real service-system. The number on the chest of icons matches with the rows in Table 5.4. Each row explains the specific episodes in a visualised form. In Figure 5.25, a colour code is used: red for the ILS contributions, green for customer contributions, blue for aiding parties' contributions and black for the emergent and unplanned service episodes, showing the adaptation in the planned design. The roles are mentioned on the right-hand side of the blueprint, resources are mentioned on the top of the blueprint and the application of rules is shown on the bottom.
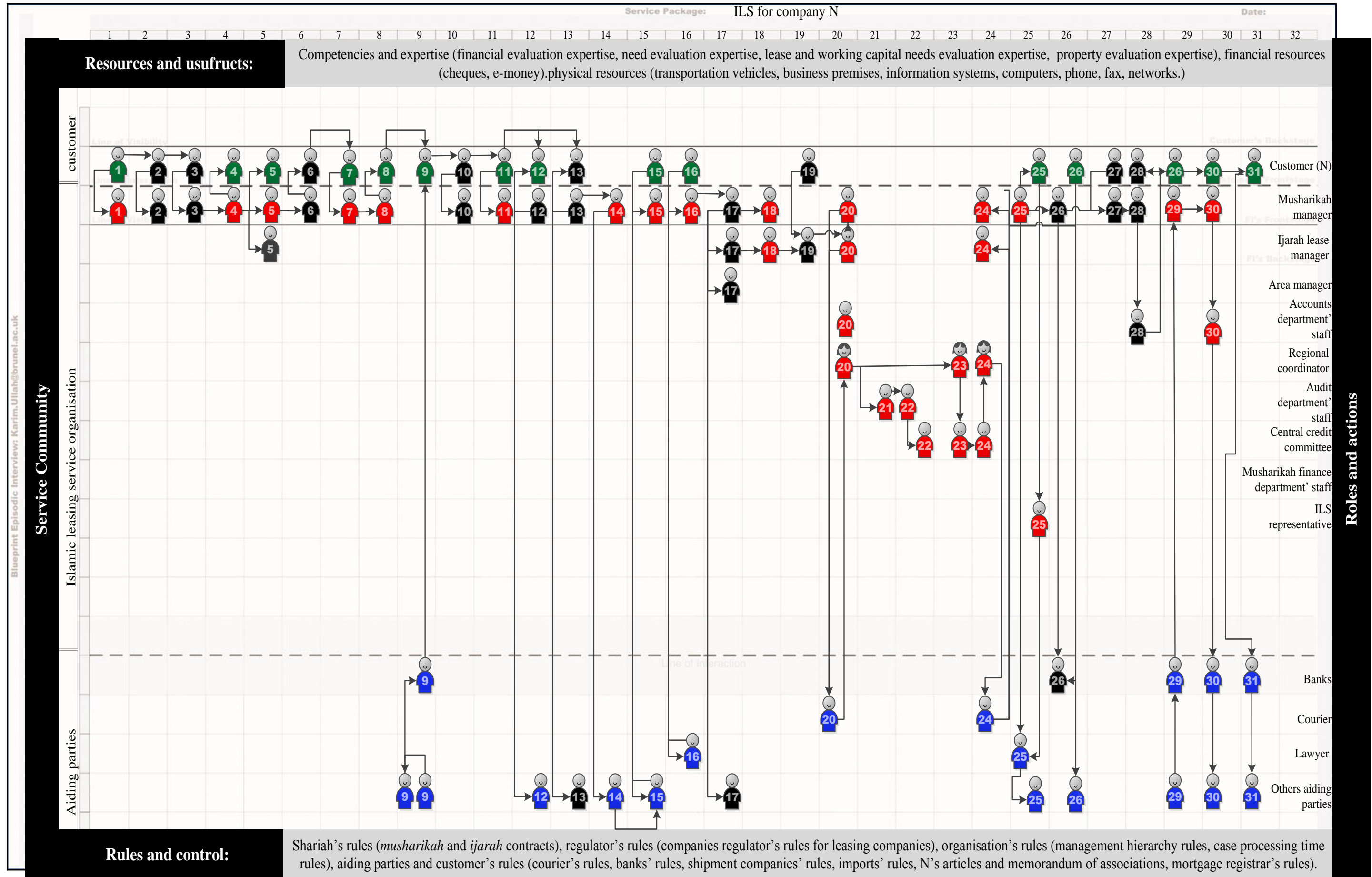
Figure 5.25: The blueprint of real Islamic leasing service case

j. ILS Case Summary

This chapter presented the third case study of ILS as further evidence of the DSD. Planned SFS models, varieties (list, range and negative) and modules are applied to create real services. The social, economic, market, government, ILS organisation, customer and aiding parties' systems create an emergent environment. The emergent environment affected the planned design's ability to adapt. In response, the service creators made deferred designs to adapt or migrate the planned designs. There are four adaptation steps found in-between the emergence and deferred designs: information diffusion (oral, documents, observation, information system and technology), knowledge diffusion, indexation, and specifics' evaluation. The ILS organisation, customer and aiding parties co-created the service. The service creators assumed particular roles which informed their actions in the service. Competencies/expertise, financial resources and physical resources are used. Rules are applied to create control within the service system. Value is created through *Shariah*-compliant leases, finances and savings and investments.

5.3.4 Case IV: Islamic Mutual Fund – IMF

a. IMF Introduction

This chapter presents the case of the IMF service organisation as fourth and final evidence for the DSD.

The IMF is a specialised SFS in which the IMF organisation as fund manager invests and manages the customers' funds within *Shariah*-compliant stock portfolios. The IMF primarily applied the SFS models of *Wikalah* (agency) and *Mudarabah* (funds and expertise partnership) to create the service. The IMF service is linked with the customers' main commercial banking accounts, through which the customers made transactions in their investment accounts. In this service, the IMF organisation primarily contributed its expertise and actions and thus worked as the customers' agent and working partner. Customers acted as investors and principals are entitled to the profits and losses of their investments. The IMF organisation charged agency and management fees such as frontload charges or entrance changes for investing in collective fund portfolios.

The IMF manages both open-end and closed-end funds based on both capital markets and money markets or a mix of both. The common financial instruments in which the IMF invested are shares, certificates of debentures, *Sukuks*, certificates of Islamic investments, *Murabahah* transactions and other securities. The IMF primarily earns through trade in these securities and capital appreciation. The IMF offered different varieties within their funds. These varieties are based on the composition of financial instruments within a portfolio indicating the risk and return levels. Through these funds pools and the underlying securities portfolios, the risks are diversified. Thus each customer bears less risk compared to if he or she individually invests in the stocks.

The selected IMF organisation is a joint venture of a Pakistan-based Islamic commercial bank and a foreign Islamic investment company. It is registered as a non-banking finance company with the registrar of companies under the non-banking finance companies (establishment and regulation) rules, 2003 and non-banking finance companies entities regulations, 2007. The IMF organisation also offered management services for voluntary pension funds under the voluntary pension system rules, 2005.

One investment branch is selected as *the case* for evaluating and further development of the DSD. Within the IMF case, the front office mainly consisted of the investment consultants who interact with the customers and the rest of the service processes were

handled by the coordinating office and the head office (the back office). Due to the saturation level achieved so far and the size of the organisation's front-office, the four available front-office investment consultants are interviewed. The one most detailed service story among these four interviews is tabulated into 28 service episodes and is blueprinted afterwards. The findings are squeezed into Nvivo 9 closed and open codes to evaluate and further develop the DSD. Node illustrations (created within Nvivo 9) and quotes are presented as evidence to support the DSD constructs. The DSD constructs are discussed below.

b. Planned Design

The first DSD construct is *that service creators apply planned design to create a real service*. The IMF organisation, customers and the aiding parties have been found to apply the planned designs during the service creation. The central service designers and the local service creators are two different groups of service designers. The central designers located in the head office supplied planned designs to the local designers situated within the operational environments. These local designers and service creators adapted and applied the planned design to create the real service. Three types of planned designs are evident (Figure 5.26).
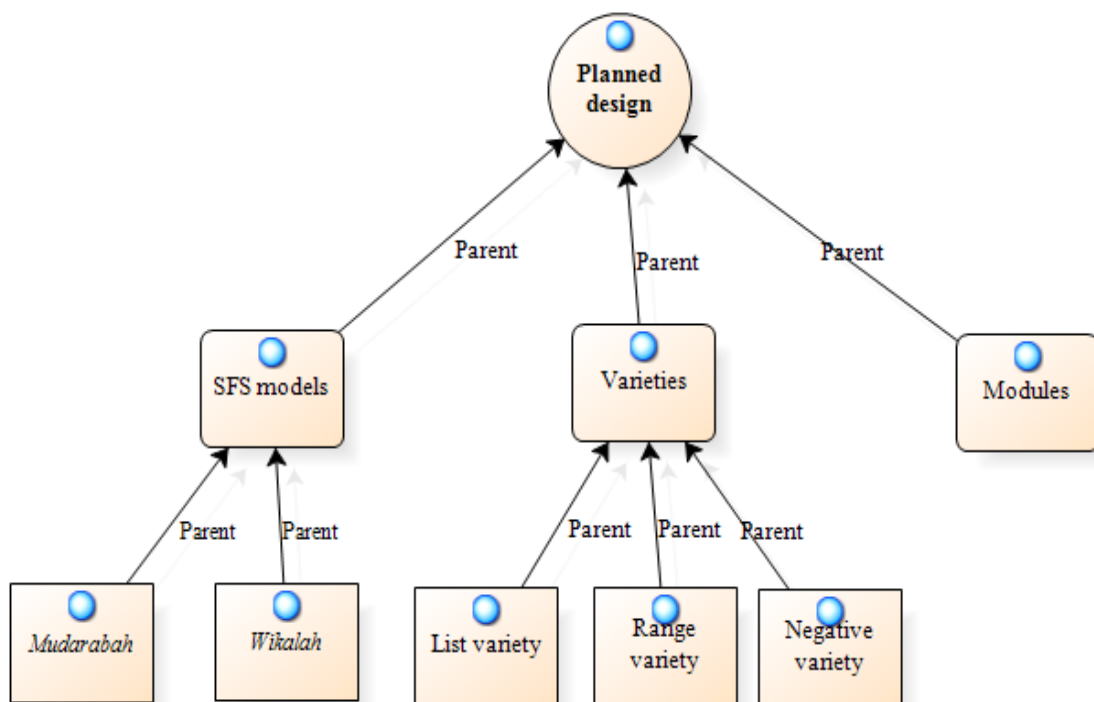
Figure 5.26: Planned design in IMF

Firstly, SFS models of *Wikalah* and *Mudarabah* are combined to create IMF own model termed *Wikalat-ul-istimal*:

> Basically throughout the world the mutual fund management service is designed based on portfolio management. In Islamic finance we design this *on Wikalat-ul-istimal,* which is built by combining *Wikalah* and *Mudarabah*. One party is *Rab-ul-Mal* [Investor] and the other is *Mudarib* [Manager] and similarly one party is the principal and the other is the agent ... we use this structure to comply with *Shariah…*/P43.

> This service is designed by the head office based on the *Wikalat-ul-istimal* model. The customer is the investor and our organisation [IMF] is the expert agent of customer. All the financial profits and losses go to the investor…/P46.

Secondly, list, range and negative varieties are applied to create tailored services. List varieties are designed for service parameters such as the markets to invest in, types of fund portfolios, next of kin, mode of contact, period of payment and type of dividend:

> I discussed different options with the customer, like whether we invest in the capital and money market. There are debt and equity markets, within which we then have the conservative, balanced and aggressive fund portfolios ... Similarly I discussed with him the nine alternative fund portfolios in which we can invest ... I transferred him [customer] from the unsecured fund to a more secured fund. For the next of kin he could choose a relative who can be brother, wife, husband, father, mother or any other person…/P43.

> I showed him [the customer] the investment statement sending options such as courier, email or do not send the statement. Similarly, I explained to him stock dividend and cash dividend options. For the period of returns, four options were provided, namely monthly, quarterly, semi-annually and annually…/P46.

Range varieties are designed for the customer's age, investment amount and withdrawal of amount:

> I saw the customer's NIC showing his age, and he fell within the allowed age range of 20 to 60 years…/P44.

> The customer asked for a fund that better caters to his needs for monthly expenses. I showed him the fund in which the investment range is PKR100000/- up to any amount. In this fund the customer is able to withdraw monthly income and preserve investment depending on the market…/P43.

Negative varieties are also designed:

> I explained to the customer that we do not invest in conventional interest-based banking, tobacco industry and in alcoholic product industries…/P44.

Planned varieties are designed for the points where the actual service takes one or more direction(s) within the actual service environments. Making an investment can be done using cheque or cash. If a customer selected to make the investment using a cheque then there are two options: IMF parent commercial bank cheque or other bank cheque. If the customer selected other bank cheque, then he will have the option to deposit a local bank cheque or an outstation bank cheque. Such local specifications in varieties adapt and determine the structure of the actual service to be created in multiple practice

environments, for example, outstation cheques require a different cheque clearance process compared to local cheques.

Thirdly, planned design modules are applied to create real services. These independent modules are addable and deductible to the core service:

> The customer came to us because he was aware that he could get value added service options such as online banking, SMS alerts, balance inquiry through ATM machine ... we added all these services with the help of our parent commercial bank.../P46.

> The customer was interested in linking the investment account with a commercial bank ATM, which we can add by involving a commercial bank ... The SMS service could be added through which the customer receives stock prices and other market information. We added this service to our portfolios through a mobile network company.../P43.

For the IMF service, planned SFS (*Wikalah* and *Mudarabah*), varieties (list, range and negative) and independent modules are applied to create real services.

c. Adaptation Process: Emergence and Deferred Design

The second DSD construct maintains *that the emergent environment affects the planned design in response to which the situated service creators take deferred actions to adapt the planned design*. The situated service creators offered deferred design adaptation and migration in response to the emergence in practice environments (Figure 5.27).
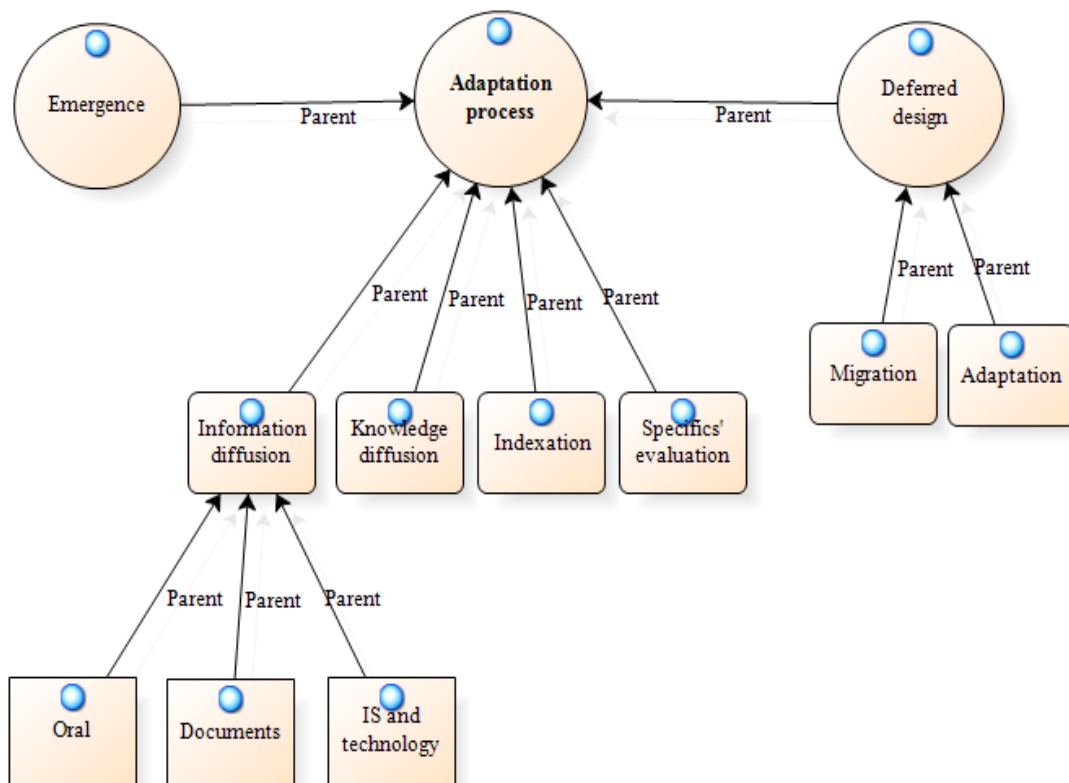
Figure 5.27: Adaptation process in IMF

First, the emergent environment and corresponding deferred design adaptation and migration is discussed. Afterwards, the mediating steps between emergence and deferred design are discoursed.

A service system is an inclusive part of the broad political, economic and market systems. These inclusive systems created emergent environments and encouraged the planned design to adapt. In response to the situated service, creators adapted the planned design:

> I explained to the customer that changes in the investment portfolio will depend on the market. Trends in the markets depend on the political, social, economic, and law and order situations. Even global financial trends affect our service. The European circular debt crises have affected our unit prices because many investors from European countries have investments in our main capital market [Karachi stock exchange]…/P43.

> We continually adapt the portfolio designs for three reasons i) the portfolio is composed of companies' stocks, which continually change their positions; ii) the trade of other stocks also affects the prices of our stocks' portfolios; and iii) the speculation about market trends all affect the stocks' portfolios. All these factors encourage the fund managers to redesign the funds' portfolios. The investment advisors then also redesign the sub-portfolios for individual customers…/P44.

The performance of companies that IMF has invested in also affected the planned designs to adapt:

> The IMF portfolio suffered losses because the housing company, whose *Sukuks* (bonds) constituted 13 per cent of our fund, has defaulted. Due to this default, the customer was not happy and he asked me to redesign his fund portfolio by including more secure funds…/P44.

> Currently we have invested 20 per cent in the oil and gas sector. This means we are more sensitive to the oil and gas sector ... Any price changes in this sector affect our fund portfolios and we accordingly adapt the customer's individual fund portfolios…/P43.

The family system, social events and technological systems also affected the planned design to adapt:

> The customer said that she does not have any other source of income in the family and the children are minors and she will need money in future for their education etc. Keeping in view the family situation, I combined cash and sovereign funds to create a more customised portfolio for her…/P46.

> This was a joint family and the money was being paid by the son on behalf of the mother. The organisation policy is that the investor needs to provide NIC and signature. In this case, the situation was different. I took NICs and signatures from both mother and son to be on the safe side because this was not clear to me whether to show the mother as primary investor or her son…/P46.

> The next day it was *Eid* [religious festival among Muslims]. There was too much of a rush on the system for cash withdrawals as spending increases in these days. As a result, the ATM system crashed. The customer was feeling very uneasy and visited me three or four times. This service was new to the investment accounts and chains of responsibilities were not clear to staff, so that created confusion. In the end IT staff resolved the problem and emailed the investment consultant, who then called the

> customer to check whether the service was working or not. The customer checked the system and called back to say that the problem was resolved…/P44.

The cooperation between the son and mother (family system), *Eid* (social system) and the ATM system (technological system) forced the situated service creators to adapt the planned design.

The emergence of new technology has also affected the planned design to adapt:

> For about six months he [customer] was receiving regular income from the fund. Then we made a contract with our parent commercial bank to use their ATM system. This new arrangement was aimed to provide the customer with direct access to the investment accounts. This customer asked to add this new service to his account, so I amended the customer account for this new facility…/P44.

> We were using the UHA information system. Now we have moved to the T24 system, which has enhanced the efficiency in our internal service process…/P43.

The inclusion of the ATM system and T24 information system (emergent technological systems) caused adaptation in the previously planned designs.

The service creators have also migrated the planned designs (not creating a part or the whole service). This happened in situations when the adaptation was feasible or not allowed (rules do not allowed the required adaptation):

> The customer had an investment of PKR9000 in his account. He was not aware of the available balance and redemption and put a claim for PKR10000. This claim was rejected and the cheque bounced…/P44.

> She [a customer] was unable to open a checking account for the time being, because her source of income was a *sale-of-land* and she did not have the ownership documents yet. So the online income payment service was not possible and was therefore not executed…/P46.

> When the investment cheque is delayed, then we cancelled the customer's investment and closed the case…/P43.

The emergence and corresponding deferred design are mediated by the four design steps of information diffusion, knowledge diffusion, indexation and specifics' evaluations.

The adaptation process started with emergence in operational environments. In response, the situated service creators diffused information orally, through documents, observation and information systems and technology. Firstly, the information is diffused orally:

> I [investment consultant] met with this customer and we informed each other about the changes in the market conditions and we came up with new options. So we regularly discuss these new changes…/P45.

The service creators diffused information through documents:

> I showed them [customers] the charts providing detailed information about the returns we paid previously and what factors can affect the future investments and returns…/P43.

> For her information, I provided pamphlets and then we agreed on a combination of cash and sovereign funds…/P46.

> We then filled in the account opening form, know your customer form, the SMS subscription form and the investment form. I also took his NIC and the next of kin form. All these forms are used to get the basic information about the customers…/P44.

The service creators diffused information through information systems and other technology:

> We used the [brand] system, which is linked with unit prices and the unit prices are linked with the market rates so changes in the market automatically reflect in the customer's units and fund portfolio. Now we have advanced to [a brand of IS system], through which a network is established in the system. We are now able to more quickly transfer the information to the concerned people…/P46.

> I entered the details of this case into the [brand] system, which is an information system linked to the commercial bank. This system linked up our funds with the bank's ATM system. The customer can then easily access the information related to the funds and market indices…/P44.

> The customer himself made changes in his investment using our online system ... when the customer completed the transaction, the information instantly reached us and the CDC…/P45.

Information diffusion resulted in knowledge diffusion because the service creators used the information to understand the emergent environment and new service requirements:

> The customer was unaware of the funds and how to invest and disinvest in each fund [lack of knowledge]. Our regular discussions enabled him to better understand the situation and promptly respond to the market changes and changes in his needs ... now he understands how to check the KMI…/P43.

> This was the case of a housewife. She was not familiar with mutual funds and asked me to explain fund types to her. I provided information about fund types and current market conditions. She also provided information about herself and her needs. This discussion helped us to understand her situation and design suitable fund portfolios for her. After fully understanding the fund types she made selections…/P46.

Based on new knowledge the service creators indexed the offers by comparing real service requirements and planned designs:

> I compared the customer's income with required minimum investment levels in each fund. Similarly, I also compared customer's mind towards risk and return with the risk and return exposure in each fund…/P45.

After indexation, the service creators applied competencies and expertise to evaluate the possible specifications and adaptations:

> Fund managers use their financial expertise and skills. They analyse and assess the funds' compositions and the overall market situation, and then redesign the fund portfolios…/P45.

> The fund managers are experts. They calculate ratios and predict the market behaviours to understand the situation and accordingly redesign the fund portfolios…/P44.

In summary, the political systems, economic systems, market systems, social systems and family systems are inclusive systems, which create emergent practice environments for the inclusive service-system. They encourage planned designs to adapt. In response service creators take deferred/situated design actions for adaptation or migration of the planned design. This adaptation started with the emergent environment, followed by information diffusion, knowledge diffusion, indexation and evaluation of specifics and eventually the realisation of adaptation or migration.

d. Service Co-creators

The third DSD construct states that the *service organisation, customer and aiding parties co-create a service*. The mutual fund service is co-created by the IMF organisation, customer and aiding parties (Figure 5.28).
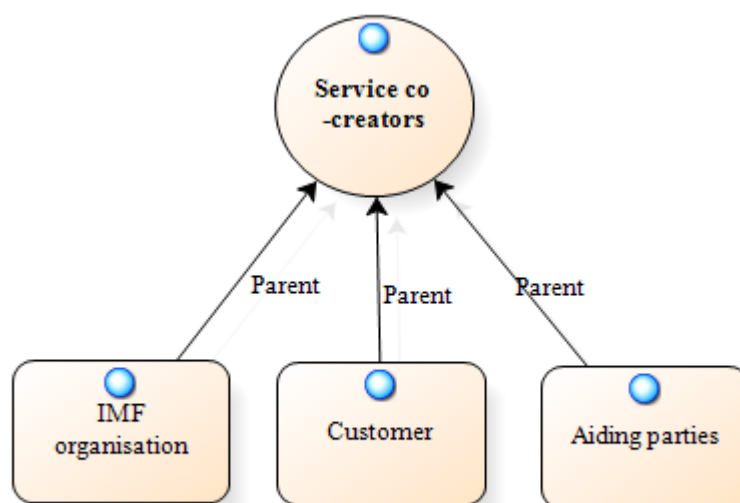
Figure 5.28: Service co-creators in IMF

Firstly, the IMF organisation contributed to the service:

> I told the customer that our organisation [IMF] provides investment services as we have experts in stock portfolio management. I showed this *Wikalat-ul-istimal* model to the customer, where I showed that we are actually fund managers and will charge a service fee and all the profits and losses in the funds will go to the customer…/P46.

> We evaluate a customer's needs, financial markets and accordingly design services. Everybody puts in his share including me [investment consultant], transfer agent, operations manager, accounts and finance people, customer care and sales persons…/P44.

Secondly, the customer also participated in service creation:

> The customer has arranged to invest money so he collected and brought all the required documents. The customer decided about different fund options…/P43.

Thirdly, the aiding parties also participated in the service creation:

> The fund portfolios are centrally controlled by the [the name of a trustee company]. This is a trustee company taking care of investments made by all the investment companies in Pakistan ... The financial transaction between us [IMF] and customers are made through banks ... The brokers are involved who have a licence to trade in stock markets…/P44.

> [The name of an interbank network company] clears the cheques between our payer and payee banks. The mutual funds association of Pakistan issues daily return rates on the stocks. We use these rates to determine the profits on customers' fund portfolios…/P43.

The mutual fund service is co-created by the IMF organisation, customer and aiding parties. The aiding parties included the banks, brokers, trustee, interbank network company, and mutual funds association. Specialised elements of the service such as cheque clearance are outsourced to these aiding parties.

e. Roles and Actions

The fourth DSD construct maintains that the *service creators assume roles, which inform their actions in a service*. In a mutual fund service, creators assumed roles which are described as job titles given to the individuals and entities (Figure 5.29).
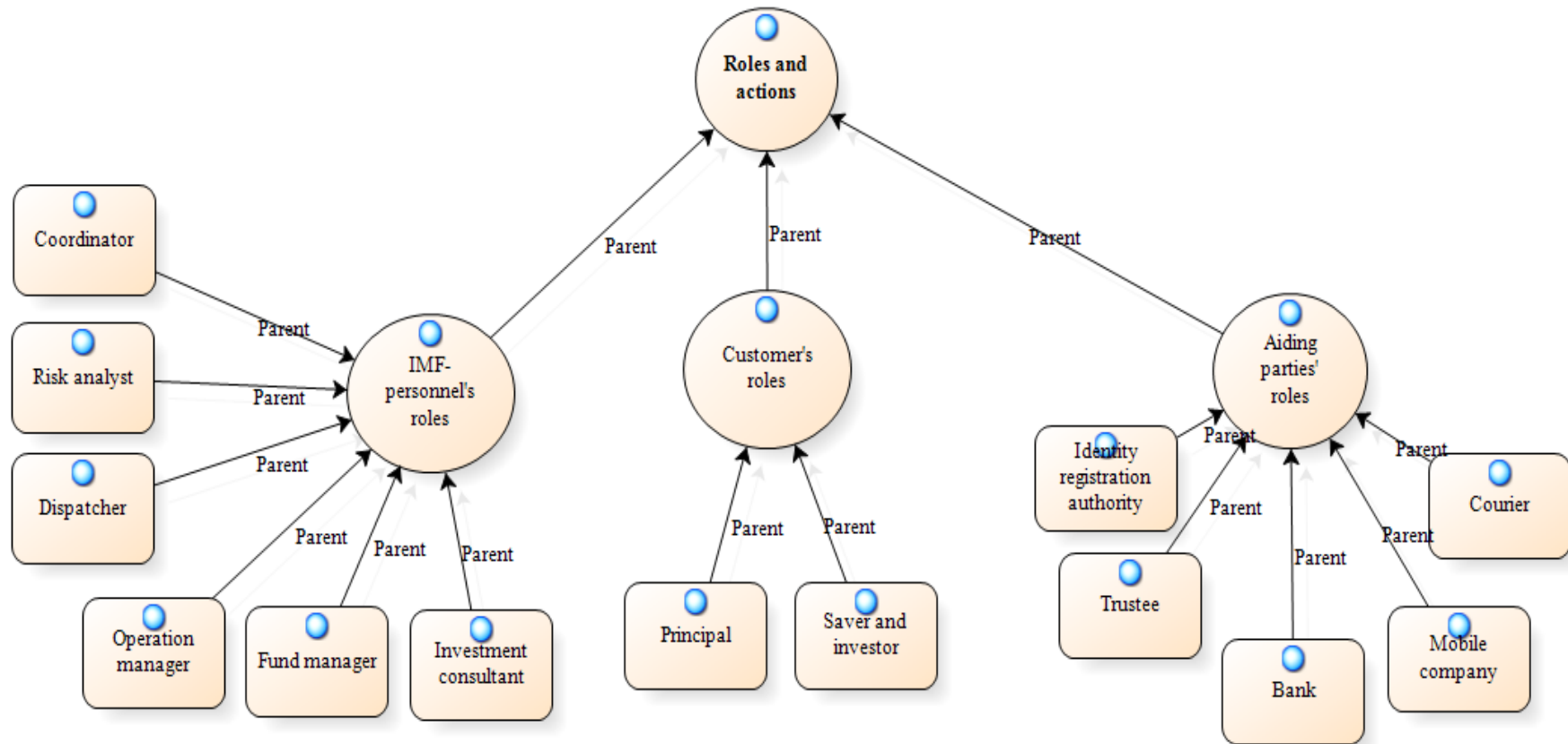
Figure 5.29: Roles and actions in IMF

Firstly, the fund manager's role in the IMF organisation is divided among different departments and further into service personnel:

> The IMF as fund manager invested the customer's money in a joint pool of securities based on customer desire ... I [investment consultant] discussed and suggested the investment options with the customer. When the customer agreed, then I sent the file to the operations manager. He then sent it to the transfer agent…/P43.

