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**Organic Structures for Manufacturing  
Support Services**

**The Role of Affective Commitment**

By

**Ayham A. M. Jaaron**

Doctoral Thesis

Submitted in partial fulfilment of the  
requirement for the award of

Doctor of Philosophy of

Loughborough University

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# Abstract

Manufacturing support services, operating as call centres, are one of the fastest growing and preferred means of service delivery in today's ever-changing manufacturing environment. The call centre has a significant potential to provide support to manufacturing organizations with business intelligence captured during contacts with customers. Research has shown that affective commitment is of particular significance in the workplace since this has been found to have the greatest impact on individuals' performance, on-work behaviour and ultimately organisational effectiveness (Porter, Steers & Boulian 1974, Sung 2007, Shum 2008, Herscovitch 2002, Gong 2009). Meyer and Allen (1991) define affective commitment as a measure of the employee's emotional attachment to the organisation, the strength of identification with the goals of the organisation and strength of commitment to its success and continuous improvement. However, call centres are mechanistic structure models represented by close monitoring of words, stressful working loads, emotional exhaustion and burnout, and minor empowerment of employees. As a result employees lack affective commitment which detrimentally influences the service quality and has consequences such as high employee turnover and low customer satisfaction. Mechanistic structures are inward oriented structures that must be shielded from the environment but call centres are outward-facing entities. This firmly implies that call centres must be given a certain form of organic structure that will stimulate affective commitment building among employees and improve work conditions.

This study aims to identify that by the implementation of an organic structure, through a systems engineering approach, to the design of manufacturing support services, the affective commitment of front-line employees will significantly increase, and due to that significant, but often counter-intuitive, benefits can be created. Conducted on a multiple-case design, three organisations were selected in this research study to collect both qualitative and quantitative data. Results were analysed for each case individually before it was analysed on inter-case basis. This has been done to show differences and similarities in patterns of data across the case studies.

Results from the research show that structuring call centres around the principles of systems thinking will produce an organically structured support services department that will improve employees working conditions, and will formally institute the integration of call centre with other business units in the manufacturing organisation. The cross-case comparison revealed significant improvement in employees' affective commitment level using organic structure when contrasted with employees working under mechanistic structure designs. It was revealed that by leveraging employee's affective commitment that significant benefits can be created at different levels in the organisation; an employee's level, managerial level, customer level, and the overall business level. A novel methodology for organic structures implementation, as a value creating model, was formulated. The emerged methodology consists of six major tasks and a decision making criteria.

Results from this research indicate that there is a need for manufacturing organisations to structure their support services departments following organic structures that could provide a rewarding working experience for their employees while achieving organisational goals. The study makes an explicit practical contribution for manufacturing organisations in the selection of proper support service design and contribute substantially to the theory about manufacturing support services structures and management.

**Key Words:**

Manufacturing support services, affective commitment, organic structures, manufacturing, service design, service operations, mechanistic structures, systems thinking, case study, implementation methodology.

**DEDICATED**

**TO MY PARENTS, WIFE  
AND  
PALESTINE**

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# Chapter 1 - Introduction

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## 1.1 Overview

This chapter begins with an introduction about manufacturing support services, operating as call centres, highlighting the significance of these departments and their potential benefits that can be gained if structured properly. It outlines the main areas of knowledge that have dominated research work in the field, and other areas where research is still silent that gives novelty of the present study over other work. Having identified a gap in the knowledge on the structure of this type of manufacturing support services and their effects on front-line employees, a presentation of the aims and objectives of the present study is given. This is followed by a statement of the research questions that drive the study. The last section of the chapter summarises the structure of the thesis by providing an overview of each chapter contained and its focus.

## 1.2 Significance of support services to manufacturing organisations

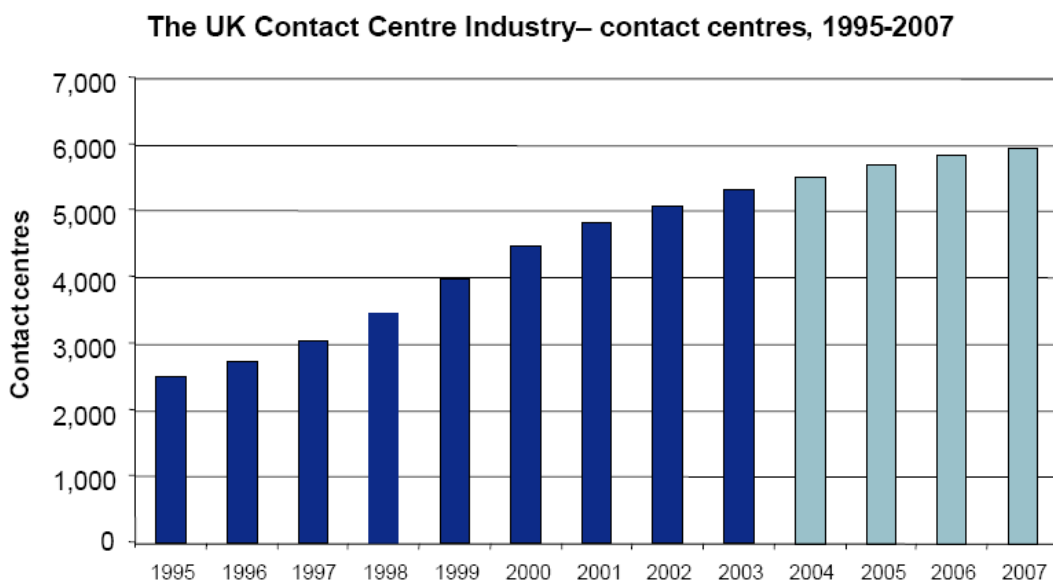
Support services systems in a range of industries have witnessed tremendous developments in the past few years. This was associated with the widely held view that call centres should be considered as one of the preferred means of service delivery today (Income Data Services (IDS) 2001). They have become a significant part of the economy in many different countries around the globe (Holman et al. 2005). It was found that call centres in particular have been one of the success stories of many global economies in the last decade. In the United Kingdom approximately 800,000 people were employed in contact centres by the end of 2003 as customer service representatives, telesales employees and managers (DTI Services 2004).

Call centres were defined in a very useful manner by International Customer Management Institute (ICMI) (Cleveland 2006) to reflect their special nature. The definition given is:

*“A coordinated system of people, processes, technologies and strategies that provides access to organizational resources through appropriate channels of communication to enable interactions that create value for the customer and organization.”*

However, the popularity and continuous rapid growth of these call centres (Clark 2007, Huang 2007), shown in Figure 1.1, can be attributed to technological advances in integrated telephone computer technology, the convenience factor for consumers, and substantial cost reductions in contrast to face-to-face contact (Sergeant, Frenkel 2000).

Figure 1.1 Contact centres growth in the UK. Source DTI Services (2004)



In spite of this popularity, there appears to be a gradual tendency for customer attitudes towards call centres to become negative in various industrial countries (Deery, Kinnie 2004). As a consequence, issues pertinent to the quality of the service provided by support services hosting them are gaining prominence.

Today, manufacturing organizations are relying more than ever before on the call centres for their customer interaction operations and services, it is the customer access point for many organizations (Dean 2002, Mukherjee, Malhotra 2006). The customer’s influence on the service quality dimension during telephone service encounters is very limited, and therefore the customer-contact employees play a major role in delivering a quality service to the customers (Malhotra, Mukherjee 2004). Strong pressures and tight

managerial measures have been exerted on the human resources working in call centres to achieve organization targets of serving high volumes of interactions in a relatively short time, and in a monitored environment (Bain et al. 2002, Little, Dean 2006). This has resulted in the call centres being widely depicted as “electronic sweatshops” with a stressful working environment due to the service system (Bain, Taylor 2004, Cartwright 2003, Wood, Holman & Stride 2006).

### **1.2.1 Call Centre Strategic Potential and Contributions**

Although many manufacturing organizations nowadays are realizing that there are very significant contributions a call centre can provide to the parent organization in general and to every unit in particular, limited attempts were found in the literature (e.g. Cleveland (2006), Cleveland (2002)) to explore this significant aspect. In addition to handling customer calls and satisfying their needs and demands, call centres can create value for the manufacturing organization as well as for the customers. Cleveland (2006) has discussed the levels at which a call centre can create value in the organization, these levels are:

- 1- Efficiency: call centres are places where people, technologies, processes and information integrate to provide a high level of service for customers. This implies that the readiness of information, the availability of the right number of skilled employees, and the well-coordinated processing of the work inevitably contribute in leveraging efficiency of customer service.
- 2- Customer satisfaction: customer satisfaction can be defined as “a customer’s fulfilment response, including levels of under or over-fulfilment” (Oliver 1997). Call centres play a vital role in the customer’s fulfilment response and satisfaction process as they are meant to be customer oriented to meet their expectations.
- 3- Business unit value (strategic value): the call centre systems today can easily capture significant information as a result of the intensive interactive nature of the work (Boersma et al. 2004, Boersma et al. 2005). This information is usually

scattered in repositories throughout the operations (Stockford 2007). However, if studied and compiled thoroughly and then transformed to other business units, can provide significant added value to the manufacturing organization (Cleveland 2006, Stockford 2007, Cleveland 2007, Cleveland 2004a). This helps other departments to evaluate their designs, processes, quality measures and enhance their research and development initiatives. The net result would be to optimise information in hand and leverage the call centre's strategic value and image across the organization.

The majority of manufacturing organizations using call centres in their operations are focused mainly on the first level of creating value (i.e. efficiency). However the remaining levels and particularly the strategic value level holds significant opportunities for development and strategic advantage (Cleveland 2006). There are many attempts described in the literature of using customer information, customer feedback and customer involvement in the design of products and services to increase customer satisfaction and achieve better market share. Siddique and Boddu (2005) introduced the concept of customer involvement in the design process of customized products through the use of a web-based mass customization information framework. In this situation customer specifications are collected by a simple web-based form which is passed to a CAD tool that can generate a three-dimensional model of the customised product and estimate the cost of production. The benefits to the customer are the availability of products and services that are congruent to their tastes and desires.

Other initiatives based on gathering customer information and feedback to improve the next product generation and manufacturing are available (Molenaar et al. 2002). One of these initiatives is the principle of postponement in production management where the production activities are postponed until the last moment of time when customer specifications are received (van 1998, Yang, Burns & Backhouse 2004, Graman, Bukovinsky 2005, Graman, Magazine 2006). In this regard, the ability to implement postponement strategies in production operations depends upon the availability of dynamic market information. If customer demands information can be captured quickly and with credibility, then organizations can factor this capability into planning their business strategies (Yang, Burns & Backhouse 2004). Well-structured and designed call

centers as explained previously collect important information from the customers about their preferences, needs, tastes and problems. Call centers business intelligence can contribute to the successfulness of postponement strategies in generic terms leading to an enterprise being in a better position to forecast customers' demands.

Cleveland (2002) has described the main benefits and support that a call centre can provide to other business units. Key business intelligence implications and contributions according to Cleveland (2002) are summarized in Table 1.1. The benefits are all derived from call handling sessions. Information is recorded, compiled, analyzed and business intelligence is achieved. The business intelligence derived is of a wide spectrum from issues including customer demographics, purchasing trends, competitor information and preferences. Table 1.1 illustrates the concept that every call we receive adds to the wide spectrum of creating value for the manufacturing organization. However, in order to be able to learn from every caller, and to add their special contribution to the call centre business intelligence, manufacturing organizations need an access strategy that defines the means through which customers can reach the organization (Cleveland 2006). The more channels of contact offered by call centres the more the organization ensures that every customer contact is received and inputs are considered. The call centre can provide different channels of contacts for customers that can add significant information for the value creation strategy. Figure 1.2, taken from a survey for the UK call centre industry, shows the different channels of contact available at a typical call centre (DTI Services 2004).

Figure 1.2 Call centre's different interaction methods. Source: DTI Services (2004)

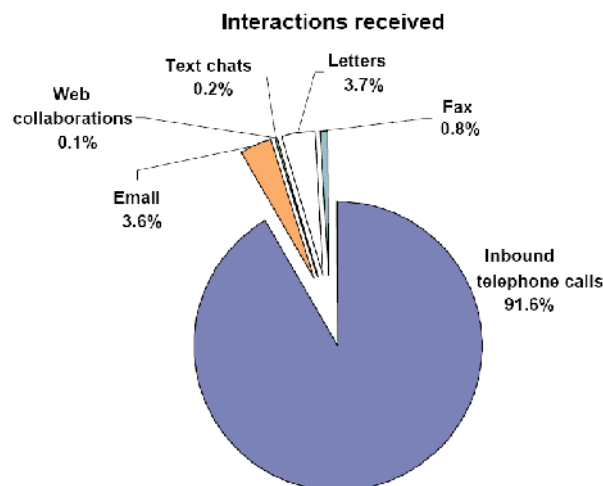


Table 1.1 The call centre's contributions to other business units. Source Cleveland  
(2002).

Business Units	Contributions provided by the call centre
<b>Marketing</b>	<ul style="list-style-type: none"> <li>• Provides detailed information on customer demographics.</li> <li>• Tracks trends (purchases, customer service and support issues, etc.) and response rates.</li> <li>• Enables permission-based, targeted marketing.</li> <li>• Supports segmentation/branding.</li> <li>• Provides customer input on competitors.</li> <li>• Provides customer surveys and feedback.</li> </ul>
<b>Financial</b>	<ul style="list-style-type: none"> <li>• Captures cost and revenue information by customer segment.</li> <li>• Contributes to the control of overall costs.</li> <li>• Serves as an early warning system (positive and negative).</li> <li>• Is essential to successful mergers and acquisitions.</li> <li>• Contributes to shareholder value through strategic value contributions.</li> <li>• Is essential in establishing budgetary strategy and priorities.</li> </ul>
<b>HR/Training</b>	<ul style="list-style-type: none"> <li>• Contributes to recruiting and hiring initiatives.</li> <li>• Contributes to skill and career path development.</li> <li>• Contributes to coaching and mentoring processes and expertise.</li> <li>• Helps foster a learning organization (e.g., through systems, processes and pooled expertise on products and customers).</li> <li>• Contributes to training and HR expertise and processes.</li> </ul>
<b>Manufacturing/Operations</b>	<ul style="list-style-type: none"> <li>• Pinpoints quality and/or production problems.</li> <li>• Provides input on products' and services' usability and clarity.</li> <li>• Contributes to manuals and procedures.</li> <li>• Highlights distribution problems and opportunities.</li> <li>• Facilitates communication related to capacity or production problems.</li> </ul>
<b>Research &amp; Development/Design</b>	<ul style="list-style-type: none"> <li>• Provides information on competitive direction and trends.</li> <li>• Highlights product compatibility issues and opportunities.</li> <li>• Provides customer feedback on usability.</li> <li>• Differentiates between features and benefits from the customer's perspective.</li> <li>• Identifies product and service differentiation opportunities.</li> </ul>
<b>IT/Telecom</b>	<ul style="list-style-type: none"> <li>• Furthers organization wide infrastructure development.</li> <li>• Furthers self-service usage and system design.</li> <li>• Provides a concentrated technology learning ground.</li> <li>• Provides the essential human bridge between diverse processes and systems.</li> <li>• Is a key driver in IT/Telecom investments.</li> </ul>
<b>Legal</b>	<ul style="list-style-type: none"> <li>• Enables consistent and accurate customer communications and policies.</li> <li>• Serves as an early warning system of quality problems.</li> <li>• Identifies and addresses impending customer problems.</li> <li>• Provides a rapid response to news/media reports.</li> <li>• Contributes to internal communication.</li> <li>• Serves as a training ground for customer service policies.</li> </ul>



## **1.2.2 Call Centre and Strategic Value Creation**

Having a forward facing oriented customer strategy which is seen as being able to create value for an organization is not the whole story for organizational competitive success. Organizations need to recognize that the involvement of other business units (e.g., marketing, finance, human resources, manufacturing, research and development, etc.) is also vital in this regard. Call centers represent the core of this strategy for creating value, as they can stimulate cooperation between business units if it is given a well-structured service model.

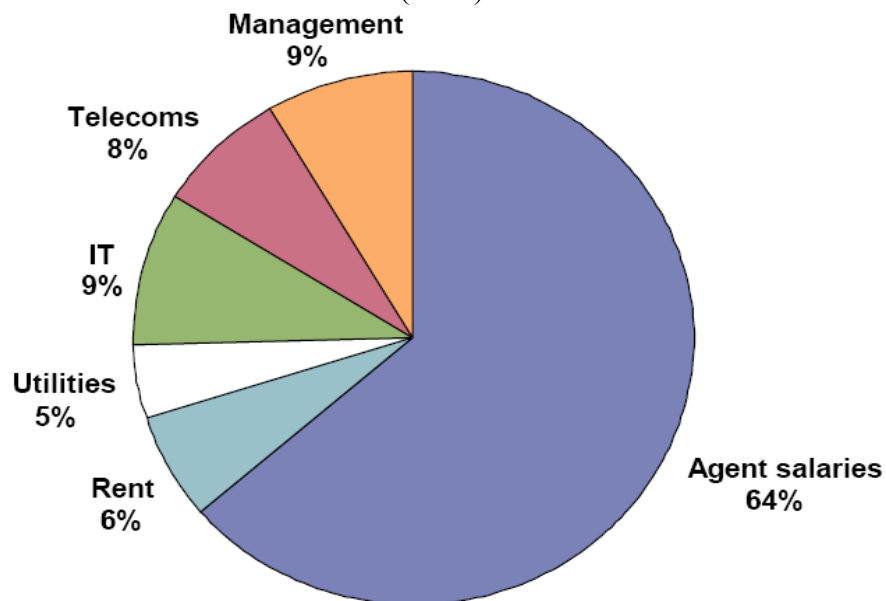
However, the involvement of the call centre in the process of value creation at a strategic level is not an easy task. There is a need for managers both inside and outside the call centre to support its operations and leverage its position in the manufacturing organization by understanding the role and importance of call centre for the other business units (Cleveland 2002). In order for call centres to be a place of value addition to the manufacturing organization in terms of both business intelligence and service excellence, it is vital that alternative service design models be applied to them (Busi 2005). These design models should provide new work structure and an integration system that eliminates the flaws of command and control structures and provide better opportunities for leveraging the call centre's contributions and strategic value for customers, employees and ultimately the organization (Cleveland 2006). It also needs to eliminate the characteristics of conventional call centre designs and allow the delivery of significant benefits to the parent organization. Nevertheless, this implies a major shift in the call centre role in the manufacturing organization and in the view of it held by managers in other departments as well as the top management. Call centres, following these characteristics, must instil the team work approach among its employees and the values of collective problem solving. In fact, this shift requires a tremendous effort in kind and in degree as it involves changing the way the rest of the organization thinks about call centres and its role in the business. Typically, large number of manufacturing organizations doubt the value of such a shift because of a lack of already proven practice (Wheelwright, Hayes 1985). Also, the benefits of acting under such models are usually invisible for managers until sometime has elapsed to feel the competitive

position of the call centre and its internal value. This explains why only a minority of manufacturing organizations grant such an effective structure to their call centres.

### 1.3 Background of call centre research and novelty of the work

The management of employees in call centres has witnessed considerable attention in the literature of call centres and service management. Several studies have been found that concentrate on this direction such as Deery et al (2002), Holman (2003), Townsend (2007), and Mahesh (2006). This is mainly due to the fact that the size of the human resources in the call centre is very large. Their impact on the service quality and the operational costs of the call centre predominates and should not be underestimated (Fleischer 2007, Pollitt 2006). According to a study carried out by the Department of Trade and Industry (DTI) in 2004 in the UK, it was found that employees salaries was the largest proportion of expenditure on call centres, on average being 64% of the total expenditures, as shown in Figure 1.3.

Figure 1.3 Salary expenditure as percentage of operating costs. Source DTI Services (2004)



In addition to the expenditures on employees, many other issues were extensively investigated and discussed in the previous literature that represent challenging dimensions in this prosperous sector. These include employees' commitment, turnover, emotional exhaustion, well-being, training, recruitment, etc. This opened up new

challenges for researchers to search for solutions for these problems from within the managerial practices found in the service models used. However, limited attention has been seen in the literature in connecting these issues of human resources management with “operational challenges” (Jack, Bedics & McCary 2006), which needs critical thinking and analysis in respect of service models used and their impact on added value opportunities for employees, customers, and eventually organizations.

Although call centre industry have witnesses tremendous growth in customer services departments across several industries, the service quality from these centres represented one of the main challenges in their management (Deery, Kinnie 2004). The majority of the work done in this field was centred on empirical testing for employees working environment and the effects it has on service quality, it was also observed that much research attempted to create a balance between the level of service quality, employee satisfactions, and work surveillance requirements (Malhotra, Mukherjee 2004, Armistead et al. 2002). For example, in-depth studies have been found on quality-quantity contradiction in call centres and the role the requirements of the service system play in this regard (Cleveland 2006, Bain et al. 2002, Robinson, Morley 2006).

Alongside these studies of call centres human resources management and service quality, many studies have emerged in the field to investigate the relationship between service quality and customer satisfaction that leads to perceived added value within the interaction experience. This work looks on studying the nature of customer psychology and what the factors that help retain callers are. Several studies explored the operational characteristics of the call centre workplace to recognise determinants of customer satisfaction (Feinberg et al. 2000, Conz 2007). Moreover, many other attempts were found on developing technology to increase service quality and eventually enhance customer satisfaction and loyalty (Steel, Jones & Apperley 2002, Ayios, Harris 2005).

There has been plethora in the articles that discuss the problem of using “Taylorist” principles in the call centre environment, and their negative effects on employees’ turnover and losses to organizations in terms of experience and resources. However, very limited attempts have been found in the literature on introducing alternative service designs for call centres. This issue has been explored in the literature of

operations management, which explored service operation models and organizational structures commonly implemented in call centres and only discussed their role in inhibiting the development of a rewarding job experience for employees (Taylor et al. 2002, Ellis, Taylor 2006, Batt, Moynihan 2002). Furthermore, new frameworks for call centre operations have been focused mainly on the introduction of tools and methodologies to improve service and reduce costs (Piercy 2009). There have however been some articles that discuss best practices in call centres and the necessity to depart away from quantitative measure to a more of qualitative ones with justifications from managerial perspectives (Curry 2008).

Despite the fact that call centres are an important industry for employment generation and job creation opportunities, the management of this huge layer of customer service representatives in call centres has become a sensitive issue due to the high levels of turnover and burnout reported within employees in this sector. For this reason, there are a growing number of studies that introduce models and solutions to mitigate call centre's employees' turnover and intentions to quite, such as Bordoloi (2004) and Siong et al. (2006). In this context, the vast majority of these studies seek to reduce turnover through adopting new forms of emerging training and recruitment techniques from a mechanistic point of view. But none has been found on reducing employees' turnover through leveraging organizational commitment as a result of re-designing the service model employed. As yet, there is little knowledge on the suitability of alternative designs to call centre environment, as this kind of study has not been performed in this field.

#### **1.4 Background of affective commitment research**

Several research studies have shown that the level of employees' organisational commitment has a significant impact on the level of service quality experienced by customers (Porter, Steers & Boulian 1974, Mowday, Steers & Porter 1979, Allen, Meyer 1990, Mathieu, Zajac 1990). The majority of these looks at the relationship between the components of organisational commitment (i.e. affective, continuance, and normative) and their effects on service quality, and the relative influence of job satisfaction and commitment on service quality (Malhotra, Mukherjee 2004, Malhotra,

Mukherjee 2003). Research has shown that, among these components, affective commitment is of particular significance in the workplace since this has been found to have the greatest impact on individuals' performance, on-work behaviour and ultimately organisational effectiveness (Porter, Steers & Boulian 1974, Sung 2007, Shum 2008, Herscovitch 2002, Gong 2009). As defined by Meyer and Allen (1991), *affective commitment is a measure of the employee's emotional attachment to the organisation, the strength of identification with the goals of the organisation and strength of commitment to its success and continuous improvement. The employee remains a part of the organisation because s/he wants to do so.* In this context, previous research has identified that it is more effective than job satisfaction in influencing the service quality of customer-contact employees (Malhotra, Mukherjee 2004). In addition, the literature suggests that equipping employees with the right level of affective commitment is associated with reduced turnover levels and intentions to quit (Vandenberghe 2009, Somers 2009), and organisational financial savings due to the direct and indirect cost of employees' turnover (Krenzelok, Dean 1994). Similarly, a number of researchers such as Meyer and Allen (1991), May (1996), Meyer et al. (1998), Lau (2001), and Shum (2008) have demonstrated the significance of employees' affective commitment for successful organisational changes that can save organisations a tremendous amount of time, effort and monetary resources usually invested during organisational change.

Another dimension of research found in the literature strongly supports the notion that employees with high levels of affective commitment have invaluable tendency to increase productivity. Several studies in this regard have pointed out that workplace productivity is increased by the availability of highly affectively committed employees who are doing extra efforts on behalf of their employer to do exceptional job of delivering a quality service that keeps customers (Mowday, Steers & Porter 1979, Mathieu, Zajac 1990, Meyer, Allen 1991, Mowday, Porter & Steers 1982, Mayer, Allen & Smith 1993). Furthermore, most of the research conducted in the field of organisational commitment has introduced the foundations necessary to create and leverage employee's affective commitment such as: fulfilling employees personal ambitions; desire of achievement, autonomy, and a sense of control on what they have, decentralising decision making processes to be at the employee's level, meeting the

expectations set by employees and employer concerning each other's obligation, and most importantly how good or bad an employee's working experience (Mowday, Porter & Steers 1982, van Emmrik, Sanders 2005).

Previous research has shown that organic structures represent the opposite case to mechanistic structures; as illustrated by the study of Burns and Stalker (1961). The research also indicated that organic structures supports jobs that are wide in scope and employees are empowered to perform a variety of tasks. Further, hierarchy of control is usually not present thus allowing employees to identify the right person to solve a particular problem and to make decisions without reverting back to managers. Open channels of communication are encouraged between employees as well as between departments to share significant information that facilitates service delivery and helps departmental integration (Huczynski, Buchanan 2007, McKenna 2006, Mullins 2005). Organic structures this way provide the opportunity for employees to fulfil their personal ambitions; desire of achievement, autonomy, and a sense of control on what they have (Robey, Sales 1994). Employees are then more likely to develop affective commitment with their employer.

## **1.5 Gaps in the knowledge**

As it will be demonstrated in the extensive literature survey presented in Chapter 2, in order for organisations to achieve competitive advantage and organisational success through their call centre employees, it is most important to equip them with high levels of affective commitment. However, there is strong evidence in the literature that front-line employees who are working in traditional (i.e. mechanistic) call centres significantly lack the affective commitment building environment and tools. Moreover, call centres are business units with mechanistic organisational structures. Mechanistic structures are inward oriented structures that must be shielded from the environment but call centres are outward-facing entities. This firmly implies that call centres must be given a certain form of organic structures that will stimulate affective commitment building among employees and improve the call centre's contributions to strategic business units.

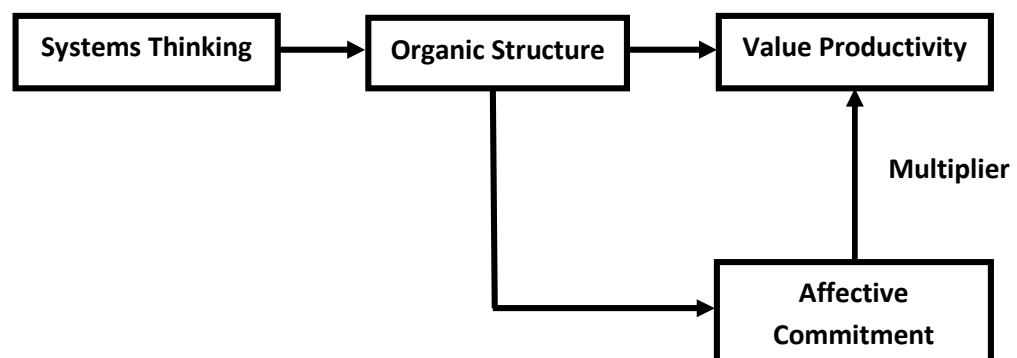
The literature presented in Chapter 2 strongly suggests that structuring call centres around the principles of organic systems will formally institute the integration of call centre with other business units in the manufacturing organisation. However, there appears to be no tools or methodologies in the literature for the achievement of an organic type of manufacturing call centre.

## 1.6 Aims and objectives of the work

In the light of the scarcity of studies on alternative call centre service structures and designs that will leverage employees' affective commitment and add value to the overall manufacturing organisation. The aim of this study is to identify that: *by the implementation of an organic structure, through a systems engineering approach, to the design of manufacturing support services, the affective commitment of front-line employees will significantly increase, and due to that significant, but often counter-intuitive, benefits can be created.*

A framework of affective commitment leveraging develops in this study which will be beneficial in creating organic structures in manufacturing support services. This framework is shown in Figure 1.4 below.

Figure 1.4 Research framework for leveraging affective commitment in manufacturing support services.



Improvements for call centre's environment will be introduced by meeting the following set of objectives:

- To explore the impact of mechanistic manufacturing support services design models on front-line employees' affective commitment level.
- The identification of alternative service design models applied to manufacturing support services, often operating as call centres.
- To compare the impact of organic structures (i.e. systems thinking) for designing manufacturing support services as compared to mechanistic models on employees affective commitment and productivity.
- To understand how organic structures for designing manufacturing support services impact on value addition opportunities to the manufacturing enterprise.
- To examine how organic structure models for designing manufacturing support services is being implemented within leading manufacturing organisations.
- To suggest further research guidelines for designing manufacturing support services, and add to the existing theory on the role of affective commitment for manufacturing organisations.

## **1.7 Research Questions**

Having identified the above mentioned gaps in the knowledge, derived from the literature findings, the work was driven by a set of research questions formulated in the early stages of the study, and these are:

**RQ1: Why do the organic structures for manufacturing support services affect the affective commitment of the individuals who work in these departments?**

**RQ2: How do the organic structures for manufacturing support services add value to the manufacturing enterprise?**

**RQ3: How can manufacturing organisations implement organic structures in their support services departments?**

These research questions were developed to understand the psychological substructure of employees' affective commitment in manufacturing support services in relation to



the service structure used, and how they developed this way. In addition, to understanding the role of support services employees' affective commitment in adding value to the manufacturing organisation.

## **1.8 Thesis structure**

The thesis is composed of eight chapters comprising all the steps covered in the project. Following on from an introduction about the significance and background of manufacturing support services, operating as call centres, Chapter 1 presents the gaps found in the knowledge and both aims and objectives of the work, and supplemented by research questions that answering them, through this work, will cover gaps identified and will contribute to the knowledge.

Chapter 2 outlines an extensive review of the literature on the issues and problems available on call centres. It is divided into two main parts.

Part I provides an account on human resources management practices, service quality flaws in call centres, organisational commitment and an explanation of the importance of affective commitment to the call centre industry by emphasising on the added value of leveraging affective commitment in the call centre and its reflection on organisational effectiveness. It goes on to represent the wide spectrum of literature on customer satisfaction in call centres. The final section of this part introduces the organisational structures of call centres, and discusses the use of the "Machine Bureaucracy" model.

Part II provides an outline of the effects of external environment in deciding about the internal structures in organisations, it highlights the reasons that have created problems in the call centre industry, specifically looking at the validity of the current call centre's organisational structure and their believed impact that created the previously discussed issues and problems. It introduces the concepts of mechanistic and organic structures for designing business units. It concludes with establishing a gap in the knowledge for the need for designing manufacturing call centres around the principles of organic instead of mechanistic structures.

Chapter 3 provides an account on the emergence of systems thinking for service operations design through the translation of lean manufacturing principles into service departments. It provides a clear link between the implementation of systems thinking and the achievement of an organic type of manufacturing call centre. It also presents a clear link between lean manufacturing, systems thinking and their impact on employees' affective commitment.

Chapter 4 describes the distinct research methodology used in this research. It focuses on introducing a clear presentation of the flow of activities followed in the research inquiry. It reviews the available theories of knowledge and schools of thoughts that underlie scientific research. It explains the use of multi-case studies design with a discussion on the techniques used in the case studies including the rationale for using each design and method. It discusses the data collection methods employed and the data analysis process adopted. The chapter is designed to match every element of the research methodology with criteria for judging the quality of the multi-case studies design.

Chapter 5 delivers a detailed account of each case study individually. In this chapter cases profiles and the data collection and results at each research site will be presented on an intra-case basis, exploring the effects of service designs and structures of departments and analysing each case within its own context.

Chapter 6 aims at presenting the second step in the multiple-case studies data analysis process by searching for cross-case patterns. It uses the thematic format developed during within-case analysis to explore and make a cross-case comparison of the effects of mechanistic and organic structures implementation on front-line employees. The cross-case comparison also explores the effects of organic structure implementation on service departments performance, specifically looking at value added opportunities at all levels in the organisation in comparison with mechanistic structure constraints. The chapter discusses the findings of the comparison with reference to the first and the second research questions.

Chapter 7 represents an extension to Chapter 6 by also searching for cross-case patterns in the multiple-case studies analysis process in relation to the implementation of organic structures to manufacturing support services. It introduces a novel methodology for its implementation in manufacturing support services as a value creating model. The chapter discusses the findings of the comparison with reference to the third research question.

Chapter 8 concludes the work done in this research, it explains how the research objectives were met and provides clear answers for the research questions posed at section 2.14. It also highlights the implications of the research findings to academics and practitioners, and outlines the significant contributions to the theory. The chapter also provides guidelines for future research in manufacturing support services.

# Chapter 2 - Call Centre Industry

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## **Part I: Contemporary concerns and implications**

### **2.1 Overview**

This part offers an intensive representation of the issues and problems available from literature on call centre industry. It begins with intensive reviews on the published literature on human resources management practices, looking at the effects of these practices on employees' work-related stress, well-being, and the training and recruitment practices that have created high levels of turnover among employees. The next section discusses the potential service quality flaws in call centres as a result of the focus on quantity of calls handled rather than quality of interaction. It then progresses onto a review of organisational commitment literature and an explanation of the importance of affective commitment to the call centre industry by emphasising on the added value of leveraging affective commitment in the call centre and its reflection on organisational effectiveness. The effects of less specialised outsourced call centres on service quality are also discussed. The next section represents the wide spectrum of literature on customer satisfaction in call centres and the influence of higher service quality on customer satisfaction and retention, and the effects of technology improvements on customer satisfaction. The final section introduces the organisational structures of call centres, and discusses the use of the "Machine Bureaucracy" model introduced by Mintzberg (1983).

### **2.2 Human resources management**

Establishing the call centre as the main channel of contact with customers in many modern organisations has put a significant pressure on the management of the human resources working in those centres, they are viewed as the main link between the organisation and its customers (Burgers et al. 2000). For this reason various research studies were focused on managing human resources in this prosperous sector.

## **2.2.1 Emotional exhaustion and well-being of call centres' employees**

The management of front line employees in call centres has attracted much attention on the literature due to its perceived impact on job performance, job-related stress and ultimately organisational effectiveness. It is seen as one of the biggest challenges for call centre managers (Batt, Moynihan 2002, Raz, Blank 2007). As a consequence much research work has been completed to address this aspect of the call centre context.

Deery et al (2002) have examined the relationship between employment and the conditions of work in five Australian call centres in the telecommunication sector. His qualitative case study identified the factors that led to emotional exhaustion and withdrawal amongst the employees and added more emphasis on this distinctive feature of call centre work. The research has revealed a number of reasons behind the emotional exhaustion and stress. These were “interaction with customers, high workloads (e.g. call volume, problem handling demands, concentration demands, maintaining rapport demands) and lack of variety of work tasks”. Moreover, the sustained speed at which the calls were handled and the call surveillance were among the major factors adding to this issue. These factors had a continuous direct effect on employee absence. In other words, employees absence rates and commitment levels were directly associated with emotional exhaustion caused by these contextual factors.

Other relevant research in this context is the work of Holdsworth and Cartwright (2003). The aim of their study was to explore the relationship between employee stress, satisfaction and the dimensions of job empowerment (meaning, impact, self-determination and competence) in call centres. Data were collected using the Spreitzer's empowerment measure developed by Spreitzer (1995). They found that the call centre work is more stressful, less satisfying than other jobs and less psychologically and physiologically healthy. Employees had poorer mental and physical health than other workers in other jobs. Employees also perceived that they were less empowered than in other jobs, “the empowerment dimensions of meaning, impact and self-determination were found to be directly influencing job satisfaction, but not health” (Holdsworth, Cartwright 2003).

Within the highly controlled environment and structure of call centres, work related stress and low satisfaction are anticipated to a degree at which call centres are frequently described as “electronic sweatshops” (Deery, Iverson & Walsh 2002, Holdsworth, Cartwright 2003). Many initiatives failed to create a state of balance between empowerment and job satisfaction on the one hand, and control on the other hand. Giving employees a challenging job tasks and certain levels of control to be involved in the process of decision making, rather than simply imposing the changes, can improve employee perceptions of their work (Halliden 2005), and rapidly improve their level of emotional bonds and commitment with their organisation (Vandenberghe 2009). Korczynski (2001), in his study of the contradictions of service work, found that where employees were given autonomy to deal with customers, they were trained in the importance of following certain conversation guidelines around specific routinised areas and topics. Apparently, this has revealed a state of contradiction in the management practices of call centres. The management intention and declarations are different from what the employees are being told to do in the workplace (Holdsworth, Cartwright 2003).

Holman (2003) reported in three studies that employee’s well-being in call centres is associated with supportive management, supportive human resources practices, and effective job design. The inclusion of time control of call handling and the extent to which employees have control on how to speak and perform the service have been found to be major sources of employees stress. Moreover, the study supports the idea that call centre managers have the choice in organizing their call centres work “to actively design employee stress out of call centre work”. Other causes of stress according to this study include the physical environment of the work, the usability of the computer system and performance monitoring practiced by the call centre management. Likewise, Holman et al. (2005) in his book titled “The Essentials of the New Workplace” discussed the call centre working environment and identified the distinctions between front-line work from other office work. He introduced the concepts of “mass service” model which serves the mass market, in which profit margins are small and competition is based on low costs. This work requires unskilled employees to handle the repetitive customer inquiries and demands, and thus it has high monitoring

practices. The other model is the “high commitment” service model which serves high-value customers from which high profit margins can be extracted. The employees are highly skilled, given more empowerment and thus little monitoring is required except in the area of employee development. He emphasised that the customer-employee interaction, performance surveillance, job design and human resources practices all have a significant effect on the employee performance and well-being in call centres. He argued that calls surveillance could have negative effects on employee, such as stress and depression, if it is practiced intensively.

It is thought that, the immediacy of performance feedback, clarity of surveillance contents and procedures, and constructive feedback methods are positively associated with reduced feelings of emotional exhaustion and stress amongst employees (Bakker, Demerouti & Schaufeli 2003). This positive view may be due to many employees wishing to measure their own performance against the target level of performance standards. It also supports the identification of training requirements which in turn help employees to cope better with work demands. However, positive employees’ perspective about performance surveillance requires a clan type organisation where the culture in place depicts leaders as supportive mentors, rather than work controllers (Masood et al. 2006).

Another important aspect for the unique call centres working environment is the employees’ work-related health and well-being. Taylor et al. (2003) introduced a study that fills an important gap in call centres literature. This study focused on occupational ill-health and safety concerns. The study was carried out in two call centres in the UK to document these concerns, assess the existing practices in the workplace, and to introduce a comprehensive diagnostic tool of occupationally induced ill-health. It was concluded that the contributors to employee sickness related to ergonomics, the built environment and work organisation. Principal causes to work-related ill-health were the call handling nature, the tight control and intensive surveillance. They argued that effective remedial action would involve radical job re-design. However, this radical job re-design requires the efforts of all people involved in the call centre and other business units of the organisation to support a new service model where both the employees and the organisation can reap the benefits of a more rewarding job experience.

As an extension to Taylor's research efforts, Sprigg et al. (2007), in their study of call centre employees well-being, found that the heavy workloads, tight work control and the highly demanding nature of the modern office work contributes to the development of the musculoskeletal disorders in different body parts; in the upper body, the lower back, and the arms. They discovered that employees stress due to the above contextual factors appeared to be associated with higher levels of the upper body and lower back musculoskeletal disorders of the arms. However, employees' autonomy appeared not to have any association with the psychological strain of employees nor with the musculoskeletal disorders. This can be explained by the presence of other factors in the call centres workplace, such as heavy workloads (Deery, Iverson & Walsh 2002), that prevent employees from having proper work breaks. It is the performance surveillance that has been shown to be a source of stress in most of the cases (Varca 2006). The limited employees choice over when to do a particular task, when to attend a call, the method of performing a task and how to speak to a customer to keep the rapport are all factors affecting employees performance (Holman 2003). They are actually caught between the necessity of delivering a high quality customer service while maintaining productivity (Robinson, Morley 2006). In brief, to improve services and create better working places for employees, the design of service processes is the key to achieve that aim (Chakrabarty, Tan 2006).

### **2.2.2 Employee recruitment, training and turnover**

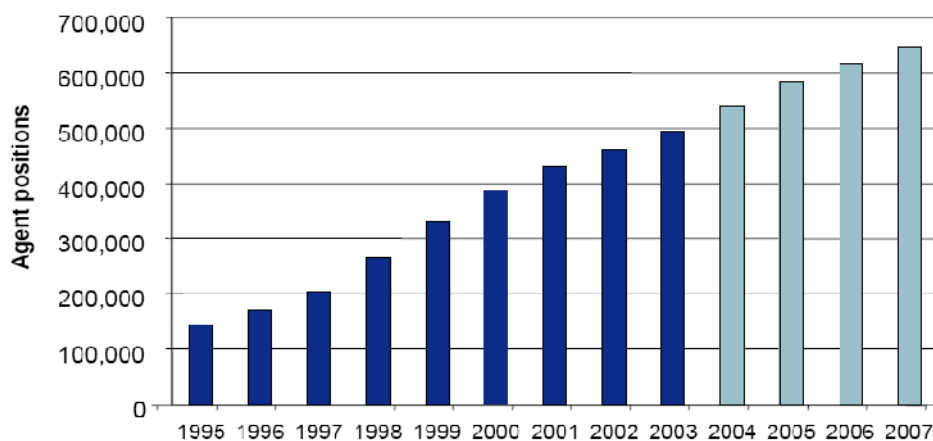
The telephone call centre industry employment has witnessed a tremendous growth over the recent years (Bain, Taylor 2004, Deery, Iverson & Walsh 2002, Bordoloi 2004, Snow 2005). It is an important industry for employment generation and job creation opportunities in many different countries of the world (Holman, Batt & Holtgrewe 2007). The situation of call centre employment generation over the recent years in the UK is shown in Figure 2.1.

This huge growth in call centre numbers and the associated growth in employees' positions is a result of a number of factors. These include the wide perception for the need for centralised customer service channels that could reduce the costs of the



traditional customer interaction activities; and the wide spread availability of enabling technologies that made it easy for organisations to adopt this kind of customer service method resulting in cost savings (DTI Services 2004). However, the recruitment and training of this huge layer of customer service representatives in call centres has become a sensitive issue due to the high levels of turnover and burnout reported within employees in this sector (Townsend 2007). The financial impact of losing employees in call centres is paramount. According to Krenzelok and Dean (1994), the loss of one key employee due to turnover can cause devastating results on call centre work and service quality. They found that the cost of leaving employees, in addition to the money spent on recruiting them; include reduced quality assurance, increased sick time and decreased morale and talent that are perceived as of invaluable effect on call centre environment and customer retention. However, these traits are impossible to be financially measurable.

Figure 2.1 Employee Positions in UK Call Centres. Source: DTI Services (2004)  
**The UK Contact Centre Industry - agent positions, 1995 -2007**



Despite the negative impact of employees turnover on call centre work and capabilities in terms of talent loss and financial cost (Krenzelok, Dean 1994), however, very little attention has been paid to the impact of the link between organisational commitment and the service system designs employed in call centres within the context of turnover and employees’ retention (Jaaron, Backhouse 2009b, Jaaron, Backhouse 2011b). In the extensive literature relating to call centre employees’ turnover it was found that majority of studies seek to reduce turnover through adopting new forms of emerging training and recruitment techniques. But none has been found on reducing employees’

turnover through leveraging organisational commitment as a result of re-designing the service model employed.

In this endeavour, Townsend (2007) studied the nature of recruitment practices and training procedures in call centres confronted with very high levels of turnover. This research work was carried out using non-participant observations and interviews with key personnel at a public utilities company's call centre. It was discovered that the organisation could reduce the cost of training and recruitment through internal transfers of employees within the organisation. This is termed as "positive turnover" (Townsend 2007). This is in contrast to irrecoverable cost associated with employees leaving the organisation. However, the limitation of this study is that it was carried out in a single company. Hence, it cannot be generalized to reflect the whole trend in the call centre sector but it highlights one of the interesting issues in this sector.

Moreover, Bordoloi (2004) has also addressed the issue of high levels of turnover among call centre employees and offered a quantitative model that results in an optimal level of employee workforce in order to meet call volume demands to satisfy a target service level. His article introduced a new employee planning model in a knowledge-intensive call centre. Maintaining a steady move of employees to higher more complicated learning levels in the call centre reduces the total labour related costs. The author combined the control theory and chance-constrained programming to deal with employees requirement planning that considers the employees learning and controls for the risks involved in a high employee turnover situation. It is worth noting that this model has the deficiency of neglecting the effects that salaries and age can have on the turnover rates. In reality, age has an effect on the employee preferences and willingness to change jobs. Older employees have better performance effectiveness and lower turnover rates (Higgs 2004). Also, higher salaries and monetary incentives can influence the turnover rates. It was found that the main reasons for turnover were low salary, lack of career path and burnout. This explains why a relationship between salaries, age and turnover is anticipated.

Annual turnover of employees is a particular problem for the call centre sector in almost all parts of the globe (Holman, Batt & Holtgrewe 2007). The cost of induction and

training of new employees exerts significant pressures on the organisational performance and well-being (Siong, Mellor & Moore 2006). In the UK employee turnover in call centres has experienced some stability and control in recent years. However it remains a perpetuated problem for many call centres from different sectors and sizes (DTI Services 2004).

In general, larger call centres tend to have higher rates of turnover due to the fact that call centres are flat organisations (Adria, Chowdhury 1999) typified by a simple and “bureaucratic structure” (Mintzberg 1983). In such an environment ambitious employees don’t see a career path and are not motivated to remain.

Siong et al. (2006) also studied turnover phenomena in call centres. The purpose of his research work was to examine a turnover model in the call centre environment derived from a study of shop floor retail sales representatives. A questionnaire to measure the variables in the model was used to collect the data. It was found that the model was supported and the stress variables played a major role in the intention to quite, this work supported the notions of Bordoloi (2004). Siong et al. (2006) argued that the experience of stress in call centre environment does not directly affect the job satisfaction, but it stimulates the lack of commitment among employees which may be reflected in outcomes such as absenteeism and turnover (Siong, Mellor & Moore 2006).

In an attempt to reduce high levels of stress and burnout reported amongst employees, and to provide a helpful techniques to reduce the caller waiting time. Seyed et al. (2007) have introduced a model to create a work sharing network by training employees to perform more than one task during their working period. The benefit of this cross training can be seen in providing employees with a career path, improving the service quality levels and reducing the employees’ work-load. Ultimately this improves the work experience by providing a more diverse series of tasks. The model has the ability to use the average shortest path length of the network to determine the best cross-training structures to reduce caller waiting time. The author argued that this model is suitable for in-bound call centres. However, although the benefits of such training arrangements are significant (Compton 2005), it is obvious that the implementation of this model in call centres is very costly and it does not eliminate the effects of

performance monitoring and tight control on work methods. However, to train employees on some or all of the call types requires significant training resources and effort (Dawson 2007).

In the same context, van den Broek (2004) studied the recruitment methods used in several large call centres in the Australian telecommunication sector. He focused on the high management motivation to resist trade unions in call centres. Recruitment methods had been constructed to recruit call centre employees who might not be motivated to join a workplace trade union. Three methods were identified by the study that helped the management to achieve this aim; the use of recruitment process to identify those with union tendencies; identifying and excluding those with previous union background or worked in such an environment, and finally applying pressure on recruits to sign non-union contracts at the appointment. The author argued that these kinds of recruitment practices have focused on behavioural, rather than technical abilities of the employees, and they have resulted in a less experienced workforce.

This may be congruent to the findings of Holman et al. (2007) in their global study of call centre employment and management, who discovered the use of rigid selection procedures and tests in call centres in many countries around the globe. However, it appeared that the lack of experience and the presence of workplace constraints resulted in service quality level deteriorating as employees were unable to perform a service at the level required (Zeithaml, Parasuraman & Leonard 1990).

### **2.2.3 Service quality in call centres**

Literature from services marketing, services industry management and organisational psychology emphasises the importance of service quality in attracting customers, satisfying and retaining them (Storbacka, Strandvik & Gronroos 1994, Heskett, Sasser & Schlesinger 1997, Schneider, White & Paul 1998). Service quality in call centres has often been linked with the service level an organisation can offer to its customers. Service level refers to predefined percentage of calls answered in a predefined number of seconds. It is considered the best measure of the call centre queue, accessibility of the organisation and it reflects, in a realistic way, the customers' experiences with the

interaction (Cleveland 2006). However, the concept of service level in this context has always been an issue of argument. Answering a certain percent of calls in a predefined period of time might imply that employees need to be quick in handling calls. Being easily accessible with short waiting times does not necessarily mean that your service quality targets have been correctly perceived by your customers (Cleveland 2006).

#### **2.2.4 Quality-quantity contradiction**

Many companies carry the slogan of being accessible as one of their distinctive features that make them distinguishable from their competitors. But one may argue that being accessible is not the ultimate objective for customers. Call centre employees may rush to achieve their target for answering their customers' calls with low abandonment rates, but the question remains is that, are they doing the right work whilst having customers on the phone? Are they communicating in the manner that reflects the company's values and are they achieving the contact benefits? Employees can provide a fast service even though the customers may be misunderstood and their information incorrectly entered. Thus possible business opportunities can be lost (Cleveland 2006). This kind of argument highlights the contradiction between quantity and quality in call centre research.

Studies of call centre management practices and environment have revealed that there is a tendency to focus on efficiency (volume of calls handled) rather than effectiveness (service quality and customer orientation) (Dean 2002). In other words there is a focus on "quantity" rather than "quality" (Bain et al. 2002, Mahesh 2006, Raz, Blank 2007). This focus on quantity explains such issues as control on employees, high workloads and less empowerment as discussed earlier.

It is obvious then that it is difficult for employees to be customer-oriented in such an environment. This explains one of the reasons for the low levels of service quality in certain call centres (Dean 2002). It was also found that this focus on quantity at the expense of quality came as a result of a mismatch between what was required from call centres and what was measured within call centres. Quantitative measures have been found in many cases to dominate over the qualitative measure. Robinson and Morley

(2006) have sought to explore the call centre management from the perspective of its managers, particularly looking at the main responsibilities and the key performance indicators used. This research was carried out using in-depth interviews with the managers of call centres to understand their strategic intent of having call centres as a channel for serving their customers. Their research work has revealed that there is confusion over the strategic intent of call centres. The management sees them as a means of reducing costs, and customer service is seen as a second class priority. Call centre managers claimed that issues related to customer service is their main management responsibility.

The quality-quantity contradiction in call centres has also been explored in a recent study by Raz and Blank (2007). They studied the integration of these two extremes in the form of “professional service model” with the attempt to instil this model in the call centre culture. The findings have shown that this kind of integration was not achieved in the call centre environment. The professional service model has collapsed in the workplace as it was perceived by front line employees as being less important for the call centre and poorly implemented. The management of employees in call centre experienced the same features of control and monitoring in the workplace even though the management declarations were to support a professional service model. Those declarations were only “a ceremonial facade that covers the conventional quantity/quality tension” (Raz, Blank 2007).

In a similar vein, the culture in the call centre environment has been built around the concept that call centres are places to reduce cost and increase efficiencies of customer-organisational interactions. This kind of concept needs to be changed to achieve a higher level of impact that the call centre can provide to the parent organisation. Once that new concept is built then many improvement initiatives can find a way to survive in this contradictory environment. Ian (1998) has illustrated the effects of the organisational culture on the new services qualities and abilities. He outlined that any new service models introduced must be incorporated into the existing service system. He stated that modifying service models during the design process itself to fit within existing organizational service culture is a significant cause of new service failure. This

implies that the introduction of new service models to the workplace can suffer unless it is truly aligned within the organisation working culture.

### **2.3 Service quality and organisational commitment**

Arguably, organisational commitment is one of the most desirable traits an organisation wants their individuals to possess (Hunt, Chonko & Wood 1985). It is emphasised that organisational commitment research should be focused primarily on lower and middle level employees (Abdulla, Shaw 1999, Behery 2009). It is widely linked with employees' intentions to turnover and, as a result, directly affects organisational performance (Hunt, Chonko & Wood 1985). Research has shown that the level of employees' organisational commitment has a significant impact on the level of service quality experienced by customers (Porter, Steers & Boulian 1974, Mowday, Steers & Porter 1979, Allen, Meyer 1990, Mathieu, Zajac 1990). The committed employee develops a special relationship with his employer such that s/he is willing to strongly engage in activities beyond his role in addition to performing his assigned duties. This attitude is regarded by Meyer and Allen (1991) as an essential element for employee's contribution to organisational effectiveness and work quality. In fact, research on organisational behaviour has shown that employees' organisational commitment is principal determinant for the level of employees' turnover, absenteeism, burnout, individual work performance and organisational effectiveness (Mathieu, Zajac 1990, Tett 1993, Sung 2007).

As it was stated previously, the environment and the management of call centres have many contradictions that need to be investigated in relation to their impact on individual's organisational commitment. Therefore, in an attempt to explore the effects of both on the employees, Little and Dean (2006) has studied the effects of the global service environment. This was in the context of employees' commitment to Service Quality Capabilities (SQC) in a telecommunication call centre. It was found that the global service environment has a direct effect on both employee commitment and employees service quality capabilities. Also it was identified that customer feedback and human resources management practices influenced the global service environment. Improving the global service environment has the benefit of improving the call centre

work place by providing support and rewards to the frontline employees for providing high quality service to customers. Hence, customers will enjoy a better organisational interaction experience.

However, it is worth noting here that improving the global service environment in call centres requires radical changes in the managerial practices and operational systems to give its anticipated benefits. The improvements in the service quality delivered to customer and the perceived customer orientation both can have a huge impact on customers' loyalty and commitment to the providing organisation (Dean 2002). Fujitsu has moved away from the concept of efficiency in their call centres by focusing in redesigning their performance management system to be more dedicated towards their customers' needs (Marr, Parry 2004). Fujitsu management have viewed the organisation from a customer perspective, and understood the front line employees' roles and responsibilities. A new theory of management called "Sense and Response Theory" was introduced in the company, they utilized transformational leadership theories in which managers role has changed from one of authority to one of support, improvements were achieved in the organisation as a result of this new strategy (Marr, Parry 2004).

Moreover, for employees in call centres to have a rewarding job experience, their perceptions and understanding of the importance of the call centre to the organisation is vital. The clarity of employees' role in this customer-service channel is very important in building their own self-esteem. Mukherjee and Malhotra (2006) examined the effects of employees' role clarity in call centres and its pre requirements and consequences on employee-perceived service quality. The research revealed that role-clarity has a vital part in explaining employees' perceptions of service quality. It was also found that management feedback, decision-making participation and team support significantly influence role clarity, which in turn enhances job satisfaction and organisational commitment. This study has the limitation of being carried out in the call centres of a single financial firm which raises questions about to what extent these results can be generalized. However, the results of the study were congruent with that found by Malhotra and Mukherjee (2004) of emphasising the relationship between employees' commitment and service quality.



## 2.4 Affective commitment: implications for organisational effectiveness

In the extensive literature relating to an individual's commitment to an organisation it was shown that organisational commitment is defined as the employee's psychological and emotional attachment to the organisation (Porter, Steers & Boulian 1974, Mowday, Steers & Porter 1979, Allen, Meyer 1990, Meyer, Allen 1991, Cook 1980, Mowday, Porter & Steers 1982, Mayer, Allen & Smith 1993, Commeiras, Fournier 2001, Ferretti 2009). Many attempts were found to define the organisational commitment, and different measurement techniques were developed for its evaluation. However, according to Meyer and Allen (1991) organisational commitment, which reflects a psychological state, has three different components (i.e. affective, continuance, and normative commitment). These are presented below:

- **Affective Commitment:** it is defined as a measure of the employee's emotional attachment to the organisation, the strength of identification with the goals of the organisation and strength of commitment to its success and continuous improvement. The employee remains a part of the organisation because s/he wants to do so.
- **Continuance Commitment:** The employee commits to the organisation because of the high cost associated with leaving the organisation, including different forms of monetary losses such as pension accruals and social costs such as friendship ties with co-workers that would be lost. The employee remains a part of the organisation because he has to do so.
- **Normative Commitment:** In this component, the employee attaches himself to and remains a part of the organisation because of a feeling of obligation. For example, the organisation may have invested resources in training or educating an employee (e.g., paying education and training tuition fees) who then feels an obligation to put in a corresponding amount of effort with a view to "repaying a debt". The employee may

also develop such feeling even before joining the organisation as a result of normative pressures of familiar or cultural socializations, driving the person to believe that one should remain loyal to one's organisation.

Of particular importance is the concept of affective commitment in the work place since this has been found to have the greatest impact on individuals' performance, on-work behaviour and ultimately organisational effectiveness (Porter, Steers & Boulian 1974, Sung 2007, Shum 2008, Herscovitch 2002, Gong 2009). A study by Malhotra and Mukherjee (2004) was carried out in four call centres in the UK financial sector to investigate the relationship between organisational commitment, job satisfaction and service quality. The study demonstrated that affective commitment was more effective than job satisfaction in influencing the service quality of customer-contact employees. It is noteworthy that affective commitment differs from job satisfaction in several ways. Affective commitment, as we have mentioned above, is defined as the employee's psychological attachment to and involvement in the organisation (Mowday, Steers & Porter 1979). Job satisfaction, on the other hand, is defined as an employee's attitude towards his/her job aspects (Weiss 2002). Hence, affective commitment is a more global construct that emphasizes the strength of bonds with the company, including its values and objectives (Porter, Steers & Boulian 1974, Jaaron, Backhouse 2009c), while job satisfaction focuses on "the specific task environment where an employee performs his or her duties" (Mowday, Steers & Porter 1979).

The effects of the affective commitment on service quality can be explained by considering foundations of affective commitment introduced by Mowday et al. (1982) and van Emmrik and Sanders (2005). These foundations are:

- Employee's personal characteristics: if the organisation provided the chance for its employees to fulfil their personal ambitions; desire of achievement, autonomy, and a sense of control on what the employees have, then employees are more likely to develop affective commitment with their employer.
- Organisational structure and job-related characteristics: affective commitment is also related to the employer ability to decentralize decisions making

processes to be at the employee's level. This gives employees a feeling of personal importance and value in the organisation. In addition, role clarity, constructive supervisors' relationships with employees, and job enrichment, as a result of organisational changes, are likely to influence employees' affective commitment (Meyer, Allen & Topolnytsky 1998).

- Psychological contract: the psychological contract refers to the expectations set by employees and employer concerning each other's obligations (van Emmrik, Sanders 2005). Employees have expectation of job promotion, employer loyalty and preferences considerations at work. Unmet employee's expectations could result in dissatisfaction and ultimately turnover. For example, organisations that implement changes that fall in its own best of interest without paying attention to employees are more likely to experience lower levels of affective commitment among employees (Meyer, Allen & Topolnytsky 1998).
- Work experiences: The psychological contract is partially responsible for how good or bad an employee working experience will be. Other dimensions such as objective and subjective matters of the work will have their impact on the issue as well. Employees provided with fair treatment and "socio-emotional" support by their organisation will tend to have stronger affective commitment level (Vandenberghe 2009). Generally, employees whose working experiences were rewarding and fulfilled their own aspirations were ready to exert more effort on behalf of the organisation to deliver high levels of service quality than those whose working experiences were less rewarding (Meyer , Allen 1991, Mayer, Allen & Smith 1993).

Behery (2009), in his study of the relationship between person-organisation fit, person-job fit and affective commitment of employees of large UAE companies, found that affective commitment is positively related to the person-organisation fit and person-job fit. He indicated that the person-organisation fit, in this context, refers to the match between an individual and the organisation in sharing similar values and preferences. According to him, a match between organisational systems and structures and

employees' preferences and needs is one of the major determinants for person-organisation fit that is found positively related to affective commitment.

If the organisation provided individuals with control on what they have, professional development opportunity, and provided a feeling among them of importance and value to the organisation, then employees are more likely to develop affective commitment with their employer (Jaaron, Backhouse 2009b, Ferretti 2009). Interestingly, and in order to remove the ambiguity on the relationship between affective commitment and profit sharing and monetary rewards, Bayo-Moriones (2009) found that where employees were given high levels of participation in job decision making processes and control on how to implement work procedures, profit sharing and monetary rewards did not raise employees' affective commitment in this context. On the contrary, he found that profit sharing practised by organisations might cause slight reduction in the level of affective commitment. This tends to be true when reviewing the foundations for leveraging affective commitment discussed above. It seems that fostering employees' affective commitment needs an organisational strategic orientation on creating competence-related work with strong bonds of mutual trust (Meyer, Allen & Topolnytsky 1998) that can create a rewarding job experience.