> The transfer agent checked the file and sent the data to the operations department in the head office. The operation officer assigned a registration number to investment and then dispatched an investment statement to the customer. I [investment consultant] deposited the customer's cheque with the clearing officer in bank …/P44.

The fund manager, investment consultant, operation manager and clearing officer are some of the roles assumed by different personnel at the IMF organisation. Documents showed further roles such as market and risk analyst, dispatcher, coordinator, accountant and fund manager.

Secondly, the customer also assumed roles and performed actions:

> The customer is the principal and *Rab-ul-Mal* or the owner of the money. He has to arrange this investment and prepare the required documents…/P45.

> The customer is the owner of money so he is authorised to change the fund's composition through our online systems ... He can also authorise me, in writing, to change the fund portfolios with his instructions…/P44.

Thirdly, aiding parties assumed roles and performed actions in service:

> The CDC is the trustee of the nine funds we have and its role is to protect the customers' funds from risky adventures ... When the fund portfolios make capital gains, the federal board of revenue deducts the required taxes ... All the transactions are made through banks where the cheques are cleared by NIFT…/P43.

> The overall investment accounts are opened by the commercial banks and they are overseen by the CDC. As fund manager we made authorised transactions…/P44.

The IMF organisation, customer and aiding parties have assumed roles and performed actions to create a service. The IMF organisation's role is divided among multiple departments and personnel. The personnel have assumed sub-roles, which led them to perform specialised actions.

f.   Resources and Usufructs

The fifth DSD construct maintains that *service creators use resources, particularly its usufructs, to create a service*. The IMF organisation, customer and aiding parties have integrated their resources to create a service. A typology of resources is evident (Figure 5.30).
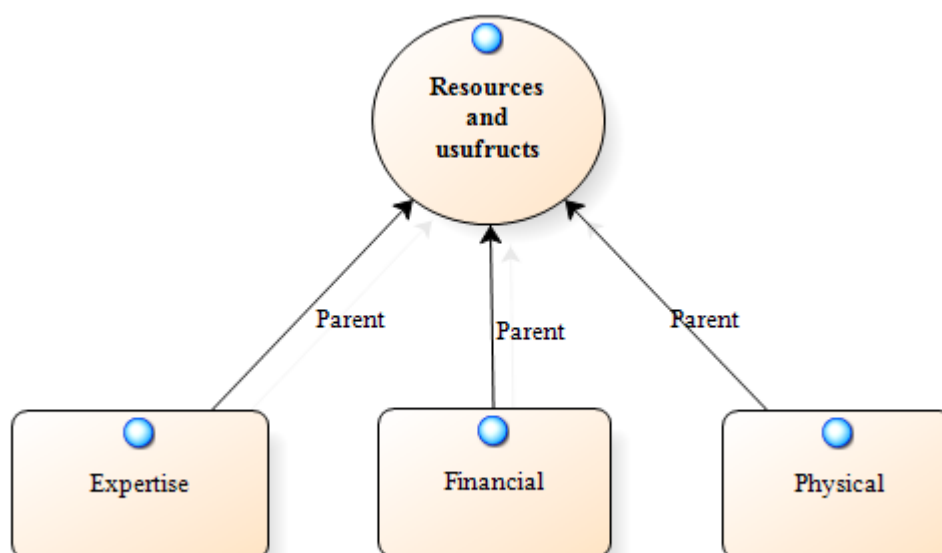
Figure 5.30: Resources and usufructs in IMF

Firstly, the competencies and expertise are employed to create solutions for and with the customers:

> We have the investment *expertise* and *know-how*. Our fund managers use their expertise to make secure and profitable investments for the customers. Customers normally do not know how to minimise the risks in different market situations. We have developed this knowledge and expertise through our continuous training and experience in this field…/P43.

> We use specialised skills for calculating ratios and designing optimum fund portfolios ... similarly, we use linguistic capabilities to share the investment analysis with the customer in layman's language so that the customer can understand and make informed decisions…/P46.

Secondly, financial resources are used to create the service:

> She [customer] has already invested PKR 3 million rupees and informed me yesterday that she wants to make a further investment…/P46.

> All the profits and losses went to the customers because they invested the money ... The cheque is cleared in one day…/P43.

> The cheque given by the customer is deposited in the [trustee company's name] account. [Trustee company's name] oversees this account for IMF's cash fund…/P44.

> The registration number is used to invest and withdraw money ... without a crossed cheque, we do not accept the customer's investment…/P45.

Thirdly, physical resources, such as technology, are used to create service:

> The transfer agent verified and activated the account in the [brand] information system, which links us with the commercial bank ATM system. I called the customer to say that the new facility of using the ATM had been activated ... We use computers, information systems like [brand], reporting systems and these well-equipped premises to deliver services…/P44.

> We provide easy access to our customers through our branch network and online system ... like we collaborate with commercial banks and [the name of ATM network] to make the funds available through ATM networks throughout the country…/P43.

In the IMF service, service creators integrate and utilise three types of resources. Service creators use competencies and expertise to execute their roles. They use financial resources to make investments and withdrawals. They also use physical resources such as technology and physical premises to create the service.

g. Rules and Control

The sixth DSD construct maintains that *service creators apply rules to create control in the service*. In mutual funds, the service creators apply four types of rules (Figure 5.31):
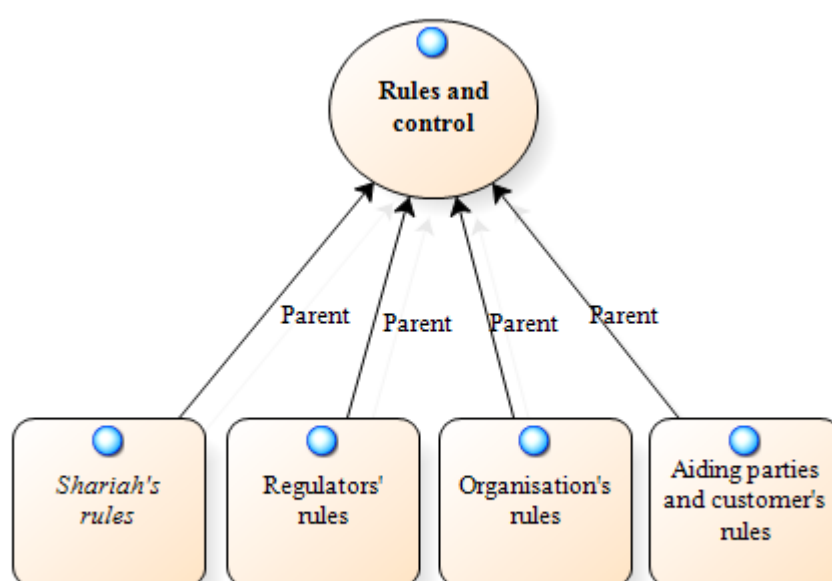
Figure 5.31: Rules and control in IMF

Firstly, the IMF is a *Shariah*-compliant service. The legal relationships between service creators are controlled through *Shariah* contracts and juristic verdicts:

> I showed him [customer] the *Fatwas* [verdicts] and the Islamic contracts we use in the service. The *Wikalat-ul-istimal* model includes *Mudarabah* and *Ijarah* contracts which state *Shariah* rules for the rights and responsibilities for all stakeholders of the service…/P43.

Secondly, the regulators apply their regulations to control the industry as a whole and the specific service-systems in particular.

> To increase the customer's confidence in the service, I showed him the licence showing that we are registered as an asset management and investment advisory company with [the name of companies' regulator]. [The name of companies' regulator] is the regulator of the non-banking finance sector. We follow their rules and statutory orders in our fund management and advisory services…/P43.

> The investment service is attached with the ATM service, through which the customer can access the investment accounts. So the [The name of banks' regulator] rules are applied related to this part of the service…/P44.

Thirdly, the IMF organisation has applied its own organisational rules:

> We use the organisation's policy and guidelines to operate. Like we must submit the customer's documents to the head office within twenty four hours of the customer signing the form…/P43.

> Each fund has its own offering document containing the organisation's rules. These rules cover every aspect of the service ... one common rule is that the cheque deposited by the customer should be a crossed cheque…/P45.

Fourthly, aiding parties' and customers' rules are applied:

> The customer can withdraw money from the investment account through the ATM. However, he cannot withdraw more than the amount specified in his contract with the commercial bank. We allow larger withdrawals but the commercial bank's terms and conditions apply on cash withdrawals…/P44.

> As per the federal board of revenue's rules, the capital gains tax is withheld and the remaining amount is credited to the customer's account ... [the name of a trustee company] have strict rules to check aggressive investments so that they can protect the customer's funds…/P43.

> Individual and corporate clients want the service as per their individual and corporate tenets and rules. As an investment consultant, my role is to evaluate and understand the customer's scenario and advise him of the best investment options, which come within our rules and their rules…/P46.

In the IMF service, the service creators applied four types of rules. They apply *Shariah* rules through juristic verdicts and *Shariah* contracts. Regulators' rules, organisation's own rules, aiding parties' and customers' rules are also applied to establish distributed control.

h. Value-in-context

The seventh and final DSD construct maintains that the *service creators create value through the service*. In the IMF service, value is primarily created in the form of *Shariah*-compliant savings and investments and profit (Figure 5.32).

Firstly, *Shariah* compliance is valued because it is compliant with service creators' belief systems.

> He [customer] came because our funds are Islamic. He was not clear what we actually do here. He was looking for *Halal* (*Shariah*-compliant) profit ... I told him that we have two plus points over conventional mutual funds. One, we are *Shariah*-compliant and two, our history shows that we paid higher profits than conventional interest-based investments available in the market…/P43.

> The customer said that he is religious and will not go for interest-based funds. He said he will accept a loss if there is a loss in the overall fund portfolio, but will not accept interest…/P44.
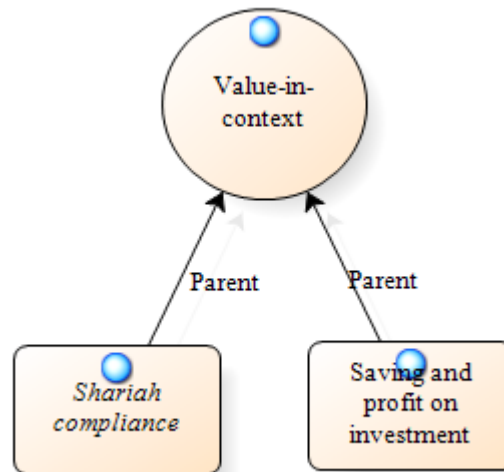
Figure 5.32: Value-in-context in IMF

Secondly, savings and profit on investments are found to be the core of value propositions:

> The customer said that she needed a secure investment. For this purpose I put her investment in a cash fund and sovereign fund, which are the most secure investment options…/P46.

> This customer came to make long-term investment for a big profit…/P43.

> The customer was a salaried person and he was interested in gradual and regular savings from his salary in secure funds…/P45.

The IMF service offers value in terms of *Shariah*-compliant savings and investments and profits on these. IMF also highlighted these two value propositions in the brochures and other advertisement materials displayed at the organisation's premises and webpage.

i. IMF Blueprint

In this section the most detailed service story is selected for service visualisation. In this story, the IMF service is created with the customer – a chartered accountant (CA) and aiding parties (P44). Table 5.4 shows the detailed episodes of the real service created. The specific story highlighted the application of planned design and its adaptation for this specific case. The service episodes highlighted the service co-creators (IMF, the CA and aiding parties). Different roles are assumed by the IMF employees, CA and aiding parties. The use of expertise, financial and physical resources are evident. Compliance to rules is found in specific episodes and the value is created through savings and investments.

E. No.	Service encounter Description
1	The customer came to the branch and met with the investment consultant. He introduced himself. The customer was a chartered accountant (CA) and he had savings worth PKR 4 million to invest.
2	The investment consultant introduced the IMF company and the available investment options. Based on the CA's saving capacity and needs, he suggested to invest in cash fund.
3	The CA thanked the investment consultant and told him that he would discuss these options with his friend working in a commercial bank. The CA said that another commercial bank had also offered him investment plans.
4	The CA went to another conventional commercial bank and discussed the available investment plans. The bank offered him a static rate of return (5 per cent per annum) through termed deposits. The banker told the CA that mutual funds are not secure because they invest in the stock markets, whereas banks are more secured.
5	The CA came back to the IMF and met with the investment consultant and told him about the offerings of the commercial bank. They compared the brochures of both IMF and commercial bank. The investment consultant told him that in a conventional bank, the investment will be bound for a fixed period but in the IMF he can withdraw the funds any time he wants to. The IMF does not offer fixed interest rates as it is Islamic, but distributes the varying earnings on the funds. The current earning rate is around 11.5 per cent, which is more than double that offered by the commercial bank. The investment consultant told the CA that he could invest with in a cash fund, which is a money market fund and is as secure as investments with commercial banks.
6	The customer came again and the investment consultant explained the risk diversification and the difference between capital and money market funds. The investment consultant showed CA the brochures showing the previous earnings. During the financial crisis when the banks were making losses the IMF funds were in profit.
7	The CA asked about *Shariah* compliance. The investment consultant showed that IMF take care of *Shariah* compliance in their investments. He showed the IMF investments in the Islamic commercial banks and government-issued *Sukuks* (Islamic bonds) and convinced the customer that his investment will be an indirect investment in Islamic commercial banks but with a higher return and *Shariah* compliance.
8	The customer agreed to invest his savings with the IMF instead of the competing commercial bank. The investment consultant provided the CA with a list of documents required to be submitted by the CA.
9	The CA brought a bank statement from the commercial bank where he had his account, the NIC and his business documents.
10	The investment consultant filled in the investment account opening form, know your customer form and investment form. The legal papers including the agency contract and the investment contract are signed by the customer.
11	The CA also asked for the SMS subscription to receive real-time information about his investments. The investment consultant filled in the SMS subscription form for him and the SMS service is added to his investment account.
12	The investment consultant sent the complete file to the operations manager, who reviewed the file and sent it back to the investment consultant.

13	The investment consultant entered the data into the information system.
14	The investment consultant prepared the documents to be sent to the transfer agent/regional coordinator via courier.
15	The courier posted the case file to the regional coordinator. The investment consultant also forwarded the data to the regional coordinator through the information system.
16	The customer handed over the investment cheque to the investment consultant.
17	The investment consultant deposited the cheque in the fund account controlled by the trustee company and maintained by an Islamic commercial bank. The cheque is then cleared by the interbank network company. The bank then informed the accounts department of the IMF.
18	The accounts department confirmed receipt of the investment. The regional coordinators checked the case file, retained it and forwarded the data in the information system to the head office.
19	The head office assigned an investment number to this case. Head office forwarded the information to the trustee company, which is an outside trustee company.
20	The trustee company reconciled the data with the investment information it had received from the bank to confirm that the investment is made by the customer.
21	The trustee company communicated this confirmation to the IMF. The IMF head office issued an investment statement to the customer showing the investment units and other specifics of the service.
22	The courier posted the investment statement to the customer. The customer came to the investment consultant and discussed the investment statement with him.
23	The fund managers invested the funds in the markets through brokers. Since, this was investment in a cash fund and the customer selected a monthly income, on the 25th of the first month, the income is transferred to CA's account. For six months the customer received a regular income.
24	The IMF launched an additional service, *mutual fund transactions through ATM*. In this service the IMF collaborated with the commercial bank and the ATM network allowing their clients to access the investment accounts through ATMs. The CA showed interest in this service and requested adding that to his investment account.
25	The head office sent new forms for the ATM facility, which are filled in by the CA and investment consultant. The commercial bank account details are provided. The regional coordinator verified the details and enabled the facility for the CA within the information system. The commercial banks and ATM network activated the facility for the CA.
26	On *Eid* (religious and social festival) there is a rush on the ATMs for cash withdrawals. The ATM system failed to access the investment account. CA complained to the investment consultant. Since the chain of responsibilities had not been clearly defined for this service. this created confusion. Ultimately the problem is resolved by the IT maintenance department.
27	The customer then withdrew the money through the ATM.
28	Until now, the CA has changed his fund portfolio three times. He asked the investment consultant and for the specific changes in the portfolio. The fund manager and CDC accordingly adjusted the funds.

Table 5.4: Service episodes in an IMF case

In Figure 5.33 the service story is blueprinted to develop a snapshot of how the real service-system emerges during the narrated service case. The number on the chest of icons and on the top of each column matches with the row numbers in Table 5.4. Each row explains the specific episode in a visualised manner and each column in Figure 5.33 visualises the same. A colour code is used: red for IMF contributions, green for customer contributions, blue for aiding parties' contributions and black for the emergent and unplanned service episodes. Roles are mentioned on the right-hand side, resources mentioned on the top and rules are mentioned on the bottom of blueprints.
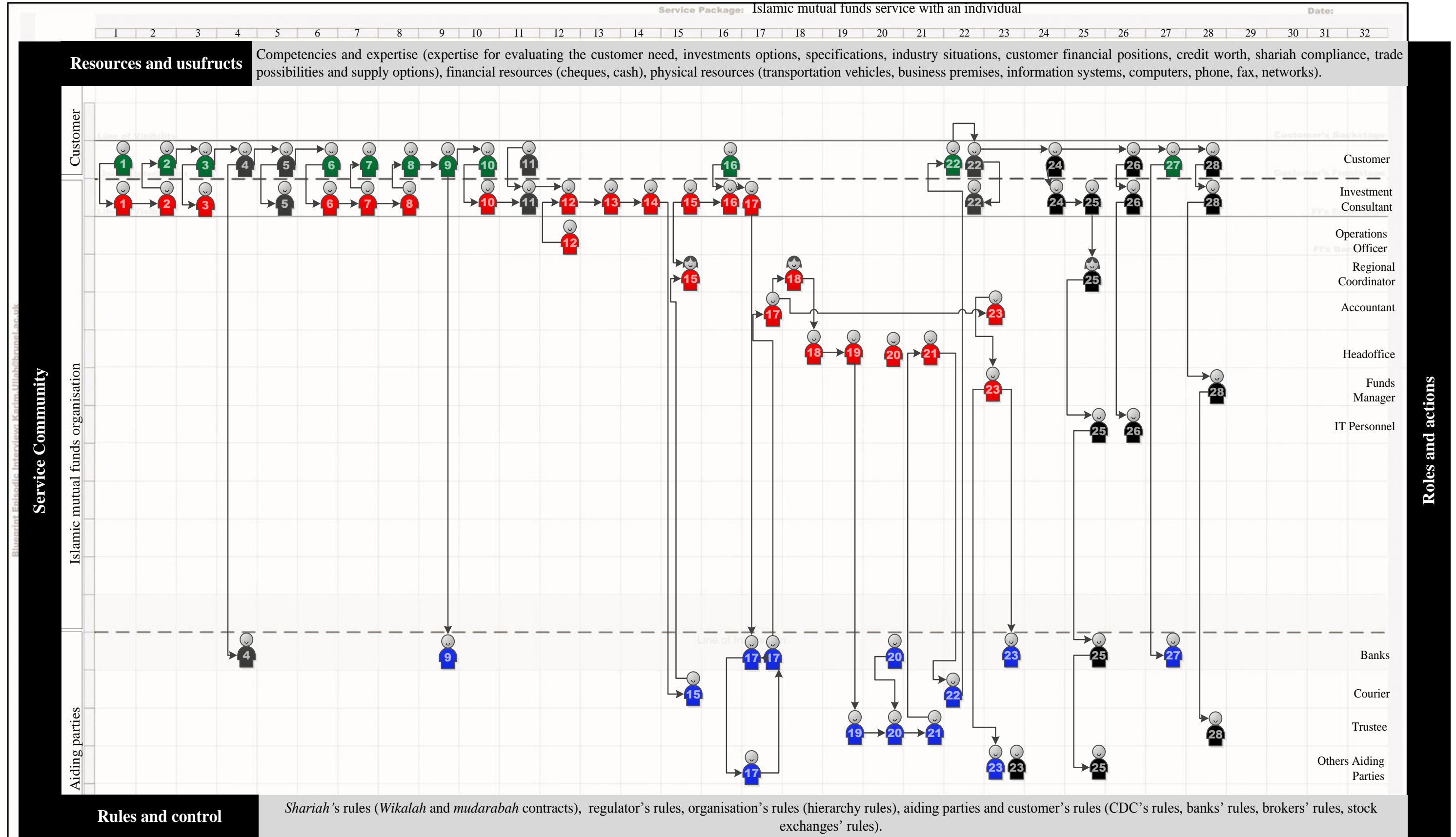
Figure 5.33: The blueprint of real Islamic mutual fund service case

j. IMF Case Summary

This chapter presented the case of the IMF as the final evidence of the DSD. The IMF service creators applied planned designs which included the SFS models, varieties (list, range and negative) and independent modules. The IMF system is an inclusive part of the political, economic, social, market and family systems. These multiple systems created emergent environments, which affected the planned designs need and ability to adapt. The service creators made deferred/situated design decisions to adapt and migrate the planned design. This deferred design started with emergence in the practice environment. In response, the situated service creators diffused information orally and through documents, information systems and other technology. The information diffusion resulted in knowledge diffusion in the system, which enabled the service creators to index designed and real service parameters. In this indexation, the service creators applied competencies and expertise to make specifications within the planned designs and also design deferred solutions for emergent service requirements. The IMF organisation, customer and aiding parties co-created the service. In this co-creation process, the personnel, customer and aiding parties assumed particular roles to inform their actions. The service creators used competences/expertise, finance, and physical and technological resources. They applied *Shariah's*, regulators', organisations', aiding parties' and customers' rules. They offered value propositions in the form of *Shariah-*compliant savings and investments.

5.4. Chapter Summary

This chapter reports the in-depth analysis of focus-group discussions and independent case studies, where a greater weight is given to the participants' voice (quotes) to effectively reflect the real service system within the extended DSD to be developed in chapter 6.

In focus-group discussions the DSD constructs are abstractly confirmed and the core issue questions are tested to know whether or not they adequately generate the targeted data. The findings show that the participants prefer and are effectively communicating their experiences in the narrative discourses (coherent speech using action verbs – as a story). This is one of the reasons for selecting in-depth narrative interviews as a core data-collection method within case studies.

Four individual cases are separately presented as evidence of the DSD. The individual findings within each case are summarised in sections 5.3.2(j), 5.3.3(j), 5.3.4(j) and 5.3.5(j).

The next chapter presents a cross-synthesis of the findings in four cases and discusses this within the wider literature to compress all the findings into a novel and comprehensive post-empirical DSD – Phase II.

CHAPTER 6: CROSS-CASE SYNTHESIS AND DISCUSSION

6.1 Introduction

The multiple case study design offered the researcher an opportunity to synthesise the findings from the individual cases and to make strong analytic generalisations (Yin, 2009). The empirical findings are abstracted and linked to the theoretical discussions to draw out clear arguments (Hartley, 2004; Yin, 2009). The literature provided the necessary scholarly context in which the empirical findings are placed. Tying the theory that arises from data with the existing literature "enhances the internal validity, generalizability, and theoretical level of theory building from case study research" (Eisenhardt, 1989, p. 545).

In this chapter, each DSD construct is separately discussed with cross-case data matrices and extant literature. At the end, all findings are squeezed into a post-empirical DSD – Phase II. The newly added constructs (through empirical findings) are discussed in more detail to establish the contributions (sections 6.2 and 6.3). Developing the post-empirical DSD and its theorisation using cross-case analysis and discussion was the fourth and final objective of this research.

Next, the cross-case synthesis and discussions on individual constructs are presented. Afterwards a post-empirical model is developed.

6.2 Planned Design Typology (PDT)

This research has conceptualised a PDT which describes how the planned designs offer a locale for adaptation. The PDT shows how service creators apply mutually-inclusive types of planned designs to create heterogeneous services. These inclusive types are: blends of SFS Models (e.g., partnership, sale, lease and agency), expected varieties (list, range, negative) and addable-deductible modules (core and peripheral). PDT is novel because it follows the scientific norm of developing a new logical classification by bringing together previously considered distinct classifications and add new classifications that arise from the data. Thus, advances the knowledge of a phenomenon.

6.2.1 Planned SFS Models

The first DSD construct says that the service creators apply planned design within dynamic environments to create real services. In this sense, a planned design is a plan

of actions to be implemented within multiple time-spaces to realise contextual services. A plan or design is an artefact whose consequences occur in the future (Pandza and Thorpe, 2010). These planned designs are the result of human teleological thinking (Patel, 2006 and 2009). Teleological thinking is the mental construction of purposive actions that a person aims to undertake in the future. The planned design is founded on formalism (Patel, 2012). Formalism means having things written down (e.g., descriptions, illustrations, policies, procedure and rules) before its enactments within real environments.

In practice, the planned SFS models are centrally developed and then applied by the people at operational levels to create contextual service. These planned designs are communicated to actual service creators within the policy manuals, illustrated as brochures, presentation packs and communicated orally in presentations and trainings. Table 6.1 shows the evidence for multiple SFS models' applications within four case studies. These multiple models are blend together to create unique service packages.

Case	Planned SFS models
ICB	This is an *Ijarah* case for corporate customers. We received the format from the head office and accordingly provided the service to the customer…/P19.
ILT	The actuarial and investment departments at the head office together design the packages. They combine *Mudarabah*, *Wikalah* and *Waqf* with aging and investments mechanisms ... They then send the service structure to *Shariah* board. The *Shariah* board study it using *Shariah* principles. They approve and send it to different branches with the *Shariah* approval certificates [*Fatwas*] and full documentation. At branch level, we then apply these service structures to provide the services…/P26.
ILS	We [ILS organisation] purchased the machinery from them and leased that back to them based on *Bai* and *Ijarah*…/P42.
IMF	This service is designed by the head office based on the *Wikalat-ul-istimal*. The customer is the investor and our organisation [IMF] is the expert agent of customer…/P46.

Table 6.1: Application of planned SFS models in four cases

Mahdjoubi (2003, p. 1) maintained that a planned design or planning is a systematic mental process prior to actions. The planned SFS models outline the service structures in such a way that their future applications lead to real services, free of interest or any other *Shariah* prohibitions (Ayub, 2008; Usmani, 2002a).

Each SFS model describes a set of actions to be undertaken. The SFS practitioners combine multiple SFS models (e.g., Ahmed, 2006). For instance, to create *Takaful* packages, the practitioners are found combining together the *Wikalah*, *Mudarabah* and *Waqf* models (P26). This blending of SFS models is the designers' attempt to create a

room for adaptation into different contexts. For instance, *Wikalah* is combined with *Ijarah* to meet contextual service requirements of auto lease (P19).

6.2.2 Planned Varieties: A Variety of Variety/Meta-Level Variety

The service creators also apply planned varieties. Varieties are the planned variation to be made within design parameters based on the predicted variations in different service situations. The planned design ideally assumes stable organisational structures and processes (Patel, 2006; Ramrattan, Ramrattan and Patel, 2009). This argument is found to be true to some extent because the service creators design for stable environments but also embrace the service-systems' complexity and dynamism in actual service practice. As a solution, they plan varieties for the predicted variations in the actual service-system parameters.

These findings confirm the Ashby law of request variety within complex systems (Ashby, 1958) and its application to the service systems (Godsiff, 2009; Maull and Godsiff, 2011). "Variety is a measure of the number of distinct states a system can be in" (Joslyn and Heylighen, 2001, p. 1). These studies suggest that creating variety within the planned structures absorbs variety within environments and in turn sustains a system to achieve its purpose (Ashby, 1958). Varieties can be designed for the service-system parameters such as value proposition and service creators' inputs and outputs (Godsiff and Court, 2011; Maull and Godsiff, 2011). Frei (2006) classified the varieties within customers as variations in customer arrival, request, capability, effort and subjective preference. Within the SFS context, this research found planned varieties for the fluctuating service parameters such as customer age, amount of finance, the maturity periods of service, goods to be financed and types of documents, etc.

Ashby (1964) maintained that within an ideal situation, the planned varieties (system responses) should match the variations in environments (disturbances) in order to fulfil the purposes. Kahn (1998) pointed out that more variety in a system enhances the system's customisation but at an increased cost. Beer (1995) used an example of a shoe store and argued that if the store's system does not produce as much variety as the variations in the customers' needs, then some transactions may fail because only variety within system can absorb variety within environment (Ashby, 1964). However, opening a system to every variation in the environment has the risk of going beyond the regulations and sometimes against the value propositions. For instance, within the SFS-system, the practitioners migrated or closed the case if the possible variations were

against the rules (e.g., *Shariah*) or if the case was economically not viable (e.g., not profitable or too risky).

This research has empirically found a variety of variety (a meta-level variety). The columns within the matrix on Table 6.2 show the types of varieties and the rows show the evidence for these varieties within the four case studies. Firstly, list varieties are designed within planned design, where the actual variations are expected to occur within some expected or predicted lists. For instance within a *Murabahah* finance package, a list variety is designed for the types of customers, which can be a sole proprietorship, a firm or a company (P24). Secondly, range varieties are designed for the expected variations lying within predicted ranges of variations. Examples of such varieties are the possible investment and finance amounts, age of the customer, the age of lease vehicles and the ranges of security deposits (P17).

Negative varieties are designed to develop *to-be-avoided* variations. When the actual service requirements occur within the negative varieties then the service creators do not create the service and instead migrate. The concept of migration is therefore added along with adaptation to the post-empirical DSD. The negative varieties use a minimum threshold to keep the system stationary and for the rest of the variations in environments, the planned design is allowed to adapt. This makes a service system open because it can accept any emergent parameter or its value, except those which are explicitly prohibited or not viable for the service creators and community.