One of the challenges associated with the creation of affective commitment is the match between the cultural values of employees and that of organisational attributes and rewards (Williamson, Burnett & Bartol 2009). Affective commitment building in call centres needs a supporting environment where employees can enjoy a clan culture (Cameron, Quinn 1999). In fact, a clan type organisation is where employees tend to have high levels of affective commitment (Hunt, Chonko & Wood 1985, Mathieu, Zajac 1990). It is at this culture where employees are encouraged to follow teamwork principles, be actively and continuously involved in making work decisions, in addition to the ability of employees to raise suggestions regarding the way they believe better to do their own work (Masood et al. 2006). Further, Liu (2009) found that organisational support is likely to influence the level of affective commitment of employees, and that affective commitment is a mediator of the relationship between organisational support and organisational citizenship behaviour of following organisational rules and helping co-workers who have heavy workloads.

It is noteworthy, then, that there have been numerous attempts to measure the organisational commitment of employees (Porter, Steers & Boulian 1974, Mowday, Steers & Porter 1979, Meyer, Allen 1991, Cook 1980, Mayer, Allen & Smith 1993). One of the examples is the Organisational Commitment Questionnaire (OCQ) introduced by Porter et al. (1974). This consisted of a fifteen items - later shortened to a nine-item version which was found by many researchers to be superior in measuring affective commitment (Allen, Meyer 1990, Mathieu, Zajac 1990, Meyer, Allen 1991, McElroy et al. 1995).

Taylor et al. (2002) and Ellis and Taylor (2006) found that despite strident calls for new forms of organisational structures and management styles, service operation models and organisational structures commonly implemented in call centres inhibit the development of a rewarding job experience for employees. This is due to standardised work procedures, monitored mechanisation of customer-employee contact and an emphasis on quantity statistics and targets over the quality of interaction (Mahesh 2006, Varca 2006). As a result employees lack the affective component of commitment. The consequence is high employee turnover, low service quality and ultimately low customer satisfaction. Nevertheless, there is evidence that the characteristics of service system design implemented in call centres play a major role in affecting the level of affective commitment of front-line employees. In fact, if the characteristics of the service system design help employees in fulfilling their personal ambitions, and in promoting their desire of achievement, and if the managerial system is related to the employer ability to decentralize decision making processes to be at the employee's level. Then, the service system design this way provides employees with a sense of control on what they have, and gives them a feeling of personal importance and self esteem in the organisation (Meyer, Allen 1991). Due to these reasons employees working under such principles are more likely to develop affective commitment with their organisation (Mowday, Porter & Steers 1982). In addition, converting the management role from performance monitoring to constructive support and involvement in demand analysis inevitably creates a rewarding working experience that can help increase employees' level of affective commitment (Meyer, Allen 1991, Mowday, Porter & Steers 1982).

However, Vandenberghe (2009) have identified that employees affective commitment to supervisors and organisations was associated with reduced turnover levels and intentions to quit. It is in this regard that affective commitment leveraging is vital to reducing employees' turnover and absenteeism (Somers 2009). Employees turnover due to the lack of affective commitment can cause call centres to lose considerable experience and talent (Krenzelok, Dean 1994). The longer an organisation keeps employees the better the services provided will be due to the accumulated expertise over time.

There is also evidence from the relationship marketing literature of the importance of affective commitment in motivating clients and customers to continue their relationship with an organisation. De Ruyter (1999) has studied the factors that motivate clients to continue their relationship with an audit firm. The findings show the availability of different pre requirements and consequences of commitment in auditor-client relationships. Affective commitment was found to have an important role in this context. The author argued that service quality and trust have a positive impact on affective commitment. The customer evaluates the overall image of the organisation solely on the basis of his experience with the service encounter and then decides whether to continue with it or not (Brown, Maxwell 2002).

In the same regard is the work of van Emmrik and Sanders (2005) of studying the relationship between employees working hours (where there was a non-correspondence between preferred and actual number of hours), and affective commitment. It was found that employees experiencing a mismatch in their working hours are less likely to have affective commitment with their organisations. Hence call centres that operate 24 hours a day and seven days a week or those working for long hours every day would benefit from allowing employees more flexibility in their working schedules to match their desires and expectations. This will stimulate building the affective commitment among them and ultimately improve the quality of their performance.

### **2.4.1 Added value through employees affective commitment**

Achieving organisational competitiveness is critical for manufacturing organisations success regardless of their type and size (Hoehn 2003, Phusavat 2008a). Not surprisingly, manufacturing organisations grant service delivery and quality a competitive priority in this regard (Phusavat 2008b). This is due to the belief that the wide spread of latest technology and the possibility of competitors to acquire it has made the competition very intensive (Matt 2009). An organisation's competitors, equipped with the latest technology, are able to produce almost exactly the same products with high quality. This has devoted many organisations to look for new innovative ways to distinguish themselves from competitors and achieve competitive success, if not through the products they produce then through the services their employees provide. Call centres embraced by a manufacturing organisation play a major role in this endeavour as they are the main channel of contact between organisations and their customers (Burgers et al. 2000, Raz, Blank 2007). Meyer et al. (1998) have indicated that in order for organisations to achieve competitive advantage through their employees, it is most important to equip them with high levels of affective commitment due to its fundamental links with extra role behaviour in the organisation (Liu, Chang 2009).

Note that affective commitment has a direct impact on organisational efforts for financial savings (Jaaron, Backhouse 2010). This is due to the direct and indirect cost of employees' turnover if they lack a sufficient level of affective commitment. Direct costs (i.e. quantifiable) include advertising and recruiting cost, interviewing cost, orientation or training cost, and employment application processing cost. While indirect costs (i.e. unquantifiable) include reduced quality assurance, increased sick time and decreased morale that is perceived as of invaluable effect on call centre environment and customer retention (Krenzelok, Dean 1994). Furthermore, a highly affectively committed employee is more willing to exert more efforts on behalf of his employer to do exceptional job of delivering a quality service that retains customers (Meyer, Allen 1991, Mayer, Allen & Smith 1993). In fact, customers evaluate the overall image of the organisation solely on the basis of their experience with the service encounter and then decide whether to continue with it or not (Brown, Maxwell 2002). Just like their

manufacturing counterparts, “service companies have their own kind of scrap heap” (Reichheld, Sasser 1990), this scrap is actually the customers who stop dealing with the company. The longer the customer stays with the company, the more the profits gained would be. Customers who stay with the company for longer become accustomed to use the service more and thus profits increase (Reichheld, Sasser 1990). In short, building affective commitment among call centre front-line employees is more likely to mitigate the problem of turnover cost and create better working force that are devoted for delivering a quality service that could generate profit by retaining customers.

Another dimension where employees affective commitment is of paramount importance is the organisational change. While most of the literature on organisational change focuses on the macro level of the organisation on how to deal with organisational changes, there appears to be a growing literature that focuses on the micro level of the requirements needed at individuals’ level to deliver a successful organisational change. Of particular significance is linking employees’ affective commitment with support for change initiatives. Herscovitch (2002) introduced a three component model of commitment in the context of organisational change. It was found that affective and normative commitments were associated with higher levels of support to change initiatives. Further, they have noted that much of the change related stress is minimal among employees with higher level of affective commitment. Accordingly, Shum (2008) have studied the role of employees’ actions and behaviours, in particular, affective commitment in the process of Customer Relationship Management (CRM) implementation. They have found that affective commitment has a strong relation with successful CRM implementation due to the supportive behaviour employees show in this context. Similarly, a number of researchers, such as Meyer and Allen (1991), May (1996), Meyer et al. (1998), and Lau (2001), have demonstrated the significance of employees’ affective commitment for successful organisational changes that can save organisations a tremendous amount of time, effort and monetary resources usually invested during organisational change.

Despite the fact that ever-changing business environment calls for new forms of organisational structures and management styles, however, managerial practices and organisational structures commonly implemented in call centres across the service



industry can inhibit the development of a rewarding job experience for employees (Jaaron, Backhouse 2010). This is due to standardised work procedures, monitored dialogue (Taylor et al. 2002, Ellis, Taylor 2006), mechanisation of customer-employee contact and an emphasis on quantity statistics and targets over the quality of interaction (Mahesh 2006, Varca 2006). Eventually employees experience reduced empowerment in making decisions. As a result employees lack the affective commitment which is more effective than job satisfaction in influencing the service quality (Malhotra, Mukherjee 2004). This has consequences such as high employee turnover, lower service quality and ultimately low customer satisfaction.

## **2.5 Call centre specialisation: implications for service quality**

The most experienced and highly successful companies in today's dynamic and ever changing marketplace have realised that low prices and availability of products and services are not the only determinants of success or failure (Zeithaml 2002). It is how skilled their employees are and how responsive the companies are in dealing with customers' problems and inquiries that governs success (Marr, Parry 2004).

In many organisations where the employees are doing the same type of work, it is often found that they are not performing at the same level. In such cases, an opportunity is there to identify the root causes of less performing employees. Improvement changes can then be taken to leverage the performance of those less performing employees to satisfactory levels (Hillmer, Kocabasoglu 2007). Obviously, a highly specialised and responsive working environment in companies requires specialised employees who seek to deliver high quality services.

Outsourcing the customer service tasks to an independent call centre has been viewed in many cases as a way of cost reduction. Outsourcing work to people or organisations that can do it better than the parent organisation is also a concern for many organisations aiming to focus on their core competencies to excel (Fleischer 2007, Bhatnagar 2004). However, Bhatnagar (2004) discussed the problem of outsourcing companies' customer interaction tasks to independent call centres. Ideally, outsourced call centres would like its clients to be from the same business field in order to

standardise its operations; to have better knowledge management models (Koh et al. 2005); and become specialised in that particular field. However the companies' managers fear the leakage of sensitive information to their competitors who are working with the same call centre. This forces call centres to have clients from different product categories and creates a problem for call centres in that commonality in the products or the sectors they serve is difficult to achieve.

Therefore, it is arguable that call centres with a variety of product categories and sectors to serve will navigate away from being specialised in one sector. The employees are then perceived to be less focused on one type of product or sector. This may lead to a less experienced and knowledgeable workforce serving the client's customers. Ultimately the service quality of the call centre will suffer. It was found that the quality of the service provider cannot be separated from the service offered (Lewis 1989). There is some potential, then, that organisations including manufacturing ones should embrace their customer service tasks. This will ensure that employees are focused on one type of sector where they can excel in executing the full spectrum of tasks within that sector.

## **2.6 Caller attitudes toward call centres**

“There is no fundamental theory derived from a scientific basis for the behaviour of the human being” (Payne, Chelsom & Reavill 1996). In fact human beings in general are the most complex and least predictable dimension of the organisation. Despite the widespread growth of the call centre industry, the customers did not embrace them with open arms (DTI Services 2004). The spread of the negative image of call centre work was due to the intensive technology in use that obstructed the work ownership by employees, and limited the customer interaction to a relatively short conversation (Pollitt 2006, Holman, Batt & Holtgrewe 2007). Customers' attitudes towards this kind of industry have been negative due to the time they have to wait for service; they believe that call centres benefit organisations more than the customers as they significantly reduce the cost of customer service (Deery, Kinnie 2004). It was found globally that the call handling time is predetermined in call centres to be limited to few minutes in most cases. The variations among different countries is also very little, this is

apparently an indicator of the relative standardization of work procedures that built the negative image among callers in many different countries of the world (Holman, Batt & Holtgrewe 2007).

Due to the invisibility of the call centre employees, customers base their opinions and experiences solely on their interaction with the employees over the phone (Brown, Maxwell 2002). In fact, customers would like employees to convey a “sense of genuine interpersonal sensitivity and concern” (Deery, Kinnie 2002) without the constraints of time and technology. Despite the fact that phone calls limit the use of non-verbal communication such as the employee’s body language and smiling, it was found that words can be a way to increase sales and promote benefits. The way employees talk and convey empathy can be a technique of achieving customer satisfaction (Sturdy, Fleming 2003).

### **2.6.1 Caller satisfaction**

Many organisations have realized that the relationship with the customers should not end at the moment they sell them their products (Feinberg et al. 2000). It is believed that organisations should provide communication channels that can add value to the customers experience with the organisation (Marisco 1996). As a result call centres have emerged as an important port for customer relationship management activities (Kotorov 2002), and the call centre employees are seen as the main link between organisations and customers through which the added value can be transferred (Burgers et al. 2000). However, although the “caller behaviour is difficult to objectively measure” (Betts, Meadows & Walley 2000), they evaluate the quality of the service on the basis of the service encounter itself and the expected benefits they can reap from that encounter. Therefore it is important for organisations to pay attention to the structures and quality of their services to both achieve and deliver the added value and satisfaction in their customer interactions.

Many studies have emerged in this regard to investigate the relationship between service quality and customer satisfaction that leads to perceived added value within the interaction experience. Keiningham (2006) examined the callers’ satisfaction and

retention among callers who are members of the primary brand of the organisation and have previously purchased some other supporting services. They found that caller satisfaction in this context has four dimensions (reliability, responsiveness, assurance and empathy of employee) which are congruent with that of SERVQUAL model introduced by Parasuraman et al. (1988). This model is used for measuring service quality by comparing customers expectations before a service encounter and their perceptions of the actual service delivered. Among the mentioned four dimensions of SERVQUAL model only empathy is important to the organisation's primary brand retention. This indicates that callers would like employees to show some ethical norms and values that might help reassure them and give them a sense of employee's commitment towards their problems (De Ruyter 1999).

Furthermore, technological developments and advancements may help to create a quality service or a happy customer (Ayios, Harris 2005). However technology options can also be a source of escalated stress among employees (Cartwright 2003). Few studies have investigated the effects of technology on customer satisfaction. Steel et al. (2002) discussed the notion of using an auditory icon such as: paper shuffling, dragging a file across the desktop, and keyboard sound during the customer-employee interaction in call centres that a customer can clearly hear, to let them know that employees were engaged in processing their transactions. This was also aimed at reducing inappropriate interruptions from customers to improve the flow of conversation and progress of calls. This study has found that such techniques were not very helpful in the call centre scenarios, and the customer satisfaction was not explicitly influenced by these changes.

Ayios and Harris (2005) studied the effects of technology developments on building customer's trust and retention in call centre. They found that technology developments must be associated with positive application of employee's knowledge about the system and the products it supports to help in building trust with customers. This employee's knowledge must come as a result of the steady cooperation between the call centre management and other business units in the organisation that is necessary to facilitate accurate and timely transfer of updated information to the call centre employee's databases to handle customer inquiries (Cleveland 2004b, Corea 2006).

Conz (2007) in his recent study showed that customer satisfaction with call centres is a result of the first-call resolution (i.e. one stop calls). The study suggests that first-call resolution is a priority for every customer who is seeking help in his inquiry or problem. The postponement of the problem resolution will exert more pressure on the call centre employees as customers will call again until they solve their problem. This will keep call centres queues overloaded with callers and thus employees will reach burnout and stress state faster than before (Cleveland 2006).

Likewise, Feinberg et al. (2000) focused on the operational determinants of caller satisfaction. Among 13 critical operational variables tested, he found that the callers who have satisfactory resolution on the first call, and the callers who were able to get through to the employee in a relatively short time without the need to hang up or disconnect (low abandonment rate), were the main determinants to caller satisfaction. Further, Cleveland (2006) has discussed seven factors that can affect abandonment of callers, the way they perceive the service of call centres and ultimately their satisfaction with the service experience. These are:

1. Urgency of the call: it is about how urgent the call is, and whether the caller will be able to wait for more time to be connected or not, the callers with serious problems are willing to wait more than those with simple inquiries.
2. Availability of alternatives: if the callers know of any other means of communication with the organisation they may abandon their call when it takes too long to get through. If not, they will retry many times and hold for long periods, even though they are unhappy with the experience.
3. Competitors influence: if the customers know of other competitors who may serve them faster, they may abandon calling the organisation more quickly to contact a competitor.
4. Level of expectations: callers who have had a bad experience with the call centre in the past may affect their willing to stay for longer on queue. The past experiences have a great effect on customers' expectations.
5. Time available: callers usually tend to wait for longer in the queue if they have the time to do so. Others, with busy life schedules may have less time to wait.

6. The call cost: callers usually tend to be more willing to wait on queue for longer time when they are not paying for the call. But in the event they are paying for the call, they are less willing to wait for long.
7. Environment influences: factors like weather, the daily pressures and demands all have influence on caller's perceptions and satisfaction with the call centre service and the abandonment rates when trying to get through.

However, a closer look at the call centre operations would suggest that a lower abandonment rate requires the employees to be quicker in handling calls to make sure that calls waiting on the queue will be answered before they hang up. This tendency will drive us again to the quantity-quality conflict in call centres. This calls for new forms of call centre service models that can offset the flaws of the current operational models in use.

### **2.6.2 Evolving customer expectations**

It is true that call centres offer a place for the voice of the customer to be listened to, and the customer's expectations to be understood. Unfortunately, it is common that customer calls are not recognised as representing important strategic asset for the organisation. In fact, it is a fundamental asset to make sound business decisions "because the contacts we handle today represent the latest read on our customers and how well we're serving their needs in an ever-evolving economy" (Cleveland 2003).

Understanding customers and anticipating their expectations is a challenge for organisations. Knowing how customers think and what are their evolving expectations and preferences holds an enormous opportunity for the organisation to differentiate itself from other competitors in this ever changing economy where products and services are easily imitated (Cleveland 2006). Dean (2004) studied the customer expectations dimension. He investigated whether customers predicted low service quality levels from a call centre, how that expected level of service quality can be compared with the minimum level they considered acceptable, and whether the customer orientation of the call centre from the customer perspective was related to service quality expectations. It was found that the customers have a very high level of

expectation from call centres that are not matched during their service encounters. This justifies the findings of Deery and Kinnie (2004) that there appears to be a gradual tendency for customer attitudes towards call centres to become negative in various industrial countries.

In the same regard, Burgers et al. (2000) focused on the customer expectations and call centre employees behaviour. For this purpose they have developed a measurement instrument to identify key customer expectations with regard to employees' behaviour. Callers have some certain expectations from their service encounters; these expectations are likely to determine the dimensions of quality of service to callers. But the work environment in call centres has its own limitations in understanding the customers' expectations. The scripts that employees are instructed to follow when talking to callers can be too rigid, and if employees are not allowed to depart to a certain level away from the scripts to have a more focused and flexible conversation, adaptability of employees to help the caller may suffer and lead to a decrease in the level of service quality a customer perceives (Burgers et al. 2000). This study can be argued as being more focussed on the characteristics that must be possessed by employees. It gives no attention to the effects of the service systems design, or to the structure of processes that has caused the employees to be highly stressed, less empowered, and often, intensively monitored (Deery, Iverson & Walsh 2002, Holman 2003, Holdsworth, Cartwright 2003).

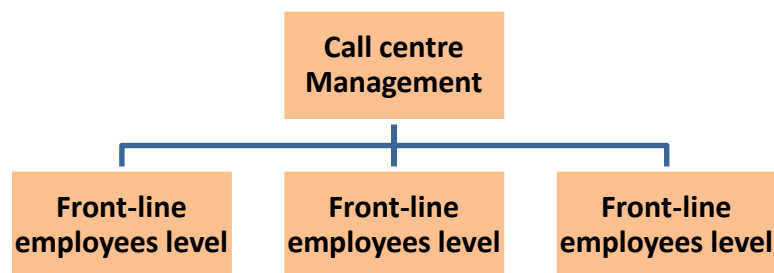
## **2.7 Call centre's hierarchical structure**

Call centres represent an organisational structure with relatively few layers of management. Managers comprise 12% of the employees in a typical call centre. Variations from this figure are very small with a minimum of 9% and maximum of 15% according to a recent global study on call centres management and employment trends (Holman, Batt & Holtgrewe 2007). They are flat organisations (see Figure 2.2) with rigid management models that control employees, monitor their performance and limit their empowerment (Holman, Batt & Holtgrewe 2007, Adria, Chowdhury 1999).

In his book, Mintzberg (1983) introduced several factors that can influence an organisational structure, these factors are both internal and external to the organisation of which some can be controlled and others cannot. These factors are:

- 1- Age and size of the organisation: age and size were viewed as the foundations for formalization and standardisation. As the organisation becomes older it adopts formalized methods of doing tasks and operations. Size also has its own influence as bigger organisations need a formalized system that clarifies tasks, responsibilities and roles amongst employees.
- 2- The surrounding environment: this factor is usually beyond the control of the organisation but it deeply affects the final shape of the organisation. A stable environment with stable demand patterns and predictable customer behaviours and requirements can lead to centralization in decisions making authority. In contrast instability and complex environment with unpredictable demand patterns, such as call centres, will lead the organisation to face uncertainty and hence become decentralized in decisions making to be at operative levels.

Figure 2.2 Call Centre Organisational Hierarchy



- 3- Technical systems: the production methods of transforming inputs into outputs significantly influences the organisational grouping and span of control and how the entire work, including customer service, is to be processed.
- 4- Power: the coordination mechanisms used, the criticality of the work, and the adopted methods of doing the tasks contribute to deciding the level of control the organisation uses.



Call centres are established with the intention of being the main channel of contact between organisations and their customers (Burgers et al. 2000), and are influenced by organisational factors. The flat organisation structure used in call centres is of a special nature as it is designed around the concepts of the “Machine Bureaucracy model” introduced by Mintzberg (1983) and the “Taylorist principles” introduced by Taylor (1911). Mintzberg (1983) has discussed the “Machine Bureaucracy” structure and elaborated its characteristics. It is usually defined by the control it imposes on the employees, and operational processes that all following strict rules. It is intended that uncertainty is completely eliminated and the employees perform repetitive tasks under tight control and supervision (Taylor et al. 2002, Ellis, Taylor 2006). The employees in many cases are selected to be from those who might not be in the favour of joining or ever having joined a workplace trade union (van den Broek 2004). Unions are often perceived by call centre management as potential sources for losing control over the employees in the machine bureaucracy model. The characteristics of the Machine Bureaucracy model are found to be typically congruent with those found in the literature regarding call centres management practices.

It is stated that the “Machine Bureaucracy” model is more applicable for old organisations of stable environment, non adaptive with conservative strategies, and mass production oriented strategy (Mintzberg 1983). However, Holman et al. (2007) in their global study of the call centre sector found that call centres are relatively young, with the typical call centre being eight years old. Unpredictability of requests and expectations would imply that the call centre environment is very dynamic and unstable. This inevitably raises questions about the suitability of the “Machine Bureaucracy” model in call centres and the necessity of the introduction of some other form of structure that eliminates the flaws of the current models. In fact, it is wrong to apply general principles of organisational design and structure to all organisations and service firms. On the contrary, every organisation must have a special design to fit the major technological operations used, and they must consider the human aspects in the workplace. It is vital to connect technological aspects with structural designs and the way the work is done (Robey, Sales 1994, Backhouse, Brookes 1996).

## **2.8 Part I summary**

The first part of the literature review gave an extensive account on the main issues and problems facing the call centre industry, highlighting the effects of human resources management practices such as training, recruitment and job monitoring and standardisation on employee's work-related stress and turnover. Following on from this, an account has been established for the service quality flaws in call centres as a result of the focus on quantity of calls handled rather than quality of interaction. Employees' organisational commitment issues and the importance of affective commitment to the call centre industry were explored. Also, an emphasis has been made on the added value of leveraging affective commitment in the call centre and its reflection on organisational effectiveness. Other issues such as the effects of less specialised outsourced call centres on service quality were also discussed. Further, a wide spectrum of literature has been explored on customer satisfaction in call centres and the influence of higher service quality on customer satisfaction and retention, and the effects of technology improvements on customer satisfaction. Finally, the hierarchical structure of call centres has been discussed, and a link has been established between the use of flat hierarchy in these service departments and the "Machine Bureaucracy" model.

Part II of the literature review concentrates on the validity of the current call centre's organisational structure design and their believed impacts that created the above discussed issues and problems in this prosperous sector.

## **Part II: Call centres organisational design**

### **2.9 Overview**

In part I of the literature review, an intensive account has been made for the issues and problems available from literature on call centre industry. It goes on to look at the reasons that have created these problems in the call centre industry, specifically looking at the validity of the current call centre's organisational structure and their believed impact that created the previously discussed issues and problems.

Part II begins with an outline of the effects of the external environment and their role in deciding about the internal structures of organisations and departments. It introduces the concepts of mechanistic and organic structures for designing business units. It concludes with establishing a gap in the knowledge for the need for designing manufacturing call centres around the principles of organic instead of mechanistic structures.

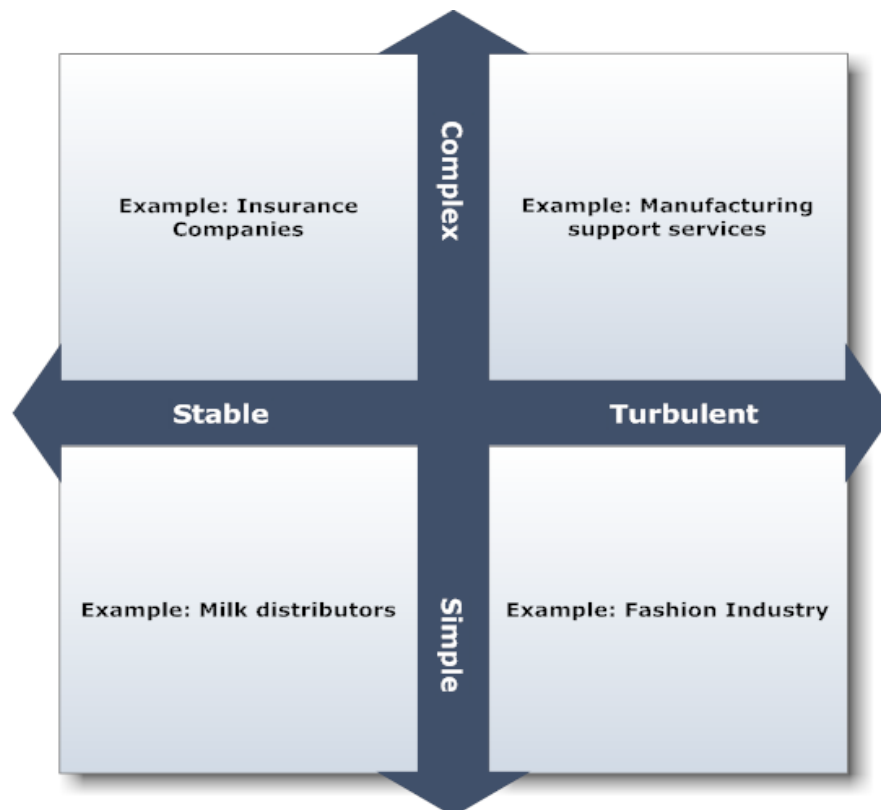
### **2.10 An organisation's environment and its effect on designing organisational structures**

For an organisation to survive and compete, it has to interact with its surrounding environment to understand the changes in its consumer market and, therefore, be able to adapt its structures and processes to remain in business (Johnston 2008). An organisation's external environment is defined by Huczynski and Buchanan (2007) as "the issues, trends and events outside the boundaries of the organisation which influence internal decisions and behaviours". It is represented by the range of elements found outside the boundaries of the organisation that affect its functionality and effectiveness. These include elements such as customers, financial markets, government regulations, competitors and cultural influences (McKenna 2006).

However, organisation's external environments nowadays are changing at a frantic rate (Hamel 1994, Loewen 1997, Conner 1998, Mason 2007). This change is occurring at two dimensional scales; level of complexity and degree of stability as shown in Figure 2.3 (McKenna 2006, Mason 2007). These two dimensions are what constitute

environmental uncertainty; that is widely discussed in organisational behaviour literature (Huczynski, Buchanan 2007, McKenna 2006, Mullins 2005, Pagell, Krause 2004). Environmental uncertainty can be defined in many ways (Heijden 1996, Sutcliffe 1998). Sutcliffe (1998) illustrated uncertainty as the lack of information or knowledge on aspects available in the external environment due to its unpredictable changes. Similarly, Johnston (2008) suggests that environmental uncertainty is emanating from the unpredictable turbulence in the external elements (i.e. political, economical, social, technological, legal and ecological factors (Huczynski, Buchanan 2007)) that limit the organisational ability to estimate the effects these will have on its functionality and competitiveness. High rates of unpredictable changes mean the lack of necessary information to react to changes. Therefore, uncertainty is synonymous to lack of information, and availability of information means the ability of organisations to create a responding pattern to a set of changes (Robey 1991).

Figure 2.3 Two dimension for business's external environment changes. Adapted from Huczynski and Buchanan (2007)



In practice, complexity is defined as the degree to which external environment elements such as customers, competitors, technology and suppliers are diversified and contain more aspects (Lane 1996, Chae 1997, Chakravarthy 1997). For example, a company is said to have a complex layer of customers when these customers are composed of normal individual consumers as well as other organisations requesting the same products or services. The more the complexity increases the more it would be difficult to collect information useful for the organisation, and thus forecasting future demands and customers tastes and expectations will become more difficult (Mason 2007). On the other hand, environmental stability or turbulence is defined as the degree of change in some aspects or factors external to the organisation; the more the degree of change, the more unpredictable the environment would be (Huczynski, Buchanan 2007). In the case of stability the organisation experiences little environmental turbulence where the change is predictable and uncertainty is low. Whereas in a high turbulent environment the changes are unpredictable and uncertainty is, therefore, high (Mason 2007).

Several studies in the organisational behaviour literature has emphasized the notion that organisational environment-fitting is very vital for the organisation to stay in business (Robey, Sales 1994, Conner 1998, Mullins 2005, Robey 1991, Lane 1996, Chakravarthy 1997). Such an endeavour to keep organisations fit with their environments will have a direct impact upon their internal decision making patterns and processes, and their departmental structures and management styles (Huczynski, Buchanan 2007, Mullins 2005, Badri 2000, Freel 2005). Griffin (1999) pointed out that organisations can adapt to its surrounding environment conditions by creating flexibility in their structural designs. In this regard, Badri (2000) identified the relationship between the effects of the external environment, represented by the government regulations and political considerations, and the choice of operations strategy and performance in a selected sample of the United Arab Emirates manufacturing organisations. His study revealed that the studied organisations viewed the environment as given and constructed structures and mechanisms to mitigate the impact of its forces. A strong relationship was found between political considerations and government regulations and the choice of operations strategy of low cost, quality and flexibility. Also, Chang (2002) studied the management strategic choice of aligning three types of manufacturing flexibility (i.e. product mix, new product and volume) with some aspects

of environmental uncertainty (i.e. customer demand, supply, competitors and product technology). His study concluded that it is necessary for a manufacturing organisation to match the degree of manufacturing flexibility with environmental uncertainty and changes to ensure competitive and profit performance. This was similar to the work of Xie (2008) who built up a theoretical model for testing the relationship between environmental uncertainty, manufacturing flexibility and competitive advantage among 204 manufacturing organisations in the United States' delta region. The model indicated a strong and positive relationship between environmental uncertainty and the degree of organisational flexibility, and between organisational flexibility and achieving competitive advantage. In addition, he noticed a clear impact of environmental uncertainty upon competitive advantage through the application of organisational flexibility. Pagell and Krause (2004) found evidence that environmental uncertainty urges manufacturing organisations to adopt operational flexibility in response. They have also found some evidence of improved performance as a result of increased operational flexibility.

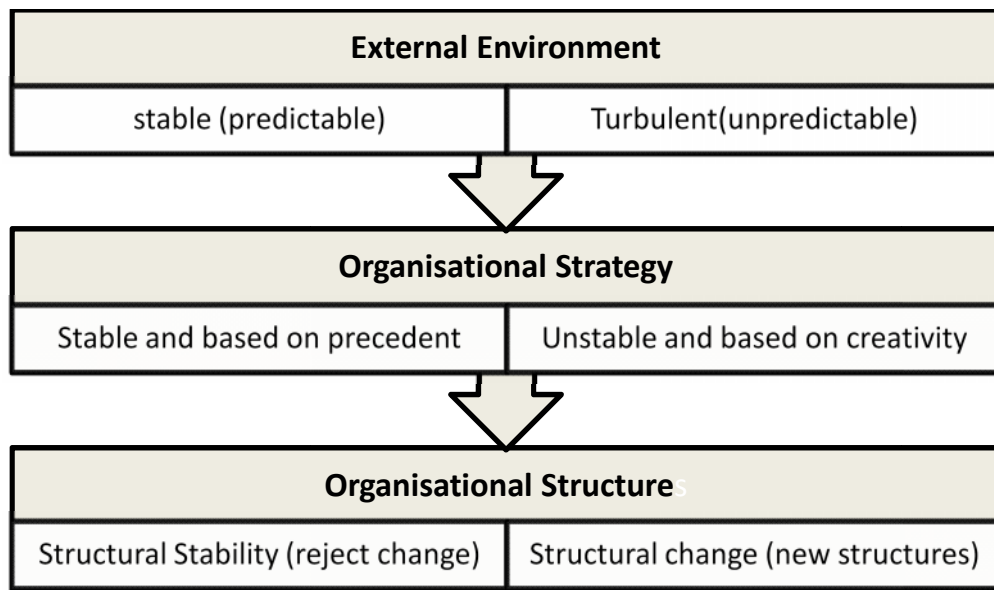
In the same vein, Liu (2006) showed that the characteristics and structures of supply chains in Chinese manufacturing organisations can be significantly impacted by the environmental uncertainty. The study has emphasised that demand and supply uncertainty have a negative effect on manufacturing performance. Further, Lee (2009) offered an empirical study on the effects of environmental uncertainty on the formation of supplier alliance for manufacturing organisations by studying the market uncertainty and technology change. It was found that technology change can influence the formation of supplier alliance, whereas market uncertainty hampers organisational investments and supplier alliance formulation. Sia (2004) have also studied links between environmental uncertainty and the investment in adopting Distributed Work Arrangements (DWAs) of executing organisational work in different geographical locations outside the boundaries of the parent organisation. The study found that organisations in high complexity environments are more likely to abandon organisational efforts to invest in adopting DWAs despite its anticipated benefits on improved performance.

Nevertheless, there is evidence that service organisations confirm in behaviour under uncertain environment to their manufacturing counterparts to a great extent. Rueda-Manzanares (2008), in her study of how the external business environment affect the association between stakeholders views and organisational environment strategy, found that external environmental uncertainty has a strong influence on shaping the organisation's environmental strategy. Freel (2005) provided evidence on the similarities in behaviour between manufacturing and service organisations in response to environmental uncertainty. He offered evidence that product innovation in both manufacturing and service firms is associated with environmental customer uncertainty and that uncertainty in market and technology is negatively associated with uncertainty in competition.

Mason (2007) identified that the influence of a chaotic and uncertain environment on organisations is, indeed, unavoidable. He found that the management choice for responding strategies to such environments requires an organic type of management style where the decisions need to emanate from the bottom levels of the organisation. In practice, the emergence of a responding strategy allows organisations to reshape their internal structures and processes, and make business decisions that will evaluate its internal capabilities on how to confront changes in the external environment (Johnston 2008).

The ultimate notion in this section is that surrounding environmental effects on the organizational structures are very severe (McKenna 2006). The more stable the environment the more predictable and certain the inputs will be to the organization and the organizational activities are easier to be structured (Robey 1991). Similarly, the more turbulent the environment the more unpredictable the change will be and the organisation should embrace new novel structure to cope with these changes as shown in Figure 2.4. Environmental uncertainty drives managers to find ways to absorb the high rates of change in the inputs. As the stability decreases the inputs will be uncertain and less predictable, the organization has to be more adaptive to the changing environment (Robey, Sales 1994).

Figure 2.4 External environment impact on internal organisational structures. Adapted from Huczynski and Buchanan (2007)



Two significant studies which are centred on the effects of environmental uncertainty and external changes on the organisations, and its internal structures and management styles, are those introduced by Burns and Stalker (1961) and Lawrence and Lorsch (1967) which are still having their strong echo in the contemporary organisational design literature (Huczynski, Buchanan 2007, McKenna 2006, Mullins 2005). These two studies are discussed below:

### 2.10.1 The study of Burns and Stalker

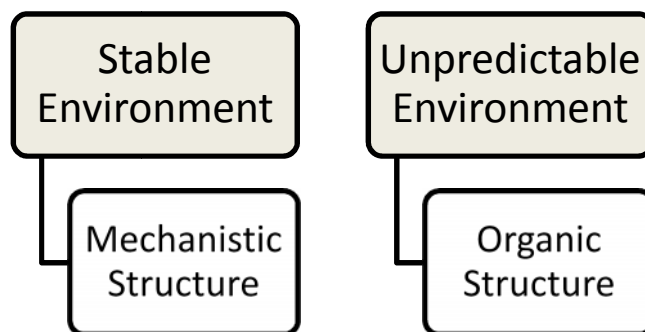
The study of Burns and Stalker (1961) was aimed to show how management systems and organisational structures in a variety of organisations changed in accordance with changes in the external environment. For this purpose, the two researchers started by studying the behaviour of people working in organisations. The study comprised of 20 organisations in England and Scotland. The organisations were a mixture of rayon manufacturers (mills) having a very stable environment to electronics organisations working in a very changing and unpredictable environment. They found that the rayon mill was a very successful company that was run with a very rigid type of management structure. The management concern was on making sure that employees do the work as they are told to. Employees were expected to use formal written communications and the top management has kept the right of making work decisions. However, the



outcomes of studying the electronic organisations, operating in an unpredictable environment, showed that such organisations were also very successful but they have employed a completely different management system from that found in the rayon mill. Employees were discouraged from using written communications; in contrast, the communication was mainly on a face-to-face basis, they were given the authority to make decisions and the responsibility of the work.

These study outcomes gave the authors the impetus to start a bigger-scale study to explore the relationship between the external environment changes and the internal management systems and structures used in organisations. As a consequence, Burns and Stalker were able to categorise organisations into two divergent systems or extremes of management structures. They gave the label “mechanistic structures” to those operating in a stable environment and “organic structures” to those working in unpredictable environment as shown in Figure 2.5. Their theory concluded that neither structure is better or more efficient than the other, but rather it is all about giving organisations the right structure on the basis of the external environment where it operates. In other words, matching organisational structures, systems and styles of management according to the type of environment available out there.

Figure 2.5 Environment type and organisational structure



However, Burns and Stalker theory of mechanistic and organic structures has proven to be quite robust as it has provided a distinctive insight into the relationships among factors that affect organisational structures (Courtright, Fairhurst & Rogers 1989, Pillai, Meindl 1998). The concept of mechanistic and organic structures will be discussed more comprehensively later in this Part.

## **2.10.2 The study of Lawrence and Lorsch**

The study of Lawrence and Lorsch (1967) was an analysis of six plastic manufacturing organisations followed by another study of two food manufacturers and two organisations in the container industry. Their study came as an extension of the work of Burns and Stalker (1961) but they examined, in addition to overall organisational structures, the degree to which departments were organised to meet the demands of the external environment through the application of “differentiation” and “integration” concepts. Differentiation according to Lawrence and Lorsch refers to the degree to which individuals and groups tasks are broken down within the organisation. Whereas integration refers to the degree to which the units in the organisation are linked together and how independent or dependent they are on each other. Integration, in this sense, is directly related to how united the business units are in achieving business goals. As the organisation is divided into units, there has to be a mechanism to ensure that all units participate to the process of goal achievement. However, their study revealed that when environmental uncertainty increases the level of integration (i.e. coordination) and differentiation increases in order to ensure achieving organisational goals. On the other hand, when environmental uncertainty decreases, so do the levels of differentiation and integration as the environment is more stable and thus standard procedures are sufficient to maintain a satisfactory level of performance towards organisational goals. However, the work of Lawrence and Lorsch has been a subject of criticism from a number of authors such as Mintzberg (1979), Mullins (2005), and Child (1988). Criticism and limitations of this study usually revolve around the concepts that it failed to link the internal changes of the organisation, as a response to environmental pressures, with the social interaction or working styles of groups of employees. Further, this study did not introduce a distinctive solution for the design of organisations where one department or more are operating in a dynamic environment and require a more organic structure, where other departments operate in a more stable environment (Mullins 2005). Another limitation is that the more differentiated the units become, the more it would be difficult to maintain goals unity. This happens because the more differentiated the units become, the more their perceptions about things will be

different. This will lead, eventually, to more conflicts between units (Huczynski, Buchanan 2007).

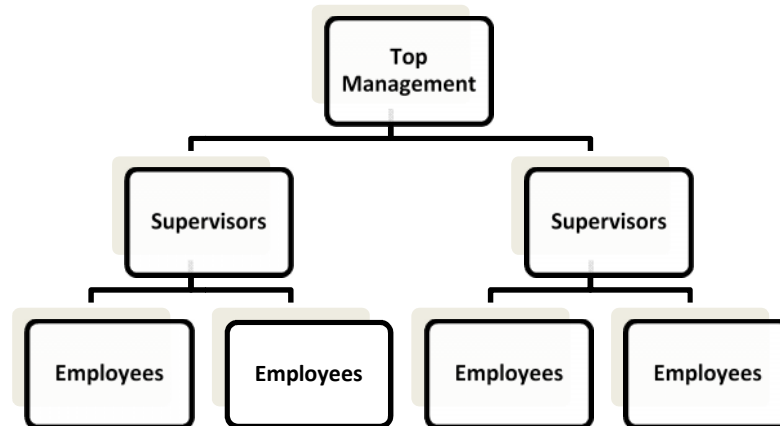
However, organisational structure affects not only management styles and organisational efficiency but also the pattern of relationships among employees themselves and between employees and their managers, and even the external world that they interact with. The activities of the organisation can, then, be directed and organised to achieve organisational goals (Mullins 2005, Robey 1991). For this kind of argument, the concepts of organic and mechanistic structures in organisations will be considered in more details as they adhere to promote organisational performance through the proper management of individuals (Jaaron, Backhouse 2009b, Burns, Stalker 1961).

## **2.11 Mechanistic structures**

The mechanistic models of organisations are quite often described as bureaucratic structures, similar to the “Machine Bureaucracy” structure introduced by Mintzberg (1983). They lend themselves to organisations operating in stable environments where the environmental uncertainty is low (McKenna 2006, Mullins 2005, Burns, Stalker 1961, Courtright, Fairhurst & Rogers 1989, Pillai, Meindl 1998). They are best suited for the inward facing departments such as production and auditing departments (Jaaron, Backhouse 2009b, Robey, Sales 1994, Jaaron 2009). In such structures top management is encouraged to adopt a more formalised policy of work tasks and centralised strategies for their decision making. Therefore employees are given low discretion on executing their own initiatives, and more control is placed on their own behaviour to a degree that is believed to reduce their interaction with other co-workers (Raub 2008, Mao 2009). However, for organisations to ensure their control on employees behaviours and activities, mechanistic structures emphasises the necessity of rigid and formal rules and procedures (Griffin 1999, Shadur 1999). For this reason, the jobs are narrow in scope and tasks are so well defined by rules and procedures that they standardize performance. Similarly, responsibilities of employees are clear and very-well defined by top management. However, this entails a clear top-down hierarchy of control (see Figure 2.6) to monitor low-level employees’ performance and coordinate their reporting

tasks (Mao 2009, Narayana 1992). Furthermore, rewards are tied directly to job performance and employees are selected solely on the basis of their ability to perform the work, and not on the basis of other personal attributes. Employees, in this sense, can approach each other on formal basis only (Robey, Sales 1994).

Figure 2.6 Mechanistic structure hierarchy



Burns and Stalker (1961) specify the following characteristics for organisations to have a mechanistic structure:

- 1- The type of interaction between members of the organisation is vertical, and usually between top management and subordinates.
- 2- The procedures and processes of the work are governed by the decisions issued by the top management.
- 3- Greater emphasis is given to the skills and knowledge relating to the internal world of the organisation, rather the external world of the organisation.
- 4- Employees retention and membership continuation with the company is tied up with obedience to top management rules and decisions.
- 5- A clear set of rights and obligations is provided for each functional position in the organisation. Employees' rights and obligations are within the periphery of their functional position.
- 6- The more you go up in the organisational hierarchic structure, the more the knowledge of actualities will be.
- 7- Top management embrace most of information about the internal and external worlds of the organisation, and that is where organisational control and strategies take its final shape.

The term mechanistic structure describes a culture as well as an organisational structure (Reigle 2001). In a recent study of four service organisations, Mao (2009) found that the contextual factors of bureaucratic culture have a negative effect on employees' workplace friendship. However, workplace friendship is very significant for work-related information sharing and mutual support (Kram 1985), thus, workplace friendship plays an important role in enhancing work performance and quality (Ross 1997). In addition, it has also a positive impact in promoting employees feelings of job satisfaction (Markiewicz 2000), organisational commitment and, ultimately, reduced turnover intentions (Nielsen 2000). Yet at the same time it is often argued that a large layer of organisations deliberately follow bureaucratic norms and cultures (Casey 2004).

Furthermore, Leavitt (2005) pointed out that the link between advances in technology and bureaucracy is strong, he argued that the growing trend of structures in modern organisations is of bureaucratic nature despite their differences among organisations. Raub (2008) examined the effects of centralisation culture of decision making and formalisation of communications, offered by mechanistic organisational structures, on the extent to which front-line service employees' display of organisational citizenship behaviour. The results have shown that employees who do not have the authority to make work decisions (i.e. centralisation of decisions) have shown a negative behaviour towards helping their colleague at work. In addition, it was found that employees, in such structures, tend not to express their opinions or make recommendations to improve existing work procedures. Similarly, lack of employees control on work procedures and the decrease of self-determination perception were found by Sherman (1984) to undermine intrinsic motivation. His findings indicated that mechanistic structures in the organisations would subsequently call for more centralisation, formalisations and control on employees due to the lack of their internally motivated behaviour. He concluded that organisations need to develop a more organic type of structure that could promote intrinsic motivation behaviour. Therefore, it is not a surprise that Frenkel (1998), in his study of the effects of the constraining nature of bureaucratic structures on call centres' employees, have made the point that bureaucratic structures are by no means suitable for call centre environment, they based their conclusions on the notion

that call centre's management is trapped between two conflicting dimensions: standardisation of employees activities and customisation of products (i.e. services) to customers. Another type of conflict found in mechanistic structures is in the communication patterns they follow. Courtright et al. (1989) have identified two patterns of communication available in mechanistic structures; first, the one-way (i.e. top-down) communication dictated by top management, second, a message pattern enriched with managerial conflicts as managers at different managerial ranks will compete with each other to secure resources for their own divisions.

Another strand of research found in the literature identifies the role of employees' skills in mitigating the effects of mechanistic structures' control on employees. Choi (2008) argued that employees' skills can play a crucial role in extracting some decisions making authority related to their jobs. He found that as the relative power of work skills of employees increases, the bureaucratic organisation is likely to grant a certain level of autonomy to those employees. In contrast, Karreman (2002) found that despite the availability of high professionalism of workers in knowledge-intensive firms, such as manufacturing and service organisations, the dominant type of management structure is the traditional mechanistic structure. However, it is claimed that the nature of high professionalism of workers makes the mechanistic structures inefficient and a departure from such type of structures towards a more clan culture is vital for organisational success (Alvesson 1995, Kunda 1995, Mintzberg 1998).

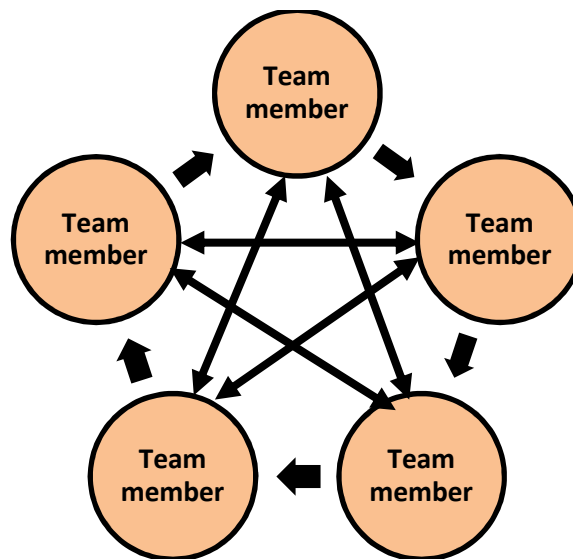
However, mechanistic structures seemingly strive to be cost efficient in the short-term and keep relationships among people task-oriented (Robey 1991). These features of the mechanistic structures focus on the efficiency dimension, and the predictability and certainty of inputs. Mechanistic structures are suitable for the inward oriented departments (Robey, Sales 1994, Jaaron 2009). Criticisms of the mechanistic structures also include inflexibility and lack of environmental adaptability, sluggish response procedures as they are not appropriate for a rapid changing environment, stifling of employees' human qualities, and thus increased stress on employees (Robey, Sales 1994). Apparently, there has to be an alternative to mechanistic structures that can be used for a changing and unpredictable environment, namely organic structures. The

next section is focused on exploring the suggested alternative and its appropriateness to changing external circumstances.

## 2.12 Organic structures

Organic structures represent the opposite case to the mechanistic structures (McKenna 2006). They are perfectly appropriate for the outward facing departments (Jaaron, Backhouse 2009c, Robey, Sales 1994). They resemble a non-routine type of work where there is a high degree of individual authority and power at the lower levels of the organisation (Mullins 2005). The organization is viewed as the living organism that can adapt to the surrounding environment in order to survive. As stated by Robey & Sales (1994) “they interpret novel situations and adopt appropriate coping responses”. Consequently, organisations employing an organic system delegate a great deal of decision making authority to their employees to allow for flexibility and quick response to unpredictable circumstances (Griffin 1999). Employees, this way, can approach each other informally as well as officially as the personal relationships comprise an important aspect for the organizational life in such environment (McKenna 2006) (see Figure 2.7). Communication channels are not restricted to the hierarchy of authority, employees can approach other departments where needed to find expertise with the required level of information to solve a problem (Courtright, Fairhurst & Rogers 1989). Ultimately they can facilitate integration among business units (Robey, Sales 1994).

Figure 2.7 Interaction nature between organic structure team members



Burns and Stalker (1961), in their study that categorised organisations into mechanistic and organic structures, pointed out that for an organisation to have an organic system the following characteristics should be dominant:

- 1- Employees' skills and knowledge of internal world are the vital elements in accomplishing work tasks.
- 2- Great importance is regarded to the expertise and information found in the outer markets, customers and the general environment.
- 3- The company delegate more importance to employees' commitment towards tasks and problems in hand more than obedience of rules and procedures.
- 4- The nature of management communication is more of an advice and information rather than orders and instructions. Supervisors co-ordinate their employees through feedback dissemination.
- 5- Co-workers' communication is more of a support and consultation and more favoured over other types of communication. In other words, a horizontal rather vertical type of communication is encouraged.
- 6- Employees are taught to be responsible for the tasks in hand; problems may not be passed to or given to someone else, but employees can ask for support from others with experience to solve problems.
- 7- The centre of authority and control is strongly viewed the property of any layer or rank in the organisation where the extensive knowledge or omniscience is located.

To elaborate, one significant corollary of this structure is that jobs are wide in scope and employees perform a variety of tasks (Huczynski, Buchanan 2007, Litterer 1973). These tasks are not governed by rigid rules and procedures, on the contrary, the team shares the responsibility of the work and the hierarchy of control is usually not present thus allowing the team to identify the right person to solve a particular problem (Robey, Sales 1994, Robey 1991). Subsequently, employees are chosen on the basis of their ability to do the work plus their personal attributes and social skills. Such personal attributes include employee's extraversion, conscientiousness, and emotional stability (Hogan 2003, Morgeson 2005), whereas employee's social skills include the ability of



working effectively within a team, the ability to negotiate, persuade, and help others in coordinating work tasks (Morgeson 2005).

Although organic structures eliminate the need for hierarchical structures in organisations (Huczynski, Buchanan 2007, Burns, Stalker 1961, Reigle 2001), it introduces a new form of stratification based on seniority and experience. Therefore, the more the person is informed and capable the more he is eligible for more authority (Mullins 2005). Further, employees working in an organic system tend to have greater levels of commitment to their organisational goals and success (Robey 1991). This, as explained by Mullins (2005), is due to the fact that organic structures promote employees' feelings of shared beliefs and values in the organisation, which substitute for employees monitoring practised in mechanistic structures.

Organic structure depicts a culture characterised by the formulation of a self-managing team. Frost (1994) carried out a study to identify the main areas of change that can establish a self-managing team within a manufacturing setting. He found that for a manufacturing organisation to convert from a mechanistic structure to an organic one requires changes in systems, processes, management styles and in the way they value and perceive their employees. However, a dominant theme in managing team-based work is to give them the ability to manage themselves rather being monitored and instructed. The supervisors' role, in this case, is more of a source of feedback and advice through open channels of communications (McKenna 2006, Griffin 2001). Further, Courtright et al. (1989) studied the patterns of communication in mechanistic and organic self-managed teams in two manufacturing plants, and found that more importance is delegated to discussion and negotiation with a severe lack of a command and control language at the organic plant. Whereas the pattern of communication at the mechanistic plant witnessed more of command-like and non-support type of statements. Arguably, the former type of structure (i.e. organic structure) is positively related to the emergence of a charismatic leadership that is specifically capable of negotiating, discussing and communicating organisational values and goals clearly and promoting employees commitment towards their organisation's success (Pillai, Meindl 1998). In the same vein, Chenhall and Morris (1995) introduced evidence that organic approaches to communication and decision making, where employees can participate in strategies

formulation and work decisions, is closely associated with improved organisational performance.

### 2.13 Mechanistic and organic structures compared

A summary of the characteristics of mechanistic and organic structures discussed above are shown in Table 2.1.

Table 2.1 Summary of the characteristics of mechanistic and organic structures. Based on Huczynski and Buchanan (2007), Mullins (2005), Reigle (2001), and Litterer (1973).

Comparison Element	Mechanistic Structure	Organic Structure
Environment	Stable, predictable	Changing, unpredictable
Work specialisation	High	Low
Communication	Top-down (vertical)	Lateral (among employees)
Type of communication	Rules, commands and regulations	Feedback, advice and work related information
Decisions making and conflict resolution	At top management level	At expert level
Values and behaviour patterns	Following specific methods and instructions. Quantity of work is emphasised	Searching for better ways to do jobs. Celebrating work accomplishments
Control of employees	Supervision and monitoring	Based on employees commitment and moral system.
Rewards	Objective: related to bonuses	Subjective: related to recognition and respect with bonuses.
Orientation of department	Inward-facing units (e.g. production, auditing, quality control)	Outward-facing units (e.g. marketing, support services, sales)

In the next section, an attempt is made in order to link the characteristics of both organic and mechanistic structures, discussed above, with the call centre operational structures and their environmental characteristics. In evaluating the role that call centre environment and interface play in deciding the type of structure it needs to have, a gap in the knowledge is made that guides the directions of the research in hands.

#### 2.13.1 Call centre operational model

Since their rapid and widespread introduction into the services sector, call centres have been typified as organizational structures with relatively few layers of management.

Managers comprise roughly 12% of the employees in a typical call centre (Holman, Batt & Holtgrewe 2007), existing within a flat T-Form organization (Holman, Batt & Holtgrewe 2007, Adria, Chowdhury 1999) (see section 2.7). Operationally they are typified by the mass production model where employees are controlled through formalised performance monitoring resulting in reduced empowerment (Cartwright 2003, Batt, Moynihan 2002). In the mass production model the emphasis is on maximizing the volume of calls that the employee can handle whilst minimising the costs. This is done in an attempt to instil the organization's vision of being accessible as a distinctive feature that makes them distinguishable from their competitors. But one may argue that being accessible is not the ultimate objective for customers. Call centre employees may achieve their target for answering their customers' calls with low abandonment rates, but the question remains is that, are they doing the right work whilst having customers on the phone? Are they communicating in the manner that reflects the organization's values and are they achieving the contact benefits? Employees can provide a fast service even though the customers may be misunderstood and their information incorrectly entered. Thus possible business opportunities can be lost (Cleveland 2006).

Moreover, the work in this production model is designed around the principles of Taylorism (Bain et al. 2002, Cartwright 2003, Batt, Moynihan 2002), and based on the concepts of scientific management introduced by Taylor (1911). This approach is based on standardising work procedures in which the employees need to handle calls in a repetitive manner with detailed descriptions of time allowance, dialogue scripts and after-call work standards. This standardisation of procedures is perceived to increase the mechanisation of the customer-employee contact. Call centre employees following this kind of model will experience low measures of control over their self-presentation to customers. This results in little autonomy in negotiating their interactions with customers (Deery, Iverson & Walsh 2002). The principles of this model (i.e. Taylorist principles) emphasis the monitoring of employees' performance, primarily on the basis of the number of calls handled in a specified period of time (Bain et al. 2002). This model of designing call centres to operate within a highly controlled environment and rigid structures is similar to the characteristics of the mechanistic structure found by Burns and Stalker (1961). They are primarily suited to inwardly oriented departments

but are less suited to outwardly facing customer focussed departments where human interaction is highly valued (Robey, Sales 1994, Robey 1991).

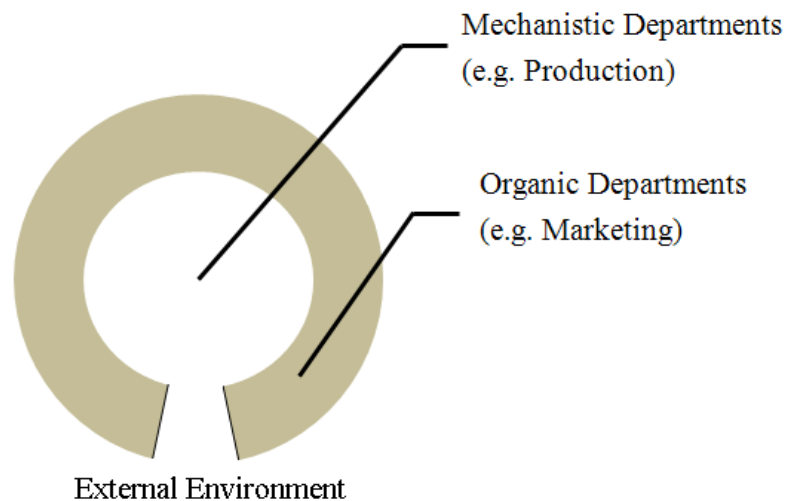
Criticisms of the mechanistic structure, as we have discussed above, include inflexibility, sluggish response procedures, stifling of employees human qualities, and increased stress on employees. In this context, the management of front line employees in call centres has attracted much attention in the literature. Job-related stress and the consequential human resources implications are seen as one of the biggest challenges for call centre managers (Batt, Moynihan 2002, Raz, Blank 2007). As a consequence much research work has been conducted to mitigate the symptoms of this model such as employees' turnover, absenteeism and deteriorating well-being. Further, the rigidity and tightness of mechanistic structures are seen to obstruct communication between business units in the organisation (Robey, Sales 1994, Huczynski, Buchanan 2007, Mullins 2005). In fact, previous work has demonstrated the need for each type of organizations to develop operational models specific to its own environment and objectives (Robey, Sales 1994, Backhouse, Brookes 1996).

From what has been discussed above, questions are raised about the suitability of the mechanistic structure model in call centres and stimulate the concept of introducing some other forms of structure to eliminate the flaws of the current model. Call centres are outward-facing entities exposed to an ever-changing, uncertain and demanding environment. They represent an intensive and primary channel of interaction with customers (Burgers et al. 2000). They are typically required to respond to demands and conditions that differ greatly from those units which are effectively shielded from the day-to-day environment (e.g., manufacturing, design, management accounting). However the concept that mechanistic structures need to be shielded from the external environment, as shown in Figure 2.8, strongly indicates that call centres must be given an organic form (Jaaron, Backhouse 2009c, Jaaron 2009).

In a manufacturing organization, service departments are typically exposed to a greater demand variety from the customer than are production departments (Seddon 2005). According to the principles of organic structures; in order for the service department to absorb demand variety it needs an adaptive mechanism similar to that of a living

organism that can adapt to the surrounding environment in order to function and thrive (Robey, Sales 1994). Such an organic structure is typified by devolved decision making processes (Huczynski, Buchanan 2007, McKenna 2006). Therefore, employees working under organic structure design are given the ability to make work decisions in order to create a variety absorbing system. Subsequently, people who are working under such standards have a sense of freedom and ownership (Mullins 2005, Burns, Stalker 1961, Reigle 2001). The characteristics of this approach are that call centre work is wide in scope and employees are allowed to act on a variety of tasks, to absorb environmental changes and to learn to build relationships with customers (Robey, Sales 1994, Robey 1991). For these reasons tasks are not governed by rigid rules and procedures; and the team is encouraged to share the responsibility of the work (Courtright, Fairhurst & Rogers 1989, Frost 1994).

Figure 2.8 Organic versus mechanistic structure - adapted from Robey and Sales (1994)



## 2.14 Gaps in the current knowledge

The literature review carried out in the fields of call centre human resources management, service quality, employee's organisational commitment, customer behaviour, organisational and operational structures clearly identifies some theoretical positions and gaps in the current literature about structuring and managing call centres. These gaps and theoretical positions are:

- The literature have indicated that in order for organisations to achieve competitive advantage and organisational success through their call centre employees, it is most important to equip them with high levels of affective commitment. However, there is strong evidence in the literature that front-line employees who are working in traditional (i.e. mechanistic) call centres significantly lack the affective commitment building environment and tools.
- Call centres are business units with mechanistic organisational structures. However, mechanistic structures are inward oriented structures that must be shielded from the environment but call centres are outward-facing entities. This firmly implies that call centres must be given a certain form of organic structures that will stimulate affective commitment building among employees and improve work conditions.
- The literature strongly suggests that structuring call centres around the principles of organic systems will formally institute the integration of call centre with other business units in the manufacturing organisation. However, there appears to be no tools or methodologies in the literature for the achievement of an organic type of manufacturing call centre.