	List variety	Range variety	Negative variety
ICB	I told him [customer] that four maturity options are available in this Islamic investment package. These options are three months, six months, one year, three years and five years. Based on his needs, the customer has specified one option…/P21.	A customer aged 18 to 60 is eligible for the finance ... I showed this brochure to the customer, which shows that any used vehicle from one month to five years can be leased … security deposits range from 10 to 50 per cent… /P17.	In *Murabahah* finance different kinds of goods can be financed except alcoholic drinks, smuggled goods, sexual literature and pornographic content. Periodically we receive a list of prohibited goods for which we do not provide finance… /P24.
ILT	We have three funds called conservative, aggressive and balanced funds ... currently six sectors are available as investment options in these funds ... based on the market situation and customer requirements we make a selection from these options…/P32	Those [customers] who come within the age range of 18 to 39 and taking protection up to PKR2million are not required to take any medical tests…/P30.	Similarly, policies cannot be designed if the customers have certain critical illnesses, the list of which is provided by the head office…/P27.
ILS	I told the client that he had two options in this service which were the direct lease and sale and lease back…/P35.	In the certificate of *Mudarabah*, the investment range starts with minimum of PKR5000 and goes up in multiples of 5000. The range for the maturity periods is three months to five years…/P42.	As Islamic leasing *Mudarabah*, we do not finance assets prohibited by *Shariah*, such as pork and alcoholic products. We have a list of such prohibited goods. …/P35.
IMF	I discussed different options with the customer, like whether we invest in the capital and money market. There are debt and equity markets, within which we then have the conservative, balanced and aggressive fund portfolios ... Similarly I discussed with him the nine alternative fund portfolios in which we can invest…/ P43.	I saw the customer's NIC showing his age, and he fell within the allowed age range of 20 to 60 years…/P44.	I explained to the customer that we do not invest in conventional interest-based banking, tobacco industry and in alcoholic product industries…/P44.

Table 6.2: Planned varieties in four cases

Furthermore, there is depth as well as breadth in these planned varieties. The phrase *depth in variety* refers to a situation where further downside varieties are designed within a single parameter of the service system. For instance, in the story narrated by P24 (a working capital finance service for businesses) there is a depth within the planned variety for customers as it could be a sole proprietorship, firm or a company. The real customer within the case was a company. Within the company options, further variety was designed in the form of private and public limited company. The real customer was a private limited company. Going into more depth, variety within the private limited company was designed as a local or foreign company. The real customer was a local company and finally for the local company a variety was designed as a manufacturing company, trading company or service company. The real customer was a construction company, which was therefore classified as manufacturing by the bank's personnel.

There is also *breadth in varieties*, which means varieties in multiple and different parameters of a planned design. For instance, list varieties are designed for the required documents, range varieties are designed for the age of customer and amount of finance required and negative varieties are designed for goods which cannot be financed (Table 6.2). All these varieties are based on prediction of variations within the actual service requirements and environments.

6.2.3 Planned Modules

Along with planned SFS models and the varieties, the service creators added or deduct planned independent modules during the service practice to enable adaptation within service. For instance in the ILT the investment top-up facility or in the ICB internet banking are the optional modules that could be added during the service practice to develop tailored services for each service case. Table 6.3 shows the application of individual modules applied to create the service:

Case	Modules
ICB	SMS banking is an optional service that can be added to any type of service such as deposit or remittance etc. ... This customer asked for SMS banking to receive real-time transaction information for the account ... ATM is an optional service for the company accounts. The customers in this case did not apply for the ATM service because that was a business entity [module deduction] but they opted for internet banking [module addition]…/P22.
ILT	There is always one main plan and many additional options can be added to it. In the education plan, education coverage for a child is always there and is the core, but other services such as disease coverage or disability waivers of contribution can also be added to this plan…/P30.
ILS	They [customers] come across a financial problem or opportunity for which we create solutions by combining different *Shariah* based service components…/P40.
IMF	The customer was interested in linking the investment account with a commercial bank ATM, which we can add by involving a commercial bank…/P43

Table 6.3: Planned modules in four cases

Modularity is originally an engineering concept where a designer builds a design in such way that multiple components can be combined to develop a context-specific system (Ullah and Patel, 2012). In modularity the idea is to represent a complex system, the whole, as a set of distinct abstract components. The whole system is analysed to discover and define logical components that are self-contained as micro services. These micro services can then be interconnected to create a whole macro service. The complex system is analysed to discover abstract components or modules that can be developed independently and then interconnected as required. Modularity is used in designs of software, electronic circuits and machines (Sullivan *et al.,* 2001; Baldwin and Clark, 2000). The effectiveness of the technique depends critically on the manner in which systems are divided into abstract components and the mechanisms used to interconnect the components (Ullah and Patel, 2012).

Sawhney, Balasubramanian and Krishnan (2004) said that a service organisation have primary activity chains or adjacent activity chains, where each activity chain leads to an outcome. This study further extent this thought by showing how a planned designs comes with core and peripheral modules and how they lead to customised service within actual service creation (operational level). First is the core module that represents the prominent part of service. Second is the peripheral module that represents the service components that can be added or deducted to the core modules as

per the requirements of each case. In the depository service, opening a banking account is the core module. After establishing this service, the service creators can add and deduct peripheral modules such as the ATM, debit card and SMS banking (P22).In Takaful service, along with core takaful-policy-module, peripheral top-up investment module can be added or deducted to meet any emergent short-term saving requirements of the policy holders (P27). This process of addition and deduction may continue throughout the life of a depository service. Both core and peripheral modules can have their own sets of primary and adjacent activity chains.

To sum up, the planned design typology (PDT) is a mutually inclusive set of types that create a room for adaptability within service-system designs. The service co-creators mix the SFS models, varieties (list, range, negative), and core and peripheral modules to create a unique service for each context. All these opportunities for adaptation are provided by the planned designs. But a more interesting journey of adaptation starts during the actual service creation, when the service creators follow a novel six-step adaptation process to realise the adaptation or migrate off the context. Next section discussed, in detail, each step of this adaptation process found in this research.

6.3 Deferred Adaptation Process (DAP)

The core argument of the DSD is that the service creators adapt the planned designs in response to the emergent environments. The TODA (Patel, 2006 and 2012) argues that during actuality, the environments affect planned action. In response, the local agents within a situation take deferred actions to adapt the planned action in order to achieve their purposes. The action for adaptation is called deferred action because it occurs in future during the application of design. The TODA, however, does not explain how the local agents actually establish this deferred adaptation i.e. the mechanism and process of adaptation is not explained. Similarly, the service ecosystem debate acknowledge that the actual service-systems or the micro systems within a service-system's network adapt to each other and thus enhance their value-creation capability and well-being (Vargo and Lusch, 2011; Vargo, Maglio and Akaka, 2008). However, this debate also does not uncover the detailed adaptation process used by the service creators to actually adapt the system.

This research has empirically found this adaptation process and thus extends both theory of deferred action as well as service ecosystem theory. Figure 6.1 illustrates the deferred adaptation process (DAP). DAP completes in six steps. These service

adaptation steps are found by further excavating the construct of emergence and deferred action proposed by the TODA (Patel, 2006 and 2012).
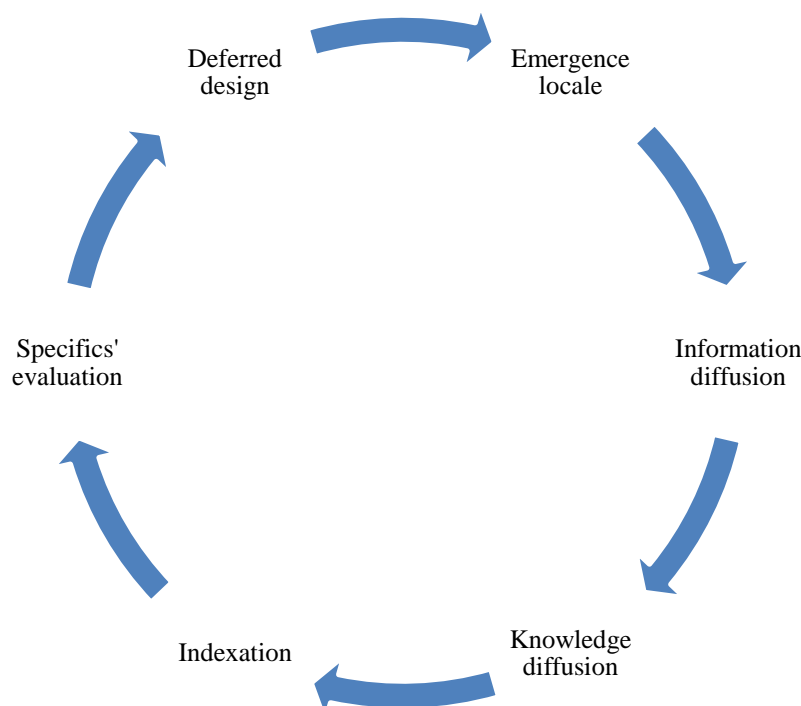
Figure 6.1: Deferred adaptation process

The process of adaptation starts with the emergence locale: the specific situation of a service case and its requirements. With the appearance of emergence locale, the situated service creators diffuse information about it. This information diffusion results in the knowledge diffusion because the service co-creators comprehend the new information and they try to understand the situation and its requirements. Based on the new knowledge, the service creators index the emergent service requirements with the planned designs and vice versa. After indexation, service creators apply their local competencies and expertise to evaluate the possible specifics of the case. Eventually, the service creators create a deferred design: an adapted design ready for application. The service creators realise deferred design by making specifications within planned models, varieties and modules and develop new off-design service elements. In some situations the service creators decide to migrate off the scene, when the situation cause rules (e.g., *Shariah*) non-compliance or the venture is too risky.

Each step of the deferred adaptation process is discussed below.

6.3.1 Emergence Locale

The findings from the four case studies suggest that emergence is the property of service systems. Each service episode uniquely emerges when multiple systems interact and adapt to each other to create a process and value (Maglio *et al.*, 2009; Sampson, 2012; Vargo, Maglio and Akaka, 2008). "Emergence is a constant in social systems and affects and inhibits teleological system design (pure planned action). An emergence creates unpredictable situations or locale. It is sudden and unexpected and makes situations unpredictable" (Patel, 2012, p. 135).

Table 6.4 shows some selective narratives from four cases that show the service creators engagement with the specific situations in different service episodes.

Case	Emergence locale
ICB	Every customer's case is different; the process flow design for our auto-parts finance case was different from this food-items finance case because the industries, regulators and suppliers were different. …/P25.
ILT	We do not have the complete details of each service case until we meet with the customer … like if the customer is married or unmarried, how much he earns, how much he spends, how much he has in savings, what and how much are the liabilities…/P28.
ILS	The situation of this customer was different. His job was in Peshawar and his wife was in Karachi … the customer put instructions to pay the profit monthly and to directly transfer that to his [customer] wife's account in Karachi…/P42.
IMF	I explained to the customer that changes in the investment portfolio will depend on the market. Trends in the markets depend on the political, social, economic, and law and order situations. Even global financial trends affect our service. The European circular debt crises have affected our unit prices because many investors from European countries have investments in our main capital market [Karachi stock exchange]…/P43.

Table 6.4: Emergence locale in four cases

The immediate sources of the emergence locale are the active people interacting among themselves within a service system. For instance, within a service organisation, the personnel interact as agents to produce heterogeneous behaviours causing a service system to be emergent (Zeithaml and Bitner, 2003). Feldman (2003) said that emergence is the property of organisation's routines. Patel (2012) also confirmed that interaction among the agents within a system causes it to be emergent.

A service system is multiple-entity system (Sampson, 2010 and 2011). In each service encounter or episode the interacting agents or people belong to multiple and different

activity systems (Sangiorgi, 2004 and 2008). As a result, the adjacent systems have an indirect influence on the service system. As in one case, the customer's family-system and employer-organisation have not only proved as sources of emergence for the customer's contribution in the service system but also caused the rest of the system to be emergent (P28). Similarly, the shortage in the oil industry in Pakistan created a new situation for a *Murabahah*-based finance case in which the construction company has applied for trade in bitumen and diesel (P24). These findings suggest that each service case emerges with service cocreators (personnel, customer, and aiding parties) who belong to and influenced by the unique situations of their inclusive systems such as families, local societies, markets, employers, regulators and governmental agencies. Thus the service cocreators themselves and the relative reflection of their broad systems create an emergent locale: specific situation and its requirements.

So, the first step towards the service-system adaptation is the appearance of emergence locale in environment.

6.3.2 Information Diffusion

A second step in the adaptation process occurs when the service creators diffuse information about the emergence locale. This information diffusion originates from the interacting points in the system (e.g., customer and bank personnel discussion) and moves to all concerned parts of the service system. This information explains the overall specific environment and the consequent new service requirements.

In the context of information system design, Patel (2012, p. 134) argued that "since organisations are emergent, the very structure, data and information about the organisation are inherently emergent too". The very organisation of a service system is emergent as new service requirements emerge within different realms of time-spaces. Vargo and Lusch (2013) also recently confirmed the movement of information within a service system which creates new densities. The unified service theory also considered information as important inputs in the service-creation process (Sampson and Froehle, 2006; Sampson, 2010 and 2011). Atkinson and Checkland (1988) argued that emergence and information control are the two cores attributes of complex systems. Table 6.5 shows evidence for information diffusion within SFS-systems.

Case	Information diffusion
ICB	We interact and exchange information with supporting parties and the customer, which creates an overall image of the case …/P19.
ILT	I was asking questions from customer and accordingly I was entering the information in the planning system. This information was visible to all the concerned employees…/P27.
ILS	I asked the client questions related to his business and his lease needs. Like what is the investment of the owner in the business, how much financing have they taken so far? The customer also talked about the current market situation and business opportunities. Similarly the customer also asked questions about the service packages we offer. This information exchange is necessary to understand actual service requirements in each case…/P37.
IMF	I [investment consultant] met with this customer and we informed each other about the changes in the market conditions and we came up with new options. So we regularly discuss these new changes…/P45.

Table 6.5: Information diffusion in four cases

In the IMF service, the unit value of fund portfolios is determined based on the emergent information about the market index and stock prices. Multiple service-creating systems are found exchanging information to actually understand the contextual situation of each service case. As in ILS case, the personnel, the auto supplier and the customer have exchanged information about the increased in prices (P40).

The mutual funds association of Pakistan issues daily stock prices based on which the IMF managers redesign their fund portfolios (P45). Each agent within the system receives and disperses new information from and to other relevant agents and thus causes the spread of information in the whole system, which informs the system about the emergent locale.

The information is diffused to inform the concerned service co-creators within a service system so that each can make informed contributions to the specific service case. The information is used to design the local functional detail for a service case. As seen within the four case studies, the initial encounters of customers and the front-office employees focus on exchanging information about each other's situations: the customers take information about the planned designs (service packages) and the institution's personnel take information about the customers' situations and service requirements.

The information is also diffused into and by the aiding parties to know and let others know the requirements and specifics of each service-creation moment. This information diffusion enables every service creator to determine their contributions and benefits within each service encounter. In the IMF, a widow client informed the fund manager about her family situation (death of husband) and the resultant new investment needs of the family. This emergent information diffusion enabled the investment consultant to develop a more secured fund portfolio. This information is also diffused into the CDC, an aiding trustee system, which enabled the company to place the customer's portfolio within the relevant parent fund portfolio of the IMF (P46). The real shape of a service system actually depends on the customer's information about actual service requirements within context (Fließ and Kleinaltenkamp, 2004).

Four channels are used for the information diffusion within SFS-system. Firstly, the information is diffused orally. Particularly within the initial meetings for service creation, the case studies show that the service participants diffused information orally in the form of questions and answers. For example, within the ICB service, the customer obtained information related to *Murabahah* working capital finance packages whereas the personnel compiled information related to the customer's company and its construction business (P24).

Secondly, the information is diffused through documents. The customer is required to submit a set of documents and to fill in forms to initiate particular information diffusion. The SFS organisations also provide brochures and application forms to inform the customer about planned service packages.

Thirdly, in some cases observations are used to diffuse information. For example, within *Murabahah* and *Ijarah* finance, the service personnel visited the customers' premises and observed the customers' businesses to generate information for themselves and the back-office personnel (P19 and P24).

Fourthly, the information diffusion is enabled through the information systems and other technology such as phone, fax and emails. Technology is used to channel the information to different participants within the system.

The diffused information does not remain limited to the directly sharing agents, but goes beyond this to other agents. For example the documents submitted by the customer go to front-office and back-office employees and aiding parties, which inform them about the emergent service requirements. In the *Ijarah* lease service, the

information about a lease vehicle is diffused among the customer, service personnel, *Takaful* operator, tracker company and auto supplier (P19).

6.3.3 Knowledge Diffusion

The third step in adaptation process is Knowledge diffusion. The aim of information diffusion is to spread the knowledge within a system about the specific environment and the consequent new service requirements. Slaughter and Kirsch (2006) described knowledge as the information possessed by an individual and when that is combined with individual personal reflection through which it becomes a basis for action. The knowledge diffusion is necessary, so that each service creator understands the specific challenges of the case and reflects on them. The service participants comprehend meaningful discussions, read documents and do observations to develop and share new knowledge.

Table 6.6 shows how service creators diffuse understanding or knowledge within a system.

Case	Knowledge diffusion
ICB	In initial meetings, the customer wants to understand the available service packages and the personal banking officer wants to know about the customer and his needs…/P20.
ILT	Based on the information, I took 15 to 20 minutes to understand the customer's needs and the overall situation of the case, based on which I selected and designed different *Takaful* policy options…/P26.
ILS	None of the staff members or the customers has complete knowledge of each and every thing in the service so we help each other to better understand each case and provide the appropriate service. As in this case the customer was a security company and the inventory they asked us to finance was new for us. Our chief executive's brother, who also has a security company, provided the valuable inputs…/P39.
IMF	The customer was unaware of the funds and how to invest and disinvest in each fund [lack of knowledge]. Our regular discussions enabled him to better understand the situation and promptly respond to the market changes and changes in his needs ... now he understands how to check the KMI…/P43.

Table 6.6: Knowledge diffusion in four cases

For creating appropriate service episodes the situated service creators seek to make complete sense of the information that they exchange. Such knowledge acquisition takes effort. The actors struggle to receive knowledge and use it to build solutions for the new problem domains and environmental contexts (Sorenson, Rivkin and Fleming, 2006). For example, the *Ijarah* manager built the required documents list based on his

emergent *understanding* that the customer was a doctor in a government-owned hospital (P18). Similarly, in a *Murabahah* finance case, the coordinator was only able to say that the customer's financial position was weak when she read and comprehended the customer credit information report and financial statements (P24).

This knowledge diffusion within a service system is multidirectional as the service organisation receives as gives knowledge to the customer and aiding parties. Knowledge diffusion is not a separate flow among service creators rather it builds on the newly diffused information (preceding step in adaptation process). In auto lease service, the bank' personnel transferred information about the vehicle's location and *Takaful* requirements to a *Takaful* operator. This new information enabled the *Takaful* operator to first understand and then go, evaluate the vehicle and to arrange *Takaful* for the specific leased auto (P19). These findings confirm Roux *et al.*'s (2006) claim that continuously adapting systems rely on a multi-faceted knowledge system.

The situated service creators want to adapt to each other's requirements to create value (Vargo, Maglio and Akaka, 2008). They cannot achieve this adaptation without prior acquisition and diffusion of knowledge about what the counter party's requirements are. The involved entities' knowledge sharing leads to knowledge dispersion within the service-system. In continuously changing contexts, the participant entities do not always have sufficient knowledge before the actual service encounters. They therefore share knowledge during the service encounters. Within the information system context Patel (2012) said that designers do not have complete knowledge of dynamic context organisation work because that is affected by customer's expectations, competitors and the current state of the economy. The findings in this research show how the real service creators diffuse the missing knowledge during actual service creation, so to fill the deficiency in knowledge.

The participant entities within a service system also search for proof of the information to verify that their knowledge of situation and its requirements is not misled by any inaccurate, incomplete or inappropriate information. For instance, the service creators use registration documents, bank statements and identity documents to understand the whole situation and verify the same.

6.3.4 Indexation

The forth step in adaptation process is the indexation. Literally, indexation is "a system in which the value of something changes in relation to another value or fixed standard"

(Cambridge Dictionaries Online, 2013a). Indexation is the match or comparison of a real system's parameters with the standard and planned ones. It is a match between real service requirements and the artefact (planned design). This indexation is necessary to specify the planned designs for the service case and also find the gaps where the contextual service requirements deviate from the planned design.

Table 6.7 shows how the real service creators index the real service requirements with planned designs and vice versa.

Case	Indexation
ICB	We compare and index the case with the available service packages [planned designs]. Like *Murabahah* finance package we have corporate, commercial and SME options. I compared the company's finance requirement with the available options and I specified this company as an SME…/P25.
ILT	We match customers' needs and interests with our available options in different *Takaful* packages. The point is that you should not divert the direction of the customer, but should move your options in the direction of the customer…/P31.
ILS	In a service proposal, we create solutions based on our understanding of the actual service situation and the service packages we have. We match these two to select the best service package and also amend or combine many packages to meet the service requirements…/P41
IMF	I compared the customer's income with required minimum investment levels in each fund. Similarly, I also compared customer's mind towards risk and return with the risk and return exposure in each fund…/P45.

Table 6.7: Indexation in four cases

The knowledge diffusion in the service-system enables the situated service creators to compare or index the real service requirements with the planned design parameters and sometimes vice versa. This is a two-way indexation. For some planned parameters, such as prevailing rules, they index the real service parameters and do not allow deviations. For other parameters, such as customer needs, they compare the planned designs with the needs and see the extent to which each available planned design meets the specific contextual needs. Stuart (1998) argued that the differences between the design and real service-system can be termed specification differences. These differences occur because the interaction intensity varies among different service creators and they interact in multiple and different points in time-space (Ullah and Patel, 2010). Different spiral points of time-space create unique contexts for the service creators. The service creators vary and they can have different visions and preferences for the service before, during and after the service delivery (Johnston and Clark, 2001).

The indexation not only enables the service creators to enlist the specifications to be made within the planned designs but also allow the service creators to identify the emergent service requirements for which no planned design exists but can be developed within the rules' threshold.

In a *Murabahah* finance, the planned-design parameter, *goods-to-be-financed,* is compared with the real-goods in the case. Through indexation, the parameter is specified as: diesel, patrol and bitumen (P24). The customer also indexes his service requirements with the planned designs and vice versa to see how best the service system can fit for his context and also how best can he fit for the service-system's context. This finding confirms Godsiff (2010, p. 97) who pointed out that "the customer needs to understand and match the variety in the value proposition with her internal variety".

6.3.5 Specifics' Evaluation

The fifth step in adaptation process is the evaluation the emergent specifications to be embedded within planned designs so to adapt them. The situated service creators use competencies and expertise to evaluate the emergent functional detail and the matched/indexed planned designs. The core of evaluation stage is the application of competence and expertise. Sveiby (1997, p. 10) define competence as the "employee capacity to act in a wide variety of situations to create both tangible and intangible goods". Competencies become expertise when they develop over a long time through training and practice (Ericsson and Charness, 1994; Ericsson and Lehmann, 1996). Competence and expertise are the cores of a service system (Vargo and Lusch, 2004a and 2004b) which results in value creation for the entity itself and other entities within service system (Lusch, Vargo and Wessels, 2008). Table 6.8 shows how the service creators do analysis and evaluation by applying their competencies and expertise.

Case	Specifics' evaluation
ICB	Personal banking officers are the experts. They evaluate the personal needs and the applicability of possible solutions…/P20.
ILT	The *Takaful* consultants do financial analysis of the customer based on the contributions and benefits schedule ... Each service case passes through financial, legal and medical assessments. The experts in these departments make decisions about their relevant parts of each service case…/P30.
ILS	We designed this document internally to evaluate the income, assets and liabilities of the customer ... Our experts evaluate each aspect of the case to decide about the service options, acceptance or rejection of the proposal…/P40
IMF	Fund managers use their financial expertise and skills. They analyse and assess the funds' compositions and the overall market situation, and then redesign the fund portfolios…/P45.

Table 6.8: Specifics' evaluation in four cases

During the specifics' evaluation the service creators see whether the functional detail best fit within the functional deferment point (DFP) and vice versa. DFP is a locale in design waiting to be filled with the specifics of each context when they emerge (Patel, 2012). In the ICB case, the financial evaluator evaluated the customer's salary slips. Based on his expert evaluation he concluded that the marketing benefits paid to the customer as arrears were not part of the current monthly salary so these arrears should be excluded from the customer's income to appropriately design the cash flow stream in the service (P17). This means that the specifics of customer's income are found inappropriate during the evaluation stage of adaptation. The service creators not just evaluate the emergent detail of a service case but also evaluate the applicability of available service designs and possibilities for new off-design solutions. For instance in IMF case, the funds' managers are found evaluating the available packages for their suitability in various market contexts (P45).

The aiding parties and customers also take part in specifics evaluation. For instance in auto lease service the third party auto evaluator have evaluated the used car that was subject to lease (P18). Similarly the lawyers have evaluated the ownership of properties that were subject to mortgage (P25). The customer took brochures from both IMF and a conventional bank and evaluated both to decide about appropriate service options (P44).

6.3.6 Deferred Design: Enactment of Adaptation and Migration

The sixth and last step in adaptation process is the deferred design: realisation of adaptation or migration. Deferred design is the conclusion of specifics' evaluation. Adaptation occur when the service creator actually decide and embed the evaluated specifics or functional detail within a design and also add off-design solutions. This adaptation results in a deferred and customised design for each service case. As in the ICB case, the customer credit information report showed previous unknown loans, which resulted in the inclusion of new activities such as the customer had to visit other banks to collect the loan outstanding letters and then the bank personnel had to tabulate the same for the Islamic bank (P19). These new additions resulted in a deferred design for the specific service case.

These findings confirm Barras's (1990) view, who argued that in response to the industry and technological environment the system incrementally changes (adaptation). Sawhney, Balasubramanian and Krishnan (2004) also maintained that in response to emergent opportunities the service creators add new activities to the planned chain of activities (expansion) or modify the existing activities (reconfigurations). The deferred design steps advance these thoughts by showing how really this occurs. Also, the stimulus for adaptation is not just the technological environment and market (needs) but a holistic sphere made of service co-creators and their inclusive systems (e.g., families, societies, markets, governments).

The service creators migrate or exclude some or all parts mentioned within a planned design bases on the preceding evaluation. For instance, within a planned lease design, normally a guarantor for the customer is required to submit documents as the guarantor needs to be financially evaluated. In one Islamic lease case, the guarantor was an existing customer of the ILS so his documents were already with the ILS organisation. As a result, the document collection and his evaluation steps are excluded in the real service case for the new customer (P40). In some cases the service is rejected when the situation is found against the rules or the creation of service was economically not viable (e.g., high risk). This phenomenon is termed *migration* in this research. Table 6.9 shows the evidence for deferred design: adaptation and migration, within four cases.

Case	Adaptations and migrations
ICB	Deviations from service packages are allowed. In one case the client was younger than the required 20 years of age. To overcome this, we took more security/down payment. In another case, the company was one year old, so year-wise comparative financial analysis was not possible, which is required in the standard procedure. We solved the problem by taking proforma [projected] financials for the coming year ... for every deviation the amendments depend on the situation of a particular case and nature of deviation we take…/P19.
ILT	This customer wanted a ten-year Takaful plan because he was having family, a child. So, we selected an education plan for his child and added family benefits as per his family requirements. So, the actual service catered for customer affordability and his family structure…/P26.
ILS	We financed the customer's imports of CNG gas cylinders. During the imports, the client mistakenly violated some excise rules and the excise department (government agency) issued a notice to stop the sale of those cylinders. For three months there was no business and the client failed to make the scheduled payments. So, we redesigned the payment stream for this case…/P42.
IMF	The customer said that she does not have any other source of income in the family and the children are minors and she will need money in future for their education etc. Keeping in view the family situation, I combined cash and sovereign funds to create a more customised portfolio for her…/P46.

Table 6.9: Deferred design (adaptation/migration) in four cases

As the narratives, in table 6.9, show how specifics of the case affect the service co-creators to adapt the planned designs. The specifics' evaluation causes the system to include or exclude further actions and resources. In the IMF service the funds management committee consists of experts in the financial market. They analyse the complex financial trends in the market and the impacts of political, governmental and social situations. Based on their expertise they develop contextual designs by adapting or redesign the planned fund portfolios. These findings are in line with Vargo, Maglio and Akaka (2008, p. 149) who argued that value creation and measurement in service systems can only be defined "in terms of an improvement in system well-being and we can measure value in terms of a system's adaptiveness or ability to fit in its environment". The situation in which the planned designs remain silent forces the situated creators to design the missing parts during the actual service creation. In this process the real service progressively emerges into new service encounters. This continuous adaptation within planned design led Moritz (2005, p. 47) to say that "the service design continues after the service is used and monitors it for constant improvement".

Planned design parameters come with empty spaces waiting for the emergent specifications to be determined by the local service creators. Patel (2012) termed these points as functional deferment points (FDPs), which remain deferred because its functional details is expected to occur in the future during the actual application of the design. Ahmed, 2006 (p. 94) also said that the service-product documents need to have a "core portion and one that is left blank for filling in for individual transaction". Along with specifications within FDPs, the service creators also look for the gaps to be filled through new design solutions causing further adaptations within planned designs. In the IMF service, when the tax authority in country introduced a new capital gain tax, the service creators found the planned design to be deficient in terms of incorporating this new parameter (P43).

The adaptation process in service systems can occur differently in different organisational cultures. An organisational culture is a shared mental state within an organisation that guides the actions of personnel (e.g., Ravasi and Schultz, 2006). Such a state of mind of the personnel is established by past and prevailing values, beliefs and principles (Needle, 2004). In literature, the four dominant types of organisation cultures are: (i) control (hierarchy); (ii) compete (market); (iii) collaborate (clan); and (iv) create (adhocracy) (Cameron and Freeman, 1991; Tharp, 2009; Übius and Alas, 2009). 'Control' organisations value "standardisation, control, and a well-defined structure for authority and decision making" (Tharp, 2009, p. 3). 'Compete' organisations focus on establishing competitive advantage over other organisations to achieve their objectives (Cameron and Freeman, 1991). "[C]ollaborate (clan) organisations operated more like families – hence the name – and they valued cohesion, a humane working environment, group commitment, and loyalty" (Tharp, 2009, pp. 3-4). 'Create' (adhocracy) organisations value creativity, innovation and entrepreneurial activities (Cameron and Freeman, 1991).