Having identified the above mentioned gaps in the knowledge, derived from the literature findings, a set of research questions were formulated, and these are:

**RQ1: Why do the organic structures for manufacturing support services affect the affective commitment of the individuals who work in these departments?**

**RQ2: How do the organic structures for manufacturing support services add value to the manufacturing enterprise?**

**RQ3: How can manufacturing organisations implement organic structures in their support services departments?**

This research work will add to the knowledge through:

- The identification of alternative service design models applied to manufacturing call centre operations, namely organic structures.
- The leveraging of affective commitment among call centre front-line employees through the use of organic structures for service operations design in a manufacturing enterprise.
- By implementing an organic structure, through systems engineering approach, to the design of employee empowered customer service delivery significant, but often counter-intuitive, benefits can be created. The development of an organic type of organisation which, through significantly enhancing employee affective commitment, will result in the twin benefits of enhanced organisational and employees added value.

## **2.15 Part II summary**

This part of the literature review introduced the concept of the external environment role in deciding about the internal designs of organisations and departments, explaining the environmental uncertainty element as a composite of two dimensional scales; level of complexity and degree of stability. It outlined that these two dimensions must be considered when designing organisational departments in order for these to survive and be successful. It introduced the concepts of mechanistic and organic structures for designing business units. An attempt was made to link the characteristics of both organic and mechanistic structures with the call centre operational structures and their environmental characteristics. In evaluating the role that call centre environment and interface play in deciding the type of structure it needs to have, a gap in the knowledge was concluded for the need for designing manufacturing call centres around the principles of organic instead of mechanistic structures.

Chapter 3 outlines the emergence of systems thinking for service operations design through the translation of lean manufacturing principles into service departments. It imposes systems thinking as an enabler for achieving organic structure in call centres, with specific emphasis on its impact on employees' affective commitment.

# Chapter 3 - Systems Thinking for Service Operations Design

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## 3.1 Overview

In the previous chapter, Part I looked at the main issues and problems available in the literature on call centres management and operations. It discussed the effects of managerial practises followed on service quality, employees' commitment, and customer satisfaction. Part II looked at the reasons that have created these problems in relation to the current organisational structures used in these departments. This part has established a gap in the knowledge for the need for designing manufacturing call centres around the principles of organic instead of mechanistic structures.

This chapter begins with an account of the concept of lean manufacturing and its principles in the manufacturing industry. It progresses to explain the emergence of systems thinking for service operations design through the translation of lean manufacturing principles into service departments. It provides a clear link between the implementation of systems thinking and the achievement of an organic type of manufacturing call centre. The chapter imposes systems thinking as an enabler for organic structure achievement. It summarises published research of systems thinking and its benefits to the service departments and presents a clear link between lean manufacturing, systems thinking and their impact on employees' affective commitment.

## 3.2 The development of Systems Thinking

Traditionally, organisational managers have learned to manage their organisations around the concepts of functional specialisations by viewing each part, such as production, finance, marketing, personnel, as a separate entity (Botla 2009). Managers believed that by focusing on the parts it will be possible for them to manage the whole. However, this reductionist approach of viewing the world around us has resulted in a case where the parts achieve their goals at the expense of the whole (Capra 1996). Reductionist approach calls for breaking a situation into smaller fragments, solving



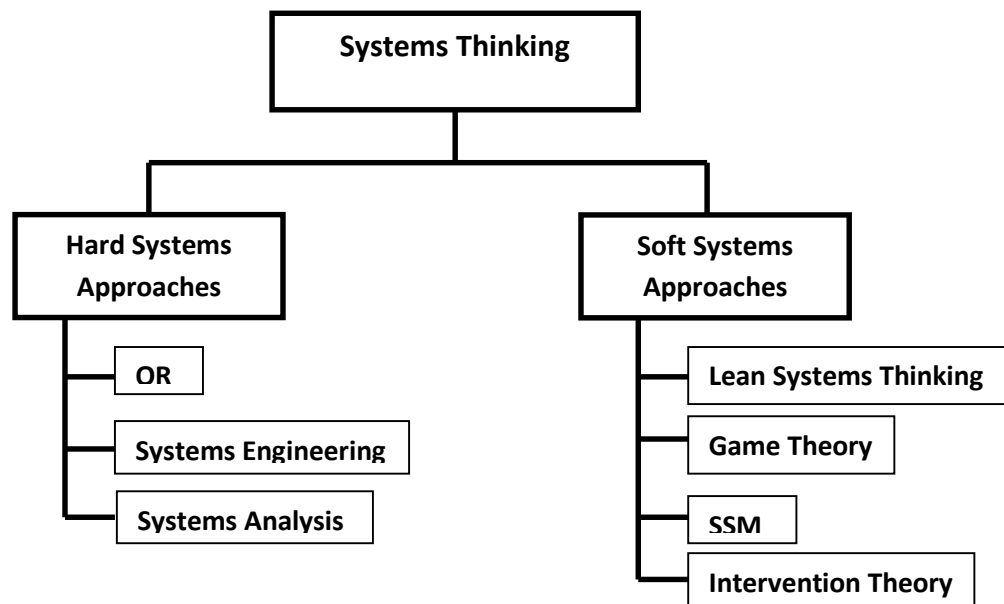
each smaller problem separately before these smaller solutions are assembled together to provide an overall solution. However, this way of dealing with problems does not necessarily provide the optimum solution for the system as a whole (Gregory 2007). If complex problems around us are viewed in this reductionist way, it would be inadequate to use one by one (i.e. one-way) cause and effects relationships within a situation. The interactions between system parts produce new properties or relationships that make many effects products of various causes (Daellenbach, McNickle 2005). Gregory (2007) argued that reductionist approach is not appropriate for organisations as it is based on dividing the organisation into its parts and then setting targets for each part separately to control performance and maximise efficiency. According to him, this is done through silo working that limits organisational dynamic ability and necessary interaction between parts. Similarly, Ackoff (1981) remarked that all sorts of systems must be taken as wholes by understanding the interactions between parts, not maximising the performance of any single part. He observed that focusing on system parts without understanding their interactions makes the system lose its essential properties, and causes managers to face unintended consequences. Gregory (2007) pointed out that one of the most prevalent unintended consequences of the reductionist approach is system waste and employees stress.

Around the time of the second world war, a number of scientists and researchers found themselves working together on findings solutions for some military problems. Their perspective exchanges and sharing on different problems helped them to recognise that all incidents and events are parts of a larger whole (Jackson 2009). This has shifted scientists focus from parts to the relationships and dynamics joining parts together in the form of a system (Daellenbach, McNickle 2005). This new way of thinking devoted von Bertalanffy (1950) to set the foundations for the emergence of “General System Theory” as a general science of wholeness. Following von Bertalanffy’s (1950) publication, most system researchers found that “General Systems Theory” was not robust enough in its pure form to provide substantive solutions for real life problematic situations (Zexian, Xuhui 2010). Therefore, subsequent attempts were found in science to link different dimensions, such as economical, social, and technological, in the study of systems (Jackson 2009). This gave rise to a new mode of thinking, that is systems thinking as a general theory (Seddon 2007). Systems thinking theory, therefore, was

centred around three core elements: interrelationships, dynamics, and wholeness (Capra 1996).

Since about 1950, systems thinking theory has been put to use in many different disciplines, such as management sciences, engineering fields, and social sciences, and was exploited in many different ways that have developed various classifications for the systems thinking theory that we know today (Checkland 1994). Figure 3.1 shows the two main types under which varieties of systems thinking theory can be classified. In general, systems thinking is divided into “hard systems approaches” and “soft systems approaches”. Hard systems approaches are particularly suitable for situations where the interactions between system parts can be justifiably quantified. They involve the use of mathematical expressions, simulations, use of computers applications and the techniques of operations research (Daellenbach, McNickle 2005). In this type of approaches, where much quantification is emphasised, other unquantifiable variables such as human views, opinions, culture impact , and politics cannot be taken into considerations, they view people as being passive with minimal role effects, rather than an active element in deciding the success of the system (Zexian, Xuhui 2010). Examples on hard systems approaches include Operations Research (OR), systems engineering, and computer systems analysis (Checkland 1994).

Figure 3.1 Varieties of systems thinking



On the other hand, soft systems approaches are those strands of techniques that are particularly useful for situations where the interactions between system parts cannot be easily quantified. They are especially appropriate to deal with systems where human aspects are inherited in the problem situation. In other words, where different people with conflicting frames of reference are participants in the system problem (Checkland 1994). In contrast to hard systems approaches that have a defined step-by-step techniques to perform a search for a system problem solution, soft system approaches are difficult to be captured through a series of defined steps (Zexian, Xuhui 2010). “The reason for this is that the majority use quite different, often *ad hoc*, processes that have evolved through practical use and have proven themselves successful for specific types of problem situations” (Daellenbach, McNickle 2005). Further, soft systems approaches rely on affected people by the problem to set potential solutions, this is due to researchers and practitioners belief that affected people are more committed to seeing a workable solution that provide optimal results. The value of involving affected people by the problem have been regarded by Gregory (2007) as a way to reduce control measures as people will view the solution as their own property, and will work hard to protect it. Examples on soft systems approaches include Soft Systems Methodology (SSM), game theory, theory of constraints, lean systems thinking, total systems intervention, and social systems design.

One of the main differences between hard systems approaches and soft systems approaches is their way of interpreting the concept of system. Hard systems approaches views the system as an objective part of the world. In contrast, soft systems approaches deal with systems as subjectively enriched with people rather than simply the objective elements of the system (Zexian, Xuhui 2010). However, despite the availability of different forms of soft systems approaches, Daellenbach and McNickle (2005) have illustrated the common characteristics of these different forms when dealing with systems problems, these commonalities are:

- Unlike hard systems approaches, soft systems approaches deal with the process that caused the problem and give equal weight to the content of the problem.
- Gaining a shared understanding between stakeholders through dialogue and perceptions sharing on values, constraints, human interests, and environment effects on problem situation.

- Using “what” questions in order to understand the problem in a prevalent way before asking the “how”.
- Involving the stakeholders themselves, as affected people, in the process of solution achievement through using their innovation and expertise.

In the context of this research, the words “systems thinking” are used to describe the lean systems thinking method developed by Seddon (2003), a British occupational psychologist, who is specialising in the service industry. Lean systems thinking emerged from the translation of lean manufacturing principles for service departments (Seddon, Brand 2008). It also incorporates aspects from intervention theory introduced by Deming (1982) together with some influential aspects from Soft Systems Methodology (SSM) developed by Peter Checkland (1981) and Business Process Reengineering (BPR) mastered by Hammer and Champy (2001).

### **3.3 Systems thinking in practise: the Toyota production system (TPS)**

Lean manufacturing principles was introduced for the first time in the Japanese Toyota Production System (TPS) as a comprehensive strategy for the elimination of waste from work operations. It is seen as a philosophy for reducing costs through reducing cycle time while maintaining product performance improvement (Comm 2000). It was developed around 1950’s and 1960’s within the Toyota’s chain of suppliers and plants before it was transferred to the western manufacturing industry in the late 1970’s (Schonberger 2007). It is one of the most widely used techniques in the automotive manufacturing industry (Schonberger 2007). The ultimate endeavour of TPS is the elimination of defects sources and value addition to the product through the aforementioned waste elimination (Ohno 1988). The waste is any action or activity that does not add any value to the product or the customer. Hines (1997) has pioneered defining and classifying waste that was found at TPS. He found that there are seven types of waste that are mentioned here:

- 1) Overproduction: it is the production of extra products than demanded. It is seen by Hines (1997) as one of the most serious wastes. It tends to produce large

amount of unseen defects due to the accumulation of products; products will need to be stored for longer resulting in quality deterioration in some cases.

- 2) Waiting: when products are reworked and production problems consume a portion of worker's time, then a waste is detected. It is more beneficial to eliminate all the time wasting causes and spend the saved time on workers' training or process improvement.
- 3) Transport: it is the minimization of any unnecessary movement of products and parts in the factory. This kind of waste minimisation has the benefit of reducing wasted time in addition to reducing causes of damage and deterioration.
- 4) Inappropriate processing: this is the case of using machines of complex nature to perform simple tasks or operations. This may cause workers to lose large control on large portion of the complex machine raising the chances of error and improper machining. Another example on inappropriate processing is the lack of use rigour devices that ensures producing products with good quality, such as the lack of use of proper tolerance measures and finishing techniques.
- 5) Unnecessary inventory: more inventory requires more space due to the increased numbers of waiting products or materials. The more the inventory the more the hidden defects and problems would be.
- 6) Unnecessary motion: This involves any unnecessary movement carried out by the workers themselves. This encompasses human ergonomics such as back bend, arm stretch, repetitive pick up and so on. This influence workers well-being and their ability to produce at the required level. In addition, poor job design can cause workers stress and quick tiredness that could harm products quality.
- 7) Defects: The only result of all the wastes presented above is the defects. They are viewed as an opportunity to improve the system by studying their causes

and, ultimately, removing them. Defects are the major management concern in TPS “as these are direct costs” (Hines 1997).

The elimination of waste is achieved through the creation of value stream mapping of operations that deliver solutions and products in minimal time (Busi 2005, Christopher 2000). Rother (1998), during his work at Toyota, introduced the concept of value stream mapping as he noticed senior managers drawing maps showing the current physical flow of products as well as the information flow accompanying the physical flow. He found that these maps were the lens through which waste can be identified, and eventually eliminated, in the process to create a cleaner stream of working for each product.

Arguably, Sugimori (1977) was the first to discuss the TPS in the academia (Wan 2008), he introduced the two basic concepts that Toyota has recognised as the guiding principles for its new methodology:

- The attaining of low cost production process through waste elimination and stream cleaning as discussed before.
- The second is the utilisation of their workers capabilities to the utmost by treating them as human beings. In Sugimori's own words: “It (i.e. Toyota) has built up a system of respect for human”.

According to him, this respect stems from three different strategies followed in Toyota’s system:

- 1) Elimination of waste movement by workers: workers were taught to show their skills and diligence when it is vital to add value for a product or a process. They were encouraged to move materials and use processes only when a new order is received that needs that particular process to move forward.
- 2) workers’ safety importance: Toyota’s workers were very committed and enthusiastic about their job. Thus, they will do almost anything to keep the work running. However, in situations where an extra role or behaviour could be

dangerous or causes further troubles, Toyota's management put on a tremendous effort to eliminate the sources of obstruction and obstacles in the processes flow, not only as a cost reduction measure, but also as a workers' safety measure.

- 3) Active participation of workers: Toyota's management has shown great consideration for respecting human values and capabilities. This was due to the company's belief that respecting human abilities and capabilities is where the competitive success lies. Workers were allowed to make decisions they found necessary for the work, such as stopping the line when a problem happens, make work changes, and make any improvement initiative to remove any waste found in the system.

Lean manufacturing is defined as the ability of the organization to do more work with less resources (Christopher 2000), thus reducing overall costs. It embraces a number of strategies, tools and methodologies that comprise the whole leanness philosophy (Monden 1998, Naylor 1999), these are Just-In-Time (JIT) (whereby products and parts are only produced when a customer demand is received), workers empowerment, zero inventory, team working, continuous improvement, small production quantities, value streams and quick systems set-ups (Forrester 1995). These strategies of "lean production" (Womack, Jones 1996, Womack, Jones & Roos 1990) strive to work interdependently to achieve a value creating system (Shah 2003). It is, then, logical to have various management practices in place due to the leanness multi-dimensional nature (Shah 2003, Shah 2007). However, Hallgren (2009) and Robertson (1999) described five different principles for lean manufacturing implementation provided by the work of Womack and Jones (1996):

- Value: Leanness defines value solely through the eyes of the customers by understanding their exact demand and what makes a difference to them.
- Value stream: The set of activities required to make a product with least waste is the value stream that creates value chain at the work.
- Flow: Flow in leanness initiative is mapping the sequence of activities in value streams in order to produce production routes without clogs or obstacles. This leads to shorter lead-time, better quality and lower cost.

- Pull: Response to customer demand is by creating a “pull schedule” at which demands pulls the processes through the operations. This eliminates the need for sales forecasts as there is no point in making inventory of products ahead of the time of when orders are placed.
- Perfection: Creating a continuous improvement process in the system to ensure being better than competitors.

Much of the interest in lean manufacturing in recent years (Schonberger 2007) is referred to its aforementioned fundamental concept of doing more with fewer resources by the implementing department or company. To some extent this wide spread of the concept is strongly related to the ability of organisations to reduce operational cost as well as sales price (Christopher 2000). In the same regard, lean manufacturing encompasses the maintenance of a level schedule where the manufacturing processes are protected from being volatile. This grants certainty to the manufacturing processes through the execution of customer exact demands, without taking the risk of accumulating standardised products prior to customer’s demand reception, which ultimately increases the system’s capacity and reduced operational costs (Hallgren 2009). Notwithstanding the success that can be reaped from lean manufacturing to the parent organisation, the implementation of this kind of work philosophy depends upon a number of organisational characteristics. Shah (2003), in his study of three contextual factors affecting lean manufacturing implementation, found that the size of the manufacturing plant is of great influence on the lean initiative success, and that other contextual factors such as plant age and unionisation are less likely to influence the leanness implementation. Larger plants were found to have more resources to implement the leanness philosophy than smaller plants (Shah 2003). However, there is strong evidence that organisational external factors such as industry’s competitive intensity plays a major driver for lean manufacturing adoption (Hallgren 2009).

### **3.3.1 Lean Manufacturing: the advent to service operations**

Nowadays, lean manufacturing systems are widely used in many manufacturing industries around the globe, in addition to the automotive industry. They have recently witnessed acceptance from service industries (Robertson 1999, Jackson 2009) as a



possible strategy to face increasing customer expectations and intensive economical pressures for reduced costs. However, this acceptance did not overlook the fact that the nature of service operations differ from their manufacturing counterparts. Introducing a service does not involve making a physical product as in the case of manufacturing, even if the customer is given a product during a service, that product is prepared beforehand. Service is more about bringing intangible things together in order to satisfy a customer demand or need through an interface (Teboul 1988, Seddon, Brand 2008). Further, services usually involve a much wider variety of unpredictable customer demands (Seddon, Brand 2008). Due to this different methods are needed to solve different problems. Service agents are, thus, critical element in this process of problems solving and their intelligence and innovation is of significant importance to improve the service and reduce costs.

In fact, the transfer of manufacturing operational models to service departments can be traced back to the views introduced by Levitt (1972, 1976) in his two articles; “production-line approach to service” and “The industrialisation of service”, in which he argued that manufacturing logic, such as mass manufacturing, can deliver significant outcomes in the service departments. As a result, his articles were among the first in the service management literature to discuss specifically service operations (Bowen, Youngdahl 1998). Levitt believed that services can inherit some of the thinking facets present in mass production models to improve efficiency and eventually cut down the cost and improve quality. He also argued that services should be treated as products and thus service managers should think like manufacturing managers.

Teboul (1988) argued against the two articles of Levitt by raising the point that services should not adopt manufacturing thinking of increased productivity as this is seen as a short term approach. According to him this will drive the emphasis to be on the product and cost regardless of the service and its quality. On the contrary, he supports the notion that investing in and enlarging the customer interface is where the long term achievements lie. He identified three strategies to achieve the twin benefits of improved customer satisfaction and reduced costs. First, enhancing customer interface by providing more channels of entry to the company and better interaction experience with employees. Second, maintaining the right level of interface while cutting down the cost

by further training for employees, reducing customer queues by employing an appointment system, and customer involvement in service creation (e.g. self service). Third, delivering the promised quality to customers by conformity to requirements.

However, Bowen and Youngdahl (1998), in their defence of Levitt, made the case that service operations should adopt manufacturing logic, but argued that this adoption should not be based on outdated view of manufacturing models such as the adoption of mass production model. They added that manufacturing performance innovations, such as the emergence of lean manufacturing, should lead “the service sector in developing ways to resolve performance tradeoffs among low cost, dependability, quality, and flexibility”.

Therefore, in response to the need for new innovative approaches to transfer the lean manufacturing approach to service departments, while considering the so called the need for shift in their production-line paradigm (Bowen, Youngdahl 1998). Radnor (2008), in his debate that lean manufacturing can provide significant benefits to public service departments through its powerful insight on processes and human resources practices, pointed out that there are some challenges which need to be addressed in order for lean manufacturing implementation in public services be successful. First, persuading the individuals to join the lean journey is very difficult as lean implementation would need individuals to change their job locus. Second, there is a need to differentiate between the processes that can be changed with lean principles and those which cannot. Third, there is a need to sustain a culture where the lean principles are accepted as a part of the new work environment after the implementation phase. This debate came after an article by Seddon and Brand (2008) in which they have emphasised that the use of Taiichi Ohno’s innovation in Toyota Production Systems (TPS) (Ohno 1988) can bring in a lot of improvement to service processes. However, they argued that such improvements are automatically achieved in the service departments once managers learn not to follow preset individuals targets and service levels, as individuals performance is governed by the system and not by managerial numbers.

Further, Liker (2006) argued that although lean manufacturing has been found applicable beyond the manufacturing shop floor to service departments, it was viewed by managers as only applying a set of tools to few processes where no importance has been given to its role in creating an integrated system of processes, technologies and people. Notably, Czapke (2008) found that implementing lean manufacturing principles in the service and marketing departments of wood manufacturers has participated in the emergence of a new culture of solving work problems. It was also found that the marketing function of those manufacturers has achieved reliable processes that increased company sales and customer satisfaction.

Despite this apparent support of the applicability of lean manufacturing to service processes, Wei (2006) argued that the dissemination of the current form of lean manufacturing to service processes remains to be limited, and that is due to the differences between manufacturing and service processes. He added that a new form of “lean” principles is required to tackle the nature of service processes and environment. However, Kim et al. (2009) found that a service department to have a successful lean project requires expert guidance and a charismatic leadership represented by project champions and senior management support, in addition to full engagement of front-line workers in the process of investigating and understanding the current system problems, finding the hidden waste in it, and in designing the service operations of the future. In the same vein, Joosten et al. (2009), in their study of the application of lean manufacturing in health care services, claimed that most of the lean manufacturing implementation effort made in service departments is focused on gaining operational efficiency while much less significance is given to the socio-technical integrity effects on the successfulness of the lean implementation.

The previous studies on lean manufacturing implementation project at service departments may be taken as evidence that there is a need to holistically view the service system as a composite of parts, with balanced view to these parts and their interactions for the project to be successful. Unfortunately, majority of service departments nowadays, regardless of their type, are putting more emphasis on the need for more control and strict top-down target setting that focus on individual system’s parts in isolation (Raub 2008). In fact, one of the essential properties of a system is to

view it as a whole by considering the interactions between its parts (Ackoff 1981). Notably, the emergence of mechanistic structures (Burns, Stalker 1961) and reductionist thinking (Chapman 2004), where the focus is on achieving system's separate parts targets and efficiencies are embedded, have been a source of criticism as they cause the system to lose its essential properties (Ackoff 1981, Gregory 2007). In his critical critique of the reductionist approach to control and performance measurement, Gregory (2007) emphasised that system's behaviour is a product of the interaction of its parts and not the behaviour of the parts in isolation, he also pointed out that target setting for the parts is causing the management to lose control on the system as a whole, and this loss of control is represented by high levels of stress among employees. Therefore, it may be assumed logical to have different control tools on service systems away from employees control and target setting, that provide maximum freedom for the parts while keeping integrity of the system as a whole (Beer 1972). For instance, Jaaron and Backhouse (2009b) found that imposing service employees as experts in their field and giving them freedom and decision making authority will leverage employees affective commitment, and substitute for the traditional system control mechanisms of target setting and performance surveillance as the general moral system will control employees behaviour. However, freedom from command and control without the existence of other tools that could control employees behaviour such as affective commitment, would lead to system disorientation and eventually the whole system destruction (Gregory 2007).

For all that, the recent innovative work of Seddon (2003) of implementing lean manufacturing principles in service departments was developed, with the aim of delivering improved service performance, reduced costs and better service quality through the promotion and respect of human values (Jackson 2009). It eliminates the flaws of other approaches of implementing lean manufacturing in service departments which tend to overlook the holistic view for the service system (see Liker (2006), Wei (2006), and Joosten et al. (2009)). Therefore, systems thinking, this way, grants significant importance for viewing the system parts in relation to each other; it focuses on interconnectedness of the parts to ensure the whole system improvement and adaptability. Also, feedback plays a major role in the systems thinking to maintain

system's adaptability to the environment and also to provide employees with learning prospects (Seddon 2007).

### **3.4 Systems thinking: philosophy and theory**

Systems thinking is an approach for the redesign and management of work. It is based on redesigning the organizational service systems around customer demand instead of in functional hierarchies. The systems thinking team spends a considerable amount of time to understand the service processes from the customer's own perspective (Jackson 2008). It is at this stage where the systems thinking team seeks answers to questions like: What matters to the customer the most? What are their problems? What do they say they want from the system? This is similar to the principles of BPR where understanding the system process plays a vital role in the systems' reengineering project (Hammer, Champy 2001). It is also pointed out by Checkland (1985,1994) that systems thinking is built around the concept of a human activity system, which consists of "structured sets of activities linked logically together to make them capable of achieving a purpose, together with a monitoring and control sub-system, which ensures that adaptation is possible" (Checkland 1994).

The understanding process begins with analysing customer demands over a period of time to collect information about what customers want and expect and what matters to them most. The need for analysing customer demands stems from the fact that a comprehensive understanding of the transformation processes in the service system needs to be unequivocally presented before interpretations about the situation are made (Checkland 1995). Customer demand is analyzed on the basis of two different types usually available in service departments (Seddon, Brand 2008):

- Value demand- is what the service department has been established to serve and what the customers want which is of value to them.
- Failure demand- is the demand that the service department was not able to serve due to the lack of information or supporting operations.

To design against customer demand is to be more responsive to them. This implies that the waste present in the current system has to be reduced in the new design to enable the quick response. Removing waste implies the redesign of the service processes flow by focusing on minimizing the non-value adding activities from the customer point of view. When waste is removed the capacity of the system increases which allows for costs reductions and service quality improvements (Seddon 2003). Systems thinking integrates the decision-making processes with the work itself (Seddon 2005, Jackson 2008). For this purpose the role of employees change from controlled to full empowerment as systems thinking requires employees to be self-directed by making their own rules and judgments (Seddon 2008). This way allows for more control on service processes because data is in the hands of the people doing the work, and provides ability and creativity in responding to the system's surrounding environment (Jackson 2008).

Since employees in a systems thinking service department need to think, analyse, judge and make decisions on the work on hands, employees training is not the focus in the preparation process for this kind of job, it is actually educating them on “why” a failure happen and then finding ways to eliminate it from the system. In fact, training increases skills of employees and teaches them the “how” of doing jobs. While education increases their competence level in finding the reasons of failures in the system (Hammer, Champy 2001). In order to accommodate these requirements of the systems thinking redesign, the work of managers shifts from command-and-control to coaches and supporters. The team members can approach their managers for advice in solving problems. This keeps managers very close to their employees to assist in their work when necessary. Due to this kind of managers-employees relationship and due to the whole service processes being owned by employees, the hierarchy of the organisation changes. The organisation tends to be more flat as the top-down role of managers diminishes (Hammer, Champy 2001).

The success of systems thinking, similar to lean manufacturing, is based on achieving economies from understanding the flow of the work, and not from the scale of production (i.e. quantity of transactions) (Seddon, Brand 2008). Measures used are built in so they automatically tell you what is happening. These measures are usually centred

on the concept of how good the service is in achieving the purpose and absorbing the demand variety. The variety can be absorbed by making intelligent use of the empowered employees (Jackson 2008). The result is a self-adapting system (Seddon 2008). This virtue of systems thinking encourages employees to point out the system pitfalls that cause failure demand, and introduce them as the experts through which the new design of processes are made. Employees, this way, get the chance of self-development and continuous learning.

Another key principle, to show the strength of systems thinking, is its view to employees. Instead of putting employees in separate departments to perform specified functions, they are viewed as one entity performing within the boundaries of a team. Frost (1994) sought to explain that for manufacturing organisations that are constantly involved in a competitive process of bringing forth distinguished services, they can reap a competitive advantage of formulating a team-based culture. In this type of culture, team members share the responsibility of the whole processes and hence every member will be practicing something new every time he performs a demand. Each team member, this way, will possess the required level of skills for every demand received as they practice along the way. Therefore, employees achieve a sense of job improvement, learning and skills enhancement. As a result, employees' work becomes more challenging and rewarding and thus more satisfying (Robey, Sales 1994).

Table 3.1 presents the main features of the systems thinking approach and compares them with the traditional managerial thinking found typically in mechanistic structures (Robey, Sales 1994, Robey 1991).

However, a gap seems to be present in service organizations between the management focus and that of front-line staff. While the premium interest of management in service organizations, similar to other types of organizations, is the cost, the concern used at the customer interface level is of service quality and customer satisfaction (Busi 2005). To cover this gap of interest the management has to understand that as the service level increases the operating costs decrease. If the customer receives what he wants from the organization, then the customer is receiving a quality service with least-cost incurred by the organization as he/she does not need to call again asking for further resources.

Likewise, if the organization is not providing what customer wants, then most probably the service encounter is poor and the customer is consuming more resources from the organization since he/she needs to call again until he/she gets what he/she wants. Eventually, if the customer does not get what he/she wants from an organization, this may cause him/her to stop using the service and switch over to other competitors (Seddon 2008). However, the need to satisfy customer demands and reduce the frequency of demand failure requires the elimination of waste in the service systems and the creation of a variety absorbing operations that can reduce resources consumption and improve capacity.

Table 3.1 Traditional Management Thinking and Systems Thinking. Adapted from Seddon and Brand (2008)

<b>Comparative dimension</b>	<b>Traditional management</b>	<b>Systems thinking</b>
Perspective	Top-down	Outside-in
Design	Functional specialisation	Demand value flow
Decision making	Separated from work	Integrated with work
Measures	Budget, activity, targets, output, standards	Related to purpose, variation and capability
Motivation	Extrinsic	Intrinsic
Management Ethic	Manage budget and people	Act on the system
Attitude to customers	Contractual	What matters

Manufacturing organizations today can easily capture significant information as a result of the customer demands coming in to the call centre (Boersma et al. 2004, Boersma et al. 2005). However, if this demand spectrum studied and analysed thoroughly and then transformed to the other business units, can provide significant “business intelligence” to the organization to improve and redesign the way they do the work (Cleveland 2006, Stockford 2007, Cleveland 2007). This helps other departments to evaluate their designs, processes, quality measures and enhance their research and development initiatives. The net result would be to optimise operational processes and leverage the



call centre's strategic value across the manufacturing organization. Systems thinking is a service operations model that can help call centres analyse customer demand to achieve the benefits presented above. It is stemmed from lean manufacturing approach found in Toyota Production System (TPS) as a comprehensive strategy for the elimination of waste from work operations (Ohno 1988).

### **3.5 Systems thinking: links with affective commitment**

There is evidence that the characteristics of systems thinking discussed earlier play a major role in leveraging affective commitment of front-line employees. In fact, these characteristics of systems thinking help employees in fulfilling their personal ambitions, and in promoting their desire of achievement. It is also important to note that systems thinking is related to the employer ability to decentralize decision making processes to be at the employee's level. Systems thinking this way provides employees with a sense of control on what they have, and gives them a feeling of personal importance and self esteem in the organization (Meyer , Allen 1991). Due to these reasons employees working under the systems thinking principles are more likely to develop affective commitment with their organization (Mowday, Porter & Steers 1982). In addition, converting the management role from performance monitoring to constructive support and involvement in demand analysis inevitably creates a rewarding working experience that can help increase employees' level of affective commitment (Meyer , Allen 1991, Mowday, Porter & Steers 1982). However, affective commitment leveraging is vital to reducing employee turnover and absenteeism which can cause call centres to lose experience and talent (Krenzelok, Dean 1994). The longer an organization keeps employees the better the services provided will be due to the accumulated expertise over time.

### **3.6 Creating a systems thinking call centre**

The approach to build call centres around systems thinking principles is based fundamentally on redesigning service operations from the customers' perspective. The service redesign aims at developing a new organisational structure, new systems and a customer centric approach to the delivery of the services on offer while achieving the

twin benefits of better working places and enhanced added value to the manufacturing organization. The philosophy and methodology discussed above are translated into three main action steps: check-plan-do. These were adapted from Deming and Walton (1992) work of management cycle “plan-do-check-act”. However, these three steps constituted the main features of the systems thinking transformation project and summarised in Table 3.2.

- 1) Check: This stage starts with a demand analysis. It aims at understanding the system and why it behaves in such a way that failure demand is achieved. It is important at this stage to clearly distinguish between value and failure demand. A specially formed team from the manufacturing organization’s call centre collates information about what customers expect and want from the organization and what matters to them most, they need to be able to use views of different people involved in the problematic system to build the “real situation” (Checkland 1995). Jackson (2008) discussed the characteristics of the systems thinking implementation team. According to him, the team should be small in size and have a close relation with those who have rich knowledge of the work flow. In addition, team members should have high levels of commitment to service and quality, be known and respected in and beyond their own departments, and most importantly be ready to challenge the current situation. Data collated in the check stage enables the identification of the major demands coming into the area. Once the team understands the type of demand received and how capable the system is to respond to it, it can start to map the flow of processes in the system. For this purpose, a visual representation of each operation carried out in the call centre is developed as a flow chart with three key checks on accuracy being: It must be end to end (from customer view); it must be followed - wherever it goes, and it must capture what the staff actually do. Identification of waste (actions not adding any value from the customer’s point of view) present in the service operations flow is then carried out (Seddon 2008). All processes classified as waste are marked in red on the process flow chart. While processes that add value from a customer’s point of view are marked in green. Team members discuss the causes of the identified waste and issues that clog the flow of the work that causes stress and dissatisfaction for

employees and customers (Jackson 2009). The examples of waste are duplication of quality checks, queuing claims, waiting / delays in documents scanning to the system, sorting, counting, batching demands documents, and rework of demands with missing information.

Table 3.2 check-plan-do cycle of systems thinking. Adapted from ODPM (2005) and Jackson (2008)

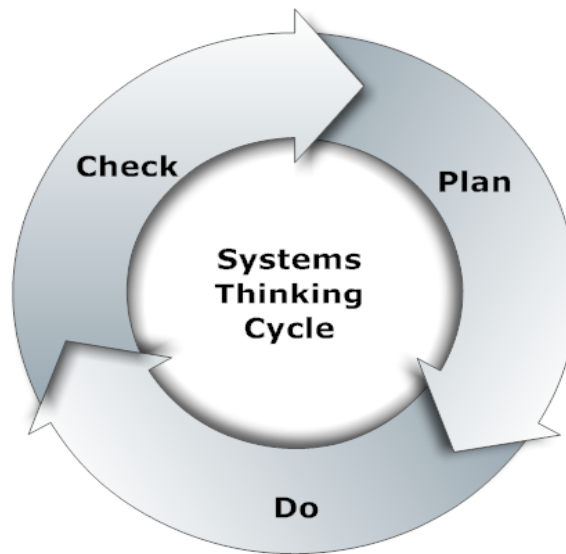
Stages in the process	Stages Definition	What does it do?
'Check'	An analysis of the what and why of the current system.	Provides a sound understanding of the system as it is and identifies potential causes of waste. 'Check' asks: <ul style="list-style-type: none"> <li>• What is the purpose of this system?</li> <li>• What is the nature of customer demand?</li> <li>• What is the system achieving?</li> <li>• How does the work flow?</li> <li>• Why does the system behave like this?</li> </ul>
'Plan'	Exploration of potential solutions to eliminate waste.	Provides a framework to establish what the purpose of the system should be and how the flow of work can be improved to meet it. 'Plan' asks: <ul style="list-style-type: none"> <li>• What needs to change to improve performance against purpose?</li> <li>• What action could be taken and what would be the predicted consequences?</li> <li>• How should success be measured and against what measures should action be taken?</li> </ul>
'Do'	Implementation of solutions incrementally and by experiment.	Allows for the testing and gradual introduction of changes whilst still considering further improvement. 'Do' is concerned in: <ul style="list-style-type: none"> <li>• Developing redesigns with those doing the work.</li> <li>• Experimenting designs gradually.</li> <li>• Reviewing changes.</li> <li>• Working with managers on their new role.</li> </ul>

2) Plan: This stage starts with a clear emphasis on what the purpose of the system is from the customer perspective. A presentation of the findings of the check phase is carried out to explore all the possible ways through which a better flow of processes can be designed against customer demand (Seddon 2005). This is followed by the team redesigning the processes flow charts taking what have been learned considering the customer “wants” and then mapping out the new

service system design. The most fruitful way to make full use of systems thinking concepts is through the use of a team who is basically from the people facing the problem and using the system (Checkland 1985, Checkland 1994). Typically, the new service design is focused on minimizing non-value adding activities from a customer point of view. The final step in the “plan” process is to build performance measures and the future system success criterion. This is usually how good employees are in creating a value demand and the percentage of value demand out of the total demand received (Jaaron, Backhouse 2009c).

- 3) Do: With the re-design work, comes the practical work. The new design is used in an experimental environment with the check team using the new model after it has been discussed with the people doing the work. The new processes are induced gradually with careful observation of both employees reaction to it and customer feedback. The processes are tested, re-designed and re-tested again to make sure that customers get the best possible service before going fully live in the call centre. This is much slower process than the check phase as the slogan at this stage is to “do it right rather than do it quick” (Jackson 2008). The links between the two systems are made directly eliminating the need to pass formal documents within the team members. It is anticipated that this significantly reduces delay and brings productivity improvement in the processing of customer demands and enquiries. Another important step at this stage is building capacity for the project among managers. Managers are invited to special sessions to explain the pitfalls of the command and control philosophy of the work, and to help them think differently about their service systems. Once the new processes design is fully validated after being tested the real implementation of the new model within all areas of the call centre is done by a gradual rolling in of employees to the new way of working. It is key at this stage to continue the identification of appropriate training needed by employees. This training could include learning more about systems thinking and putting that into practice; understanding and using the new ways of working as progressed by the check team.

Figure 3.2 Systems thinking continuous improvement cycle



However, the check-plan-do cycle is a never ending cycle to allow for continuous improvements (Seddon 2008, Jackson 2008) (see Figure 3.2). It is, therefore, a learning system by itself where the process of acquiring knowledge and taking action to improve the situation is continuous (Checkland 1994, Checkland 1995). This is embedded into the fully operational environment and involves making smaller changes to the way of working to improve the service offered. It also involves the identification of new demands coming in to the call centre and designing new processes that ensure dealing with new demands as value demands.

### 3.6.1 Capability charts

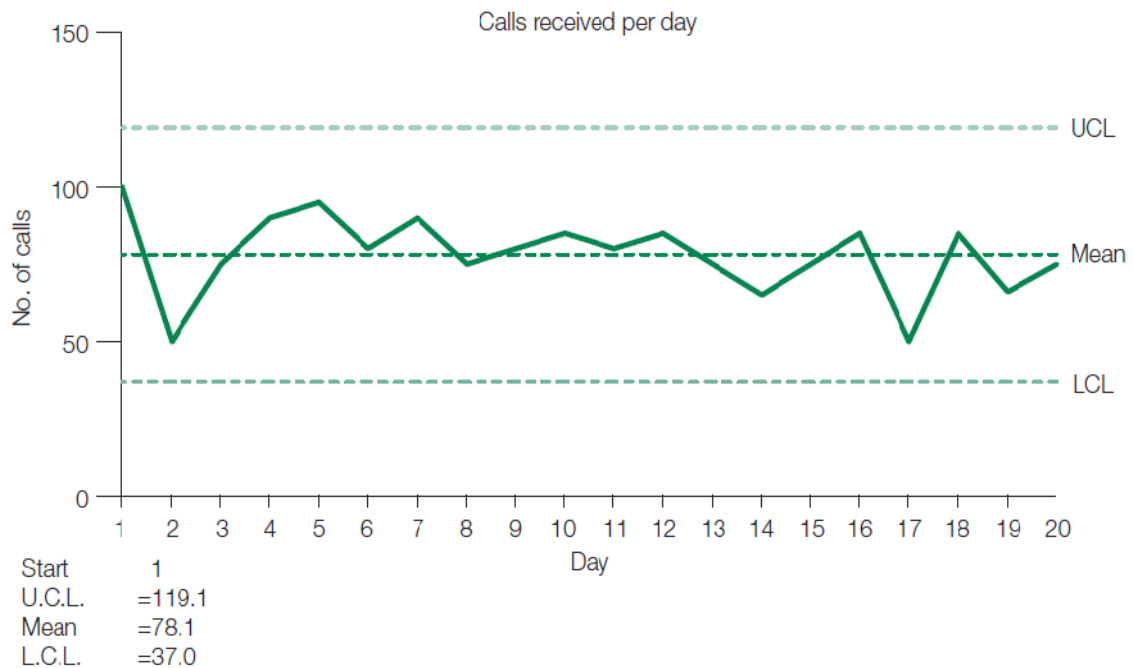
In addition to the flow charts tool used by systems thinking during the plan phase of the call centre building methodology, the system needs an auxiliary tool that will clearly demonstrate how well the system responds to customer demands, both for the current system (before redesign) as well as for the system of the future (after redesign). Capability charts are used in the methodology to demonstrate the quantity of demand the system is receiving and how predictable performance is around the demand averages (ODPM 2005). For example, if an employee dealt with 100 calls on Monday and he dealt with 50 calls on Tuesday, this may concern his manager, as traditional managers are only concerned about achieving preset targets and numbers (Hammer, Champy 2001). By tracking the number of calls received by the employee over a longer

period of time it can be demonstrated that the system receives between 37 and 119 calls each day in that tracking period. Therefore, it is normal for the employee to do 50 calls at any one day as he is still performing within the acceptable limits of the system (see Figure 3.3). However, the point that should be highlighted here is that systems thinking regards quantity an invalid measure for system performance; it should not be the ultimate concern for managers, but how well the customer demands were met at those calls.

The advent of systems thinking to call centres encompasses that managers change the way they think about their systems. Instead of exerting control on employees to follow work standards and monitoring their performance, it is of great benefit to divert the attention to the design and management of the systems itself (Seddon 2003). This is because more than 95% of performance variations are in the system, and only 5% or less are in the employees (Deming 1993). However, in order to enable working on 95% of system variations employees need to be actively involved in this process. Systems thinking requires the decision-making processes to be at the employee's level to make sure that the waste is avoided and that employees are able to deliver the service with minimal consumption of resources (Seddon 2005). Therefore, systems thinking is considered as the service delivery design with most economical means; it gives customers only what they want in minimal time of interaction (Seddon 2008). Employees, this way, are given freedom to act. As the roles change, so do job experience.

Employees working in a systems thinking department are enjoying wide range of job tasks that introduce them as better dealer with customers (Seddon 2005). Collective team work and responsibility sharing is of great importance in order to identify the right person or persons to solve a demand problem at minimal time at the same phone call. The consequences are the achievement of an organically structured business unit (Robey, Sales 1994, Robey 1991). Organic units typically face diversity in demands of unpredictable nature than those that are shielded from the environment (e.g., production department, quality assurance department, accounting, etc.); these unpredictable demands increase the uncertainty of the inputs (Robey, Sales 1994), and requires that employees are given the freedom and ownership on what they have.

Figure 3.3 An example of Capability Chart. Source: ODPM (2005)



### 3.7 Systems thinking as the enabler for organic structures

Service departments are typically exposed to a greater demand variety from the customer than are manufacturing departments (Seddon, Brand 2008, Seddon 2003). The systems thinking approach in services recognises that manufacturing lean tools, which emphasise standardisation and the elimination of variation, are not appropriate for service organisations, which need to absorb variety in customer demand. In order for service organisations to absorb this variation in demand they need to become adaptive organisations, often referred to as ‘organic structures’ introduced by Burns and Stalker (1961). Such ‘organic’ organisations are frequently introduced as remediation for mechanistic pitfalls. It is recognised that when employees are given the ability to make work decisions, organisations are more able to absorb variety. In addition staff who are working under such standards, and who are entrusted with working on a variety of tasks and building relationships with customers, have a sense of freedom and responsibility (Robey, Sales 1994, Robey 1991). The characteristics of this approach are that jobs are wide in scope and employees are allowed to act on a variety of tasks, to learn and to build relationships with customers (Seddon 2005). These tasks are not governed by rigid rules and procedures; the team shares the responsibility of the work. Hierarchy of

control is not usually present thus allowing the team to identify the right person to solve a particular problem. The characteristics of organic structures are congruent with those of systems thinking. Therefore, it is discerned that systems thinking approach is the opposite of mechanistic structures.

To provide an account for the impact of the radical redesign of company's service operations as a result of systems thinking implementation, the work of Hammer and Champy (2001) is used to illustrate the kinds of changes that occur in the organisation due to this kind of service reengineering. These changes are:

1) The work changes from functional specialisation to team work:

Once the systems thinking principles are implemented, the people relocate within the service department to be a part of a team. The essence of this team is that all the individuals are working together to perform an entire process and if necessary they can seek the help from each other to accomplish a task. Instead of separating the individuals into different departments, they are all now working within the boundaries of one team.

2) Employee's work changes from handling simple processes to diversified tasks:

Systems thinking urges the individuals working within the team to share the responsibility of the work with their team members. An employee could receive a different customer demand every time he receives a call. He actually performs a whole customer demand or a part of a demand that provides a solution or solves a problem for a customer who cares about (Hammer, Champy 2001). This adds richness to the work with a tremendous potential for learning and challenge.

3) Employee's role changes from controlled to empowered:

Systems thinking requires employees who can steer the work rather than being steered. Employees are given full control on what they have in hands (Jackson 2008); they rely on their innovation and intelligence to make decisions regarding customer demands and how to serve them the best. Employees can decide what and how to do the work as long as they are "within the boundaries of their obligations to the organisation" (Hammer, Champy 2001).



4) The emphasis is changed from training to education:

As employees are given the authority to make decisions and decide on how to serve the customer in a systems thinking call centre, the company puts a great deal of effort on educating employees how to continuously check the system for potential improvement (Seddon 2008). Education increases employees' understandings and teaches them "why" the system behaves as they experience, while training only increases employees skills and instructs them how things are to be done (Hammer, Champy 2001).

5) Performance measurement changes from numbers to value and quality.

In mechanistic service departments employees are evaluated on the basis of how many calls or transactions they do in a specified shift, day or month. Numbers play a vital role in this environment to decide whether the employee has performed as expected and instructed or not (Cleveland 2006). In contrast, a systems thinking service department measures performance on the basis of how good employees are in matching the company's principles of serving the customer through employees' appraisals in the call centre. The number of value-adding calls is counted against the non-value adding calls to form the basis for measuring and evaluating employees work in general.

6) Organisational culture changes from targets orientation to customer orientation

Manufacturing organisations grant a serious importance for organisational culture in order for its employees to deliver competitive products and services (Masood et al. 2006, Frost 1994). Systems thinking builds a culture that requires employees to be focused on delivering value work to customers (Seddon 2008). This entails that managers' demand for targets achievement is no longer in place. Thus, employees believe that they are doing the work for the sake of the customer and not for their immediate supervisor or manager.

7) Managers' role changes from monitors to supporters:

Systems thinking employees deal with a growing complexity of customer demands and tasks within their own team. Employees are no more in need for managers to instruct them on how to do things; on the contrary, they need support and advice from their managers (Jackson 2008). The new role of managers includes becoming a part of the workforce as they had the capability, and on occasions can act on this capability. They

substitute for front-line employees where available to help front-line employees serve the customer.

8) Organisational structure changes from top-down hierarchy to flat.

As the role of managers' change from monitors to supporters the top down hierarchy is no longer suitable for this new environment (Hammer, Champy 2001). Departmental and operational issues that required managerial levels meetings are now being resolved by the team members who are equipped with the right level of knowledge and freedom to make decisions (Jaaron, Backhouse 2009c, Seddon 2008). The new workplace, this way, is no longer in need of as much managerial layers as they used to have in the mechanistic top-down structure. Organisational structure is also changed as a result of the open channels of communication between the team members and whomever they need to execute customer' demands and service operations (Hammer, Champy 2001).

Consequently, the characteristics of systems thinking discussed above provide the opportunity for employees to fulfil their personal ambitions; desire for achievement, social needs, and a sense of control on what they have. Employees are then more likely to develop affective commitment with their employer (Mowday, Porter & Steers 1982). It is also important to note that affective commitment is related to the employer's ability to decentralize decision making processes to the employee's level. This gives employees a feeling of personal importance and self esteem in the organization (Meyer , Allen 1991). In addition, constructive supervisor relationships with employees in this organizational structure inevitably create a rewarding work experience that can help increase employees' level of affective commitment (Meyer , Allen 1991, Mowday, Porter & Steers 1982).

It is argued in Part II of Chapter 2 that increasing the mechanisation of the customer-employee contact and decreasing service flexibility will cause front-line employees to lose personal control of their activities and on their ability to negotiate issues with customers (Deery, Iverson & Walsh 2002). This is the typical nature of structures found in call centres due to the managerial systems they use. However, call centres are outward-facing entities exposed to the ever-changing, uncertain and demanding surrounding environment; they represent the most intensive and the main channel of

interaction with customers (Burgers et al. 2000). These units typically face different demands and conditions than those that are shielded from the environment (e.g., production department, quality assurance department, etc.), the unpredictable demands and conditions increase the uncertainty of the inputs (Robey, Sales 1994). The emphasis that mechanistic structures must be shielded from the environment strongly indicates that call centres must be given an organic face.

### **3.8 Chapter summary**

Chapter 3 provided an account for the concept of lean manufacturing and its fundamental principles in the manufacturing industry. It progressed to explain the advent of lean manufacturing to service departments, specifically concentrating on the emergence of systems thinking which resulted from the translation of lean manufacturing for service operations design. Following on from this, the approach to build call centres around systems thinking principles was introduced. Further, a critical evaluation was introduced to establish the relationship between the implementation of systems thinking and the achievement of an organic type of manufacturing call centre. This part presents a clear link between lean manufacturing, systems thinking and their impact on employees' affective commitment.

Chapter 4 outlines the available theories of knowledge and philosophical stances that underlie scientific research. It is focused on introducing a detailed presentation of the research design and the methodology followed in this research inquiry.

# Chapter 4 - Research Methodology

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## 4.1 Overview

In the previous two chapters, an extensive literature review has been accomplished in the following main literature areas: call centres human resources management, organisational commitment, service quality, mechanistic and organic structures, lean manufacturing for services and the concept of systems thinking. The literature review has shed the light on the gaps in knowledge and helped in the research questions formulation and research objectives definition.

This chapter aims to introduce the reader to the distinct research methodology used in this research. It is structured to establish a bridge between the dimensions of the theory of research selected, including research strategy, techniques and data collection methods, and their practicality to the research in-hand. Thus it is focused on introducing a clear presentation of the flow of activities followed in the research inquiry. The chapter is divided into different sections that cover these dimensions. It starts by a review on the theories of knowledge, the available schools of thoughts and philosophical stances in research paradigms that underlie scientific research. This is followed by a review of research questions sought to answer in this study and the objectives of research. An intensive explanation of the multi-case studies design used is also illustrated. Then a discussion on the technique used in the case studies is presented (i.e. mixed methods) including the triangulation designs used in the mixed methods and the rationale for using each design. This is followed by a presentation of the data collection methods employed. The advantages, disadvantages and justifications for selecting each method were also presented in this section. The chapter proceeds to report on the data analysis process adopted in drawing interpretations and conclusions from the data collected. This includes an explanation on the rationale for using these particular data analysis processes. The final section of this chapter highlights the ethical standards used in seeking permissions to access research sites and the measures taken to ensure the participant rights of protection and anonymity. The methodology chapter is designed to match every element of the research methodology with criteria for judging

the quality of the multi-case studies design. Four testes widely used in the literature were employed in this process.

## **4.2 Theories of knowledge in research**

The nature of inquiry or “ontology” (Lincoln, Guba 1985, Tashakkori, Teddlie 1998) in any research is a very important element in deciding the path an inquirer needs to follow to achieve research goals. The ontology can be divided into two different types that embrace the research perspectives on the issue of research. An objective perspective which is characterized by the use of numbers to describe a reality or a fact (Easterby-Smith, Thorpe & Lowe 2002). On the other hand, a subjective perspective which is characterized by the use of reflections, oral explanations and sensations to describe a reality or a fact (Easterby-Smith, Thorpe & Lowe 2002). Therefore, the objective perspective is more attached to quantitative methodological tools that use numbers in answering research problems, while the subjective perspective is more attached to the qualitative methodological tools that use words to formulate a research problem understanding (Tashakkori, Teddlie 1998). Both the quantitative and the qualitative methods will be discussed in more details later in this chapter.

However, ontology of research needs a general stance that identifies the nature of the relationship between the inquirer and the object of inquiry (Lincoln, Guba 1985, Tashakkori, Teddlie 1998); this is known as epistemology of research. This relationship is mainly based on the level of interaction. The inquirer and the object of inquiry can either be separate (independent) from each other which has been described by Lincoln and Guba (1985) as “discrete dualism” or the inquirer and the object of inquiry are inseparable (highly interactive). It is more reasonable to think about it as a spectrum where inquirer at some type of research may be more subjective and at other types more objective; at some points be highly interactive and at some other points be separated from inquiry (Tashakkori, Teddlie 1998). Epistemology is required to shape the process of finding the truth based on “assumptions about the best ways of inquiring into the nature of the world” (Easterby-Smith, Thorpe & Lowe 2002). Successive waves, of epistemology move from the independence of inquirer from the inquiry to the full

interaction between them, has created a continuum of paradigms that will be discussed in the next section.

### **4.3 Paradigms and philosophies of research**

A paradigm has been defined by Lincoln and Guba (1985) as a set of beliefs about what we think about the world that guides research efforts. It is a “knowledge claim position” (Creswell 2003) at which researcher preset assumptions and certain beliefs decide the type of actions necessary to achieve research goals. Without a clear form of reference to those beliefs, research actions cannot occur in the way that either refute or support a theory of research (Lincoln, Guba 1985).

Easterby-Smith et al. (2002) are one of many who have depicted research paradigms as philosophies of research. They have argued that there are three reasons why these philosophies are useful and can affect the research actions to satisfactorily achieve research outcomes:

- 1- Research philosophies are very useful to determine suitable research designs that help find not only evidence on a research issue but also how this evidence will provide clear and convincing answers.
- 2- Research philosophies will help identify “what fits where”, which research designs are workable and which are not. This saves the researcher efforts of going into research tracks that will not give any research fruits.
- 3- Studying research philosophies during a research project helps the researcher to create new research designs that were not available before. It may also help in avoiding constraints of research by adapting other forms of research designs.

However, researchers who took different stances (beliefs) throughout their research projects have helped the creation of different models of inquiry; that have been debated during the past three decades by authors who are described by Tashakkori and Teddlie (1998) as “warriors”. These debates according to Tashakkori and Teddlie (1998) have created four schools of thought or paradigms and these are: positivism, postpositivism, constructivism (interpretivism, naturalism), and pragmatism. The second term,

“postpositivism”, will be treated as similar to positivism philosophy throughout this chapter due to its being a natural extension of positivism (Creswell 2003). Therefore, three knowledge stances (paradigms) have been selected (i.e. positivism, constructivism, and pragmatism) as they embrace aspects that cover almost all the available research orientations. These will be discussed in the following sections.

### **4.3.1 Positivism/Post-positivism**

The positivism orientation is also known as empirical science, quantitative research and post-positivism (Creswell 2003). Other terms were used to describe this research philosophy such as “logical positivist” approach used by Meredith et al. (1989) and Meredith (1998). It is based on the principle that scientific knowledge about a particular phenomenon is related to a particular element of patterns by reducing the whole problem into the basic elementary components (Kirk, Miller 1986). These elements of patterns are described through probabilistic expressions, modelling by equations and laboratory experiments for generalizations (Lincoln, Guba 1985, Meredith 1998). The main idea of positivism is the assumption that the social world is isolated from what is being studied and exists externally (Easterby-Smith, Thorpe & Lowe 2002). It focuses on objective perspective of the matter and uses quantitative methods to measure its properties (Creswell 2003). Most survey research nowadays is viewed to be falling in this category (Meredith et al. 1989). The term “post-positivism” refers to the era beyond positivism which gained a view of critique; researchers in this era insisted the need to examine factors that cause the problem studied and its emerged consequences (Creswell 2003). However, Lincoln and Guba (1985) have discussed the fact that researchers tend to discredit positivism and that qualitative methods such as constructivism are gaining more importance. The key positivism limitations from their point of view can be summarized as follows:

1. Positivism cannot deal with more than one aspect of the theory-fact relationship. This implies that conclusions made solely on the basis of one aspect neglect much of the truth.

2. Positivism is largely focused on operationalism which has always been judged to be inadequate. Operationalism neglects the importance of meanings about facts and their causes.
3. The problem of neglecting the human side in the research has emphasized the superiority of the researcher in deciding the research procedures and the use of findings. This has restricted validity and ignored the humanness of respondents who have the right to determine the suitable way of using findings.
4. The use of deductive logic in positivism has emphasized the simplification of reality to be very particular. This would make the whole reality including human beings involved to follow the same set of laws which is inadequate.

These critiques of positivism have caused a reaction among many research scientists to move away from positivism and find another paradigm that could eliminate its limitations by giving reality an internal perspective that could give meaning to people.

### **4.3.2 Constructivism (Interpretivism)**

The limitations discussed above, that participated in challenging positivism, have resulted in the ascending of a new paradigm that gives voice to people to make sense of reality through their experiences. This paradigm has been known as Constructivism but has been known by other names such as Interpretivism and naturalism (Tashakkori, Teddlie 1998). Constructivism has the assumption that the phenomenon being studied is a part of the surrounding context. It studies the opinions of the people and the meaning they attach to their own experience and the phenomena under investigation. The focus is on what people think and how do they interact with each other (Easterby-Smith, Thorpe & Lowe 2002, Creswell 2003). The researcher is no more independent of what is being studied. He/she argues and come up with his/her understandings and conceptions to explain why people have different feelings or experiences about a situation (Lincoln, Guba 1985, Miles 1994). It underlies the use of qualitative methods such as interviews and observations (Easterby-Smith, Thorpe & Lowe 2002, Amaratunga et al. 2002). Certain manufacturing management studies are often best viewed under this perspective (Meredith et al. 1989). Constructivism uses an inductive logic in which the researcher argues “from the particular to the general” (Tashakkori,



Teddlie 1998). Being totally attached on research site to what is being studied enhances the researcher’s ability to maintain openness and be exploration oriented. Qualitative methods solely used in this paradigm help the researchers to unfold the phenomenon in a real-world, or natural setting, where people can provide their related knowledge in places that are familiar and comfortable to them (Patton 2002), this is the reason why it is also known as “naturalistic inquiry” (Lincoln, Guba 1985, Patton 2002).

Table 4.1 illustrate the main distinctions between the positivism/postpositivism and the constructivism paradigms, these distinctions were abstracted from the work of Creswell (2003) and Easterby-Smith et al. (2002).

Table 4.1 Distinctions between Positivism and Constructivism.

Aspects	Positivism	Constructivism
Researcher	Independent from what is being studied	Attached to what is being studied
Epistemology	Objective	Subjective
Methods	Quantitative	Qualitative
Logic	Deductive	Inductive
Generalization	Through statistics	Through theory building

Extreme supporters of each of the above traditions and those who argued on the superiority of using a pure paradigm in research (either a positivism or a constructivism), did not confine themselves to only one position. There are many research scientists who adhered to the idea of migrating away from either of these traditions to a more balanced view by combining research methods that belong to both traditions, better known as Pragmatism (Easterby-Smith, Thorpe & Lowe 2002).