The adaptation process can better be nurtured and enacted within organisations that have collaborate and create cultures. The collaborate culture can support the phenomenon of service co-creation (presented in the proposed DSD model in chapter 3) because the collaborating parties (i.e., service organisation, customer and aiding parties) need to adjust to each other's requirements to create mutual value (Vargo, Maglio and Akaka, 2008). For the adaptation aspect of service co-creation, participants need to develop new solutions to the emergent requirements of the collaborating parties. For this purpose, a create (adhocracy) culture in congruence with a

collaborative culture is more suitable for establishing a holistic, adaptable service system. This is because "a major goal of an adhocracy is to foster adaptability, flexibility and creativity" (Cameron and Quinn, 1998, p. 43). Hierarchical cultures take a static and centric approach to designing service systems and provide little room for adaptation because within such a culture the organisations value standardisation and well-defined structures so as to achieve efficiency (Tharp, 2009).

The contextual *Shariah* finance service system is found to favour collaborate and create cultures. For instance, the Islamic bank, while co-creating the working capital finance service, adjusted the design of the working finance process flow to adapt to the requirements of a customer (a construction company) and aiding parties (the suppliers of oil products) during their collaborations for service co-creation. New solutions, such as visits to the constructions sites, were added to the design (P24). Moreover, the *Shariah* system prefers collaborate culture, as it favours partnerships over loans in creating banking services (Usmani, 2002a). Similarly, in the case of ILT, *Shariah's* principle of *Tabarru* (brotherhood) has motivated service creators to work as a family and has encouraged the customer to be part of the trust fund (P33). *Tabarru* is a classic example of clan culture, which supports the co-creation of a service and the adaptation of the service creators to each other's requirements.

The social and cultural values of the service creators also affect the type of culture they value and, hence, the extent of adaptation possible in their service systems. In an ICB story, the customer was an elder in the village who was very famous for his pokhtoonwali (the local Pathans' code of life) and was well-respected and trusted in the village. This reputation influenced his case, and detail was added to the customer's credit proposal to explain that the customer is an active Pathans leader and trustworthy, which would reduce the risk of default (P19). Giving importance to this trustworthiness in society is a shared value among service co-creators that has stimulated them to adapt service-system design.

To sum-up, the service creators realise their desired adaptation or migration through a novel and complex deferred adaptation process (DAP): emergence locale, information diffusion, knowledge diffusion, indexation, specifics' evaluation and deferred design (enactment of adaptation or migration). This adaptation process effectively occurs in a more collaborative organisation culture.

6.4 Service Co-creators

The third DSD construct is the service co-creators. This research has found the service organisation, customer and aiding parties as service co-creators (Table 6.10). The service community establishes a network of systems to co-create service and value at each service encounter or within a chain of encounters (Maglio *et al.*, 2009; Sampson and Froehle, 2006). The service creators vary in size and can be any number in multiple service environments. These service systems range from an individual person to the whole economy (Maglio *et al.*, 2009). However at the concrete micro level, there are always individuals or subjects from multiple systems who interact with each other to create the service (Sangiorgi, 2008). Vargo and Lusch (2013) recently suggested that there is a need to change the strategy of *business to customer* (e.g., bank to depositor) to an *actor to actor* (partners) strategy where every participant is producing and consuming a part of the value.

Firstly, the service organisations are the core service creators. These organisations create value for and with the customers (Vargo and Lusch, 2004b). During value and service creation, the service personnel integrate organisational resources with customers' and aiding parties' resources to create service (Sampson, 2010). Shostack (1982) divided the service organisation personnel into back-office personnel and front-office personnel, both of which contribute to the service. In the back-office service creation, the personnel have strong control over the service process. In the front-office service the personnel interact with the customer and aiding parties, therefore have weak control over the service creation (Chase and Tansik, 1983; Sampson, 2012). Table 6.10 shows evidence of the service co-creators within four cases.

	Service co-creators		
	Service organisation	**Customer**	**Aiding parties**
ICB	As an Islamic bank, we provide *Shariah*-compliant financial service for customers ... every department of the bank is involved in the services. Like the legal department takes care of all the legal arrangements in each service. The accounting and finance department disburse the funds…/P24.	The customer has some responsibilities in every service. In this transaction, we sold goods to this firm. The purchasing officer of the customer's firm worked. He linked up the bank with the goods supplier. Similarly, the financial matters were handled by the firm's accountant…/P25.	In auto leasing, along with bank and customer, the auto supplier, tracker company and *Takaful* company are the parties. They supply the vehicle, install trackers and provide *Takaful* coverage…/P18.
ILT	At the core, we are trust fund and investment managers, who create benefits for the customers in terms of financial coverage from the trust funds and taking advantage of investment opportunities in the stock markets…/P30.	The customer arranged documents from different sources and provided these for evaluation. He also made his first financial contribution to the trust fund and investment accounts…/P33.	The customer was required to do medical tests before approval of the *Takaful* policy. So the third-party doctor and his personnel were involved in this service. Similarly the courier was involved who sent the customer's documents to the head office and sent back the approval to the customer. The customer's bank was involved for clearing the cheques and issuance of bank statements…/P33
ILS	To efficiently deliver the service, different staff members are linked to ultimately complete the service and fulfil the customer's need…/P36.	All these documents are arranged by the customer. Besides this, he made arrangements for mortgaging his property against the *Musharikah*-based finance…/P38.	The customer's NIC is verified by the [the name of national identity registration authority]. His national tax number is verified by the [the name of national taxation authority]. The registrar of mortgages registered the customer's property as a security mortgaged against this facility…/P40.
IMF	I told the customer that our organisation [IMF] provides investment services as we have experts in stock portfolio management. …/P46.	The customer has arranged to invest money so he collected and brought all the required documents. The customer decided about different fund options…/P43.	[The name of an interbank network company] clears the cheques between our payer and payee banks. The mutual funds association of Pakistan issues daily return rates on the stocks. We use these rates to determine the profits on customers' fund portfolios…/P43.

Table 6.10: Service co-creators in four cases

Customers also significantly contribute to the service and value creation. These contributions include the resources such as money, information and even him/herself (Sampson and Froehle, 2006; Sampson, 2010). In SFS, the customers contribute actions and resources, for instance, in a term depository service, the customer visited the bank, arranged the documents and contributed his savings (P20). These findings confirm Bitner, Ostrom and Morgan (2008) who maintained that customers perform actions and use resources to interact with service organisations and support systems. Customer is an important party because he ultimately determine the value (Cabiddu, Lui and Piccoli, 2013; Vargo and Akaka, 2012). Sampson (2012) argued that only those processes in which the customer significantly contributes should be considered a service.

Many important parts of the services are outsourced to aiding parties. These aiding parties are the support systems that integrate their actions and resources with the service organisation and customer to create a specific service (Bitner, Ostrom and Morgan, 2008). Contributions of the aiding parties can be completely new peripheral or core service activities (Sawhney, Balasubramanian and Krishnan, 2004). SFS can be seen as integrated packages developed and delivered by the multiple systems, including the aiding parties. In an auto *Ijarah*, along with the financing service of the bank, the vendors, *Takaful* company, tracker company and evaluator contributed added important service modules to complete the service case (P19). Due to this inclusion of aiding parties, a service system is often considered a system of systems or a multiple entity system (Maglio *et al.*, 2009; Sampson, 2012).

6.5 Roles and Actions

The service co-creators assume specific roles within a service system. The findings from the four case studies suggest that SFS personnel, the customer and aiding parties assume different roles to create services (Table 6.11). These roles inform the actions and performances, which are the core of a service system (Grönroos, 2000; Sampson, 2010, 2012; Shostack, 1982; Zeithaml and Bitner, 2003). A service design specifies the actions in terms of roles (e.g., lessor).

Service creators normally execute the actions temporally (Grönroos, 2000). However, multiple members of the service community can operate at the same time to create different parts of the service simultaneously (Sangiorgi, 2004). The actions also occur in response to other actions. For instance, when the customer and Islamic leasing organisation completed the action of preparing the documents for a property's

mortgage, then the registrar of mortgages taken the corresponding actions to register the mortgage. These actions within a service system create a chain of service encounters, which ultimately achieve the aims of the involved service creators (Sampson, 2012; Sangiorgi, 2008). Table 6.11 shows evidence of roles and actions within four cases.

	Personnel's roles	Customer's roles	Aiding parties' roles
ICB	Every employee is assigned a specific role in the depository service ... the personal banking officer (PBO) fills in the account opening form for the customer. The verification officer has online access to [the name of a national identity registration authority] to verify the customer's identity… The manager of operations reviews the form and attaches documents to make a case file. He also assigns an account number…/P20.	The client was a company, so its director had participated in the initial meetings related to decisions regarding different service options. The company's finance advisor and accountant then took part on different occasions such as arranging the required documents, depositing the security and disbursements of finance funds etc…/P17.	I took legal opinion on the property ownership from our independent legal advisor. The legal advisor also mortgaged the property with the registrar of mortgages…/P25
ILT	The executive branch officer also titled operations manager was involved in this service… all the documents submitted by the customer were signed by him…/P27.	In this case the customer is an individual and specifically an investor and principal, because his core contribution is the investment in the funds…/P33.	Both payer and payee banks performed important roles in this case because they managed the overall cash flow in the service…/P26.
ILS	We send the proposal to our regional coordinator. Her work is to coordinate the regional offices with the central office. She accumulates cases from all regions, categorises these and then forwards these to the relevant departments at head office…/P35.	*S* is an existing long-term customer. In this service he was an investor because he purchased two *Mudarabah* investment certificates…/P42.	I issued a letter to the clearing agent with a copy of the shipment documents. The agent cleared the goods from the sea shipment company in Karachi. The customer then hired a carriage company who transferred the goods from sea the shipment company to the customer in Peshawar…/P41.
IMF	The IMF as fund manager invested the customer's money in a joint pool of securities based on customer desire ... I [investment consultant] discussed and suggested the investment options with the customer. When the customer agreed, then I sent the file to the operations manager. He then sent it to the transfer agent…/P43.	The customer role is *Rab-ul-Mal* or the owner of the money. He has to arrange this investment and prepare the required documents…/P45.	The [the name of an trustee company] is the trustee of the nine funds we have and its role is to protect the customers' funds from risky adventures ... When the fund portfolios make capital gains, the federal board of revenue deducts the required taxes ... All the transactions are made through banks where the cheques are cleared by [the name of an interbank network company] …/P43.

Table 6.11: Roles and actions in four cases

Service organisations assume different roles depend on the type of SFS model they apply (e.g., seller, lessor, investor, agent etc.). It then divides these roles further into small roles among departments and then individual personnel who perform specific bets of the overall role assume by the service organisation.

Similarly, the customer assume different roles vary with the type of model apply (buyer, lessee, principal investor, tenant etc.). The institutional customers such as companies are found dividing their roles among the employees.

The aiding parties assumes roles, mostly, to create peripheral services for instance the interbank transfer networks, carriage and postage companies, mobile and internet companies.

Service creators vary in size and can range from individuals to economies (Maglio *et al.*, 2009). However, the roles at the concrete level are always possessed by the individuals. The service creators can have different and multiple roles within a single service or can have a single type of role within multiple services. In the ILS, the operations manager assumed the same role in multiple cases, whereas the group *Takaful* manager assumed dual roles of group leader and individual *Takaful* consultant within the same service (P32). The roles can only be inclusively classified because each individual can have many roles from different perspectives. As Vargo and Lusch (2011, p. 186) argued "the CEO of a firm, the head of a household, a carpooling parent, an individual grocery shopper, a politician, etc. are not fundamentally different kinds of entities; they are all just people going about the business of their daily lives, and trying to improve them".

6.6 Resources and Usufructs

The findings from the four case studies have confirmed that the service creators use resources such as expertise, and financial and physical resources (Table 6.12). These findings are in line with Lusch and Vargo's studies (2006a and 2006b), which maintained that service creators use competencies to create a service. Information and knowledge are used as inputs for competencies and expertise utilised by the service creators.

 Financial and physical resources are also important resources used by the service entities (Sampson and Froehle, 2006). Physical resources create a physical interface and environment within which the actual service occurs (Bitner, 1992). These physical

resources establish touchpoints through which the service creators experience the service (Shostack, 1982; Parker and Heapy, 2006). An ATM machine is an example of a touchpoint through which the customers can experience the service. Sangiorgi (2008) also confirmed the use of physical artefacts within a service activity system.

	Competencies and expertise	Finance	Physical environment and technology
ICB	The personnel in the risk management unit are experts in credit risk analysis. They do detailed credit analysis to determine the risk level in each case…/P19.	The customer deposited a cheque for the down payment ... the accounts department made the payment order of PKR487000 in the name of vendor. Similarly, the customer paid a fee to the excise department for the registration of the vehicle…/P17.	To facilitate customers, we use technology for ATM, debit card and credit card services. Customer can promptly contact us using their computer, phone and fax…/P23.
ILT	*Takaful* consultants readily understand the customers' needs. They are trained to develop skills and expertise to identify customers' needs and accordingly design *Takaful* polices for them…/P28.	I attached the cheque to the customer's file and handed that to the operations manager…/P29.	We normally contact customers via phone, fax and email. We use computers to design the *Takaful* plans…/P28.
ILS	Normally the experienced employees are more competent at bringing tailored services for each case…/P41.	They [customers] started the business with PKR8 million and we also invested PKR8 million with them through a *Musharikah* agreement…/P38.	I sent the customer's details to the head office through our centralised information system ... head office is connected with the [name of the credit information provider], which provides the credit history of the customer ... [the name of an national identity registration authority] provided us with an identity verification machine which is linked with [the name of the national identity registration authority]'s database…/P36.
IMF	We use specialised skills for calculating ratios and designing optimum fund portfolios ... similarly, we use linguistic capabilities to share the investment analysis with the customer in layman's language so that the customer can understand and make informed decisions…/P46.	The cheque given by the customer is deposited in the [name of a trustee company] account. They maintain this account for IMF's cash fund…/P44.	We provide easy access to our customers through our branch network and online system ... like we collaborate with commercial banks and [the name of an ATM network] to make the funds available through ATM networks throughout the country…/P43.

Table 6.12: Resources and usufructs in four cases

The actions within a service system mediate the operant (competencies and expertise) and operand resources (physical and financial resources). As Vargo and Lusch (2008a and 2008b) argued, the operant resources create an impact on the operand resources. The expertise of a banker creates an impact on the banking network to transfer the funds; however, the link between the operant and operand resources is established by the mediating actions.

Due to the involvement of multiple and unique service creators with different levels of competencies and expertise, the service system results in unique and heterogeneous services. As found in the case studies, the experienced and skilled fund managers came up with different investment and disinvestment strategies and portfolio designs for customers' money in different circumstances (P46). Table 6.12 shows evidence of resources and usufructs in four cases.

In service, normally the ownership of the resources does not transfer to the beneficiary but its usage does, which makes a service (Kotler, 2001). Wild (2007) said that it is convenient to establish ownership over tangible goods because they can be inventoried, whereas the same is seem difficult in services because they are intangible. Chandler and Vargo (2011) said that the resources provides service streams and the service they provide can be more valuable in one context and less in the other. This usage is termed usufruct in SFS (Usmani, 2002a). In SFS, the ownership of competences and expertise are not transferred in service creations but in the case of some physical and financial resources, the ownership transfers to the beneficiary. For instance within the auto lease service, the ownership of the autos transferred from the vendor to the bank and then gradually from the bank to the customer (P19).

6.7 Rules and Control

The four case studies have confirmed the application of rules to create control within a service-system. Stephen Vargo, the cofounder of SDL, recently maintained that the service-systems' conceptualisations need to further explore the rules of the game or the institutions (CTF, 2011).

Four types of rules are applied: *Shariah* rules, regulators' rules, organisational rules, and aiding parties' and customers' rules (Table 6.13). These rules create a minimum threshold of dos and don'ts. These findings confirm Sangiorgi (2004, 2008) who said that rules in a service-system define the rights and responsibilities for the subjects and the surrounding community. Financial services are among the most regulated industries

because of the high public interest and risk involved. Mattoo and Sauve (2003) said that general service is subject to regulations more than goods. The *Shariah* rules are applied through partnership, sale, lease and agency contracts. The *Shariah* scholars issue verdicts to ensure that the service should emerge in compliance with *Shariah*.

	Shariah's rules	Regulators' rules	Service organisation 's rules	Aiding parties' rules
ICB	Every service package comes with a list of *Shariah* rules and verdicts (*Fatwas*). When we evaluate service cases we ensure that each and everything we do complies with *Shariah*…/P25.	The Islamic banking department of the [the name of banks' regulator] develop these model contracts, which contain the rules to be followed in different services…/P23.	For each service package, we develop a specific list of rules and terms and conditions. For *Ijarah* finance, there is a car *Ijarah* department which makes the package's policy rules and terms…/P17.	The tracker company applied its rules, terms and conditions related to the tracker installation in the leased vehicles. These rules were considered while preparing the credit proposal for this auto lease case…/P17.
ILT	The trust fund is established through trust or *Waqf* rules [*Shariah* rules]. I explained these rules to the customer. …/P27.	As per [the name of companies' regulator]'s rules, *Takaful* companies must have re-*Takaful* arrangements. For this purpose we have re-*Takaful* engagements with globally established *Takaful* companies and groups…/P32.	There are rules for service opening and closing times, the file submission duration and the required documents. They are regularly changed and communicated to us by head office…/P26.	We have contracts with doctors. These contracts include the rules related to medical liabilities and privacy. The doctors have their rules and we follow these rules when doing the medical tests for the customers. These tests are used to determine the accurate policy coverage…/P29.
ILS	All the *Shariah* rules, terms and conditions are mentioned in the *Ijarah*, *Musharikah* and *Mudarabah* contracts that we sign with the customer…/P39.	We work as per [the name of companies' regulator] regulations related to the non-banking finance companies ... mortgaging the property is the requirement of [the name of companies' regulator] rules…/P41.	I provided this brochure to the customer, which shows the terms and conditions to be followed…/P38.	The mortgage was registered with the registrar of mortgages. Their rules require that the owner should personally present his consent for mortgaging the property…/P38.
IMF	I showed him [customer] the *Fatwas* [verdicts] and the Islamic contracts we use in the service. The *Wikalat-ul-istimal* model includes *Mudarabah* and *Ijarah* contracts which state *Shariah* rules for the rights and responsibilities for all stakeholders of the service…/P43.	[The name of companies' regulator] is the regulator of the non-banking finance sector. We follow their rules and statutory orders in our fund management and advisory services…/P43.	Each fund has its own offering document containing the organisation's rules. These rules cover every aspect of the service ... one common rule is that the cheque deposited by the customer should be a crossed cheque…/P45.	The customer can withdraw money from the investment account through the ATM. However, he cannot withdraw more than the amount specified in his contract with the commercial bank. We allow larger withdrawals but the commercial bank's terms and conditions apply on cash withdrawals…/P44.

Table 6.13: Rules and control in four cases

The financial regulators in Pakistan provide the regulatory rules. These rules are applied to the whole banking and finance industry in the country. Since service systems are part of broader systems (economies, markets, countries), their rules apply to individual service systems as well. The rules of these macro systems are applicable to the micro service-systems. *Shariah* rules are inclusive of the regulators' and organisations' rules. This means that regulators issue *Shariah* rules within broad model contracts (SBP, 2008) and *Shariah* boards and advisors within organisations then specifically issue further detailed rules related to each service package.

For efficient management, the service organisations also apply their own rules to establish a control within the system. Overall the service organisations at the abstract level have memorandum and articles of associations and policy manuals. Similarly, terms and conditions are developed related to the group of service packages (e.g., deposits) and for the individual type of service package (deposit for salaried persons).

Aiding parties and customers are also the service co-creators and they share the service system with the organisation, so their rules are also applied. For instance, *Takaful* companies arrange financial coverage for the vehicle leased by the bank. This value addition to the leasing service is subject to the *Takaful* company's rules (P19). The tracker company installed the tracker in the leased vehicle as per its own organisational rules (P17). Similarly, in working capital finance service the customer's company's rules are followed (P25).

These findings confirm Mars, Bronstein and Lusch (2012, p. 275) who said that any "exchange is guided by both economic and non-economic institutions. For instance, the regulation of economic exchange is partially governed by law and partially by social contracts and norms of exchange and behaviour."

6.8 Value-in-context

Every service system aims to create some value or benefit within a specific context (Lusch and Vargo, 2006a and 2006b). In the SFS-system, the value is created in the form of *Shariah*-compliant savings, investments, finances, leases and financial coverage (Table 6.14). Vargo, Maglio and Akaka (2008, pp. 145–146) argued that "the creation of value is the core purpose and central process of economic exchange ... value and value creation are at the heart of service and are critical to understanding the dynamics of service systems". Planned designs have value propositions to be realised in future in multiple points in time-space with different customers and aiding parties.

Interestingly, *Shariah* compliance is found to be the core value proposition in SFS because the service creator tries to comply with their belief system. SFS organisations promote *Shariah compliance* as an attractive value attribute of the service and show it as strength that is lacking in the conventional finance services. The vision and mission statements of the SFS organisations explicitly declared *Shariah* compliance as a value proposition. This compliance with *Shariah* can be within the structure, in the substance of the service or in both (Ahmed, 2011a). This compliance with *Shariah* is not just compliance with rules but compliance with service creators' (including customers') beliefs which cause internal satisfaction for them. Gustina and Abdullah (2012) have also recently found that a religion is one of the driving factors that motivate the customer to avail the life takaful services. The absence of *Shariah* compliance in the substance of service causes repulsion among the customers (BBC, 2011).

These findings show that following *Shariah* is not just a compliance with rules but also a *belief-value proposition* in SFS practice. This value proposition is attached with other economic benefits such as savings, investments, finances, leases and financial coverage (Table 6.14). Different SFS packages are designed with a different mix of economic benefits (value propositions). Depository packages are designed to create value in terms of saving and returns on investments. *Musharikah* based services are created for profit sharing and arrangement of finances, and *Ijarah*-based leases are created to create benefits in the form of transferring usufructs and *Waqf*-based services are designed for financial coverage.

Case	Value-in-context
ICB	Our main focus in the service is to circulate the money in *Shariah*-compliant ways in the economy and to earn money, which is classified as *Halal* [permitted] by *Shariah* … People in this part of the world are more religious and therefore they value our services…/P17. The term deposit receipts [TDR] are for the long-term investments for which we pay high of return. The investment will be fixed and agreed period of time…/P21. The primary benefit of *Murabahah* is that the customer will have running finance for the working capital…/P24.
ILT	Ninety per cent of the customers come because the service complies with their religious beliefs. They avoid conventional insurance because of *Riba* and *Gharar*, which are prohibited in *Shariah*…/P28. This customer was a professional medical doctor. His aim was to invest his savings for his retirement age so I developed a *Takaful* plan dominated by contributions to the investment pool…/P33. Based on discussion, I realised that the customer was interested in financial coverage for family health and child education so both these needs were covered in the *Takaful* plan…/P29.
ILS	In all investments, financing and leasing services we aim to remain compliant with *Shariah*. This is clearly stated in our vision and mission. You can see these *Shariah* quotes that we framed on the walls, so we really mean to follow these in our services…/P38. The service was designed with the objective to lease and lease back fixed assets. We leased two buses to the customer ... customer use buses and we receive lease income…/P35. This was a security company and they were looking to arrange finance for security guards' uniforms…/P36.
IMF	The customer said that he is religious and will not go for interest-based funds. He said he will accept a loss if there is a loss in the overall fund portfolio, but will not accept interest…/P44. She needed a secure investment. For this purpose I put her investment in a cash fund and sovereign fund, which are the most secure investment options…/P46.

Table 6.14: Value-in-context in four cases

The value propositions are realised through contributions of multiple service-systems categorised as SFS organisation, customer and aiding parties. In the *Ijarah* lease service, the value is realised when the ILS organisation, customer, the vehicle vendor, *Takaful* company, commercial banks, evaluators, couriers and others aiding the system integrated their contributions (P35). These findings are in line with Vargo, Maglio and Akaka (2008, p. 146) who said that the "service systems engage in exchange with other service systems to enhance adaptability and survivability – thus, co-creating value for themselves and others".

Service co-creators offer value propositions as individuals or groups (e.g., families, firms, and nations). They co-create and consume the value within contextual service encounters (Vargo, Maglio and Akaka, 2008). This value work as a purpose for the subjects in a service activity system (Sangiorgi, 2008). Current organisations are deliberate and purposeful actions (Patel, 2006). Service-system designs need to develop value congruence among service creators so that the service creators' efforts remain mono-directed and effective.

SFS designs are the service offerings/promises that offer to create value in the future. These offerings do not contain the essential intrinsic value: the value emerges in actual service encounters, where the service creators actually execute the planned designs packages. In this sense a service organisation is a value proposer and the customer is the value actualiser (Gummesson, 2008). For designing valuable service-systems, the futuristic and dynamic value propositions need to be the focus of service designers because the value significantly changes with a change in user and his context (McColl-Kennedy, 2012). These findings confirm Vargo and Lusch (2004a and 2004b) and Vargo and Morgan (2005) who argued that in a service system, the value-in-use should be the focus rather than value-in-exchange. Designing tangible goods focuses on the intrinsic value that can be created, inventoried in goods and then exchanged with others. In services, the value production and consumption occur at the same point in time and remain alive for a very short moment of time during the actual service encounters.

The value created within service systems can be plus-plus (mutual benefits), plus-zero (one benefits and the other does not), plus-minus (one benefits and other loses) and minus-minus (where both or all suffer losses) (Mars, Bronstein and Lusch, 2012). In SFS-systems the service packages aimed to have a plus-plus situation. As *Shirkah* models, the partners share the profits. However, individual encounters within the chain of encounters can take any of the four possible forms. For instance, in auto *Ijarah*, a service encounter in which the customer collects a vehicle from the supplier is a plus-minus situation if we consider it as a stand-alone service. This situation balances when the bank pays the vehicle price to the supplier and further equalises when the customer gradually pays the lease instalments to the bank. The unique value creation within each case is one stimulus of emergence or heterogeneous services. This happens because "different individuals might choose or have the ability to become involved in the cocreation of value process in different ways" (McColl-Kennedy *et al.*, 2012, p. 371).

6.9 The Evaluated DSD Model − Phase II

Based on the comprehensive cross-case synthesis and discussion presented in this chapter, the theoretical DSD model is further extended. The post-empirical and evaluated DSD holistically conceptualises and *adaptable service-system design*. Figure 6.2 exhibits the evaluated DSD. Figure 6.3 describes the DSD's constructs. A colour code is used. The constructs in red show the extensions.

Figure 6.2: Evaluated DSD Model – Phase II

Constructs (C)

C1: Planned design typology
Service co-creators apply three types of planned designs (models, varieties and modules) to create a service

C1a: Models
The service co-creators apply planned SFS models (e.g. partnership, sale, agency, lease, endowment and gift.) to create a service

C1b: Varieties
The service co-creators apply planned list, range and negative varieties to create a service

C1c: Modules
The service co-creators apply independent (core and peripheral) modules to create a service

C2 : Deferred adaptation process
The service co-creators follow a six-step process to adapt or migrate a planned-service-system design: emergence locale, information diffusion, knowledge diffusion, indexation, expertise application, deferred design (adaptation or migration)

C2a: Emergence locale
The service co-creators and their inclusive systems (e.g. social, family, market, regulator and government) create an emergence locale: context of the service case and its' requirements

C2b: Information diffusion
The service co-creators diffuse information (in service system) about the emergence locale through oral discussions, documents, observations and information systems

C2c: Knowledge diffusion
The service co-creators comprehend the diffused information to understand the emergent locale

C2d: Indexation
The service co-creators index (match) the emergent locale (context and its service requirements) with the available planned designs.

C2e: Specifics' evaluation
The service co-creators evaluate the specific functional detail of the service case and possible adaptation in designs

C3f: Deferred design (enactment adaptation or migration)
The service co-creators either adapt and apply planned designs or migrate off the emergence locale.

C3: Service co-creators
The service organisation, customer and aiding parties co-create a service by forming a service community.

C4: Roles and actions
The service personnel, customer and aiding parties assume roles, which inform their actions during the service creation.

C5: Resources and usufructs
The service co-creators integrate expertise, finance and physical resources, particularly their usufructs, to create a service.

C6: Rules and control
The service co-creators apply the rules of *Shariah*, regulators, service-organisation, aiding parties and customers, to create a distributed control in a service system.

C7: Value
The service co-creators create value-in-context: belief value (*Shariah* compliance) and benefits.
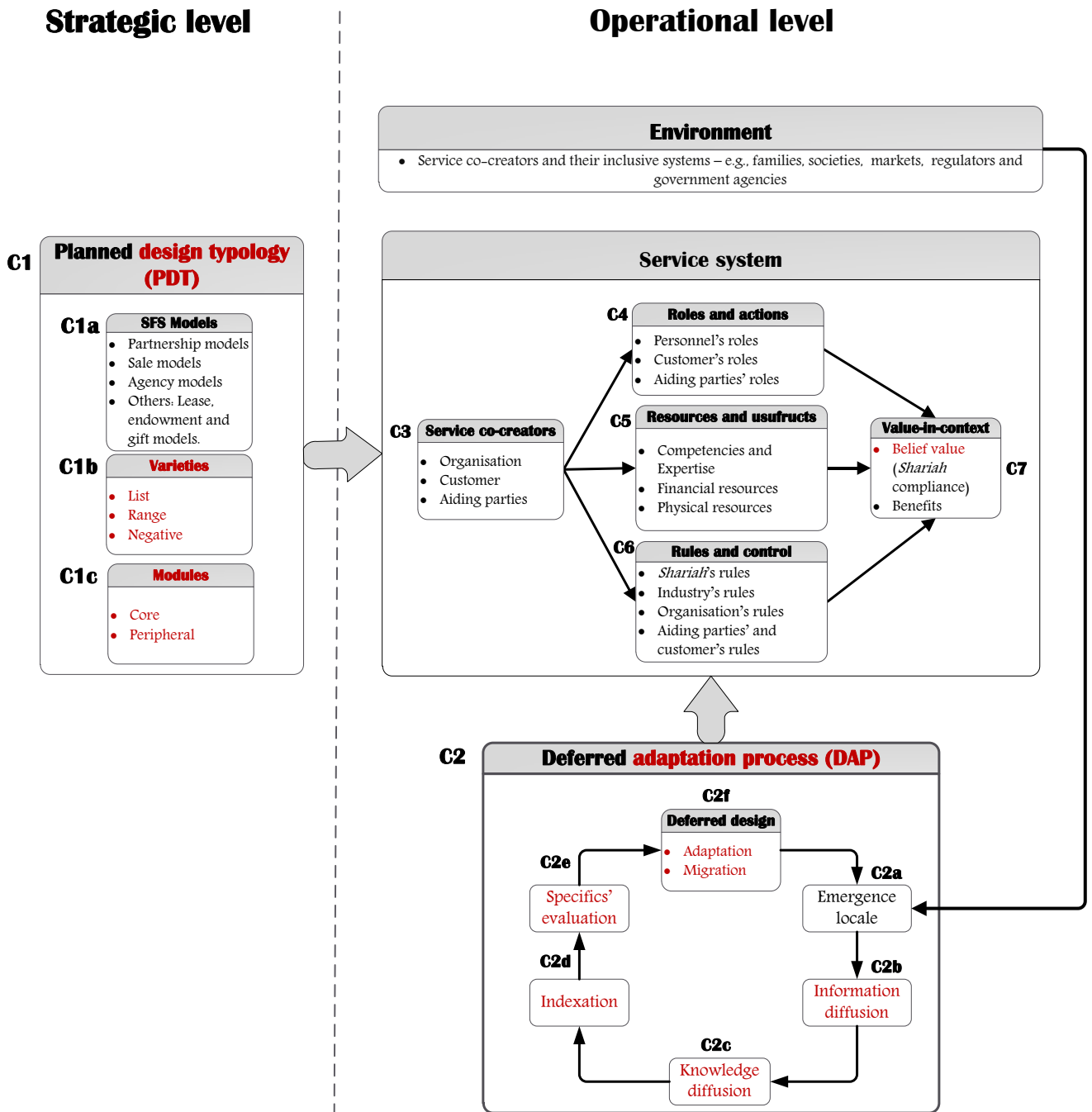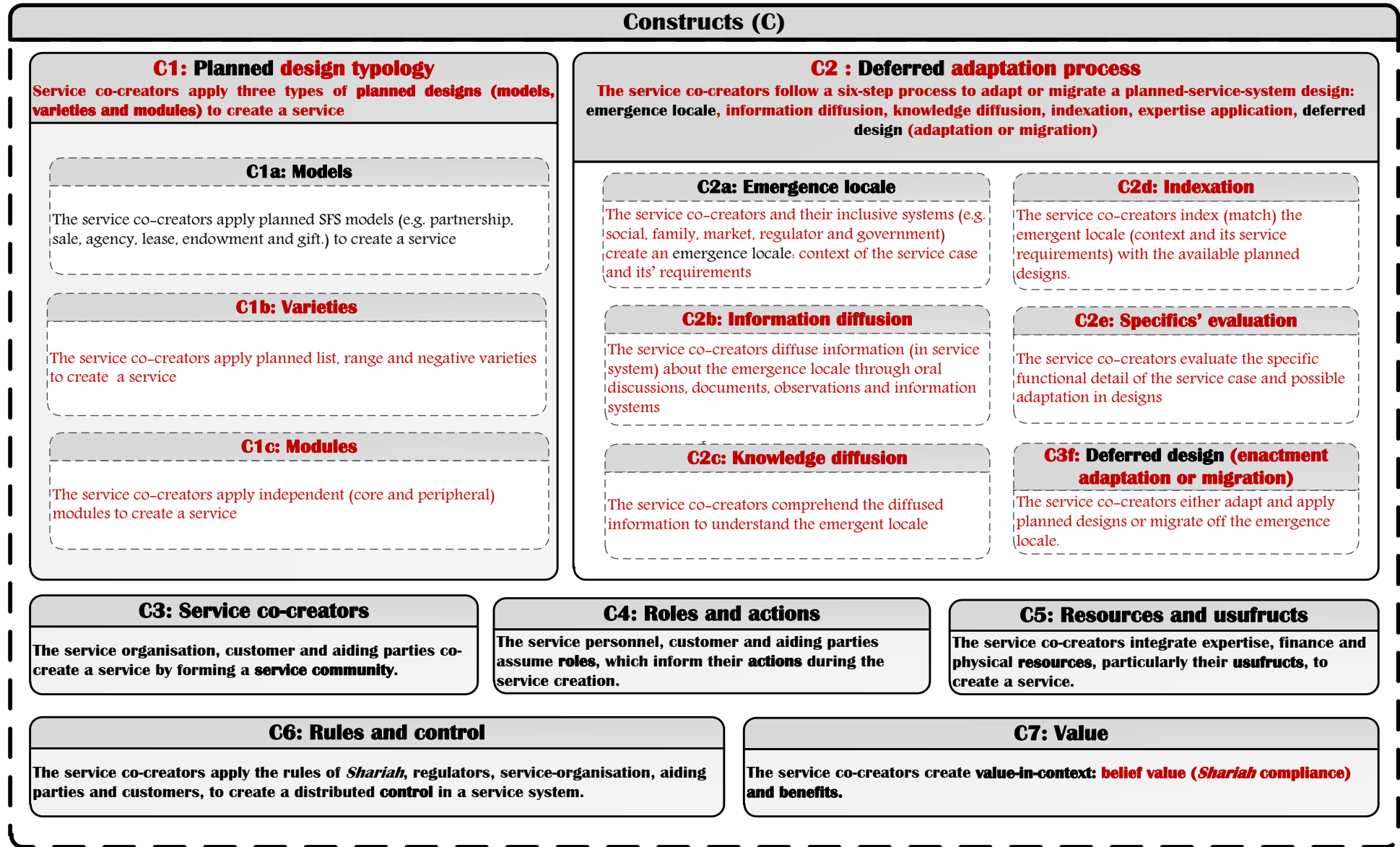
Figure 6.3: Evaluated DSD's constructs – Phase II

The first DSD construct conceptualises a planned design typology (PDT). PDT answers the question of 'how a planned design provides a locale for the adaptation?' PDT shows that a planned design allows adaptation through a mutually inclusive set of designs. Firstly, the planned design offers different blends of planned SFS models. These models outline, in advance, the futuristic activities to be performed by the service co-creators in different contexts. Secondly, the planned design establishes expected varieties related to different parameters of the service system. These varieties include a list variety (list of possible occurrences), a range variety (range of possible occurrences) and a negative variety (possible occurrences to be avoided). Thirdly, the planned design offers modules (core and peripheral), which can be added and deducted during the actual service creation.

The second DSD construct establishes a novel deferred adaptation process (DAP). DAP answers the question of 'what process the service creators do follow to attain the adaptation?' DAP is a six-step service-system design adaptation process. Firstly, the service co-creators identify the emergence locale: specific case's situation and its requirement. Secondly, they diffuse information about the emergence locale through oral discussions, documents, observations and information systems. Thirdly, they diffuse knowledge in the system, because the concerned service creators comprehend the new information share their understandings. Fourthly, the service co-creators index the planned designs with the emergent context and its service requirements and vice versa. Fifthly, the service co-creators apply their competencies and expertise to evaluate the case's specifics and possible adaptation/migration areas in planned designs. Finally, the service co-creators realise the adaptation by embedding the case's specifics into the planned design. In some occasions the service co-creators migrate off the context or they do not create the service.

The third DSD construct conceptualises the service co-creators. The empirical findings suggest that the service organisation (personnel), customer and aiding parties establish an emergent community to co-create service.

The fourth DSD construct conceptualises the roles and actions. The service creators assume roles that inform their actions in actual service encounters. The service organisation divides its role among different departments and personnel. The customer

also assumes roles. An institutional customer such as a company divides its role among its employees. Different aiding parties also contribute their roles to complete a service.

The fifth DSD construct is the resources and usufructs. The service creators contribute valuable resources to the service system to enable the value creation. The core resources are competencies and expertise. The service creators use these operant resources to actually create value for and with the customers. Furthermore, the service creators use financial resources as indirect value promises to balance the service creators' contributions within the system. Physical resources such as technologies are used to establish the touchpoints and servicescape.

The sixth DSD construct is the rules and control. The service creators apply rules to establish the necessary control over the service creation. Various inclusive levels and types of rules apply in a service system. In SFS, *Shariah* rules apply to comply with Muslims' belief system. Also, regulators' rules apply as the service system is part of the relevant regulated industries. Similarly, the service organisation, customer and aiding parties apply their own institutional rules to control their participation in a service system.

The seventh DSD construct is the value. The service creators contribute to a service system to create a particularly identified value. In SFS, uniquely *Shariah* compliance is found to be a core value proposition as the participants value their religious beliefs in matters including financial services. Also, various unique financial benefits such as savings, investments, finances and financial coverage are found the prominent value propositions.

6.10 Chapter Summary

In this core chapter a cross-case synthesis and detailed discussion is presented. Seven DSD propositions/constructs are discussed in the context of selected discourses from four case studies and relevant literature. Intra-case findings are synthesised with the literature and all the findings and discussions are enfolded into a novel post-empirical DSD – Phase II.

The post-empirical DSD more comprehensively addresses the knowledge gaps: it describes the detailed adaptation process within a service system and where it locates within a holistic service-system design.

The adaptation process consists of six steps: emergence locale, information diffusion, knowledge diffusion, indexation, specifics' evaluation and adaptation/migration. Surprisingly, the centrally-developed designs are found with a typology of planned designs that enable the operational-level service creators to adapt the service system. That essential room for adaptation surprised the research and enabled it to holistically understand how the complete adaptation happened within a holistic service-system design. Along with these core findings, the specifics of other constructs, such as service co-creators, roles and actions, resources and usufructs, roles and control and value-in-context, have provided an enriched context for the adaptation process and planned design typology.

CHAPTER 7: CONCLUSION

7.1 Introduction

In the previous chapter the cross-case synthesis and discussion is presented to abstract and theorise the findings by discussing them in relation to the wider literature. This chapter concludes the research. Firstly, the research outcomes are discussed and are compared with the respective research objectives set in the introduction of the research. Secondly, the core theoretical contributions to the service-system theory, the TODA and SFS theory and research method are discussed. Thirdly, fourteen practice implications are discussed for the general service and SFS practitioners. Finally, the limitations of this study and future research directions are presented.

7.2 Research Outcomes

The problem addressed in this research stems from the current debate in literature which says that service systems like natural ecosystems and networks of systems adapt to specific environments to create contextual service and value (Cabiddu, Lui and Piccoli, 2013; Chandler and Vargo, 2011; Vargo and Lusch, 2011; Vargo, Maglio and Akaka, 2008). However, there is little knowledge about how these systems adapt (adaptation process?) and how this adaptation process can be conceptualise within a holistic service-system design. These knowledge gaps are identified and justified in the contemporary service-system and its design literature (chapter 2, section 2.2.6), which are then contextually interpreted and further justified in SFS literature (chapter 2, section 2.3.8).

To address the research problem and to fill the knowledge gaps, the aim of the research is set to: develop a theoretically and empirically based model, which can describes a service-system design that adapts to the specific operational-level environments of *Shariah* finance organisations in Pakistan. This aim is achieved in the form of a novel and comprehensive post-empirical DSD. This theoretically and empirically based DSD is the culminated output of seven chapters that comprise this thesis.

The aim of research is achieved through the following four interrelated objectives (milestones):

- To critically review the literature of service-system design in general and SFS-system design in particular, in order to conceptualise the theoretical constructs of an

adaptable service-system design. Also, to identify the knowledge gaps to be research further in the empirical study.

- To develop a model by interconnecting and justifying the theoretical constructs of an adaptable service-system design.

- To evaluate the proposed model through empirical findings from four *Shariah* finance service organisations in Pakistan.

- To develop a post-empirical model through synthesis of cross-case findings and literature, to establish the theoretical and practical contributions.

The first objective was to review the relevant literature in detail to holistically conceptualise the current understandings of an adaptable service-system design and point-out the knowledge gaps. For meeting this objective, the literature is reviewed in two sections (chapter 2, section 2.2 and 2.3). In the first section, a holistic service-system and its design are conceptualised through prominent existing theories and models. The discussion is started with the literal understanding of a service. It is evident that service is a complex phenomenon because it emerges very heterogeneously, it cannot be separated from its producers and consumers. Service is highly perishable because its production and consumption occurs at the same point in time (and sometimes same place as well) and it is highly intangible in nature (Han, 2010; Palmer and Cole, 1995; Shostack, 1982). The service emerges as a series of actions with tangible and intangible resources (Grönroos, 2008) and the ownership normally does not transfer during the service creation (Kotler, 1987 and 2001).

To build a robust background theory (in terms of Phillips and Pugh, 2010) the current theoretical perspectives are discussed. These perspectives are: service-product perspective, service molecular model, customer contact model, service encounters triad, triad, service opportunity matrix, service activity system model, unified service theory, service dominant logic and ecosystem debate. These theories and models conceptualise a service system from various alternative theoretical perspectives. Proceeding further, the concept of *design* and is contextualised into service-system design through prominent service design models: service blueprint model, journey to customer interface model, storyboard model, persona mapping model and process-chain-network diagram. Finally the reviewed theories and models are summarised and tabulated to

abstract the theoretical constructs of a service-system design. This review is covered in chapter 2, section 2.2 (2.2.1 – 2.2.5).

The summary of service-system design literature, showed that a service system is a network of systems that co-creates value for and with customers and supporting systems through resource integration (Maglio *et al.,* 2009; Maglio and Spohrer, 2008; Sampson and Froehle, 2006). The service co-creators (organisation, customer and aiding parties), their roles and actions, resources and usufructs, rules and control and value are found the core theoretical constructs of a service system. The literature also showed that the entities within a service system adapt to each other and uniquely integrate actions and resources to create contextual service and value (Shostack, 1982; Vargo, Maglio and Akaka, 2008; Vargo and Lusch, 2011; Wieland *et.al*., 2012). Though there have been discussions that the service should and does adapt within specific environments, little knowledge was exist about detailed adaptation process and its conceptualisation within a holistic service-system design. These knowledge gaps are discussed and justified in section 2.2.6.

In section 2.3 the thesis argument is contextualised into SFS literature to contextually understand a service-system design and to interpret the knowledge gaps within context. This review is started with *Shariah* philosophy, *Shariah* compliance, *Shariah* and social emergence, Islamic economic and financial system and current SFS models. Four categories of SFS models are classified into *Shirkah* (partnerships), *Bai* (sales), *Ijarah* (Leases) and Others, such as *Waqf*, *Wikalah* and *Hibah* (endowment, agency and gift, respectively). This review is covered in chapter 2, section 2.3 (2.3.1 – 2.3.7). The knowledge gaps are contextually interpreted and justified in section 2.3.8. The theoretical constructs found in service-system design literature are contextually confirmed within SFS models and knowledge gaps are contextually discussed.. SFS models have been found well researched from Islamic economic and juridical perspectives as they provide designs for the financial and physical assets' transactions. However, these models are found deficient in terms of conceptualising service co-creation and the underneath detailed adaptation process. Finally the research aim, objectives and questions are restated.

The second objective was to develop a theoretical model, which is normally considered as a focal theory in a research (Phillips and Pugh, 2010; Yin, 2009). Two focal theoretical perspectives, the TODA (Patel, 2006 and 2012) and SDL (Vargo and Lusch, 2004a and 2011) are discussed and justified in section 3.2. These theoretical

perspectives are applied as tentative perspectives through which the relevant and extant literature is framed into the pre-empirical DSD model – Phase I, in section 3.3. The constructs in literature threads are adopted, adapted and linked to develop a novel DSD model.

The DSD describe an adaptable service-system design through seven constructs. Each construct of the model is developed and justified through a relevant thread of discussion within the extant literature to rigorously back up the concept before it is evaluated and further developed through empirical studies. The DSD argues that i) the service creators apply multiple planned designs within operational-level environments to create real services; ii) the emergent environments affect the planned designs in response to which the situated service creators adapt the designs to incorporate contextual requirements; iii) service organisation personnel, customer and other aiding parties co-create a service by forming a service community; iv) the service co-creators integrate roles which inform their actions in a service; (v) the service co-creators integrate resources particularly their usufructs; (vi) the service co-creators apply rules to create a control within the system; and vii) they co-create value (benefits) in context.

The third objective has been set to rigorously evaluate the DSD through empirical findings. To achieve this objective, a detailed and rigorous research methodology is designed and reported in chapter 4. The choices in different research parameters are discussed in detailed and justified through sources in literature and rationale. In chapter 5, the DSD constructs are abstractly confirmed through findings from 3 pilot focus group discussions in which 14 SFS personnel participated (section 5.2). The issue questions are accordingly adjusted based on the findings in focus group discussions. After that, four case studies are conducted in which 32 in-depth narrative interviews are used to generate narratives and discussions about the specific real service cases. The narratives are also complemented with the service visualisations and document reviews to enhance the validity of findings. The research participants were the service personnel, placed in positions which enabled them to have interactions with other service co-creating personnel, customers and aiding parties. The narrative discourse analysis method is used to analyse the narrative discourses within Nvivo 9 software. In the analysis, empirical patterns of narratives and discussions are reduced, segregated, summarised and matched with the theoretical propositions/constructs of the DSD. The gaps between theory and practice are evaluated and meaningful conclusions are drawn about each DSD construct. Seven DSD constructs are confirmed and further extended

within four cases separately analysed in chapter 5. Four case studies are used to establish a repeated chain of evidence, which enhances the validity of findings through triangulation (Yin, 2003 and 2009). These in-depth four individual case analyses are reported in sections 5.3.2 to 5.3.5.

The fourth and final objective of this study was to further extend and theorise the findings through the development of post-empirical and extended model. For this objective, four cases are cross-synthesised and discussed within the context of the wider literature (chapter 6). Selected discourses from the four case studies are discussed within the relevant threads in literature to abstract the findings. The findings and discussions are then squeezed into a post-empirical DSD. The post-empirical DSD address the knowledge gaps: adaptation process and its conceptualisation within a holistic service-system design. The empirically found constructs have established new planned design typology (PDT). PDT shows how the planned designs provide a room for adaptation through different blends of planned SFS models, varieties (list, range and negative) and core and peripheral modules. More importantly, a novel deferred adaptation process (DAP) is conceptualised through empirical constructs and their synthesis with extant literature. DAP completes in six stages: appearance of emergence locale, information diffusion, knowledge diffusion, indexation, specifics' evaluation and deferred design – enactment of adaptation or migration.

7.3 Contributions to Theory

Every piece of academic research is expected to make knowledge contributions in terms of new theoretical and empirical insights (Phillips and Pugh, 2010). These contributions can be in the form of extending the background and focal theories, applying these theories into distinct and new fields and contexts or applying them through new methodologies. Table 7.1 summarises the core theoretical contributions claimed by this research through the development, evaluation and theorisation of a novel DSD model. Each of these contributions is discussed afterwards.

Theory/Field	Contributions of this research
Service systems and its design theory **(i.e. SDL and service ecosystem theory)**	The DSD model, which addresses the knowledge gaps within current service-system design literature: Adaptation process and its conceptualisation within a service-system design. Evaluating the service-system design constructs in a new type of service: SFS. This establishes the originality because SFS literature is rarely synthesised with generic service-system design literature Bringing empirical evidence from a developing country context: Pakistan. This establishes the originality of data theory for generic service-system design literature
Design theory **(i.e. TODA)**	Empirical evidence for TODA from a new type of system: service-system to which TODA was not applied before. Expansion in TODA through an empirically based planned design typology (PDT). Expansion in TODA through an empirically based deferred adaptation process (DAP)
***Shariah* finance service models**	Complementing the current Islamic jurisprudence and economics perspectives with a service-system design perspective Service co-creation within the SFS system. Adaptation process within the SFS-system design.
Service visualisation (i.e. service blueprint)	Expansion in service blueprint and using it as an additional data collection and analysis method.

Table 7.1: Theoretical contributions

7.3.1 Contributions to Service Systems and its Design Theory

Firstly, this study primarily contributes to the service system and its design theory by proposing a theoretically and empirically based DSD model. DSD advances our understanding of a service-system design by showing how a planned design (service package) enables adaptation through a planned design typology (PDT). More importantly, how the service co-creators follow a novel deferred-adaptation-process (DAP) to attain the desired adaptation or migrate off the scene. In-depth discussions on these contributions are made through synthesis of empirical findings and current literature in chapter 6, section 6.2 and 6.3. Through these new findings, the service co-creators can design a service system that can better meet and acclimate to specific environments. The leading academics in service research argue that the current service systems are, like natural ecosystems, self-adjusting and adapting (e.g., Maglio *et al.*, 2009; Mars, Bronstein and Lusch, 2012; Pareigis, Echeverri and Edvardsson, 2012; Vargo and Lusch, 2011).

Adaptation to its environment is crucial for value creation and thus the survivability and well-being of service systems (Vargo, Maglio and Akaka, 2008). Morelli (2006) and Sangiorgi (2012) suggested developing new models, frameworks and methods to uncover the service-system's complexity and its adaptiveness. Vargo and Lusch (2011, pp. 185–186), while arguing about the service co-creating networks, maintained that the current discussions on service co-creating networks "lacks a critical characteristic of systems, which are dynamic and potentially self-adjusting and thus simultaneously functioning and reconfiguring themselves". In a recent presentation the leading service researcher, Professor Robert F. Lusch at University of Arizona, said that we can clearly see a shift from old and rigid hierarchal command and control structures and long term strategic planning to a very flexible, adaptive, sense and response and collaborative type of service organisations (Lusch, 2013). The proposed DSD forward these scholarly thoughts by conceptualising a holistic adaptable service-system design.

Secondly, this research contributes to the service system and its design theory in terms of the originality of contextual theory. This study brings empirical evidence from a new and emerging service sector (i.e., SFS). The SFS literature is rarely synthesised with the contemporary service debates such as service dominant logic and service ecosystem debates (e.g. Lusch and Vergo, 2011). The literature suggests that generic service literatures are synthesised with the specific literatures from health services (Stickley *et al.*, 2007; Perish, 2012), conventional financial services (Tomake, 2002), project services (Sangiorgi, 2004 and 2008), transport services (Mager, 2009) and design consultancies (Han, 2010). Service-system design research is new requires further evidence from diverse fields (Mager, 2009).

Thirdly, this research contributes to the service-system and its design theory because it evaluates the service concept in a developing country's context – Pakistan. The current evolutionary framework for the regulation of SFS in Pakistan (e.g. SBP, 2008) has provided a well-timed research opportunity to bring an evidence for the current theoretical debates about adaptation and evolution within service-system design theory. Service theory is primarily developed from the practices within Western world mainly in Germany and Britain (Han, 2010). In practice, the service design consultancies (e.g., Engine, www.enginegroup.co.uk; Livework, www.liveworkstudio.co.uk) and networks (e.g., service design network, www.service-design-network.org) based in London and Köln, respectively. There appears to be an obvious gap in developing service-system theory from evidences from developing and Eastern countries, including Pakistan.

7.3.2 Contributions to Theory of Deferred Action

The research has adopted two design constructs from the organisation and system design TODA (Patel, 2006, 2009 and 2012). The TODA is previously applied to organisations and information system design (Dron, 2005; Elliman and Eatock, 2005; Patel, Eldabi and Khan, 2010; Ramrattan and Patel, 2010). Nyame-Asimah (2013) and Nyame-Asimah and Patel (2010) used the TODA to conceptualise the transformation in knowledge systems within a hospital context. Patel, Eldabi and Khan (2009) said that the TODA requires to be extended into new organisations and system designs' contexts. Patel (2012) maintained that this theory can be further developed through empirical evidence in other contexts. This research has three implications for the TODA.

Firstly, this research has extended the theoretical abstraction of the TODA by applying and evaluating it within the service-system's contexts. From the service perspective, a service system is theoretically a more abstract conceptualisation of a system than an information system to which this theory was previously applied. An information system is an integral part of the service system, as today the banking service-system heavily relies on information systems. This use of the TODA in this research has enhanced its theoretical power and its analytic generalisation to a relatively distinct and abstract system design. This approach of using the TODA in a relatively distinct system design field agrees with the approaches in recent TODA-based PhD theses (Ramrattan, 2010; Nyame-Asimah, 2013). Both these successful PhD research studies claimed knowledge contributions by applying the TODA into educational web systems and learning process transformation within hospital system. This present research has applied the TODA into a conceptual adaptation and its embedment with a holistic system design, within a specific service-system context – SFS. This approach is in line with scientific norms of evaluating theories in multiple theoretical and empirical contexts to generate new knowledge. This knowledge comes in the form of enhancing the empirical bases of the theory and also enhances the analytic generalisation and theoretical power of concepts (Yin, 2003).

Secondly, the DSD further extends the generic constructs of the TODA (i.e. planned and deferred actions) and thus enhance the knowledge about adaptable-systems-designs. The research has empirically found a PDT further enhances the conceptualisation of the planned action construct of the TODA. The PDT shows that the actual planned actions vary for various parameters of the system and thus create room for a system's adaptation for the contextual service co-creators. Within PDT, the

first type of planned design is the static list of events to be followed during the actual service creation. The second type is the planned varieties, which allow the local agents within practice environments to select a specific variety for a design parameter. List, range and negative varieties are found which shows a variety of varieties – a meta-level variety. The list and range varieties need specifications of actual service parameters within the designed lists or ranges. A negative variety requires indexing of actual parameters with the planned negative varieties to ensure that the actual parameters do not occur; if the environment forces a negative element to occur then the agents migrate away from the system (do not create a service). The third type of planned design is the independent modules. These modules are contextually added and deducted by the local service creators to create tailored services.

Thirdly, this research contributes to the TODA through an empirically found deferred adaptation process (DAP). The TODA argues that in response to emergent environments, the implementers of planned designs take deferred and contextual actions to adapt a system (Patel, 2010; Ramrattan, 2010; Nyame-Asimah, 2013). However, no further detail is given related to the actual adaptation process. Knowing this process is specifically important for holistic conceptualisation of adaptable system and its design. This research has empirically excavated the construct of *emergence and corresponding deferred action* and found a six-step adaptation process. These six steps are emergence locale, information diffusion, knowledge diffusion, indexation, specifics' evaluation, and enactment of adaptation or migration.

These contributions to the TODA agree with Eisenhardt (1989) and Yin (2012) who argued that within a case study setting, a researcher benefits from past literature and empirical data and uses his own imagination to build incrementally more powerful theories and thus extends the boundaries of human knowledge.

7.3.3 Contributions to *Shariah* Finance Service (SFS) Models

The current *Shariah* finance service models primarily based on Islamic economics and jurisprudence (e.g., Ahmed, 2011a; Ayub, 2008; Iqbal and Mirakhor, 2008; Usmani, 2002b). As a result, an SFS models give considerable weight to designing the financial and physical assets' transactions. These models are in essence *Shariah*-compliant economic and financial models and do not justify the term of financial *service* models because they provide little consideration to the intangible service co-creation interactions and experiences. This research has significant implications for SFS theory

because it attempts to establish a service-system perspective that can complement the current economic and jurisprudence perspectives. With the support of service-system literature and empirical evidence within SFS, this research challenges the *sufficiency* of the current SFS models in two areas: service co-creation and adaptation to specific operational environments.

Firstly, this research argues that finance organisations, customers and aiding parties are the co-creators of the service and value (benefits). This finding agrees with the current service studies such as SDL (Vargo and Lusch, 2008a; Vargo, Lusch, Morgan, 2006), UST (Sampson and Froehle, 2006; Sampson, 2010, 2011) and the service ecosystem debate (Chandler and Vargo, 2011; Mars, Bronstein and Lusch, 2012; Pareigis, Echeverri and Edvardsson, 2012; Vargo, 2013). The SFS still use a product perspective, which considers SFS as product of financial institutions alone. In particular, SFS models do not provide enough detail about the aiding parties' contributions with some exceptions such as goods suppliers within *Bai* models and customer contributions within *Shirkah* models (Usmani, 2002a; Iqbal and Mirakhor, 2008; Ahmed, 2011a; Ayub, 2008). However, there is less detail related to the contributions of contextual aiding parties such as visa system and interbank ATM networks (e.g., Onelink in Pakistan). SFS models consider each relationship between the service creators in isolation and do not conceptualise a holistic view of the service cocreating network conceptualisation (e.g., Maglio *et al.*, 2009; Sampson, 2012).

The lack of service co-creation conceptualisation limits the SFS model's applicability because a service package cannot be designed by applying a single SFS model because not a single model defines all the service processes within multiple entities integrating to complete a single service case. The practitioners are therefore found to combine multiple SFS models to create a single service package. For leasing autos, the service creators combine *Bai*, *Ijarah* and *Takaful*. *Bai* and *Takaful* models are used to integrate aiding parties such as the supplier of the vehicle and *Takaful* operator and *Ijarah* is used to integrate the customers. There are also further service co-creator activities not covered by the theoretical models but followed within practice. Examples within an auto lease scenario can be the contributions of the auto registration department, auto evaluator, auto carriage company, customer credit and identity evaluators and an interbank network, etc. The DSD provides a holistic perspective of the service co-creator community, which includes the service organisation, customer and aiding parties.