### 4.3.3 Pragmatism

Easterby-Smith et al. (2002) in his discussion over the paradigms of research have concluded that “philosophers within one school not only disagree with each other; they also disagree with themselves over time”. However, Creswell (2003) has viewed that the evolution of Pragmatism came as a result of the war between the two main paradigms discussed above, and indeed helped in overdrawn this war. Pragmatism is based on the idea of “what works” in the sense that a researcher can choose any

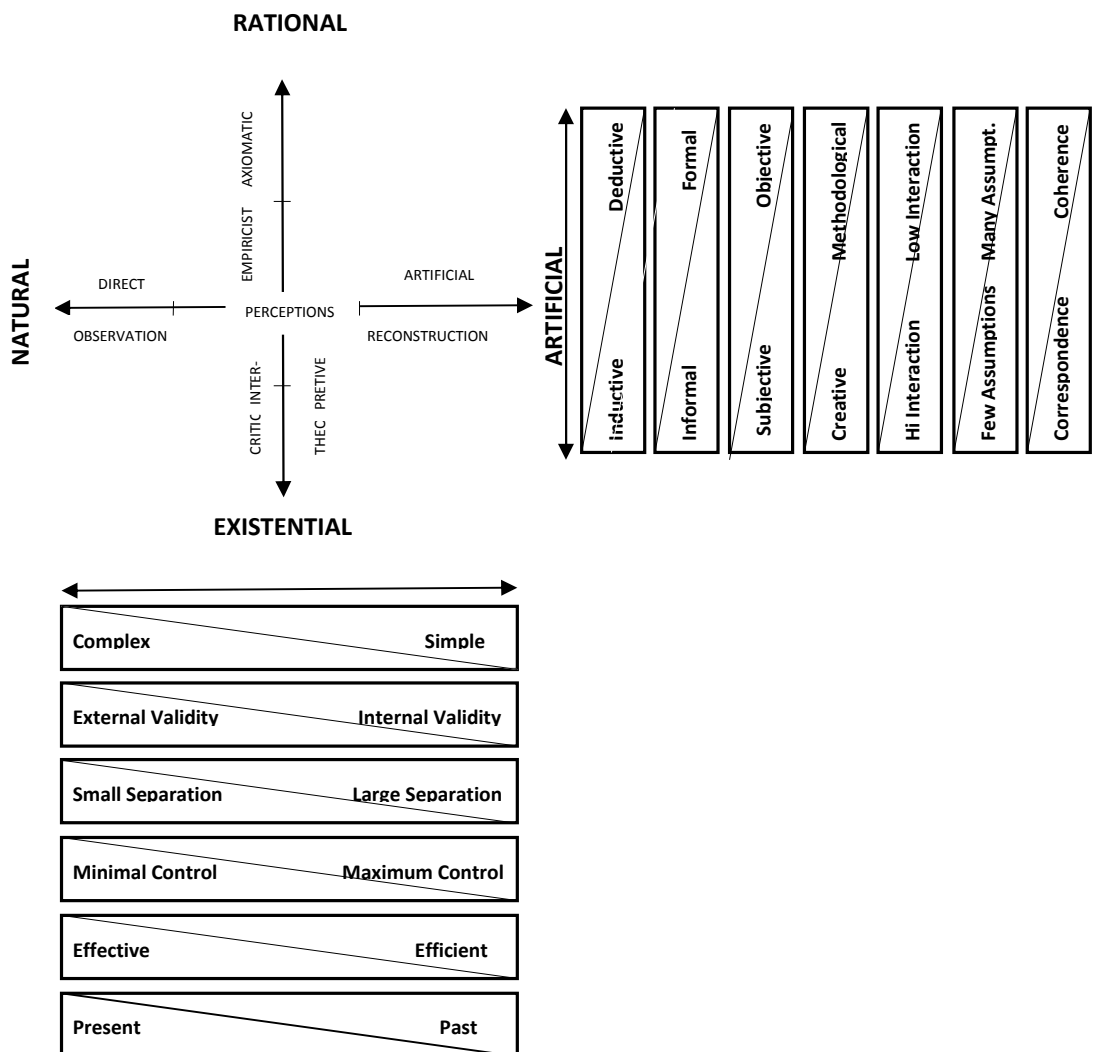
research method whether it is quantitative or qualitative to answer the research questions posed in a study clearly. Thus considering the research question as more prominent than the methods of research used or the worldview that embraces these methods. Pragmatism, in this sense, does not look to the world as one entity that can be approached through only one dimension. On the contrary, it supports the idea of looking through many dimensions that could provide a holistic view of the problem under investigation. This view of pragmatism urged the use of different methods in the same study. This has emerged as a new form of research design known as “mixed methods” championed by Creswell (2003). In this research design both qualitative and quantitative methods can be used in the same study. Thus, it is acceptable for pragmatists to have a choice of deductive and inductive logic when conducting a research study. According to Creswell (2003), who provided a number of interpretations on the adoption of pragmatism viewpoint:

1. Researchers adopting Pragmatism are not restricted to the use of only one method. They can use any type of methods and procedures that best answer research questions.
2. Pragmatism does not belong to any of the extreme research paradigms (i.e. positivism and constructivism). It is a continuum that could move relatively between these two ends. This implies that neither of the qualitative or quantitative methods is used solely and a certain level of combination will be required.
3. Pragmatism urges the use of “what works” to address the truth. An accepted truth needs answers to questions like “what” “how” and “why” to provide a clear and perceivable conclusion. Mixed methods use both qualitative and quantitative methods that could answer such questions.

Given all these considerations, Pragmatism is the only paradigm that justifies the use of mixed methods (Yvonne Feilzer 2010). Furthermore, pragmatism was inherited in a framework developed by Meredith et al. (1989) after his study of operations management. It is based on two key dimensions of research methodologies: natural versus artificial and existential versus rational (see Figure 4.1).

The first dimension is concerned with the type and source of information used in research. The natural end is the information that is achieved objectively, while the artificial end is the information that is achieved subjectively. In the second dimension, Rationalism represents the uses of a formal structure and deductive logic as the viable measure of the truth. It suggests that the fact is external to the observer. While at the other end lays the Existentialism, where research activities rely on exploring the human interaction with the problem being studied to draw conclusions and understanding on the basis of their experiences. It uses inductive logic to measure the truth and suggests that the observer is inseparable from what is being studied.

Figure 4.1 Generic research framework. Source: Meredith et al. (1989)



Comparing these characteristics of the two dimensions with those of the previously discussed paradigms (Positivism and Constructivism) it would be easily judged that Rationalism represents Positivism while Existentialism represents Constructivism. Ultimately, what lies between these two dimensions is the space at which Pragmatism can work, or in other words the space that the mixed methods designs can stem from.

Meredith et al. (1989) has pointed out that operations management researchers have employed a limited set of paradigms for a long period until recent years when the field has witnessed dramatic changes. Meredith argued that the Operations Management field has been more focused on the use of quantitative modelling and statistical methods to answer research questions, or in other words the rationalist (positivism) end. With majority of operations management studies residing at the rationalist end of the framework, it was argued that operations management researchers would no longer be able to address real world problems without expanding their research methodologies to make true contributions to the field. Furthermore, Meredith (1998) has also concluded the importance of Pragmatism and the combination of methods in research in his argument that case/field research (using both quantitative and qualitative methods) is more rigorous than the traditional rationalist methods. He states that “A major conclusion is that these alternate research methods are not mutually exclusive and, if combined, can offer greater potential for enhancing new theories than either method alone”. In addition, Pragmatism sees the quantitative and qualitative methods as compatible and that researchers could make use of these two complementary methods in their studies. This is known as “compatibility thesis” (Creswell 2003) that has urged the mixing of methods in research studies.

#### **4.4 Research questions and objectives**

An initial step in any type of research project is the definition of research questions, this is particularly important in guiding organisational case studies research (Bryman 1989). Typically, every action the researcher executes in a research inquiry emanates from research questions as they control the way the rest of the research is carried out (Graziano, Raulin 2007). For instance, the identification of a research question permits the specification of kind of organisations to study, and keeps the researcher focused on

collecting data of relevance to the problem of research (Huberman, Miles 2002). Bryman and Bell (2007) have identified that research questions are crucial in organisational studies due to the following reasons:

- They guide the literature search.
- They decide about the type of research design to use.
- They decide about what data is required and from whom.
- They guide the analysis processes of the data.
- They guide the write up stage of the data
- They keep the researcher on the right direction as they stop researchers from going off in unnecessary directions.

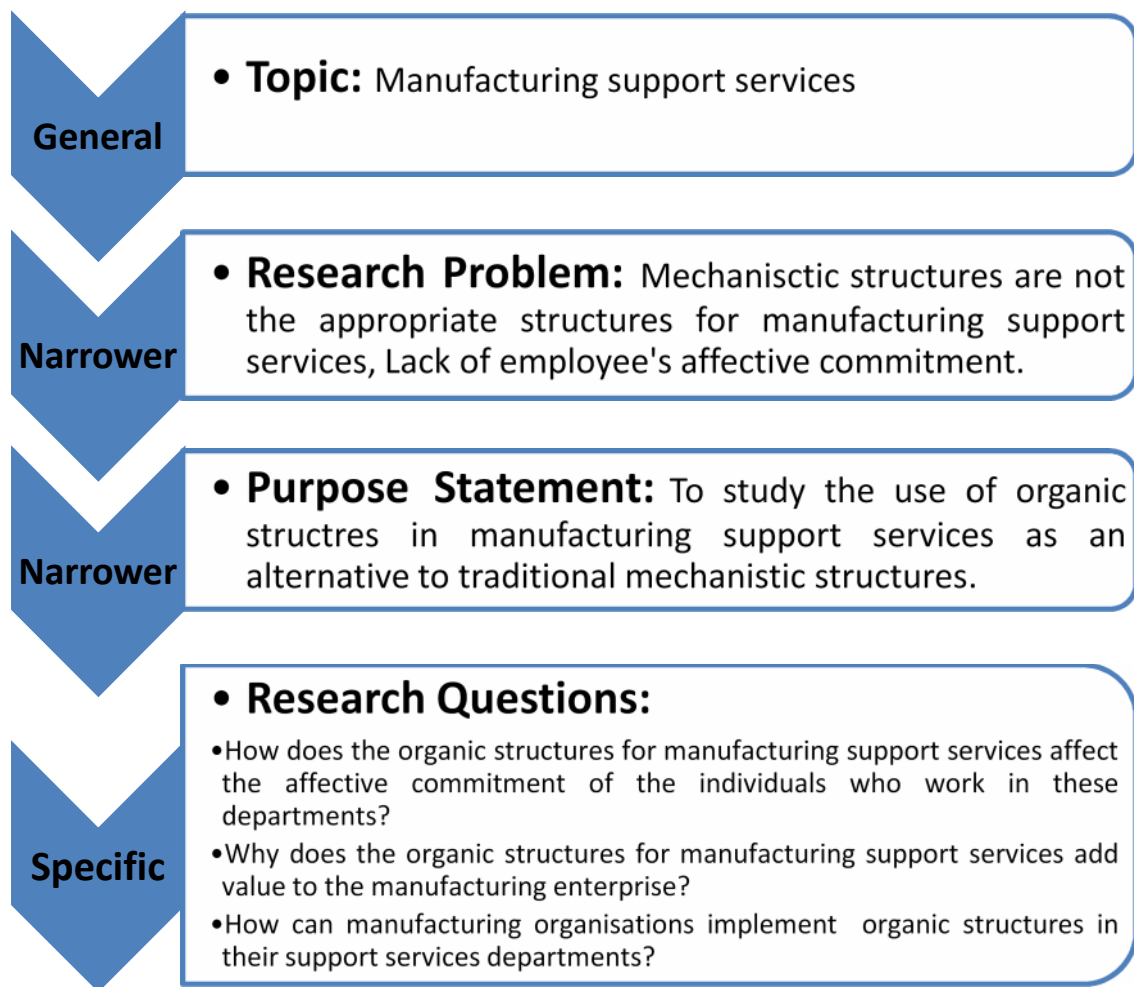
Although the early identification of research questions and focus is important, it must be recognised that the research questions at the early stages of many research projects are tentative and can be revised or shifted due to the identification of some early evidence (Huberman, Miles 2002). Nevertheless, careful formulation of research questions is usually possible through the use of two mutual routes introduced by Graziano and Raulin (2007):

- What has been learned from the literature review. This permits the availability of well-developed knowledge of research area and the identification of previous research already done.
- The researchers own creativity, previous experience and ideas.

In a research inquiry, the researcher starts with a broad subject matter of research (i.e. research topic) which has to be narrowed down to a more specific issue (i.e. research questions). The researcher seeks to learn more about a problem related to the broad topic so that a more focused knowledge can be developed about the identified problem in the field (i.e. research problem). The researcher, then, at this stage seeks to identify the major intent or objective of the study (i.e. purpose statement). In order to narrow the purpose of the study more, the researcher decides about the exact issues that he would like to get answers for (Bryman, Bell 2007, Creswell 2004). This allows the research questions to be formulated, as shown in Figure 4.2. However, one of the most regarded

reasons for conducting a review of the literature is to find out whether other researchers have asked the same research questions in their previous studies and what they have reported about the problem. Obviously, there is no point in carrying out a research whose questions has intensively been discussed by researchers in previous studies unless the major aim is to replicate the same study in some other settings (Minichiello et al. 1990).

Figure 4.2 Method of identifying research questions. Adapted from Creswell (2004)



For this research inquiry, having identified the aforementioned gaps in the knowledge in the previous chapter, derived from the review of the literature findings, three research questions were formulated.

The literature review have indicated that in order for organisations to achieve competitive advantage and organisational success through their call centre employees, it is most important to equip them with high levels of affective commitment. However, there is strong evidence in the literature that front-line employees who are working in mechanistic call centres significantly lack the affective commitment building environment and tools. Therefore the first research question posed here is:

**RQ1: How do organic structures for manufacturing support services affect the affective commitment of the individuals who work in manufacturing support services departments?**

Also, having completed the literature review on call centre structures and operations designs; call centres are business units with mechanistic organisational structures that are inward oriented, and that must be shielded from the environment but call centres are outward-facing entities. This firmly implies that call centres must be given a certain form of organic structures that can improve work conditions. Therefore the second research questions posed here is:

**RQ2: Why do organic structures for manufacturing support services add value to the manufacturing enterprise?**

Finally, the literature strongly suggests that structuring call centres around the principles of organic systems will formally institute the integration of call centre with other business units in the manufacturing organisation. However, there appears to be no tools or methodologies in the literature for the achievement of an organic type of manufacturing call centre (i.e. support services). Therefore, the third research question is stated as:

**RQ3: How can manufacturing organisations implement organic structures in their support services departments?**

In order to answer these questions a number of research objectives have been identified:

- The identification of alternative service design models applied to call centre operations that could leverage employees' affective commitment levels to mitigate turnover problem, and improve service performance to retain customers.
- Exploring the relationship between improving the service operations using organic structures approach and the affective commitment of frontline employees within their call centre.
- Explaining the leveraging of affective commitment among call centre front-line employees through the use of organic structures for service operations design in manufacturing support services.
- Creating an understanding that by implementing an organic structure, through a systems engineering approach, to the design of employee empowered customer service delivery significant, but often counter-intuitive, benefits can be created.
- Proposing a novel methodology for the implementation of organic structures applied to manufacturing support services, often operating as call centres, as a value creating model.

## **4.5 Research design**

The intention of this section is to explain the use of multiple case studies research design in this research as an enabler to achieve research objectives. First, this section introduces insights on types of research designs available for researchers in organisational studies. It introduces definitions of case study research as well as discussions on the appropriate criteria of when and how many cases should be used. It also introduces the components of a successful case study research design. The rationale for using case study design is also introduced through a comprehensive discussion on its advantages and practicality.

The research design phase is specifically focused on determining the research methods to use in a research inquiry. A research design is needed to provide suitable research strategies that enable the logical sequence of activities (Sekaran 2003). Therefore, it guides the researcher in the process of collecting data and analyzing findings and



conclusions. Lang and Heiss (1984) pointed out that a research design is not the sophisticated equipment or the tool that is used to solve a problem, but it is the way of approaching and tackling a problem. They argued that a research design is the most reliable technique which can be used to avoid limited or biased perceptions and opinions about a research problem, and it guarantees the presentation of problem solutions in systematic and orderly manner. It can also be viewed as the logic that is used to draw a link between the data collected and the conclusions reached to answer research questions (Rowley 2002). Designing a research encompasses, for example, the identification of which participants to test, how to test them, what observations to make, what ethical considerations are needed, what statistical and analytical methods to use to analyze the data and under which conditions (Graziano, Raulin 2007). It is defined by Yin (1984) as “an action plan for getting from here to there”. In other words for getting from the research questions to answers and conclusions.

However, to select a research design a significant importance is given to the way the problem is formed, the research questions it raises, and the solutions or conclusions required (Merriam 1988). There are four main types of research designs available for researchers in organisational studies. These are experimental research, action research, survey research and case study research (Bryman 1989). These are discussed as follows.

#### **4.5.1 Experimental research**

This research design has a positivism orientation more than other research designs as it is more focused on using quantitative methods (Neuman 2007). It can be divided into two different categories; lab experiments and field experiments (Sekaran 2003). The distinction between the two types comes in the setting in which the experiment takes place and in the way variables are assigned to conditions (Graziano, Raulin 2007). In lab experiments the setting is a laboratory facility and the focus is on finding a cause-and-effect relationship between a dependent and independent variable. The researcher manipulates the independent variable while eliminating the effects of other factors involved in order to evaluate the effects on the dependant variable. However, putting control on other factors involved is very crucial in such type of research design as it eliminates alternative explanations and isolates the two variables under focus from

other factors (Neuman 2007). Due to this property experimental research designs are considered among few designs where cause-and-effect relationships can be ascertained (Lang, Heiss 1984). In case of field experiments, the setting where they are carried out is a natural and realistic environment. When the natural environment is an organisation, then they are better known as “experimental organisational research” (Bryman 1989). Certain group or groups are selected to perform the required treatment on them. For instance, a group of workers in a production line may be chosen to test their production rate as a result of using a new production technology. Any identified cause-and-effect relationships maybe used to generalise the findings to other workers groups using the same technology (Sekaran 2003). However, the researcher in field experiments does not have the absolute ability to build the experiment elements as in laboratory; some participants may not be available for sometime during the experiment. In addition, participants may feel that the experiment being carried out is a senior management tool, thus they may “a vested interest in certain outcomes” (Bryman 1989). Therefore, the researcher has much less control on other factors involved in the experiment (Lang, Heiss 1984, Neuman 2007).

#### **4.5.2 Action research**

Action research can be defined as systematic procedures where the researcher gathers information about a specific problem and participate actively in solving it, and where the organisation collaborates in setting the research activities (Ritchie, Lewis 2006). It is appropriate for research undertaken by consultants whose role is to solve organisational problems (Sekaran 2003). It can co-operatively be performed with people rather than on people of the organisation (Oates 2002), where people are perceived as co-researchers or co-subjects (Reason, Heron 2001). In organisational terms, the researcher becomes a part of an organisation by providing it with possible solutions for a problem, that has been identified by both parties (Creswell 2004) and the organisation systematically implement those solutions before the researcher evaluates their effects on the problem. It is recognised in action research that the implementation of such tentative solutions may produce unintended effects, therefore the researcher may require to implement a set of solutions before the problem is fully solved (Sekaran 2003). Action research, in this sense, is explicitly concerned about bringing new

knowledge and improvements to research places by implementing changes to real world situations (McKay 2001, Cronholm, Goldkuhl 2003). However, despite the considerable support that this type of research design enjoys among many researchers, action research projects are not without problems. The combination of both action and research is a great source for lack of control in the research project; action research is highly situational which makes the process of drawing general rules on how to be conducted in different situations is a difficult task (Avison 2001). In addition, it is sometimes difficult to avoid manipulation due to the exclusion of lower level employees in the process of research decision making. There is also a chance that an organisation will not agree to implement a certain set of researcher's solutions if it finds that research results are critical of the organisation (Bryman 1989).

### **4.5.3 Survey research**

Similar to experimental research, survey research has a positivist orientation and, therefore, it is considered as a quantitative research method (Creswell 2004). It is defined as a procedure where researchers gather information from participants, in their natural environment, by asking questions, through the use of survey questionnaires or interviews schedule (Neuman 2007), about their attitudes, behaviours and experiences with respect to a specific set of variables (Graziano, Raulin 2007). Survey research provides a framework where a number of questions are used to collect data on a number of units. The term "units" is preferred to "participants" as the variables of concern might be characteristics of people, departments, organisations, or even sectors (Bryman 1989, de Vaus 2002). In the case where data are to be collected from participants working in organisations, access permission is required from the two entities; the organisation and then employees. Therefore, such type of research requires higher levels of skills on the part of researcher to achieve the co-operation of potential participants. The researcher's goal in a survey research is to identify patterns in units responses about ideas, feelings, attitudes and causes of such patterns (Graziano, Raulin 2007), through the use of specific statistical analysis procedures. This is achieved through the comparison between groups or cases (de Vaus 2002). However, the issue of finding cause-and-effect relationships in survey research is paramount, but survey researchers do not have the ability to manipulate independent variables as in the case of

experimental research. For instance, it is not possible to change the size of organisations to examine the effects on structures. Further, surveys collect information about a number of variables and their perceived effects at a single juncture, without the ability to change the variable and then allow for some time to see the effects as in the case of experimental designs (Bryman 1989).

#### **4.5.4 Case study research**

Although case study research designs are frequently used in many social science disciplines (Verschuren 2003), they are increasingly being used for conducting scientific research in organizational and management studies (Buchanan, Bryman 2009). In organisational studies, they lend themselves for the examination of a phenomenon in one or few number of cases where the unit of analysis is the organisation as a whole, a department, a section or a network of organisations working in a specific field (Bryman 1989). Yin (1984), one of the most well-known influential authors in case study literature, has defined case study as: *“an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used”*. Similarly, Merriam (1988) defined case study as an examination of a phenomena or an event of concern within a process, institution, a social group or an organisation to understand relationships and dynamics in that particular setting. It was made clear that case study has the advantages of being able to answer questions like “what”, “how” and “why”, and it does not provide answers for questions like “who” and “how many”, and that it is more focused on contemporary events in a natural sitting (Yin 2009, Kyburz-Graber 2004). The reason is that the questions of “what”, “why”, and “how” are typically concerned about the introduction of a comprehensive understanding of operational links in a natural setting, and not the frequency of incidents or events (Yin 2009). For example, if knowledge is required on how manufacturing organisations are reacting to global economical pressures, then a survey or an experiment is less likely to provide explanations of how this is done, and it will be more appropriate to conduct a case study in such situation.

However, there seems to be a tendency in the literature to exclusively join qualitative research with case study designs, which is not appropriate (Bryman, Bell 2007). This is because case studies typically use any and all types of methods for collecting and analyzing research data such as interviews, questionnaires, archives, and observations (Hamel, Dufour & Fortin 1993), and the evidence may be either qualitative or quantitative, or both (Huberman, Miles 2002). In other words, case study research design has the unique strength in providing a full range of evidence through the use of multi-sources of data. It is the richness of this evidence, provided by a well designed case study, that disseminates findings in other similar sites (Macpherson 2000). Therefore, case studies are attractive research design for many researchers due to their heuristic value (Levine 1996). They go, in this way, beyond the level of thick contextual descriptions of a situation (Kyburz-Graber 2004). For instance, they are more suitable for situations where theoretical connections are needed to be generated (Amaratunga et al. 2002, Macpherson 2000). Therefore, for all these considerations the use of case studies was preferred in this research inquiry and will be discussed in more details in the “Multiple-case studies” section. Figure 4.3 shows a flow diagram for conducting the study and the way it was organised.

#### **4.5.4.1 How many case studies are required in a research inquiry?**

Due to the limited number of cases that can be studied in case study research, it is widely agreed that when selecting a case it is more appropriate to be of the polar type or extreme situation where the phenomena of interest is “transparently observable” (Huberman, Miles 2002, Pettigrew 1990). Several authors, explicitly or implicitly, support the notion of selecting one single case study to examine a phenomenon such as Mitchell (1983), Merriam (1988), Ragin (1989), and Stake (1995). However, using one single case study design has been a source of criticism as it has several limitations regarding the generalisability of the findings and due to its analytical power (Verschuren 2003). Voss (2002) pointed out that using a single case study in a research inquiry has many risks such as misjudging of a single event, and that these risks can be mitigated when the researcher considers multiple-case designs. Yin (1989) argues that the use of statistical techniques or “statistical generalisation” is not appropriate for case studies. “This is because cases are not sampling units and should not be chosen for this

reason” (Bryman 1989). Further, Bryman and Bell (2007) made the case that generalising from case studies is not possible, if the point of view is that case studies are a sample out of a population. Similarly, Voss (2002) rejects the traditional way of cases sampling through the identification of a population. They advocate the case selection through the logic of replication or theoretical sampling; the case is selected on either of the following two bases:

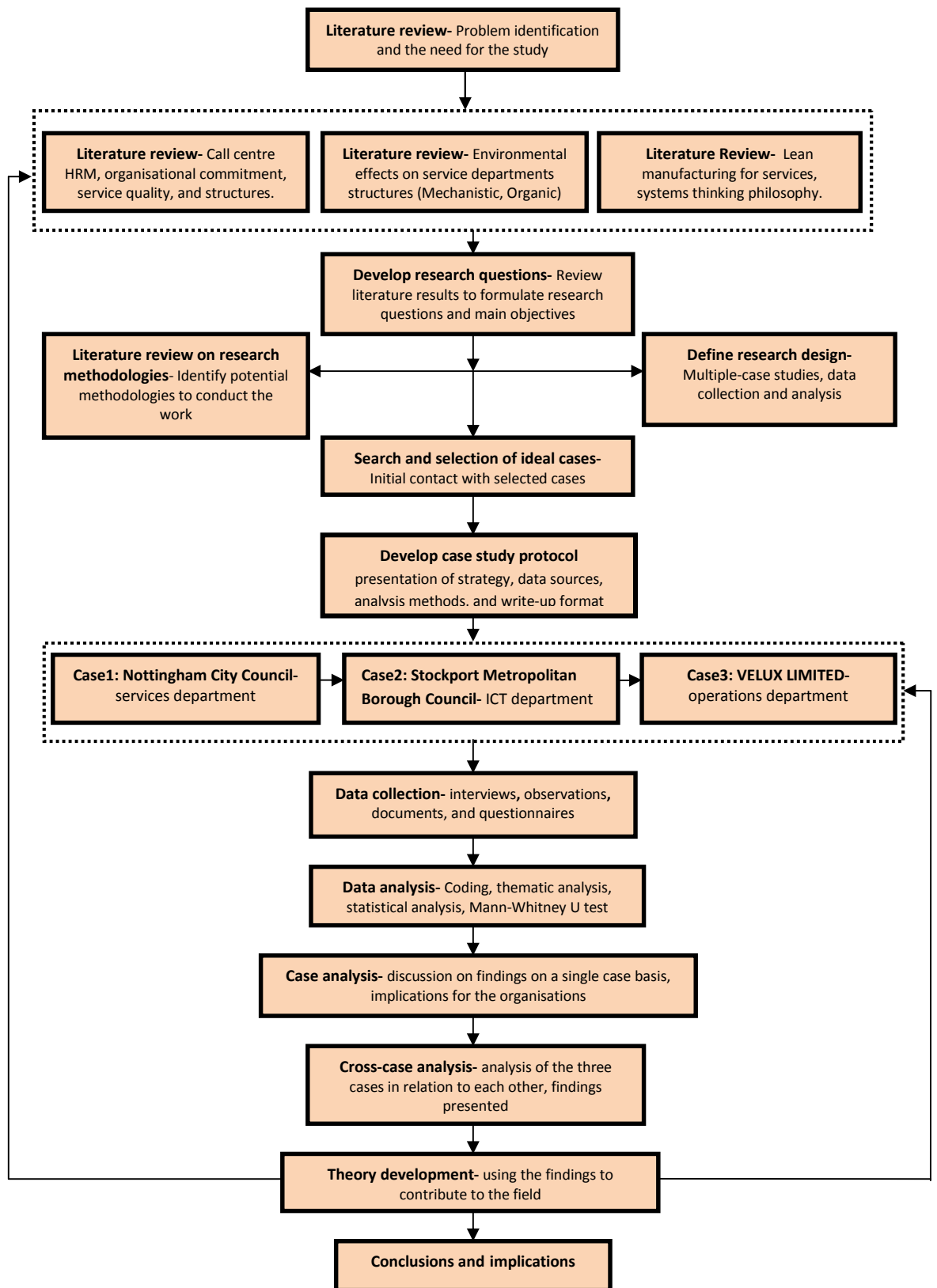
- Literal replication: if the case is expected to deliver the same results that were found in previous case or cases.
- Theoretical replication: if the case is expected to deliver contrary results of those found in previous cases due to the availability of specific reasons.

It is widely supported that case study research must seek to develop a theory (Bryman, Bell 2007). According to Yin (1989), this theory development is the level at which the generalisability of the findings will be achieved through, what he calls, “analytical generalisation”. This means that “a previously developed theory is used as a template with which to compare the empirical results of the case study. If two or more cases are shown to support the same theory, replication may be claimed” (Yin 1994). Therefore, a researcher who carries out two case studies can have better chances of making an analytical generalisation that can stop other researchers’ scepticism and criticism about case study findings. However, Yin (2009) argues that the use of more than, or at least, two case studies will produce a strong effect when justifying the research findings (see Table 4.2). Therefore, the research design of this research work consists of the use of multiple case studies.

Table 4.2 Case study choice and generalisability.

<b>Choice</b>	<b>Generalisability</b>
Single case study (n=1)	Limited generalisability
2 to 3 cases	Literal generalisability
More than 3	Theoretical generalisability

Figure 4.3: A flow diagram for conducting the research



#### **4.5.4.2 When to use case study research design?**

Because of its unique strength, case studies are often used when the aim of the research is to build a theory (Voss 2002, McCutcheon, Meredith 1993, Stuart 2002). Typically, when a research intend to examine an event or phenomena and to provide a description and explanation about a research problem, and when it is not possible to identify variables that causes behaviours, or when the extraction and treatment of variables is not feasible, case study research is undertaken (Merriam 1988). Furthermore, Stuart (2002) has identified three factors that favour the use of case study research in organisational studies and operations management:

- Paucity of theory: organisational and operations management studies contain causal and time-dependant relationships which are required to be understood through the application of evidentiary chain. However, this type of understandings usually builds theories that case studies can provide.
- Complexity: organisational studies are usually focused on studying operational and human systems in place which are built up from a large number of subsystems and variables. This feature of organisational systems adds complexity to research studies. Case study research is capable of dealing with so many variables that have to be captured to make valid comparisons.
- Shortage of well-developed measures and standards for inter-organisational comparisons: In contrast to other disciplines, organisational and operations management studies lack a great deal of metrics that can measure operations and human systems characteristics. Case study designs are one approach that is equipped with vast majority of available techniques to compare variables and characteristics across organisations.

However, Rowley (2002) pointed out that case studies are useful designs for exploratory, explanatory or descriptive research, and that the selection of a case study research design can be determined by taking into consideration the following three factors:



- The types of questions to be answered: it is seen that knowing the types of research questions to be answered is probably the most powerful determinant for a research design (Huberman, Miles 2002, Neuman 2007). Case studies are one approach that is useful when the purpose is to provide answers for detailed investigations like “how” and “why” (Rowley 2002, Yin 2009, Kyburz-Graber 2004).
- The extent of control over behavioural events: the second factor in deciding about a research design is the identification of the extent of control over and access to behavioural events. Case studies are preferred research design when there is no access to variables or behaviours of interest. In other words, when the manipulation of behaviour is not feasible (Rowley 2002). For this reason, case studies are distinguished from other research designs by adding two sources of evidence to its inquiry; direct observation of events and interviewing those involved in events or behaviours (Yin 2009).
- The degree of focus on contemporary as opposed to historical events: this factor is concerned about the type and era of events required for a study. Case studies are specifically appropriate when contemporary events and behaviours are required to be examined (Yin 2009). This explains their use of the aforementioned sources of evidence (i.e. direct observations and interviewing methods), in addition to other sources of data such as documents, questionnaires and artefacts (Rowley 2002). This also provides insights on the need to be conducted close to the event itself, through continuous interaction and communication with the people available in the research place (Kyburz-Graber 2004).