Secondly, the SFS models do not offer designs for the emergence (novel patterns) within specific environments. SFS models prescribe static temporal steps to be followed to remain compliant with or based on *Shariah* (e.g., Iqbal and Mirakhor, 2008; Jackson-Moore, 2009; ObaidUllah, 2005; Usmani, 2002a). Since the actual service-system adapts during the interactions of multiple systems in multiple contextual environments (Vargo and Lusch, 2011), the design models need to have room for this adaptation in the specific context/environment within the rules' threshold (including *Shariah*). The service co-creators experience a service through dynamic touchpoints and interactions within systems (Parker and Heapy, 2006; Shostack, 1982). The service system adapts within these detailed interactions for which the SFS models remain silent. Ahmed (2006) also said that the documentation for a service product should have spaces to be filled with the contextual details so to adapt them to the specific transactions' contexts. The DSD has empirically found how the SFS designs create a room for adaptation through PDT and how the situated service creators follow a novel six-step process, DAP, to realise the adaptation. In some cases the service creators migrate off or do not create the service, particularly when the situation going against the *Shariah*. This happens because rules, particularly *Shariah,* are a core value proposition and prominent control mechanism within an SFS-system.

These findings provoke new researchable thoughts. Though this study does not explain a method for interpreting *Shariah* for emergent matters (a task that can be perform by a qualified Islamic jurist through Islamic jurisprudence principles), but it does describes how a matter (e.g., a service) becomes emergent within specific SFS cases. This knowledge can provide insights for the *Shariah* scholars to conceptualise adaptation within a service system, which matters for the application of Islamic juridical principles such as *Ijmah*, *Qiyas* and *Istihsan*. These principles are widely used for interpreting *Shariah* rules and issuing verdicts for the emergent social matters. In the Islamic juridical principal of *Qiyas*, such emergent matter is called *Far* – a new case or situation (Hasan, 1986). Currently there is substantial juridical literature on how the *Shariah* scholars derive rules for the emergent matters (e.g., Hasan, 1986; Kamali, 1996 and 2006) but little is known about how the matter in itself became emergent. This research has empirically found a six-step process which explains how an SFS-system becomes emergent. Any future research which combines a DSD model and the juridical principles such as *Qiyas* can open new debates for designing adaptable SFS-systems based on both contemporary service-system design theory as well as *Shariah,* which is the core of SFS.

7.3.4 Contributions to Research Method: Extension in Service Blueprint

This research also makes a contribution in terms of extending the well-known service blueprinting model (SBM) and its use as an additional data-collection and analysis method. SBM was developed by Shostack (1982). SBM is discussed in chapter 2, section 2.2.4 (a). The fundamental premise in SBM is the division of service processes through a line of visibility, which divides the service steps into the categories of *visible-to-customer* and *not-visible-to-customer* (Sampson and Froehle, 2006). This research has contributed to the SBM by adding a grid (like a spreadsheet) to the SBM and then using the extended SBM successfully in the four cases[1]. This grid has the following two advantages.

Firstly, the grid enabled the SBM to assign specific column numbers and to visualise each service episode within a single column. Thus, all episodes within a service process can now be represented as individually analysable units. The conventional SBM does not provide such an episodes-separating system through columns, because it only has five horizontal lines separating the actions of customer, front office, back office and supporting system (e.g., Bitner, Ostrom and Morgan, 2008). Through contribution of this research, researchers and practitioners can now effectively locate (number) the planned and emergent episodes if the extended SBM is used to visualise and analyse the real service stories.

Secondly, the researchers and practitioners can now separate each individual role within a service system. The actions of each participant can separately be sketched and, thus, can effectively be designed and communicated to those who apply the designs. The crossing point of service episodes (columns) and roles (rows) creates unique traceable cells (the contribution of each participant within each episode). Such a detailed tracing system can now illustrate who will participate in which and in how many episodes. The conventional SBM randomly puts all the roles into three categories; i.e. customer's actions, personnel's actions and supporting parties' actions, and does not provide the mechanism to illustrate such in-depth detail of a service

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[1] *For the contribution to service blueprint, I must acknowledge the help of Gohar Saleem Parvaiz (my colleague, a PhD student, who also worked in an Islamic leasing company in Pakistan. After adaptation to the blueprint we, in detail, discussed the implications of changes and have also blueprinted a real Ijarah lease service in which he was involved. After that successful evaluation of adaptation, the blueprint is used in the data collection and analysis. This information is provided with the consent of Gohar.*

system. This research has successfully used this extended SBM within four case studies (chapter 5, sections 5.3.1 (i), 5.3.2 (i), 5.3.3 (i), 5.3.4 (i)) as a data-collection and analysis tool.

The addition of the grid to SBM also has a disadvantage. It is now not convenient to place text within the boxes describing the service actions (unless it is visualised on very large page). This research has, therefore, built a separate table where each row of the table describes each episode, visualised as a column within SBM illustration (chapter 5, sections 5.3.1 (i), 5.3.2 (i), 5.3.3 (i), 5.3.4 (i)). This solution to the problem also allowed the researcher to describe each episode in greater detail, which would not have been possible in the conventional SBM, with the limited room in boxes representing the service episodes.

7.4 Implications for Practice

Along with theoretical contributions, an academic research is expected to have practical relevance and utility (Van-Aken, 2004 and 2005). Practical relevance is one of the research quality criteria used in this research along with the conventional validity and reliability. Implication is "the effect that an action or decision will have on something else in the future" (Cambridge Dictionaries Online, 2013b)

More precisely, an implication is "the implicit conclusion that can be drawn from something … a likely consequence … the action or state of being implicated" (Concise Oxford English Dictionary, 2011, p. 715). This research mainly has implications for service- and SFS-system-design practice as summarised in Table 7.2. Afterwards each of these implications is discussed separately.

General Service and its design practices	SFS and its design practices
a. Planned design typology and its use	**a.** DSD as support service practice framework for the current evolutionary regulatory regime in SFS
b. Enactment of DAP	**b.** Service orientation within SFS-systems
c. Establishment of service and value co-creation networks	**c.** SFS expansion into new geographical environments through DAP
d. Developing dual personas and roles	**d.** Planned design typology and *Shariah* compliance in practice
e. Typology of resources and usufructs	**e.** DSD and *Shariah* interpretations for emergence
f. Hierarchy of rules and distributed control	**f.** Risks and adaptation
g. Specifications of value propositions	
h. Organisation culture and adaptation process	

Table 7.2: Practice implications

7.4.1 Implications for Service and its Design Practice

The DSD explains a detailed service-system design and its adaptation process within service practices. The DSD can be interpreted as a strategy for designing sustainable and adaptable service-systems and service packages. This section derives eight practice implications for general service-system and its design practices:

a. **Planned design typology and its use:** The first step towards designing an adaptable system in practice would be to train the service designers for the types of planned designs (packages) that they can develop. The DSD-based planned models, varieties (list, range, negative) and modules can be used as a training toolkit to show how different parameters of a service package can be designed so that it leave a room for adaptation . Similarly, the actual service co-creators within different contexts (e.g., branch level employees) can be trained about what types of planned designs they can receive and what corresponding deferred actions to each type of planned design they can take to adapt a service package for a specific case. These four cases provide enough practical narratives to build the required training toolkits, one for the central designers (those who develop the planned designs) and one for the service creators (those who apply of planned designs).

b. **Enactment of DAP:** After deciding about the types of planned designs and their applications, the organisation can establish a DAP (emergent locale, information diffusion, knowledge diffusion, indexation and specifics' evaluations, and realisation of adaptation or migration). Networks can be established based on the

DAP. The information and knowledge networks can work like blood vessels in a natural organism, which make it responsive to the environment. These network systems within a service system can transport the necessary knowledge about the emergent environments and can enable the relevant service creators to instantly index these with planned design typology and make the necessary deferred adaptations and migrations. An emergence control manager can on its own be a specialised post managing the DAP network. This enactment can enhance the service-system's capability of responding into to specific contexts.

c. **Establishment of service and value-co-creation networks:** The service organisations would need to change their strategic view of service being produced by the organisation. Rather, they should consider themselves as the partner with the customer and aiding parties as proposed by the SDL (Vargo and Lusch, 2011) and empirically validated within the DSD model. With this collaborative thinking, a service package (planned design) would look incomplete without the inputs from the co-creating customer and aiding parties. The product perspective primarily takes inputs from different functional departments of the organisation offering the service. However, in reality a complete service package requires synchronisation with the aiding parties' and customers' inputs. To design holistic service packages, the service organisation's touchpoints with the customer and aiding parties should be clearly pointed out and the other co-creators' contributions should be shown as part of the holistic service design. For instance, in Pakistan's interbank network, the visa system, the phone companies, the utilities and the banks are integrated to design holistic service packages (Onelink, 2013). This integration of the service co-creators can not only improve the core service package (e.g., an auto lease) but can also improve the aiding service modules (e.g., *Takaful*, tracker service).

d. **Developing dual personas for role segregation:** After establishing the service co-creating strategy and network, there would be a need to develop dual personas for all the involved participants within a service system. The term dual persona is used to refer to the duality of a role as partially specified and partially deferred. Each persona, the role of an actor, can have specified actions and also leave room for the deferred actions to be designed locally (within the threshold of the rules). An illustrated dual persona (may be animated or recorded) can be used as training toolkit to show the service creators how they can establish this duality in their particular roles and actions. For instance, within the *Ijarah* scenario, the abstract

format of the *Ijarah* proposal should be specified by the central designers at head offices, whereas the actual detail of the proposal will then be designed locally by the Ijarah manager at branch level. The actions in these two tasks can be shown as specified and deferred actions.

e. **Typology of resources and usufructs:** The service creators should be introduced to the typology resources, the expertise and competencies, financial and physical/technological resources. They can be trained how to create heterogeneous services through a contextual mix of these resources. A service package should specify the possible mixes through PDT. Service creators can also be trained how to incorporate new resources and new combinations of existing resources following DAP. The steps of DAP can be interpreted as the emergent need of a resource, receiving and sharing information and knowledge about the new requirements, indexing the new requirements with available resources combinations and applying the appropriate expertise to determine the inclusion or exclusion of a new resources.

f. **Hierarchy of rules and distributed control:** The service co-creators should be introduced to the hierarchy of rules and distributed control in a service system. A dual persona should explain the dos and don'ts of ethical standards (e.g., *Shariah*), the regulators' rules, the organisational rules, and aiding parties' and customers' rules. Each service creator can be trained with DAP to incorporate emergent rules (e.g., new statutory orders). This will involve the same DAP (emergence, information diffusion, knowledge diffusion, indexation, specifics' evaluation, and enactment of adaptation or migration) only the object to which the system adapts will be a specific emergent rule. Within planned designs, the service designers can only specify the rules available at the time of designing. The service packages can be adapted to any future rules using DAP. More importantly, the service designers normally are more aware of the rules of the service organisation and its regulators. They normally have less knowledge about the rules of all the customers and aiding parties with whom they will co-create services in thousands of service encounters. Adaptation to the rules of other contextual service co-creators can be enacted through DAP.

g. **Specifications of value propositions:** The service co-creators can be introduced to the types of value propositions specified within a service package (e.g., a saving need) and how they can incorporate new value propositions or new attributes of a

value using DAP. The challenge in a service system is that the value is not embedded within a service package (which is just a set of documents prescribing the plan to be enacted in future); the value emerges within service-creation context and use. As a result, if a value within a particular case has some unique attributes it does impact upon the planned service package. The local service creators therefore need to describe the object or value in each service case in detail to decide about the actual service design to be adapted and applied in order to realise the value. Based on DAP, the service creators can incorporate the emergent value or its attributes.

h. **Organisation culture and adaptation:** The proposed deferred adaptation process can work better if the service creators establish a culture of collaboration. In such a culture, the service organisation would allow personnel to adapt to the requirements of other collaborating parties (e.g., customer and aiding parties) who co-create a service with the organisation. The culture of imposing static and centralised structures on others' work will not be effective in today's service organisations because the actual service emerges as a result of collaborative efforts of organisation, customer and aiding parties.

7.4.2 Implications for Shariah Finance Service and its Design Practice

The seven implications and recommendations discussed in the previous section can also apply to an SFS. However, there are five contextual implications for SFS, which can better be interpreted if they are discussed within SFS regulatory frameworks. Currently there are two types of SFS frameworks: a revolutionary framework and an evolutionary framework (SBP, 2008). A revolutionary framework prefers to apply centrally-designed structures to the overall industry to be followed firmly to establish a planned system. It is more like a prescriptive framework, which has been adopted by Pakistan in the early 1980s (SBP, 2008). Pakistan was not successful with this framework in its first attempt to *Islamise* the economy (SBP, 2008 and 2010). In contrast, the evolutionary framework is a system that transforms itself gradually through insights from experiences from actual practice (SBP, 2008). Since 2003, Pakistan has also adopted an evolutionary framework to re-establish the SFS sector after having a dissatisfactory outcome of the revolutionary regime (Saeed, 2012).

Within the current evolutionary framework an SFS institution continuously adapts their packages to create Islamically acceptable services to tackle the constant innovations, compete in local and global markets and remain compliant with *Shariah* (Moin, 2008).

The SFS design strategies also vary and fit within the broad SFS regulatory frameworks. In the UAE and Bahrain the process is entirely left to the financial institutions. In Sudan, the government provides some guidelines (SBP, 2010). In the UK the Financial Services Authority (FSA) treats the SFS as similar to conventional finance with no special favours or obstacles (Ainley *et al.*, 2007). SBP's strategy in Pakistan is unique and is based on the experience it gained from the earlier launch of Islamic finance (SBP, 2010).

The SFS regulator in Pakistan has now recognised the importance of having dynamic frameworks (SBP, 2008). It allows banks to design services that meet the diversified needs of the markets and remain compliant with *Shariah* (SBP, 2008). The regulator issue minimum prudential regulations and model contracts through the Islamic banking department and the rest of the service design process lies with the product development departments and their *Shariah* advisors in financial institutions.

The DSD can be used to develop a service-system adaptation framework at the service-creation level. The following six specific implications are relevant for the service practitioners within an evolutionary SFS framework:

a. **The DSD traces the SFS evolution at the service-creation level**: The DSD and DAP are developed in the context and can meet the practical needs of the SFS market in Pakistan and those contexts in which the evolutionary frameworks are in practice. The current evolutionary framework is grounded on *evolution or emergence*. Along with minimal planned structures (planned designs) the current evolutionary framework allows the industry to emerge or evolve in itself within the minimum current *Shariah* guidance (controlled emergence). The DSD and the embedded PDT and DAP describe how such a framework can be supported at the actual service-creation level.

    Evolution emerges within concrete service practice points and abstractly moves towards strategic level frameworks of organisations and then more abstract to regulatory frameworks. This is a bottom to top approach with minimal top to bottom control and guidance mechanism. The DSD incorporates the minimum top to bottom structure through PDT and a robust bottom to top structure through DAP .DAP explains a six-step pragmatic process about how a planned design can be grounded in actual and contextual service practices. SBP has established an evolutionary regulatory framework that requires sub-frameworks at the very

concrete service-creation level to channel the evolution towards the top. Currently the evolutionary framework only decentralises service design up to the product development departments and centrally located *Shariah* scholars and boards. PDT and DAP can be used to trace and establish evolution (adaptation) at the service-creation level, which is the actual source of emergence or evolution. This enactment can prove to be a significant improvement within current SFS infrastructure.

PDT and DAP can further be researched and developed and can be used to trace and embed evolution (emergence) within SFS-systems. DAP can be used for industry transformation as follows: locating the emergent service requirements within a society; detailed information diffusion about this emergence locale (through four channels: oral, observations, documents and information systems); comprehending and diffusing knowledge within the industry; indexing the planned design (existing framework) with emergent requirements; evaluating the specifics of emergence locale and enactment of adaptation or migration (evolution within a macro system). In this research the evidence only supports adaptation at the individual service case level. However, it is logically and theoretically sound enough to be taken further to macro systems such as overall service organisations and industry adaptations. Service systems contain the construct of migration, which means that when the emergent environment does not adhere to the minimum rule threshold or does not remain viable, then the system will leave or migrate from the situations (to avoid operational and *Shariah* non-compliance risks).

Service orientation within SFS-systems: The DSD complements SFS models (economic and jurisprudence perspectives) with a service perspective. The SFS models consider a service design as a static plan (number of steps to be followed) providing limited room for strategic manoeuvring during actual service co-creation among multiple agents. SFS managers should not just think of service designs as a static list of actions to be followed but should also incorporate the actual service detail which occurs underneath and are not described by the planned design. For instance, in *Ijarah* auto lease, the *Ijarah* planned design describes a service step: *bank purchases a vehicle from a supplier*. There are further underlying service steps such as inquiry of the vehicle's price, courier transfers, quotations and third parties evaluating the vehicles and many other contextual service steps such as coordinating the customer and supplier and arranging a meeting between the

supplier and evaluator. The managers can be train with DAP to incorporate this detail in actual service creation moments.

b. **SFS expansion to new geographical environments through DAP:** The SFS is an emergent service-system that is growing in new regions such as European markets (Ainley *et al.*, 2007). Callum McCarthy, the chairman of the FSA, explicitly stated that the FSA has an interest in Islamic finance because of social (Muslim community inclusion within financial system) and economic (keeping the UK as a hub of diversified financial services) reasons (McCarthy, 2006). The DSD explains a process through which existing planned designs can be adapted for new and emergent environments. The pragmatic DAP can be further researched and developed to enable such adaptation to new geographical contexts. This process can be executed by locating the emergent geographical place; diffusing detailed information about the context and the service requirements; comprehending the information and diffusing the new knowledge within the service system; indexation of the requirements (of a new environment) with current planned designs (models, varieties, modules); and applying the relevant expertise to adapt or migrate the planned design for a new environment.

c. **Planned design typology and *Shariah* compliance in practice:** This research has proposed a planned design typology (PDT), which included planned models, varieties (list, range and negative) and modules. Currently, *Shariah* scholars ensure *Shariah* compliance by having greater emphasis on developing the Islamic economic models. However, they rarely pay any attention to the variations within actual services that occur due to types of varieties and combinations of various modules. Taking an example of two case scenarios and applying the same planned design can lead to different consequences related to *Shariah* compliance, due to the planned design varieties (Table 7.3).

Planned design parameters	Service for customer A	Service for customer B
Type of customer	A bilinear person who owns many cars	A self-employed shopkeeper
Financial position	Cash flows multiple times more than required for this lease	Weak but fulfils the requirements
Type of vehicle	Luxury branded car with good-looking design that may not be efficient	An efficient and economic car
Purpose/value proposition	To use the vehicle for leisure activities	To use the car as a taxi to support his family income

Table 7.3: Planned design typology and *Shariah* compliance

The planned designs provide varieties within parameters such as type of customer, financial position, type of vehicles to be financed and value. With the same service package, two services, A and B, could emerge differently in the eyes of *Shariah*. Case A may be *Shariah*-compliant in structure and substance but does not serve any *Shariah* objective such as supporting poor. Case B is more preferable in terms of *Shariah* compliance as it fulfils the *Shariah* objective of supporting the poor. Ahmed (2011a) termed these *Shariah*-compliant and *Shariah*-based services respectively based on the criteria of whether they serve necessities, complementary needs or luxuries. Using Ahmed's criteria, case A is merely a *Shariah*-compliant service and case B is *Shariah*-based. The point to make is that even with the same planned design the actual service can come up differently in terms of *Shariah* compliance. Current literature and practical efforts are more focused towards establishing *Shariah* compliance within service packages, whereas the actual *Shariah* compliance or non-compliance occurs in practice. This happens because the designer treats the service packages as products and thinks of the value as being intrinsic to a service packages (design). However, in reality the value arise during the actual service creation moments where the service creators apply the designs. *Shariah* compliance or non-compliance in service can therefore only be determined during these critical actual service creation moments. So, some *Shariah* compliance tasks require decentralisation and deferment to actual service-creation points.

d. **The DSD and *Shariah* interpretations for emergence:** The DSD does not provide any path for how *Shariah* could be interpreted for an emergent service-system.

However, it does explain how a system becomes emergent, which has significant implications for interpreting the *Shariah* rulings. *Shariah* scholars use Islamic jurisprudence principles of *Ijmah, Qiyas, Istihsan* and others to derive rulings from the *Nus – Quran* and *Sunnah* (Hasan, 1986; Kamali, 1991; Hannan, 2004). For example in *Qiyas* (juridical analogy) a qualified *Shariah* jurist uses analytical reasoning to interpret *Shariah* rulings for an emergent matter. The *Qiyas* process starts with the understanding of the emergent situation called *Far*. An emergent (adapted) service system is actually a type of *Far*. The *Shariah* jurist identifies emergent matter then looks for the root case in *Nus,* upon which he makes an analogy. Such a root case is called *Asl* and then the jurist looks for the *Shariah* rule for the *Asl* called *Hukum-ul-Asl*. A jurist does this by identifying a common cause or *Illah* within *Far* and *Asl* and thus extends a prevailing rule to the emergent matter called *Hum-al-Far* (Hasan, 1986).

Currently the *Shariah* scholars mainly focus on whether to interpret *Shariah* based on compliance in structure of objectives; little discussion exists on how an object to which *Shariah* is applied becomes emergent and what implications this adaptation will have on *Shariah* compliance. If a *Shariah* rule is interpreted based on structure or objectives, the real service can still have a *Shariah* non-compliance risk due to the continuous adaptations within contextual services.

If DAP is combined with Islamic jurisprudence, it can bring real results in the development of more robust practical frameworks and *Shariah*-compliant mechanisms. However, there is a need for further research in this line of thinking. This research has only described how a service system becomes emergent: its synchronisation with *Shariah* juridical principles requires further insights. Developing such adaptable devices is required within *Shariah* financial practice. In Pakistan, the governor of the central bank explicitly stated that there is a need for "a sound *Shariah* compliance mechanism which is comprehensive, flexible, multi-layered and acceptable locally and internationally" (SBP, 2008, p. 1). This research can be a step towards the development of such practical and dynamic mechanisms if they are studied within the perspective of Islamic jurisprudence.

e. **Risks and adaptation:** Financial services in particular are more exposed to different kinds of risks because of the greater involvement of customers' money. Risk, in the service context, is the possibility that the service participants will not achieve their set or promised objectives. For example the possibility that service

creators may not earn the targeted profit in a *Musharikah.* The adaptation process has implication for the risk profile of service packages in particular and service organisations at large. Firstly, the embedment of adaptation process suggested by this research can enhance the risk, if the service creators at operational level are allowed to adapt to the emergent risky adventures, which can cause losses. Secondly, the same adaptation can reduce risk if it is used to adapt the service system for the purpose of avoiding any emergent threats or remove some existing weaknesses. To minimise the risk, this research suggests that the practitioners need to strengthen migration construct included in the DSD model. The migration construct states that, when the service creators find the emergent environment not viable for the service (e.g., risky) they then migrate off the system or they do not create the service. The construct of migration is empirically found which suggest that the practitioners take into account the risk while adapting to emergent situations. Adaptation and migration are the two properties of natural systems (organisms) in the ecosystems to avoid the dangers (risks), so can also work effectively for the service system, as found in the four cases.

7.5 Limitations and Further Research

Every piece of research has and put some limitations on different research parameters. This research has limitations related to its generalisability, sampling, research methods, model evaluation and application. These limitations point towards further potential avenues of research. Some future research directions such as studying the DAP within the *Shariah* framework have already been highlighted within the relevant sections.

Firstly, the DSD is an abstract model that requires further evidence from other diverse service areas such as hotel services, airline services and medical services. SFS-system is a specific theoretical context for this research, which limits the generalisability of the DSD. However, the DSD is theoretically grounded in both general service literature and SFS literature, which enhances its analytic generalisability through a detailed background theory and rigorous multiple case study design. Practically, the service organisations have variations in structures and management hierarchies and they are very diverse in terms of tangible and intangible resources (Sampson, 2010; Shostack, 1982). These diverse service-systems and organisations therefore provide great opportunities for further development of the DSD through theoretical and empirical studies.

Secondly, the data sample is based on a single country, Pakistan and four SFS organisations are selected as cases. The SFS service practices could vary in other regions because there are different regulatory frameworks and *Shariah* schools of thought. Further, data from countries such as Bahrain, Malaysia and Indonesia can enhance the generalisability of the DSD because the SFS is prominent in these countries. Contexts such as the UK would also provide an attractive location for further research as most of the conventional banks in the UK have started SFS and faced problems in adapting to the emergent SFS (Ainley *et al.,* 2007). These adaptation problems can be resolved by further researching the DSD particularly within evolutionary regulatory frameworks.

Thirdly, the DSD conceptualises that a planned design is develop by the personnel in headoffices and then the personnel at the operational level apply the designs to create service. On some occasions, it is difficult to separate who plans and who applies the design because there are different levels of planning and applications. Even at the very concrete level, local personnel who are in direct interaction with customers can be seen to plan some service parts that they want to repeat in future. This research considers the actual first-hand designers (product development department or team) as central designers and the rest of the personnel who adapt, apply and add further planning to actually create the service are considered as service creators. There is a need for further research to crystallise the *centrality and locality* of the designers. Based on this criteria, a typology of the designers can be developed, which can provide further insights for service system designing. This will also further clarify the concentration of planning and deferment at each managerial level.

Fourthly, this research is primarily based on the data collected from the front-office personnel who have narrated the real service stories. These stories also cover the actual service contributions made by the back-office personnel, customers and aiding parties. A more comprehensive picture of the phenomenon can be obtained by interviewing the back-office personnel (within head offices), customers and aiding parties. This extension in participants will further explore the co-creation concept because the customer and the aiding parties will potentially be more informed about their contributions to the service system. The SFS personnel interviewed naturally had a limited view of the overall service because they were not involved in all of the service encounters in the cases they narrated and discussed. However, the selected personnel were the most active contributors in the narrated service cases. They were directly in

touch with back-office personnel, customers and aiding parties. In future research, developing a single unit case study and interviewing multiple personnel, customers and aiding parties within the same service case can enhance the depth in the concept; however, such a proposed research design will reduce the necessary abstraction level required for understanding of the phenomenon. So, an optimum abstraction and concreteness is maintained in this research. The narrative format of the interviews provides enough concrete detail about the services and they also make it possible to study multiple cases to obtain the necessary theoretical abstractions.

Fifthly, the DAP is found to be a systematic service-system adaptation process. The DAP describes each step of the adaptation process, such as locating emergence, information diffusion, knowledge diffusion, indexation, specifics' evaluation and deferred adaptation or migration. This process actually indicates the existence of some underlying micro systems such as the knowledge diffusion system. This research does not provide any in-depth detail of such micro system or network. However, this research opens a dimension for future research to reveal the actual knowledge diffusion networks within service systems, from the system's adaptation perspective. In this respect, grounding the research on knowledge diffusion networks studies can further develop this construct. For example Braganza, Hackney and Tanudjojo (2007) developed theoretical propositions for the effective development of knowledge-based infrastructure. Such knowledge-based infrastructure can enhance the organisation's sensitivity to the environment. Braganza, Hackney and Tanudjojo (2007) also identified 30 attributes which are important for the creation, mobilisation and diffusion of organisational knowledge. Other studies such as Singh (2005), Droege and Hoobler (2003) and Haldin-Herrgard (2000) also provide meaningful insights to further develop the DAP.

Sixthly, the case study strategy is normally accused of having limited statistical generalisability (Denscombe, 2010). However, this strategy is effective for analytic generalisability if multiple cases are selected (Yin, 2003). This research adopted a multiple embedded case study design, which is the most rigorous case study design compared to its alternatives of single case study, single embedded case study and multiple case study (Yin, 2003 and 2009). Its argumentation direction within the cases was both deductive (confirming the DSD) as well as inductive (extending the DSD). This approach is more pragmatic because the method of selection was primarily based

on the research question and problem. As a result, this research has validated as well as extended the focal theories.

Finally, this research came up with the DSD model, which conceptualises an *adaptable service-system design*. The DSD is developed, evaluated and theorised based on literature and narratives of real service experiences. However, it is not applied to the real service-systems. This research extends the theory to a practicable model. However, further research can develop methods and instantiations through and for the DSD to actually develop the adaptable service-systems. For instance, the DSD can further be studied within in Islamic juridical principles to develop practicable devices for designing adaptable SFS-systems.

7.6 Chapter Summary

In this chapter the research is concluded by summarising the research findings, theoretical and practical contributions, limitations and recommendations for future research.

The outcomes of the four research objectives are discussed in detail. The outcomes of the literature reviews are shown as the theoretical constructs and the identification and justification of knowledge gaps. The development of a pre-empirical DSD is discussed as outcome of the second objective. The outcome to third objective is shown as the evaluation of DSD and findings through analysis of pilot focus group discussions and individual cases. The outcome to the fourth objective is discussed the development of post-empirical DSD through cross-case synthesis discussion.

The key theoretical and practical contributions of this research are discussed. DSD advances the contemporary service-dominant logic and service-ecosystem debates in service-system design theory by describing in detail the adaptation process within a service ecosystem and suggesting a design strategy for it. The research also brings evidence from a new service context, SFS in Pakistan, which enhances the originality of data theory. DSD expends the TODA through empirical planned design typology and a deferred adaptation process. Importantly, DSD complements the current economics and Islamic jurisprudence perspectives of SFS with a service-system perspective, which can open a new research direction within contextual SFS theory related to service co-creation and the underlying adaptation process. This research also claims a methodological contribution in terms of extending and using the conventional service blueprinting (visualisation) as an additional data-collection and analysis tool.

Implications for service practice and SFS practice are outlined and discussed in detail. Seven research limitations and consequent future research directions are highlighted.

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APPENDIX 1: PUBLICATIONS AND PRESENTATIONS STEMED FROM THIS RESEARCH (SYMPOSIUMS, WORKSHOPS, CONFERENCES AND JOURNALS)

Some elements of this thesis appeared in the papers produced from this PhD research and presented/published in conferences, symposiums, workshops, and journals as listed bellow:

- Ullah, K. and Patel, N.V. (2010) 'Designing *Shariah*-compliant financial services: Addressing context for persistent adaptation (migration)', *4th Asian Business Research Conference*, Dhaka, Bangladesh, 23–24 December 2010.

- Ullah, K. and Patel, N.V. (2011a) 'Addressing emergent context of *Shariah*-compliant financial services: A service designing construct', *International Review of Business Research Papers*, 7(3), pp. 81–93.

- Ullah, K. and Patel, N.V. (2011b) 'Information systems for adaptive *Shariah*-compliant financial services: Defining adaptation constructs', *Proceedings of European, Mediterranean & Middle Eastern Conference on Information Systems, (EMCIS2011),* Athens, Greece, 30–31 May 2011.

- Ullah, K. and Patel, N.V. (2011c) 'Adaptation in emergent context: A silent innovation in *Shariah*-compliant financial services', *Proceeding of British Academy of Management Conference (BAM2011)*, Aston University, Birmingham, 13–15 September 2011.

- Ullah, K. and Patel, N.V. (2012) 'Conceptualizing service systems modularity as deferred service systems', *3rd International Service Modularity Workshop,* Brunel University, London, 19–20 January 2012.

- Ullah, K. (2013) 'Designing *Shariah* finance service system as deferred service system', *Doctoral Symposium*, Brunel Business School, Brunel University, London, 20–21 March 2013.

- Ullah, K. (2012) 'Designing adaptable service systems: case of islamic finance services', *Doctoral Symposium, Brunel Business School, Brunel University*, London, 27–28 March 2012.

- Ullah, K. (2011a) 'Designing adaptive *Shariah*-compliant financial services', *Doctoral Symposium*, Brunel Business School, Brunel University, London, 28–29 March 2011.

  Ullah, K. (2011b) 'Understanding the emergent service practices bysynthesizing the concepts of context, emergence and service practice', *Business and Economics Review* (IMSciences), 3 (1), pp. 29–38.

APPENDIX 2: STATEMENT OF ETHICS APPROVAL

Head of Brunel Business School
Professor Zahir Irani

Brunel
UNIVERSITY
WEST LONDON

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Middlesex, UB8 3PH, UK
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Brunel Business School
Research Ethics Committee

9th November 2010

STATEMENT OF ETHICS APPROVAL

Proposer: Karim Ullah

Title: Designing Self Adaptive Shariah Complaint Financial Services

The school's research ethics committee has considered the proposal recently
submitted by you. Acting under delegated authority, the committee is satisfied that
there is no objection on ethical grounds to the proposed study. Approval is given on
the understanding that you will adhere to the terms agreed with participants and to
inform the committee of any change of plans in relations to the information provided
in the application form.

Please ensure that you maintain you points of contact as there needs to be 10 contact
points per year; annual enrolment and the annual review of progress count as two.
Therefore there will have to be a minimum of 8 formally recorded supervision
meetings with a maximum of 6 weeks between formal supervisory meetings.

In exceptional cases (such as collecting Data away from the University).These
'meetings' may be carried out by e-mail correspondence but in such cases there
should be an exchange of e-mails; the student should provide written evidence of the
progress they are making and the supervisor should provide a critical assessment of
the work submitted. The e-mails will have to be printed and saved with the report
form.

Yours sincerely,

Dr. Tillal Eldabi
Chair, Research Ethics Committee
BBS

APPENDIX 3: PARTICIPANTS INFORMATION AND CONSENT SHEETS

Participant Information and Consent Cheet (Focus Group Discussions)

Brunel
UNIVERSITY
WEST LONDON

Brunel Business School
Research Ethics
Participant Information Sheet

1. Title of Research: Designing Adaptive Shariah Compliant Financial Services

2. Researcher: Student **Karim Ullah** on PhD Management Studies Research, Brunel Business School, Brunel University

3. Contact Email: Karim.Ullah@brunel.ac.uk

4. Purpose of the research: This Study is aim to develop a service designing model which could facilitate regulators, financial institutions and researchers to design and developed financial Services compliant to shariah law and changing markets

5. What is involved: You are requested to take part in the focus group discussion among 3-4 participants on questions/discussions points provided.

6. Voluntary nature of participation and confidentiality.

The Focus group discussion will be electrically recorded in audio format and then will be transformed into anonymous textual data. The textual transformation and analysis of the data will be coded and your personal information will not be traceable. The textual data and analysis based on data will only be part of the thesis. Participation in this research is completely at your own choice. You are free to ask any question regarding the research and can leave any time in between the discussion.

7. Your voluntary participation implies implicit consent.

Your participation in the focus group will implying that you are satisfied with the above information and agree to participate in the research.

Thank you for your participation

Karim Ullah

Participant Information and Consent Sheet (Interviews and Visualisations)

Brunel
UNIVERSITY
WEST LONDON

Brunel Business School
Research Ethics

Participant Information Sheet

1. Title of Research:

Designing Adaptable Shariah Compliant Financial Services

2. Researcher:

Student Karim Ullah on PhD Management Studies Research, Brunel Business School, Brunel University

3. Contact Email:

Karim.Ullah@brunel.ac.uk

4. Purpose of the research:

This research is aimed to understand the designing and practice of shariah compliant financial services.

5. What is involved?

This research inquiry requests for your voluntary participation in in-depth narrative interviews and visualization of service (drawing the service steps on A3 page with colour markers) of the service you deals with. Interview and visualization both will take about 40-60 min. The interview will be recorded in audio format and will be anonymously transcribed for analysis purpose. The data findings and reporting will not indicate any information that lead to the identity of interviewees or organisations.

6. Voluntary nature of participation and confidentiality:

The interview, service visualisation, and documents reviews are fully voluntary research activities. You can refuse to participate at any time and in any part of this inquiry.

The personal information on the top of the questionnaire i.e. age, gender, designation, experience, and industry are the optional information.

7. Your voluntary participation implies your *implicit consent*:
Your participation in the interview implies that you are satisfied with the above information and agree to participate in the research.

Thank you for your participation in the research

Karim Ullah

APPENDIX 4: FOCUS GROUP PARTICIPANTS PROFILES AND ISSUE QUESTIONS

Focus Group 1 (Four participants)

Karim Ullah

Karim.Ullah@brunel.ac.uk

Thank you for accepting to participate in the focus group discussion. The aim of this discussion is to understand the design and practice of *Shariah* finance services and also to see whether the guiding questions accurately and completely generate the required data or not.

Focus Group 1 (Four Participants)

Codes	Participants	SFS Sector
P1	Manager business development	Leasing Leasing company
P2	Marketing manager	Islamic Leasing company
P3	Senior officer operations	Islamic commercial bank
P4	Senior officer operations	Islamic commercial bank
Discussion Points (Issue questions)		
Q1	How the service designing and service practice occurs in SFS organisations?	
Q2	Who participates in service creation?	
Q3	What role does each participant assume in the service creation?	
Q4	What resources do the service creators use in the service creation?	
Q5	What rules do the service creators apply during the service creation?	
Q6	For what values and benefits do the service participants create the service?	

Focus Group 2 (Five Participants)

Codes	Participants	SFS Sector
P5	Branch manager	Islamic Commercial Bank
P6	Incharge *Ijarah*	Islamic Commercial Bank
P7	Incharge *Murabahah*	Islamic Commercial Bank
P8	Regional sales manager	Islamic Commercial Bank
P9	Sales manager	Islamic Mutual Fund
Discussion points (issue questions)		
Q1	How the service designing and service practice occurs in SFS organisations?	
Q2	Who participates in service creation?	
Q3	What role does each participant assume in the service creation?	
Q4	What resources do the service creators use in the service creation?	
Q5	What rules do the service creators apply during the service creation?	
Q6	For what values and benefits do the service participants create the service?	

Focus Group 3 (Five Participants)

Codes	Participants	SFS Sector
P10	Personal banking officer	Islamic Commercial Bank
P11	Senior manager operations	Islamic Commercial Bank
P12	Branch manager	Islamic Commercial Bank
P13	Operations officer	Islamic Commercial Bank
P14	Operations officer	Islamic Commercial Bank
Discussion points (issue questions)		
Q1	How the service designing and service practice occurs in SFS organisations?	
Q2	Who participates in service creation?	
Q3	What role does each participant assume in the service creation?	
Q4	What resources do the service creators use in the service creation?	
Q5	What rules do the service creators apply during the service creation?	
Q6	For what values and benefits do the service participants create the service?	

APPENDIX 5: IN-DEPTH NARRATIVE INTERVIEW GUIDE AND PARTICIPANTS PROFILES

In-Depth Narrative Interviews Guide (issue) Questions

Karim Ullah

Karim.Ullah@brunel.ac.uk

Thank you for accepting to participate in the interview. The aim of this interview is to understand the *design and practice* of *Shariah* finance services within your organisation. The questions are specific to each service offering. Therefore, to answer the questions, it is requested to keep in mind one service package and a recent story of a related real service case.

Personal Information				
Age (optional)	**Experience (Years)**	**Service Specialisation**	**Current Job Title and Description**	**Sectors of Experience**
Questions and Discussions Points				
Q1	Please explain a service package you are dealing with. How did your organisation design and practice this service package?			
Q2	Please narrate a complete story of an *actual service case,* which is created based on the service package you explained in question one.			
Q3	In the service case you narrated, who participated in service creation?			
Q4	In the service you narrated, what are the core roles and actions performed by different participants?			
Q5	In the service you narrated, what resources are used?			
Q6	In the service you narrated, what rules are applied?			
Q7	In the service you narrated, what benefits or values are created?			

Case Organisations

Case Study 1: Islamic Commercial Bank (Number of Participants = 11)

Code	Participant's Role	Specialization	Experience History
P15	Branch manager	Managing branch level services	35 years of experience in credit and management of banking services
P16	Operations manager	Managing branch level operations	21 years of experience in depository, investment and branch operations
P17	*Ijarah* manager	Auto financing	6.5 years of experience in financing
P18	*Ijarah* officer	Auto financing	4.5years of experience as credit manager.
P19	*Ijarah* officer	Auto financing	3 years of experience in consumer financing, including 1.5 years in auto financing.
P20	Investments manager	Term depositing	8 years of experience in long term investments services
P21	Investments officer	Term depositing	1.5 years of experience in long term investments services.
P22	Accounts opening manager	Accounts opening and depository services	5 years of experience in personal banking and depository services.
P23	Accounts opening officer	Accounts opening and depository services	3 years of experience in depository services
P24	*Murabahah* manager	Working capital financing	15 years of experience in working capital and SME financing services
P25	*Murabahah* officer	Working capital financing	2.5 years of experience in working capital financing.

Case II: Islamic Life Takaful (Number of Participants = 9)

| Code	Participant Role	Specialization	Experience History
P26	*Takaful* consultant	Advising and designing *takaful* plans	4.5 Years of experience in insurance and *Takaful*
P27	*Takaful* consultant	Advising and designing *takaful* plans	6 Years of experience in insurance and *Takaful*
P28	*Takaful* consultant	Advising and designing *takaful* plans	6 Years of experience in insurance and *Takaful*
P29	*Takaful* consultant	Advising and designing *takaful* plans	3 Years of experience in insurance and *Takaful*
P30	Operations manager	Managing *takaful* operations	16 Years of experience in insurance and *Takaful* operations
P31	*Takaful* consultant	Advising and design *takaful* plans	3 Years of experience in insurance and *Takaful*
P32	*Takaful* group manager	Managing group *takaful*	8 years of experience in insurance and *Takaful*
P33	*Takaful* group manager	Managing group *takaful*	5.5 years of experience in *Takaful* consultancy.
P34	Regional head	Managing overall *takaful* operation at regional level	18 years of experience in insurance and *Takaful*

Case III: Islamic Leasing Service (Number of Participants = 8)

Code	Participant Role	Specialization	Experience History
P35	Lease manager *(Ijarah)*	Lease and lease-back	7 Years of experience in leasing
P36	Lease officer *(Ijarah)*	Lease and lease-back	5 Years of experience in leasing
P37	Credit manager *(Musharikah/Mudarabah)*	Financing working capital and fixed assets	11 Years of experience in financing working capital and fixed assets
P38	Credit officer *(Musharikah/Mudarabah)*	Financing working capital and fixed assets	9 Years of experience in financing working capital and fixed assets
P39	Credit officer *(Musharikah/Mudarabah)*	Financing working capital and fixed assets	8.5 Years of experience in financing working capital and fixed assets
P40	Auto lease officer *(Ijarah)*	Lease and lease-Back	3 Years of experience in leasing and lease back
P41	Credit officer *(Musharikah/Mudarabah)*	Financing working capital and fixed assets	6.5 Years of experience in financing working capital and fixed assets
P42	Investment manager	Long term advisory services	4 Years of experience long term investment services

Case IV: Islamic Mutual Funds (Number of Participants = 4)

Code	Participant Role	Specialization	Experience History
P43	Investment Consultant	Investment advisory and portfolio design	12.5 Years of experience in investment advisory and designing stocks portfolios
P44	Investment Consultant	Investment advisory and portfolio design	5 Years of experience in investment advisory and designing stocks portfolios
P45	Investment Consultant	Investment advisory and portfolio design	5 Years of experience in investment advisory and designing stocks portfolios
P46	Investment Consultant	Investment advisory and portfolio design	9 Years of experience in investment advisory and designing stocks portfolios

APPENDIX 6: SERVICE VISUALISATION SHEETS AND STICKY PAGES
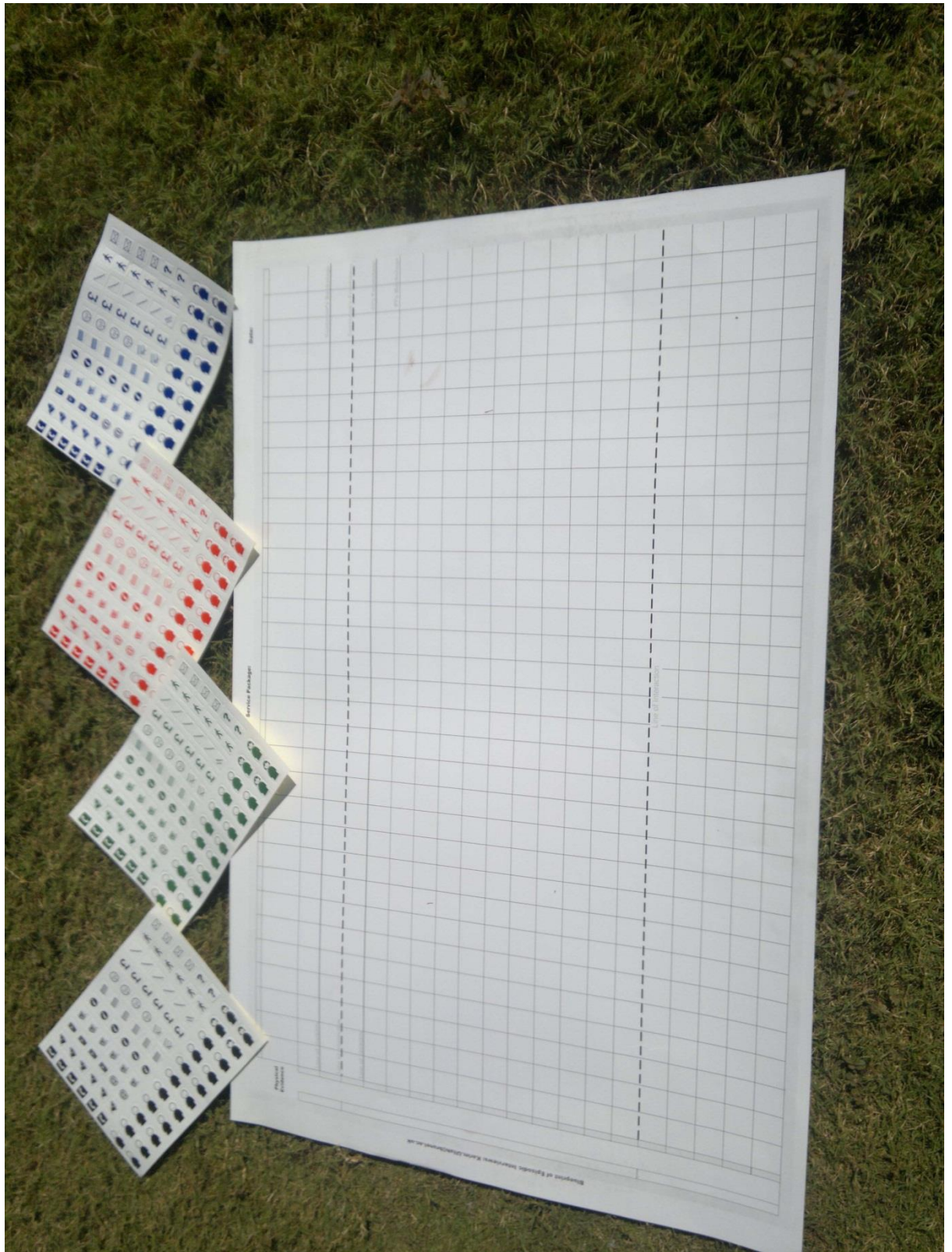
APPENDIX 7: SAMPLE TRANSCRIPTS

1

Participant code: P22

Organisation: ICB

Participant Job Title: Account opening officer

Expertise: Accounting opening and depository services

…

Question 2: Please narrate a complete story of an *actual service case,* which is created based on the service package you explained in question one?

This was a current account for an individual salaried person. The service started when the customer approached the bank. Most of our depository customers come through reference. This customer is employed and since his employer maintains all its accounts with us, so he has also referred by the organization which is a pharmaceutical company. /Bank's name/ credit their salaries. So the employee came to branch, he then showed his service card to me. He told me that I came from the /employer company's name/ and our accounts are with you, and I want to open an account with you for salary receipt. He was also having his job offer letter with the employer; I also took his national identity card (NIC) to make the verification from the /name of the national identity registration authority/.

I sent the copy to the head office where the operation officer verified the same by getting the allowed access to /name of the national identity registration authority/. This process took two days and I also told to the customer to come after two days with all the required documents. I hand over the NIC copy to the Accounts manager he made entry into the online system. I told the customer to come after two days, with employer's offer letter, service card and the next of kin ID card. He came after two days. I read the offer letter in detail and his name was written in front, designation, the salary and the allowances that were offered by the employer. During this time the operating officer at headquarter has sent his verification of identity card to our accounts manager, which I collected when the customer came after two days. I also filled the account opening form and customer due diligence (CDD) form, know your customer (KYC) form and change in signature form.

I also filled the change in signature form because the customer new signature was different from the one on his NIC. We do not fill this form if the signature remains the same. Since, there was very much time between this service and when he made the NIC. I also got specimen signatures on the card. In the CDD we try to accommodate the information related to the diligence of the customer, that he alone will be the beneficiary of the account and his account cannot be used by other parties. In information gathering event we try to identify how much the customer is politically exposed, so to evaluate the chances of misuse of the account, secondly we speculate the volume of transactions that the customer is expected to make. In KYC, we see the customer's nature of business, sources of funds etc.

Probe: Who design these forms?

We receive all these formats from headquarter and accordingly specify these for the customer they comes with the model contracts form central bank. The Islamic banking department of the [central bank name] develops these model contracts, which contain the rules to be followed in different services. These are also available on central bank's website. These formats and model contracts are built as per central bank policy; we attach these with bank opening form. These are not build by the SBP it only provide the policy, then the head office actually design the format, and we add further detail to that by putting the customer information. When the account opening gets completes then we made file of these documents. After filling all these forms I took the customer with me to and we met the operations officer. The operation manager has generated an account number for the customer. The operation manager maintains a register of computer generated account numbers and assigned the numbers as per the sequence of the customers applying for accounts.

Then the customer went away. After two days he come back with latter of thanks sent to him by the headquarter. Then I told him to deposit some money in the account. As the new customer deposited money with the cashier. His account was opened but not yet authorised for transaction. Authorisation from operations managers takes about 20 to 25minutes after opening the account. The customer was in hurry, so the cashier manually recorded the transaction and later transferred the amount to the customer account. We do such favours to customer within rules to establish long term relationships with them as you know the depositors can stay with you for life particularly salaries accounts like this one. So the cash is taken, at the end of each day

the extra cash goes to the local office of central bank through / the cash carrying company's name/ where the central bank credits ours bank account.

The operation officer made entry in a free set software format /name of software/ so the account is generated. After that the operation manager authorized the same. The cashier checked the account for two three times after third time he found the account is opened. Then he made the transaction. The transaction cannot be made without opening the account. After making this transaction the account opening officer has drawn two letters of thanks on the name of the customer. The system has the option of letter of thanks, after the system input, the system prepares the letter. The accounts manager then printed the letters of thanks and he then kept one copy with himself, signed the other and kept that for sending to the customer address. At evening of the same day the /currier company name/ currier guy came and collects the letter with others for posting to the customer's home address.

The purpose of this letter of thanks is to confirm the account holder address; we called it letter of thanks in other words that is the verification of the permanent address they give in the forms. This is the indication that the address is correct and not blacklisted, we basically tell to the customer about the letter when he leaves after opening the account. With the letter of thanks, we again went to gather to the operation officer to request for the cheque book. The operation officers basically have the cheque books received from the head office. The operation manager then stamp serial numbers and account number and name of the customer on the cheque books and kept the record of that which himself and handover the cheque book to me. The cheque book and others documents are called the treasury stationary sent to us by the head office on demand…

2

Participant Code: <u>P17</u>

Organization: <u>ICB</u>

Participant Job Title: <u>*Ijarah* Manager</u>

Expertise: <u>Auto leasing</u>

…

Question 2: Please narrate a complete story of an *actual service case,* which is created based on the service package you explained in question one?

Okay I will take out the file. I will tell you the whole story and we will omit the personnel information/…/this service started when the customer came for the auto *Ijarah*, the customer came to the branch but first we basically communicate the offering through help line. So the customer has first called to the helpline where the customer service person has provided the contact address and number of this regional office. The customer then called here and we made telephonic conversation. After hello and hi, he took initial information related the service and then told that he is coming to the branch. This also happen that we visit the customer. In discussion I found that the customer was a doctor by profession. He then next day came himself to the branch for meeting with me. He gave the detail. I will give the print out of that detail to you as well, which includes the brochures, terms and conditions and contracts and different methods of payment. I provided the desired information. Along with that I also provided the criteria. I mean if you are interested in the particular vehicle then this is our criteria, which is need to be met by the customer. He went back and in about four days he completed his formalities.

Probe: May I know these formalities?

Yes we are coming to that. The customer has brought two references, bank statement, salary slip and utility bills. This is the information gathering process through which we can better understand the situation and better serve the customer. He also later signed the signature verification card, this is basically the sign he used in his banking accounts, we take it for the purpose of comparing that with the post-dated cheques he will giving to us after sanctioning the funds. These were the initial documents that I asked the Doctor to bring with himself when he comes next time. He took four days to

collect these documents form the concerned sources like form his employer and his own bank, etc.

In first meetings we only exchanged information, see criteria is discussed. Now there are many types of vehicles and every person has its own need and has its own specific income. In this meeting we see the person who is seeking to lease the vehicle should have a net income at least 3 times greater than the rent of the vehicle. For example if 10 rupees is the rent whatever the vehicle is, so his income should be the 30 rupees. You know that in Pakistan there are many types of vehicles and everybody wants to have vehicle but we look to the affordability of the customer at this moment.

We tailor our offerings in this meeting as per the needs and affordability of the customer. If the customer need and affordability says something else and we talk about other vehicles then this is a waste of time for both of us the customer and the bank. So in the first meeting, whether that is telephonic or through other source, we first ask about the income then we estimate if the customer has that much income, so to know what vehicles comes in his range. So, we then select the good among all. So I just pick that detail and discuss with him. I liked the options and I provided the formalities said above.

Probe: how the case proceeded further?

In the second meeting when he came he brought all the documents, so first we went for the verification of the customer. For that purpose, though I understand that this customer is okay as per my understood but since there is a process to follow. First, I checked the to see that whether the customer is national of Pakistan. The NIC is the document uses for that purpose we did this verification from the /name national identity registration authority/.

Probe: what happened next then?

I did that, I made the file and I had given two weeks' time to the customer, this is your time two weeks at least, in actual it can take more or less time depend and verifications case to case. The customer went and I took the verification from /name of the national identity registration authority/, and I got the credit information report from central bank to see whether customer has due loan to other banks or not. If the loan is taken then we see its expenses and adjust that in the calculation and we less that expenses less from the income and then calculate the spread and also see that the customer has not

defaulted somewhere else. There is competition but the banks agree if a customer defaulted in one bank, the other bank withdraw its hand from the case and reject that. The central bank also put penalty on issue if funds are given to a defaulter. If the central bank is giving you a report that the record of a particular customer is not right then in case of late payments or default, the central bank can impose penalty if this information is disregarded. There are others verifications as well. I also called data check report, from a local credit rating agency. This is now applicable in the new cases. After getting these reports, I made an approval sheet, which is available in the *Ijarah* documentation. We entered the clients detail into the same format. This system made a proposal sheet like this /computer screen is shown by the participant/.

Probe: who make requests for all these verifications and who pay for that?

For verifications we made a request to /city name/ regional office and then they have license and access to the /name of the national identity registration authority/ data base. A request to the /name of the credit information provider/ is also made by the /city name/ office section specific to this/…/. For data check, the license is available with our/city name/ office (headoffice) they did this data check for us they make payment to the agency and then they draw the report and then send to us. We also do third party verification of where he lives and where he do job, for that the employment letter and residential addresses are used. We outsource these to /company name/Pakistan, a third party company, which is on the panel of our bank. We phoned them and provide the data. They make verifications…

3

Participant code: <u>P28</u>

Organization: <u>ILT</u>

Participant Job Title: <u>Takaful consultant</u>

Expertise: <u>Advising and designing takaful plans</u>

…

Question3: In the service case you narrated, who participated in the service creation?

You mean the people?

Yes, and also the organisations.

Many like the customer, the regional office, head office, and the doctors who conducted medicals. Similarly the dispatchers, the PN is involved, everyone have its own role to play. The photocopiers, similarly the seniors are involved, everybody in this office is involved in this service. Similarly, the underwriting department who evaluates the applications and calls medicals etc., which depend on the family history, customer contributions, and his protections and so on and age. Like even if a client is a young person, but his father died because of heart attack, then this is possible that the underwriting department calls for the medical. Similarly on the weight as well like with height 6, and 100kg. That is fine but if a person has a height of 5.4" and weight is 100kg then they may call the medical of the customer. Like if a person is diabetic, if the client is called for urine test, it seem a normal test, but the doctors say that this test could have symptoms of about 500 diseases. So many people or involved, the underwriter, the dispatcher, the currier, the receptionist and the seniors help us.

Question4: In the service you narrated, what are the core roles and actions performed by these different participants?

The doctors are doing the medicals evaluation. The dispatcher is responsible for carrying cash to the bank and dispatching the post to the courier. We market the services and bring clients and prepare their documents. The receptionist is responsible for receiving the client and then guiding him towards the relevant *Takaful* consultant. The PN is responsible for bringing tea and food for us and client and making photocopies of the NICs and other documents. The branch manager and other seniors

help us in big and difficult cases. If the quarries are unique, similarly they also view the completed cases. Sometime if I realized that I cannot handle a particular client so the group manager or the branch manager helps.

Question5: In the service you narrated, what resources are used?

Resources you mean the things?

Yes, anything which has value or utility and that is used in the service.

In resources we use computers and the softwares, which help us to design the plans. Similarly, we use the laptop; we show *Takaful* plans to the client. We normally contact customers via phone, fax and email. We use public as well as private transport. But this depends. From the company side in my salary, they provide fuel allowance; my allowance is PKR3000 per month. Thus varies for every staff member. Some do having their own vehicles, some use public taxis and sub uses public buses.

Question6: In the service you narrated, what rules are applied?

There are many rules apply. These are mentioned in the proposal forms like it is a rule to bring the NIC, all these are written in the forms in the conditions sections. An important rule is that the customers have 14 days pre look period in which if they do not happy with the policy they can claim back their contribution and wind up the policy. These include rules related to the nominations, the investments the contributions, information disclosures, and the claims, at maturity who will be the beneficiaries etc. All these are according to the takaful rules 2005, which are developed by the /regulator's name/.

On the investment side, the rules of *Mudarabah* are applied. Two parties, one is invested *rub-ul-mal* and other is *Mudarib*, the manager. We do have *Shariah* scholars, mainly at headoffice and also now at branch, who explain the *Shariah* compliance of policies to customer which increase their confidence. Profit and loss is distributed as per *Mudarabah* contract. The *Shariah* rules are applied and monitored by the head office as well when we send the file. For all the services we have a policy manual.

Question7: In the service you narrated, what benefits or values are created?

Takaful is a protection. So the financial protection compliant to *Shariah* is the primary objective and benefit that our organization creates. Like conventional insurance do provide financial protection, but not compliant to *Shariah*, so the *takaful* is that

financial protection but with additional value for customer is that this complies with their belief system which is *Shariah*. Three main components which make insurance non-compliant is the inclusion of *Riba* (interest), *Gharar*, (uncertainty), *Mysir* (gambling), which are removed in the *Takaful* so, this creates additional value for the customer and I discuss these with every customer. Ninety per cent of the customers come because the service complies with their religious beliefs. They avoid conventional insurance because of *Riba* and *Gharar.*

The secondary objective is doing investments and earning but of course in *Shariah* compliant sectors and earning along with financial protection, both *Shariah* compliant. The protection is created through *waqf* model which is endowment and mutual assistance and the earning is made through investments in sectors compliant to *Shariah*. So we do assistance. From *Waqf*, like if any mishap happened to one member he or she will be compensated from the *Waqf*, as also this is very common in our society when one person dies, the family is compensated from the fund created by the local community who contribute to the fund normally monthly. We do all this through the concept of *Tabarru* which means brotherhood. We try to re-establish that Islamic brotherhood like in one of our customer's father died. We purchased *Surah Yasin* and visited their house and encouraged the people to recite that for the success of the customer's father in hereafter. Everybody is connected it is not just finance and protections. *Takaful* literally means, mutual guarantee and everybody agrees that they will help each other in bad times as recommended by *Shariah….*

4

Participant code: P26

Organization: ILT

Participant Job Title: Takaful Consultant

Expertise: Advising and designing takaful plans

…

Question1: Please explain a service package you are dealing with. How did your organisation design and practice this service package?

In the name of Allah the most gracious and the most merciful. The service we are going to discuss is basically called the /package brand name/ takaful, it is one of the most running service in /organisation name/. In this service we deal with the saving and investment needs of the customer and family protection needs of the customer. It is actually designed in headoffice. The actuarial and investment departments at the head office together design the packages. They combine *Mudarabah*, *Wikalah* and *Waqf* with aging and investments mechanisms to design different solutions for the family protection and investment. They then send the service structure to *Shariah* board. The *Shariah* board study it using *Shariah* principles. They approve and send it to different branches with the *Shariah* approval certificates and full documentation. At branch level, we then apply these service structures to provide the services. The documents also come with special spreadsheets and broachers in which the service is explained with an example. With that example they explain each and everything. Like up to what maturities with minimum and maximum the policies can be developed and the possible coverage amounts etc. They also send us the presenters in which all the detail of the services is available. Through present we actually receive a complete presentation of the service and also use this to explain the service design to the customer.

Probe: Who receive the service design at branch?

The head office sends the product documents through registered mail to the operations manager, who is basically the representative of the head office. He then sends these to all the managers and the managers then distribute these to the field force. Then the zonal head ask for a meeting and in detail discuss the new service with all concerned staff in the branch. He introduces the product that this is newly launched product, with the approval of *Shariah* board and he explains the main feature of the product. He

explains the specification, if than anybody has any problem in the product then they talk to the operations manager about this.

The field force is basically the interaction staff with the customer. They study the service design in very much detail to understand each and every aspect of the service. So, to enable themselves to better understand the service because they will then explain these to the customers in the market. This is important because if the sales force don't know something it badly impact the organization image, as they directly answer the questions that.

Probe: Does the service design just include documents?

No, they make changes within all the information systems to fit for the new service and also they send. The system provides the details like, the purpose of the *takaful* plan. Like if the customer is interested in pension building, we then design a plan for him keeping in view the purpose of the service. Like if in his remaining duration of service is 20 years. So, we will take the service maturity period 20 years and if 15 years then we will design the service for 15 years. Because for continuing the service it will require regular income, which he or she will then not receive so we design the service for the period in which he can contribute to his benefits.

Similarly the customer themselves suggest the time period of the plan keeping in view certain events in his her life like one customer may want a 10 year plan, because he would need money for his child higher education, he planned to start after ten years. So the actual service catered with the objectives of customers and their needs. So all the features varies with the need. The benefits are given in listed format, mainly categorized as saving and investment and protection. The customer do not tell straightforward his need, but will tell you his own circumstances and you the will need to explain him his precise need in financial terms and suggest services for him.

Takaful and insurance are basically future concept, based on the current scenario of the customer; we need to explain to the customer what productions and investments are actually the needs of the customer. You need to get focus on that scenario, because it clicks when you actually explain the service design in his own scenario. Stating the maturity as per his needs, adding the benefits as per his age, physical health and suggest investment options as per his earning and saving capacity. We try to increases the maturity so that the customer actually sees face value at the maturity. If the customer is

interested in saving and you offer him short-term plan then he will not be interested. Actually see the saving and earning. Our service basically catered to long term needs.

Probe: When the service starts?

The actual service starts when we normally visit the customer and present find out his needs. For which we use financial questionnaire. Which reflect what service he should need? We fill that during the discussions with him about his occupations earning and family needs. We understand his income and saving etc. then we ask when will he or she be actually needed this money back for any need. And try to find the need for which that money is needed like for education of child, for financing a house, for health or for marriage etc. he or she will tell you that.

We then asked him about his income, expenses and saving which we note with ourselves. These things basically indicate the present and future financial position of the potential customer and we compare his needs with these financial positions. Like if the customer is in position to earn about PKR 50000 in and spend PKR40000 saving PKR10000 a month or PKR120000 in a year. That does not mean that you will suggest him a plan of PKR120000. But the client will not give you the complete saving to you a feasible plan could be between PKR40000 to PKR50000, so that the customer could save a portion of the saving with us, in such cases there is a high change of getting customer and then you explain each and every thing in this scenario. We then ask him what investment ideas you have. We make calculations with him that if you invest that money in ten years this will reach to this amount and if you did this with us then this amount will become up to this amount. Here we need very focus discussions with client…

 5

Participant code: <u>P43</u>

Organization: <u>IMF</u>

Participant Job Title: <u>Investment consultant</u>

Expertise: <u>Investment advisory and portfolio design</u>

…

Question: Please explain a service package you are dealing with. How did your organisation design and practice this service package?

This service that we will discuss is originally a type of mutual fund. Basically throughout the world the mutual fund management service is designed based on portfolio management. In Islamic finance we design this *on Wikalat-ul-istimal,* which is built by combining *Wikalah* and *Mudarabah*. One party is *Rab-ul-Mal* and the other is *Mudarib* and similarly one party is the principal and the other is the agent. This product is approved by our *Shariah* advisors and we use this structure to comply with *Shariah*. As a manager invests the money in a joint pool of securities based on customer well, wherever he wants to invest his money. We have variety of investment options all of them are *Shariah* compliant

Probe: just a small question, who has developed these packages?

Our headoffice has product development department which develop these and *Shariah* advisors look to the services that they remain comply with *Shariah*.   The legal department prepare the format of the legal documents. Here we serve the customers we manage their money, within broad categories of capital and money market, from another angle that is debt and equity market, within which we then have the conservative, balanced and aggressive pools. Similarly we have offshore market in which we invest the money. We are providing managerial services to the customer, so we work as *Wakeel* for the customer on agreed fee. All the profit and losses goes to the customer, we are just managerial agents of the customers. The difference between the banking and ours services is that in banking the profit is divided between the bank and the investor in profit earning deposits, but here we only provide service of management. The earnings in bank depend on different products like in euro and local currency accounts the profits will be different. In our case the total profit and losses goes to the customer. We are basically a management company, we provide expert services to the

customer and the customer is the principal and *Rab-ul-mal* or the owner of the money. Through this process we earn money for the customer but importantly *Halal* income according *Shariah*.

Probe: What is the benefit of your organization?

We invest this money for customer, the question of why we do that. Like if everything belongs to customer including the profit and loss, like if the earnings are 10 percent still go to the customers and if the earnings are 30 percent again will to the customer. We charge the management fee on annual bases for the services we provide; in some funds we take front end load, like when the customer enters into the pool we charge an admission fee. In the equity sector/…. /This comes after /competitor organization name/which are Government owned and conventional/…/. We do have *Fatwa* for this that we operate under *Wikalah-ul-Istimal*. All the detail is there in the offering documents each point is explained. That is a complete book.

Question 2: Please narrate a complete story of an *actual service case,* which is created based on the service package you explained in question one?

We have individual as well as corporate cases, here we mostly deal with the individual cases, the big companies like /5 names of the companies are mentioned/ all the banks, they do with head office directly, in most, the /bank's name/ is dealt here. We do not have direct advertisements, normally from customer to customer.

Probe: What was the starting point and first event of this case?

So this case started when two of our customers discussed our service, so one has recommended us the other potential customer. Our existing customer has provided reference of me to the new customer. He referred me that R is there he will guide you in detail. At that point, the customer was not clear that when I am coming to R for what I am coming. The customer comes with blank mind. He just came for the name of Islamic he was not clear what actually be done here, he was looking for high profit and *Shariah* compliance. He came to the branch referred to the existing customer; he said that I want to make this investment. First I explained this how this service different then banking, so that he should not make confusion.

This is important to the customer that we do not issue any cheque book, ATM card, so but is linked to the main account if saving, current and if the accounts are available in other banks, we do have liaison with them as. So this is a non-banking financial service,

which linked to the customer banking account in /a bank's name/ or other bank. The first question I asked the customer that what you want to do with your savings, he said, I need high profit investments, I had this money for 4 years, then I told him that this money will not be in the bank, this money will be invested by the /organization name/ in the head office Karachi, whenever, you need this money back, you have to give a notice of one week, Then I also told him that the investment is unit based, so you will purchase the units of the portfolios, and upon your request the units will be sale out at the prevailing market price.

I told him that previously our organisation has earned provided 30-35 percent return for the customer, but this is not fixed this depend on the market fluctuations. Everything is in units so whatever, we show them the charts that that we pay this much return of units in previous year. These are the previous rate of returns from 2003 to 2011; this shows a loss in the year 2009 as well, reflecting financial crises. We lost 30 percent. In 2010, we again showed the recovery as well in different portfolios. I discussed different options with the customer, like whether we invest in the capital and money market. There are debt and equity markets, within which we then have the conservative, balanced and aggressive fund portfolios. These are different classes of investments based on the risk exposure and expected return. Similarly I discussed with him the nine alternative fund portfolios in which we can invest....

6

Participant Code: <u>P40</u>

Organization: <u>ILS</u>

Participant Job Title: <u>Leasing Manager</u>

Specialization and Experience: <u>Lease and lease back</u>

…

Question1: Please explain a service package you are dealing with. How did your organisation design and practice this service package?

Okay. I basically deal with auto lease which is *Ijarah*. In auto lease in especially for individuals we need some specific documents from clients. These documents contain bank statements CNIC of lessee, last utility bill of the lessee, source of income. But all these documents vary according to the type of customer.

Probe: Can I ask how you know in advance that you will perform these tasks?

Actually every service package explain the responsibilities of every employee and customer and these are mentioned in the policy manual and the offering documents

Probe: Who develop these documents?

These come from the head office.

Question 2 Please narrate a complete story of an *actual service case,* which is created based on the service package you explained in question one?

Okay this case was basically a case of landlord and this landlord has given his property to one of our existing client organization/name of an existing client organization/. So He has taken a lease contract between this client and another existing. Because, the client was receiving more than PKR 100,000 as rent from our existing client. So our existing client has recommended this client for lease.

If a client is introduced by the existing lessee with his or her guarantee, then this boost up our confidence level on the case. The reason is that we do not need to go for that detail investigation. Since this client is recommended by our existing lessee, and the existing client has given his personal guarantee. The personal guarantee is a very important document, because if God forbid if the client fails to repay then the payment should be made by the guarantor, which was the existing client in this case. If the

existing client is recommending him that means that the client is credit worthy, because the guarantor knows he is reliable, else why would he himself take the responsibility then? These two persons one the existing client and the new client must have discuss the *Ijarah* before because they were aware about it.

The new client came to the branch and along with that the existing client has phoned us that he knows this new client and there will be no problem with this new client. The client came and met me and I made calculations for him on his request. He asked for the detail of the auto lease, what will be the rent? For how much time can he get the leasing? And what will be the lease structure? And what will be the terms and conditions?

I provided all the information, saying that these are the terms and conditions and this will be the structure of the facility and I printed out the pretended amortization schedule. Then the client told me that okay I got these information, know tell me what documents should I bring? I told him that you will need to bring CNIC, the bank statement, the house utility bill and the source of income. Since this customer was a landlord, he was not a businessman nor a salaried person, but a landlord. So, rentals were the main source of income for him. One land has been given by the client to our existing client and he also had some houses he had given on rent. These were the two sources of income for him. The client provided proofs of these. To verify his source of income, we told him to bring the rent agreements and the starting agreement that you made for the duration of the rent. These were the information we took from the client.

Probe: Did you help the customer to arrange the documents?

Actually all the documents should be arranged by the customer we can only tell him what documents to bring. But he can easily take for example CNIC was comes from /name of national identity registration authority/, national tax number comes from federal board of revenue. We actually don't know the sources of documents for each customer. Like in this case what happened is that when you are making long term agreement related to property then you register that with sub-registrar. So the lease agreement between this new lessee the old lessee was witnessed by the registrar. Similarly, he was having account in /a Bank's name/, so we asked for bank statement as well and for the registrar's proof. Since, he told us that there are three houses, to confirm it's earning, we ask for his bank statement.

The customer said that he gets PKR 10,000 from each tenant of houses, so does this reflect in the bank statement transactions. So that was to verify the income to reconfirm, what is said by the client. We normally collect guarantor's NIC, source of income, and bank statements. In this case the guarantor was our existing client. We had already made his evaluation in his own case, so we excluded the evaluation of guarantor in this case and did not ask the customer to bring the guarantor's documents. If that was a new entity for us then we would have gone through the same process as we normally go in a normal case

Probe: How the case proceeded then?

He brought these documents handed these over to me. Then I prepared the financial statements from client books.

Probe: Can I ask, from which books?

I mean books of accounts. He was a landlord he was having the accounts but financial statements were not prepared by him. So I developed these for him. Normally if the client is company or firm then chartered account develop these...

7

Participant Code: P30

Organization: ILT

Participant Job Title: Operations manager

Specialization and Experience: *Takaful* operations

…

Question5: In the service you narrated, what resources are used?

We use the computers, the software, but mainly the financial resources of the customer, the assets; we use telephone and mobile service of other companies for completing a particular part of the service. The medical doctors and the curriers complete particular specialized parts of the service. The other parties helping the core parties to speed up or make their own parts of services more effective such as the cellular and phone companies, the photocopiers services, the internet service and the interbank network.

Probe: what resources and facilities they used?

The transportation is use, but this is very informal, the funds are allocated to the field force, they arrange the transportation as per their own convenience. There are different levels, different fuel allowances are given, if a person perform well, he can get fuel allowance increased. What transport to be used during the service, heavily depended on the circumstances in which the travel occurs, the customer vehicles, public and private transport can be used. In the manager salaries, the fuel or convince allowances are included in their salaries. The company provided the vehicles to the employees by taking these on lease from the banks. Apart from these as you can see all the systems and premises are used in the service however it is very difficult to specify that in each case what particular resources are used. In all the cases finance is the core resource.

Question6: In the service you narrated, what rules are applied?

The rules are applied from beginning to the end of the service. Monthly targets are given to the consultants; there are rules and regulations related to these targets. The documentations look to the compliance to the *Shariah* rules, like the client is not to be dealt in wrong way, the amount is accurately reported; no changes are made by the consultant etc., after this confirmation. To ensure that these rules are followed, the compliance department also makes calls to the customer. The first thing they will do is

to call the customer and will ask many questions like from whom he got the policy, how much amount is given, cash or cheque is give, when did he made the signatures for the verifications etc.

Like the consultant himself did not do anything wrong from himself, this is up to the level of the consultant. Similarly, the rules are that there is a specific order of the documents in which the file must be arranged. Similarly a specific file to be used by the *Takaful* consultant and then he must give me a filled in proposal form, valid NIC, customised *Takaful* plan, and filled in financial questionnaire. NIC must be valid, must be signed by the branch head. Like this receipt we cannot give above PKR 50000 in cash, only cheque will be received then, even if a single rupee is above the PKR50000 then we need to take cheque or demand draft etc.

The cash of PKR50000 and below can be accepted in cash. So we do not accept above payment in cash. The actuarial, the NMAD, and the compliance departments apply the *Shariah* and the /regulator's name/ rules. The headoffice provides further detail on the rules for the operations which we apply in service. These rules change, and new rules comes in the form of memos. The concern manager or the sales force, and then distribute these rules among the staff, we show that on notice board as well to inform everyone, to inform that a particular task should be done in this way now onwards.

A branch office, in which I have my post, a branch manual is here. This is a departmental wise manual, which include each and everything, the whole detail is given. Everybody has to follow this in doings. This is department wise, that which department is responsible for what. This shows who to will report to whom and how and all the job descriptions are there. There are rules for administration, for finance in this. This contain departmental wise detail of each and everything, If something or situation arise and it does not exist in this or not clear, then we call to the head office, there are coordinating people from them we clarify the situation.

Question7 In the service you narrated, what benefits or values are created?

At the core, we are trust fund and investment managers, who create benefits for the customers in terms of financial coverage from the trust funds and taking advantage of investment opportunities in the stock markets. So the basic motive is financial profit, and second priority is the social welfare as well. This is the promotion of *Shariah* objective as well; the financial solutions are designed within the principles of *Shariah*. The *Waqf,* upon which the trust fund is based, is the concept of *Shariah*. Where in case

of death the member is compensated through the contributions made by the rest of members. From the client perspective, everyone need protection as well as investment, he got *Shariah* compliant solution for investment and the protection. He looks that the investments are profitable and the coverage are there so he took as they look for the support...

8

Participant Code: P25

Organization: ICB

Participant Job Title: Murabahah (working capital finance) manager

Expertise: Working capital financing

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Question 2 Please narrate a complete story of an *actual service case,* which is created based on the service package you explained in question one?

In this package we deal with corporate, SMEs, and commercial customers for working capital finance. Every category has its own clients corporate has its own clients, the commercial has its own clients and SMEs has its own clients. We first provide guidance to the client to determine the accurate category of the client.

Probe: How the service is started in this case?

This case started when I received a directory form the / the name of a chamber of commerce and industry/. This directory was having the recent businesses activities in the province and these were categorized as manufactures, traders, suppliers of medicine etc. They provided the detail contacts of the clients. So, I used this directory as marketing tool and I enlisted the potential customers. On Monday I decided to go for the food related clients. There were around 45 potential customers which I filtered, for which I has known how much are good potential clients because had work previously in the banks, and then I decided to visit 5 among them. Among these five I will discussed the story of this one customer. From where should I start?

From the first meeting with customer may be good.

Okay, it started when I visited to the customer business premises and found that this customer falls in SME category, which was asking for a limit starts from PKR 1m to PKR 75. Their profile was attractive in the directory. This was a partnership of two brothers; their line of business was general traders. They were dealing in packed food like chips, gold drinks and toffees, tissue papers and other general consumers' goods. During the meeting they told me that we purchase most of these goods from Karachi. The client told me that they are wholesaler they purchase and store the goods in their godowns, and then they were supplying these to the retailers.

They also said that they normally had advance orders so when they receive supply they immediately sell that as per the orders of the retailers. Through this information I understood that this was a good financing opportunity because the customer had a very short and efficient cash cycle. Such a customer attracts the banks, because that is a running customer which normally has less chance of default in the finance because they were dealing in very routine food items which less affected by the crises. That was in my mind and fortunately, he also shown interest in Islamic banking and said from long time I was looking to somebody from Islamic Banking to guide me.

That was a very fruitful meeting both the partners were exist. I also explained to them what is Islamic banking in general and the *Murabahah* of ours bank in particular. They readily convinced because their way of talking has shown that they are very religious. One of the partners said that from the long time we are financing our working capital through interest based banks, but my inner spiritual being is not satisfied. He continued and said that we did not start the Islamic banking because that was not that famous, but now since we have a choice then this banking is our first choice. Even they said irrespective of your rate of profit even if that is higher than the conventional but if it is trade based then we agree to deal with you.

This was a first meeting with a customer where we exchanged information and agreed on different alternative options. For further discussing the operational detail of the service I invited them to come to the bank. On the next day they came to the bank. Then they were so enthusiastic that I arranged a meeting of them with our area manager to show him how clients take interest in the service and how successful we are. There we had some cup of tea and we further discussed the detail of the service. We had also been joined by the branch manager. After that we came back to the seat, I printed out a check list of documents. Since this was a partnership firm, I provided the required list of documents that the customer's firm needed to submit to the bank. These documents included Form H, which is issued by the registrar of firms, the partnership deed, the NIC copies of parties, list of potential buyers, if you already had some loan then their sanction letters. I also provided service brochures and terms and conditions that will apply in the service.

Then I asked what property would you mortgage for the facility, they said in /name of residential area/ they had two houses one was on their mother name and the other on their father name. They said we will mortgage these properties. Then I explained to them how we will actually do a sale transaction to do a trade rather than a simple loan.

They said that to Lahore or Karachi (cities names) they place orders to the manufacturers by paying the amount to them in advance in millions.

Then when they receive the goods they place these in the godowns, then the retailers approach us and we supply these to them. These are their permanent clientele because they are the wholesalers of these food goods. I explained again that 1-6 month *Murabahah* can be made. They are told that they will not receive any cash because the payment will be made directly to the supplier because and we are the first purchaser, then we sell these to you on deferred payment to the customer.

I handed over the checklist of documents to them to start preparing the documents for them next meeting. After some time, the customer has provided the property documents to be mortgaged. I took legal opinion on the property ownership from our independent legal advisor. The legal advisor also mortgaged the property with the registrar of mortgages. We also do valuation of the property; to find out it's worth we also had approved valuators, we send the documents and called them. They send us the property valuation report showing the worth of the property on the day…

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Participant Code: <u>P20</u>

Organization: <u>ICB</u>

Participant Job Title: <u>Investments officer</u>

Expertise: <u>Term depositing</u>

…

Question 2 Please narrate a complete story of an actual service case, which is created based on the service package you explained in question one?

The service as I told you in is called /brand of service package/. So the focus is saving and earning. The service actually starts when the customers visit to the bank. There are walk in customers, customers comes through references and existing customers of other services provide references. The first meeting of customer normally happens with the account opening officer. He guides him about the accounts types and opening procedure. For /brand of service package/ this is compulsory to open a checking account with a specified structure.

Probe: Sorry for interruption, how this service is started?

Okay in this case the first meeting of customer happened with the receptionists, who ask the customer about his need. When the customer said account opening. The PBO, public business officer, who provide the initial information to the customer and guide him to meet with the concern staff for further information. If the customer is for /brand of service package/ then they send that customer to me. The PBO, first ask what kind of account you want to open, i.e. the current, the saving, the fixed etc. they then discuss the income proof of the customer is must to be provided as per [regulator name] regulations. An account cannot be opened without the income proof, if that is a business person then we use letterhead of the business else and employment letter.

The employer must send the letter as well that this person is working on a particular designation in this office. The offer letter and salary slip is compulsory. The senior citizen brings who is retired brings pension books.

Probe: What they focused in these initial meeting with PBO?

In this first stage both customer and the PBO asked each other questions to understand each other. In initial meetings, the customer wants to understand the available service

packages and the personal banking officer wants to know about the customer and his needs. Like if the PBO understand that the person is a business person, so it is most likely that we will offer the current account as his need will be day to day transections, which we can better manage in current account. These personal banking officers are the experts. They evaluate the personal needs and suggest possible solutions for the specific cases. However, these PBOs are very experts in needs evaluations but they are not specialized personnel of every service package and do not have complete in-depth knowledge to explain each and everything in a particular service. Therefore if he find the customer want to open an account he send that customer to that particular specialized officer in the branch, such as account opening officer. Then both PBO and the customer jointly explain each and every thing to the account opening officer and ask for his opinion. The account opening officer then also determine what documents would be needed in that particular case.

Also look that any information is not if not complete he ask customer to complete. Then we evaluate that the income proof is valid, and then the account opening officer sent the CNIC for the verification. Okay let me tell you about the documents. The documents we ask for are CNIC, income proof, and then the different information are asked and filled in the account opening form. This only happen when the customer has all the information in hand, if not then the customer goes back and come with the information again. Or if his needs are not fulfil by offerings or there is a problem in the documents or information then he goes back and when overcome the limitations and then come back again. We then sent his NIC information, name, no and father name to the regional officer, where the verifications officer verify the NIC from the national data base, to which the area regional office has official access.

The customer goes back and we ask for one day that next day your verification will come. Next day the customer comes and we also receive the verifications from the regional office. Customer also brings all the documents such as income proof, and we fill the application form, get his verification which reaches to the branch. The verification officer has online access to national database office and he sends us the report from the Islamabad (city in Pakistan). In some branches, the bigger one had their access to the database, this varies branch to branch. Every bank and every branch has their own procedures. Like /another bank's name/ provides this facility in every branch, the /another bank's name/ do in headoffice, the /another bank's name/ do not make verifications, but ask the customer to do the verification from the /name of national

identity registration authority/ and provide that with his document. In this branch particularly, we do our verifications via regional office. The rest of verifications come after opening the accounts. Like when the accounts opens then we send a letter of thanks to the customer, to verify the addresses of the customer provided.

Probe: So how the case proceeded?

The sales officer, either PBO or BDO, fill the account opening form for the customer. This is the duty of the PBO, but BDO also some time do that. There are different information personal, related to the addresses, the type of entity individual, minor, photo account, joint account, partnership account, private company, public limited company.

Probe: What is a photo account?

The Photo account is for illiterate customers, we take thumb impression, and his recognition at time of withdrawal will be made through his photo and thumb impression. He/she must come him or herself to make a transaction. Each type of account has minor differences in service processes. So on cheque the customer will use thumb impression and we paste his photo on the signature card with thumb impression which is verified at time of withdrawal of money. Then this portion of the account provides information related to the purpose of the account. Like why the customer want to open the account, for example for business transactions, for receiving salaries etc. some open account for saving purpose or safety of savings. We try to understand this in the beginning, we ask the customer about the purpose of opening the account to know the customer's savings and investments needs to offer a best package. We offer different packages for business transactions, for receiving salaries, and for savings and investments. The need analysis give us an Idea of what service is best for customer and also what documents will be needed. We enter all this in the system. Similarly, we enter the personal information, emails, addresses and phone numbers which are then used for the interaction and verification of the customer…

10

Participant Code: <u>P35</u>

Organization: <u>ILS</u>

Participant Job Title: <u>Leasing manager</u>

Specialization and Experience: <u>Lease and lease back</u>

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Question 2: Please narrate a complete story of an actual service case, which is created based on the service package you explained in question one?

In this case we leased buses to a transport company. In total we have leased out four buses in two phases. I will go through the case file to remind myself the detail.

Yes, please.

The transport owner was already our client. We also leased out a vehicle for his personal use. Now we will discuss that phase in which we have leased out two buses. Basically this is a sale and leased backed case so it will be better for you. So what happened in this sale and leased backed case is that the /company name/ is a transport company. /…/In the case of partnership, documents needed are CNICs of both partners.

Probe: How this service case is started?

Okay, he was our existing client. He contacted us and told us that he wants to lease out two buses. He was the managing directors and he came and told us that he wants to lease out two buses. We told him that okay we will. He told that these buses are imported. The modal year of buses was old, 1995, but these were reconditioned. These busies were still not registered in Pakistan. These were in the third party control now, which import vehicles and supply in the country.

Now if we leased that directly then the problem is that tax is levied 3.5 percent on that. The authorized dealers such as/organizations names/, have the exemption certificates. Now if this client purchased directly from a third party which haven't the exemption certificate, then the tax 3.5 percent will be levied. Now the price of these two vehicles was PKR 6.6 in total and per vehicle was PKR 3.3 million. So the tax for 6.6millions is a huge amount. So we told the client that here he has two options. One direct lease and second is the sale and lease back. For sale and lease back they are not required to pay this extra tax as they have already paid the tax when they imported the buses. So for

sale and leased back case they purchased the buses from the third party and then sold and leased back the buses from us. So here come three parties, the supplier of business, the client and our company.

Probe: From supplier you mean the manufacturers of these buses or the importers?

The party from Karachi (city in Pakistan) from whom client purchased the buses, who imported these.

Probe: Okay how the case proceeded?

Okay after this discussion the client agreed. Then we made the calculation for him that how much down payment he will need to pay for PKR 6.6 million. How much will be the instalment per month rent. So we told these calculations to him and he agreed.

Probe: No documentation was made till this level?

Yes, he came that day and discussed with us. Sale and leased back was decided plus I conveyed him the calculations. Plus we told him to complete these documents.

Probe: What are those documents??

CNIC of the partners, partnership deed, and this deed is an agreement that is signed when the partnership is made. This partnership deed is registered with registrar of firm. According to the partnership act 1932, at the time of registration of partnership you are given a form that is called form H. So these are the documents. Let me enlist you these: CNIC of the partners, partnership deed, form H, bank statements, balance sheet, NTN certificates, and the papers of registration of assets.

As he was already in business and he was our old client so we were confident. As the new person who less experience of the field are more risky. Along with this, if the new customer does not have his own assets in the business then he will have less interest and will not be careful. Therefore the procedure of our company or any other leasing company is that the person to whom you are leasing assets must have the experience of his business for which he is taking the assets. So, that the risk is minimum because he will have his own assets as well and his interest remains in the business.

Probe: What happened next in the case?

So we were talking about the documents. Along with the normal documents I mentioned there were specific documents required in this case. As he was interested in leasing back two buses, so we asked the registration copies of the vehicles plus the ownership proofs. Look when the case of sale and leased back is carried out when the client must have the proof of ownership of the assets. I mean if the vehicles are till now in the ownership of the Karachi party then it is not possible to have the case of sale and leased back. For this problem I provided two options to the client. First was that the client register the vehicles on his name and then sale these to us. The second option was that the registration remains with supplier but the client just take a sale invoice from the supplier which confirms the vehicles are purchased by the customer and he has made the payment for it.

Okay because the vehicles has to come in our ownership so if he first registers these on his name and then transfer to our name. This will results double registration and the cost will increase. Therefore we decided that the customer will only take the sale invoice plus payment proof from that party so that this is confirmed that he has purchased the buses. Then the suppliers will directly transfer the vehicles to the ownership of our company. So, the customer got the original documents of the buses. Plus he got the sale invoice and the payment voucher. After that we started work on the proposal.

Now as this amount is more than PKR 1.5 million. So it was supposed to be approved by the headoffice. So we recommended the proposal from here and send it to head office for the approval. From here we sent the documents through a registered currier to the regional office where our regional coordinator checked the case. Her work is to do coordination between the branches and headoffice.

Probe: What happened next then?

So when she received the proposal she went through it and also checked the attached documents. If she has any queries or any deficiency she emails us that.

Probe: Were there any specific queries in this case?

Yes like every case, here were some quarries. The queries need to be in the form of documents or may be in the form emails. Let suppose that we forget to mention in the proposal that from how long the client is in this business or we missed that how much his income will increase due to these new buses…