These three determinants for using case study research designs are summarized in Table 4.3 below.

Table 4.3 When to use case study research design?

Type of research questions asked	The extent of control over behavioural events	Degree of focus on contemporary events
<ul style="list-style-type: none"> <li>• how?</li> <li>• why?</li> </ul>	<ul style="list-style-type: none"> <li>• no control over behavioural events</li> <li>• no manipulation of events</li> </ul>	<ul style="list-style-type: none"> <li>• high degree of focus on contemporary events</li> </ul>

## 4.6 Selection of case study organisations

Having decided about the use of case studies as the research design and the use of multiple-case studies as the research strategy to answer the research questions formulated, a selection criterion has been developed for the case study organisations. As Merriam (1988) noted, the “case” can be an individual, a group of people, an institution, an event, a concept or an organisation that is chosen purposefully to be able to say something about it at the end of the study. The cases selected for this research were chosen with the help of “extreme case sampling” technique (Patton 2002, Creswell 2004) that displays extreme characteristics; to develop an emergent theory and to “provide examples of polar types” (Huberman, Miles 2002). As it was mentioned before, if two or more cases are shown to support the same theory, replication may be claimed (Yin 1994). Therefore, choosing two case studies can have better chances of making an analytical generalisation that can stop other researchers’ scepticism and criticism about case study findings. Also, Yin (2009) argues that the use of more than, or at least, two case studies will produce a strong effect when justifying the research findings. Therefore, three cases were deemed to be an appropriate number of study subjects in order to have a wide spread or diversity of organisations but narrow enough to be able to conduct in-depth studies of each. However, the choice of cases was primarily determined by the research purpose, questions and propositions formulated, in addition to some other constraints that impacted on case selection (Rowley 2002). In this research, the cases were chosen based on the type of call centre organisational structure used; that is mechanistic or organic. This is quiet similar to what Huberman and Miles (2002) calls “polar types selection” where cases selected disconfirm patterns of those selected earlier to illustrate high and low availability of the phenomena under

investigation (Pettigrew 1990). This is to allow for a comparison of the characteristics of work including employees' affective commitment.

In order to gain access to the data required for a successful investigation, the researcher had links with a service delivery and design consultant, who provided a rich sample of organisations which exhibit both mechanistic structures in their call centres and others with organic structures in their call centres. Due to the scarcity of manufacturing organisations implementing an organic structure into their call centres, one case was a manufacturing organisation implementing an organic structure, and the other two were UK city councils one with a mechanistically structured call centre and the other is organically structured as shown in Table 4.4. However, in addition to this choosing two public services departments and one manufacturing organisation was done due to the following reasons:

- Manufacturing thinking and models are dominant in many sectors including public services departments.
- The two public sector case studies were available with an established contact that could provide full access to the research site. Further, it was believed that these two cases will form an excellent opportunity to learn lessons and gain knowledge.
- Customer support call centres in public services carry many similar operational characteristics to those found in manufacturing organisations.
- The manufacturing organisation studied was the first adopter for systems thinking principles for customer support services in the UK manufacturing sector; no other manufacturing companies were available with this structure.
- The manufacturing organisation case study was carried out in late 2008 and up to mid of 2009. However, due to the global economical pressures at that time, it was nearly impossible to gain access to other manufacturing organisations.
- The availability of additional two case studies from public sector was believed to enhance data validity and findings generalisability to other sectors.

Table 4.4 Case study organisations: reasons for selection

Case	Type of organisation	Reasons for selection
Nottingham City Council's service department	Public sector	<ul style="list-style-type: none"> <li>• The availability of pure mechanistic structure to study.</li> <li>• Early involvement in systems thinking transformation programme.</li> <li>• Established contact, giving good access to service department.</li> <li>• A public sector department with manufacturing thinking, lessons can be learned before entering manufacturing sector.</li> </ul>
Stockport Council- ICT department	Public sector	<ul style="list-style-type: none"> <li>• The availability of pure organic structure to study.</li> <li>• Previous successful involvement in systems thinking transformation programme.</li> <li>• Established contact, giving good access to information.</li> <li>• A public sector department with manufacturing thinking, lessons can be learned before entering manufacturing sector.</li> </ul>
VELUX Company Limited (GB)- Operations department	Roof windows manufacturer	<ul style="list-style-type: none"> <li>• The first adopter of systems thinking in the UK manufacturing sector at the time of the study.</li> <li>• Successful involvement in the systems thinking transformation programme.</li> <li>• Established contact, giving good access to organisation</li> <li>• Recognised brand, associated with quality products.</li> </ul>

#### 4.6.1 Case 1- Nottingham City Council's service department

Nottingham City Council is a large city council in the UK east midlands region. It is an all-purpose unitary authority providing all local government services within the city of Nottingham administrative district. The contact centre at Nottingham City Council is mechanistically structured. It operates weekdays with a total of ten working hours every day and employs 40 staff. They deal with council tax and housing benefit claims and

enquiries. In general, employees are local residents in the area surrounding the council and they are a mixture of young and older employees with half of them approximately having university/college degrees and the other half with high school qualifications. The call centre has a main switchboard that receives calls and categorises them according to customers' demands (i.e. council tax or housing benefits related issues). It has four team leaders who monitor front-line employees against call handling targets. Performance is displayed on screens visible throughout the call centre with a call average handling time allowance of seven minutes. For all but the simplest issues front-line employees act as filters directing callers on to those with experience in the particular area. As a result almost 75 per cent of work is passed to back office staff where the expert is located to deal with customer enquiries regarding their tax and benefits.

Nottingham city council's call centre was chosen for being a pure mechanistic department that would allow the study of the effects of this structure on its employees. In terms of organic structure implementation, Nottingham City Council is in the early adoption phases; currently redesigning some of the service operations at the call centre according to the systems thinking principles as test cases to prove its worthiness for full acceptance as a new service design to be adopted across the service functions. This was deemed to be an ideal case as the early stage of the redesign project was an extensive study of the mechanistic structure at the call centre carried out by the service directorate to justify its replacement where the researcher was considered a part of the study. Furthermore, Nottingham City Council has established contact (i.e. services director) who could give full access to the service department for good data collection and investigation.

#### **4.6.2 Case 2- Stockport Metropolitan Borough Council- ICT Department**

The second independent case study was carried out in the Information and Communication Technologies (ICT) department of Stockport Metropolitan Borough Council in the UK North West region. The city council is providing all local government services within their administrative districts. However, the ICT Department

has a help desk that supports more than 6000 customers across the council departments and related directorates for their hardware and software needs and IT problem solving. The help desk has a total of 18 employees working on phones and emails and it also operates weekdays with a total of nine working hours every day. There were two team leaders in the ICT help desk responsible for day to day operations of the work. Employees have varied educational backgrounds, some were college degree holders, some have received IT training and some have taken further education before joining Stockport Council. They are a mixture of young and older employees, most of them are in the age range of (20-35). They are local residents in the area surrounding the council. In general, the work of the employees is very similar to call centre environment where customers call seeking information on how to solve IT problems or for technical support. The ICT help desk was granted one phone number for its entire customer regardless of the nature of their demand, and with no Interactive Voice Response (IVR) Technologies in use. The Purpose of the help desk from Customer perspective was “to provide customer with IT support and systems he needs and will need to do his job effectively”.

The help desk at Stockport Council was chosen for many reasons. First, the help desk was structured around the principles of systems thinking and thus it represented a pure organically structured department that would allow the achievement of a polar type study. The transformation programme covered all functions of the ICT department, engaged with all employees within ICT and interacted with a wide cross section of customers who use the services. This made the help desk an ideal location for studying the organic structure effects on employees as well as on the overall performance of the service department. The consultant who helped in finding this second case study had an established contact with the service director of Stockport Council who provided full access to required data and areas of investigation.

#### **4.6.3 Case 3- VELUX Company Limited (GB)- Manufacturing Operations Department**

The third case study was conducted at one of the market leaders in the manufacture of roof windows in the United Kingdom. VELUX Company Limited (GB) is a part of a

larger group operating in approximately 40 countries around the world. It provides a complete range of roof windows, blinds and electronic accessories to its customers. VELUX Company (GB) employs just over 200 people where approximately half are employed in manufacturing operations. The customer call centre is located within the office site and deals with all customer enquiries (trade and retail) and orders.

VELUX Company (GB) was chosen for its position and standing in the roof windows industry. A recognised brand it stands out as leader in the industry, fulfilling the high quality demands of customers. It was widely regarded in the industry of being able to influence others through its successes. The case study was conducted after a change management programme based on systems thinking had been implemented to refocus call centre operations. Similarly, the consultant who helped in finding the first and the second case study provided an established contact with the operations director of VELUX Company who granted full access to the operations department for successful data collection and meaningful investigation.

#### **4.6.4 Initial contact and access to case study organisations**

In this research project both quantitative and qualitative data collection processes were used as a response for employing mixed methods triangulation designs. The data collection process began after the access permission has been approved by the research sites involved in the three cases. The access was arranged through an established contact who worked closely with the three research sites and helped in creating the initial contact with managerial bodies who agreed on the research. The managerial bodies were the “services director” in “case 1” and “case 2”, whereas access has been granted by “operations director” in “case 3”. This was followed by an explanation of the problems to be studied and the development of a case study design (Yin 2009) with the managerial bodies. Research programs of a specified time frame have been provided along with the consent criteria used. The managerial bodies also played the role of “gatekeeper” (Neuman 2007) in studies. They provided entrance to the sites, helped in locating people for further assistance and information, and assisted in the interviews setting and the identification of aspects to study. The qualitative data methods employed in the case studies include Interviews, documents, and observations while the

quantitative data methods include the use of questionnaires. These methods including the rationale for choosing them have been explained in the data collection methods section.

#### 4.7 The case study as a rigorous research design

Although case study research plays an important role in many research fields, it is often stereotyped as lacking rigour in the knowledge it produces, and that results from this type of research cannot be generalized due to the small sample size it investigates (McCutcheon, Meredith 1993). Another major invalid criticism of case study research is that the scope of case study is only relevant to the case under investigation without any external value, it is thus perceived, in this sense, as microscopic (Hamel, Dufour & Fortin 1993). This perception is emanating from the fact that case study is often seen as an anecdote leading to large amount of uncontrolled documents (Stuart 2002). For case study research to gain wider acceptance, these perceptions need to be dispelled (McCutcheon, Meredith 1993).

Table 4.5 Four steps test for case study research design

Tests	Case study tactic	Phase of research in which tactic occurs
External validity	• Use theory in single-case studies	Research design
	• Use replication logic in multi-case studies	Research design
Reliability	• Use case study protocol	Data collection
	• Develop case study database	Data collection
Construct validity	• Use multiple sources of evidence	Data collection
	• Establish chain of evidence	Data collection
	• Have key informants review draft CS report	Composition
Internal validity	• Do pattern-matching	Data analysis
	• Do explanation-building	Data analysis
	• Address rival explanations	Data analysis
	• Use logic models	Data analysis

However, case study is a sophisticated method that goes beyond the mere collection and description of documents and actions in a specified situation, it can be fully regarded as a scientific rigour method if it follows certain criteria of objectivity, reliability and



validity (Kyburz-Graber 2004), these are “concerns that can be approached through careful attention to a study’s conceptualisations and the way in which the data were collected, analyzed, and interpreted” (Merriam 1988).

Yin (2009) has outlined convincing responses for these common criticisms by introducing a four steps logical test to case study research. Table 4.5 lists the four steps logical test and the tactics that could be used to deal with them. However, these tactics have been employed throughout the stages of the present research (i.e. research design, data collection, data analysis) to ensure a rigorous and valid research design.

## **4.8 External validity test**

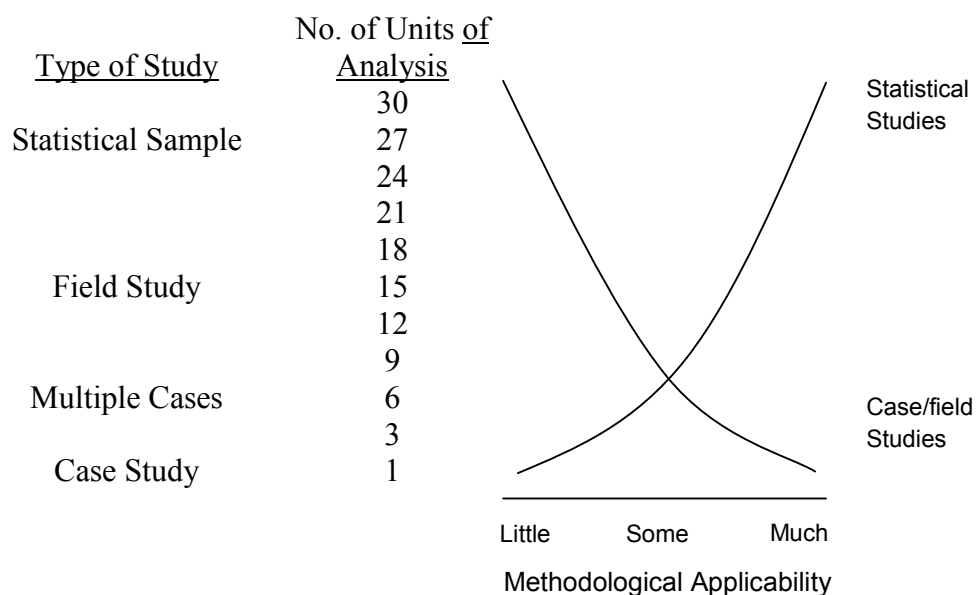
External validity decides about the domain to which findings of a case study can be generalised (Rowley 2002). Unlike survey research where statistical generalisations to a larger population are possible via selecting a sample correctly (Bryman, Bell 2007), cases are chosen on the basis of theoretical sampling in which polar cases that differ as widely as possible from each other are used (Huberman, Miles 2002). Therefore, case studies rely on analytical generalisations. In order to achieve this, the research design is specifically tailored with validity in mind (Yin 2009). In analytical generalisation, attempts are made to generalise the results of a single case study to a broader theory (Stuart 2002). For example, a noticed theory in a research situation that has led to case study design in order to be tested is used to identify other cases to which the results can be generalised. However, Yin (2009) recommends that a theory be tested by using “replication logic” by testing the findings in a second or even a third case. This “replication logic” is, thus, used in multiple-case designs. In fact, “multiple cases have higher external validity than single cases” (Voss 2002).

### **4.8.1 Multiple case studies as the research strategy**

Multiple case studies have recently become increasingly used in organisational research studies (Bryman, Bell 2007). They involve the use of from two cases up to eight cases in a research work (Meredith 1998). Herriott and Firestone (1983) have regarded the evidence from multiple-case studies to be compelling and more robust as compared to

single case study. Furthermore, multiple case studies are particularly useful when some initial understandings about the phenomenon are present but much is still to be explored. They exhibit a stronger evidence for the research inquiry with robust findings that can help in generalizing the theoretical findings to the greater population (Yin 1984). It might be asked what the difference is between a single case study design and multiple-case designs. However, Yin (2009) considers no difference between single case designs and multiple case designs methodologies. According to him, “no broad distinction is made between the so-called classic (that is, single) case study and multiple-case studies. The choice is considered one of research design, with both being included under the case study method”. Figure 4.4 illustrates that a single case study is more appropriate with pure qualitative methods, while moving up toward the multiple case studies (two to eight cases) can support the use of some quantitative methods (i.e. statistical methods) particularly at eight units (Meredith 1998). But with the availability of large sample of participants at each case study, the use of quantitative methods/statistical methods to study them becomes a necessity. This shows that mixed methods (i.e. the use of both quantitative and qualitative methods) is an appropriate technique with multiple case studies designs. Selecting multiple case designs is largely done due to the researcher’s intention to compare between cases included; the researcher compares the findings to extract what is common and what is unique that allows building of a theory (Bryman, Bell 2007).

Figure 4.4 Type of study versus methodological applicability. Source: Meredith (1998)



Meredith (1998) has argued that case studies are more rigorous and preferred over the traditional positivist/rationalist methods used in operations management such as simulation, statistical modelling and optimization techniques. He commented that the main goal of using case study research is to fully understand the phenomenon under investigation through perceptual triangulation that provides different entities as supporting source of evidence to verify that the facts concluded are indeed correct. He further discussed the advantages of using case studies in operations management research. The main advantage from his point of view is that case study can be conducted in a natural setting and in a relevant context that can reflect true facts. It provides comprehensive and meaningful illustrations of “why” in addition to the “what” and “how” that allows for in depth interpretations. The validity of case study to work in early stages of a research project has been perceived to be another strong point where both the variables and the phenomenon have not yet been fully understood. Meredith (1998) added that achieving rigor in case study research can be done through four requisites:

- Controlled observations: through natural setting by keeping some factors (e.g. managerial policies, operation systems) relatively constant while others can change naturally.
- Controlled deductions: by applying formal logic to verbal propositions arising from the case study.
- Replicability: by applying the resulting theory in some other situation that shows that it can be tested, and
- Generalizability: by including as many variables as possible in the study, so that other situations that contain these variables can be included; by including multiple populations in the study to obtain a broader theory; and finally by testing the theory on other populations.

From consideration of all these issues, the case study has been used as the research strategy for the research project in-hand. However, a case study has difficulties as well; it is time consuming as it requires the researcher to use multiple methods of data collection and to directly observe behaviours and events in the research site. This

implies that access hurdles might be involved in such case. Also the use of triangulation might cause loss of control of what is being collected and studied; this requires the researcher to plan precisely his/her activities before starting the case study. Table 4.6 summarizes the advantages and disadvantages of case study research.

Table 4.6 Advantages and disadvantages of case study research. Adapted from Meredith (1998)

<b>Advantages</b>	<b>Disadvantages</b>
Natural setting	Time and resource requirements
Relevance and Understanding	Triangulation unfamiliarity
Exploratory depth	Lack of control under some circumstances
Results have very high impact	Needs skilled interviewer
New and creative insights	Care is needed when drawing generalisations
Develops new theory	
With Triangulation validity can be increased further	

Yin (2009) stated that there are five main components for a successful case study design which are followed in the design of the three case studies in this research project, these are discussed below:

#### 1. Questions of the study

A case study is a research strategy that uses both quantitative and qualitative methods to help understand clearly formulated research questions (Rowley 2002). It provides answers to a study's questions that explain why certain events or actions happen and how they happen (Meredith 1998). As it has already been explored in the previous section that the purpose of case study research design is to provide answers for "how" and "why" questions (Rowley 2002, Kyburz-Graber 2004), so the first component is to clarify the types of questions sought to be answered. A helpful way of clarifying research questions is to use the literature to narrow down issues or problems to be tackled, revising other available studies in the same field by focusing on their research questions posed, will help in stimulating the researcher creativity in generating his own research questions (Yin 2009). The aforementioned research questions identified for this research inquiry were of the "how" and "why" type. This clearly shows that the use of case study design is appropriate, there were stated as:

**RQ1: How do organic structures for manufacturing support services affect the affective commitment of the individuals who work in manufacturing support services departments?**

**RQ2: Why do organic structures for manufacturing support services add value to the manufacturing enterprise?**

**RQ3: How can manufacturing organisations implement organic structures in their support services departments?**

Even if the research questions are tentatively extracted at the initial stages of the research, it is most important to have a “defined focus” at the early stage of the research (Voss 2002). “A research question is the engine which drives the train of inquiry” (Bassegy 1999).

## 2. Study’s propositions.

Case studies of the descriptive and explanatory type usually need propositions; these are translated from the research questions posed in a research inquiry (Rowley 2002). This can be done through the construction of a “conceptual framework” (Miles 1994) which, then, speculates the main variables and constructs to be considered in the study and the main relationships between them (Voss 2002). Early identification of constructs has been viewed by Eisenhardt (1989) as valuable; they provide researchers with stronger “empirical grounding for the emergent theory”. However, the conceptual framework of these propositions and speculations is based on the literature review findings and any other early evidence collected from research sites (Rowley 2002). The research project in-hand, is striving to answer questions of how and why do organic structures for manufacturing support services affect the affective commitment and add value to the manufacturing organisation? The propositions take into account the use of innovative service designs such as the employment of “systems thinking” for service operations design as a possible tool through which an organic structure in manufacturing support services could be achieved. These propositions help to inform where to search for related evidence to answer research questions.

### 3. Units of analysis

A definition of the unit of analysis in case studies is required. It is simply the case under investigation (Yin 2009). The unit of analysis might be an individual (e.g. organisational leader), a group of people (e.g. training team), an operation system, a department or an organization as a whole. It is sometimes recognised that the identification of the boundaries of unit of analysis is difficult (Rowley 2002). However, this difficulty can be avoided, similar to the way case study design is chosen, by accurately identifying research questions. If reverting back to the research questions was not helpful in deciding about the unit of analysis required, then research questions are most probably too vague and need to be evolved, improved, or even abandoned at this stage (Voss 2002). Diefenbach (2009) made the point that the selection of unit of analysis must provide the objects of reasoning that satisfy all relevant criteria required to answer research questions. In this research project the unit of analysis is the manufacturing support services department, often operating as call centres as the main unit. Subunits have been used to be the front-line employees working in call centres.

### 4. The logic linking data to propositions

Every case study needs a clear logic to link the collected data with the propositions posed at the early stages of the research. These are the data analysis steps followed to reach to conclusions. Although no one definitive way of linking the data with propositions exists in case studies literature, this linking can be done in a number of ways. "Pattern matching" is one of the most beneficial techniques to analyse case study data, it compares one or more expected pattern with other patterns achieved empirically in the case study (Gillham 2000). If matching is achieved among patterns then the case study is said to have a strong internal validity (Yin 2009). However, mixed methods triangulation designs have been used in this research project to collect data from different sources and pattern matching has been used to link these data with the propositions. This will be discussed in more details later in this chapter.

### 5. The criteria for interpreting findings

Yin (2009) advocates the use of rival explanations in the process of interpreting of the findings by identifying them in the early stages of the research design stage. He introduced some principles for high quality analysis. First, using all the achieved

evidence in analysing the data is very significant to show that interpretations are based on all the available evidence and leave no loose ends. Second, the analysis should cover all possible explanations of the findings, if one of these findings is explained in different ways than the case study proposes, the researcher should check if there is an evidence to support his claim. Third, a best strategy in the analysis process is to keep the focus on the main aspect of the study. This will protect the findings from being accused of straying away from the main issue. The analysis processes of the data collected will be discussed later in this chapter.

External validity is achieved here by the use of this research design that covers both the set-up of the individual cases and the cross-case replication between cases. The use of three cases advocated by Yin (2009), increases the likelihood that patterns found within all cases are generalisable for wider industry. This is reinforced by the selection of cases from different industrial sectors, with different services and systems choices, allowing for comparisons to be made and similarities which may affect many to be identified. However, Yin (2009) suggests the adoption of literal replication with fewer cases of (2 to 3), and theoretical replication to be more suitable with little more cases (4 to 6). Therefore, the use of literal replication has been adopted in this present research which will be discussed in depth later in Chapter 6.

#### **4.9 Reliability test**

Reliability is the degree to which the findings are independent of any accidental circumstances of the research (Kirk, Miller 1986). It is also the ability of a later investigator to repeat the operations of a case study carried out by an earlier investigator, such as repeating the same data collection methods to get the same results and conclusions (Rowley 2002). A reliability test is used to minimise the errors and biases in a case study, and differs from internal validity tests in its operational domain. Reliability deals with data collection methods to ensure consistency of findings and conclusions, whereas internal validity is concerned about the way results support conclusions (Amaratunga et al. 2002). Therefore, reliability tests can be performed through proper documentation of methods and precise records keeping (Rowley 2002), without documentation and records keeping repeating the same work is almost an

impossible task in case studies. Two tactics were used in this research to perform reliability tests, which was recommended by Yin (2009):

- The creation of case study protocol: The case study protocol is more than just a list of questions that a researcher needs to investigate, it is the principal documentation needed to help the researcher in organising visits to the research sites, keeps the researcher focused on the type of data needed, and ensures that the sources of evidence is fully documented (Stuart 2002).
- The creation of case study database (shown in Appendix 1) of raw material to make the process of independent inspection possible. The case study database of this study contained data such as notes, documents, tabular materials, and narratives.

For this research inquiry the case study protocol followed Yin's (2009) structures. It contains the following sections, and fully presented in the table below:

- Overview of the case study project including objectives and main issues.
- Field procedures including access to research sites, participants' confidentiality treatment and sources of data.
- Case study questions and how these questions will be met in the research.
- A guide for the case study report and write-up formats.

Table 4.7 Case study protocol

<p style="text-align: center;"><b>Multi-Case Studies Protocol</b></p> <p><b>Overview of the case studies</b></p> <p><i>Rationale</i></p> <p>Manufacturing support services, often operating as call centres, have a significant potential to provide support to manufacturing organization with business intelligence captured during contacts with customers. They are mechanistic structure models represented by close monitoring of words, stressful working loads, emotional exhaustion and burnout, and less empowerment of employees. As a result employees lack the affective commitment which is more effective than Job Satisfaction in influencing the service quality. This has consequences such as high employee turnover, lower service quality and ultimately low customer satisfaction. Mechanistic structures are inward oriented structures that must be shielded from the environment but call centres are outward-facing entities. This firmly implies that call centres must be given a certain form of</p>
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organic structures that will stimulate the affective commitment building among employees and improve work conditions.

### ***Aim***

In conducting this research it is aimed at:

- the identification of alternative service design models applied to manufacturing call centre operations.
- the leveraging of affective commitment among call centre front-line employees through the use of organic structures for service operations design in a manufacturing enterprise.
- introducing evidence that by implementing an organic structure, through a systems engineering approach, to the design of employee empowered customer service delivery significant, but often counter-intuitive, benefits can be created.

### ***Cases***

A multi-case strategy was decided on to give a greater understanding of the situation by involving a variety of organisations. Three cases will come from different industrial sectors: two from public sector and one from manufacturing. Industrial sectors were chosen based on the likelihood that the cases are of the polar type where one of them is adopting a mechanistic structure in their service department, whereas the other two are adopting an organic structure in their service departments. The two public sector cases were chosen as they have shown manufacturing thinking in their service department that was believed to provide a significant lessons. Two of the three cases are based in England, one is in Scotland in the UK, this was not a factor in the choice of research sites and will not be assessed as a factor in the findings.

## **Case Study Questions**

RQ1: Why does the organic structures for manufacturing support services affect the affective commitment of the individuals who work in these departments?

RQ2: How does the organic structures for manufacturing support services add value to the manufacturing enterprise?

RQ3: How can manufacturing organisations implement organic structures in their support services departments?

## **Field Procedures**

### ***Initial Contact***

The access was arranged through an established contact who worked closely with the three research sites and helped in creating the initial contact with managerial bodies who agreed on the research. This was followed by an explanation of the problems to be studied and the development of a case study design with the managerial bodies. Research programs of a specified time frame have been provided along with the consent criteria used. The managerial bodies provided entrance to the sites, helped in locating people for further assistance and information, and assisted in the interviews setting and the identification of aspects to study.

### ***Main Study***

Organisation visits were arranged on weekly basis (1-2 visits) to the research sites for an average of 4 months.

Observations: observation of service departments and front-line employees to take place.

Interviews: interviewees chosen based on job roles stated to gatekeepers who chose the particular individuals. All roles are those directly linked to front-line positions, implementation of systems thinking, and to service departments managerial positions. Semi-structured interviews will be used for exploring working conditions and managerial styles. In-depth interviews will be used for exploring systems thinking implementation where applicable.

Questionnaires: the 9-item Organisational Commitment Questionnaire is to be used with front-line employees in the research sites. Gatekeepers will be contacted to get the electronic list of employees for a web-based questionnaire employment were possible.

Documents: documents of service system used and performance reports exchanged is to be collected, in addition to newsletters and emails the capture communication nature and reflects working conditions.

Information Sought	Projected Outcomes	Applicable to
<p><b>Background</b></p> <ul style="list-style-type: none"> <li>▪ What are the characteristics of the current service design?</li> <li>▪ What are the problems/ benefits of the current service design?</li> <li>▪ What are the factors that helped to establish the current service design?</li> <li>▪ Are the top management aware of these problems/benefits of the used design?</li> </ul>	<p>To understand how the service design is perceived/viewed by different individuals at the research site.</p>	<ul style="list-style-type: none"> <li>▪ services Director</li> <li>▪ company director</li> <li>▪ operations director</li> <li>▪ Project Manager</li> <li>▪ implementation team</li> <li>▪ Team leaders</li> <li>▪ Employees' supervisors</li> </ul>
<p><b>Working experience as a result of using the current service design</b></p> <ul style="list-style-type: none"> <li>▪ Type of communication encouraged between employees and with other departments.</li> <li>▪ The role of managers and supervisors.</li> <li>▪ Performance measurement at the workplace.</li> <li>▪ Customer service levels</li> <li>▪ Good and bad about the currents service design.</li> </ul>	<p>To fully capture the working experiences of employees working at front-line positions and their perceptions of the service design and its effects on their wellbeing.</p>	<ul style="list-style-type: none"> <li>▪ Front-line employees</li> <li>▪ Employee's supervisors</li> </ul>
<p><b>Inter-departmental Integration and communication</b></p> <ul style="list-style-type: none"> <li>▪ Communication type between departments and the service department.</li> <li>▪ Frequency of interaction.</li> <li>▪ The bodies who are responsible for initiating the contacts.</li> <li>▪ Nature of messages exchanged.</li> <li>▪ Degree of necessity of the messages to the receiving department.</li> <li>▪ The relationship between the type of service design in service department and inter-departmental integration.</li> <li>▪ Perception of service department in other business units.</li> </ul>	<p>To understand the effects of the service design used on the organisation department's work and the value added of the service design to the organisation (if any).</p>	<ul style="list-style-type: none"> <li>▪ Managing Director</li> <li>▪ Company director</li> <li>▪ Service director</li> <li>▪ Project Manager</li> <li>▪ Team leaders</li> <li>▪ Other departments directors/managers.</li> </ul>
<p><b>Measuring the affective commitment of employees at the service department using the nine-items Organisational Commitment Questionnaire.</b></p> <ul style="list-style-type: none"> <li>▪ What is the level of affective commitment among front-line employees at service departments?</li> <li>▪ Is there any difference in the level of affective commitment between those who work in mechanistic structure service department and those who are in an organic structure service department?</li> </ul>	<p>A detailed description of the affective commitment level of front-line employees in the three service departments to confirm the findings of interviews on how the service design affects employees wellbeing and their intentions to stay/leave.</p>	<ul style="list-style-type: none"> <li>▪ Front-line employees in the three research sites.</li> </ul>
<p><b>How to develop an Implementation methodology of systems thinking to achieve an organically structured service department?</b></p> <ul style="list-style-type: none"> <li>▪ Role of previous service design problems in justifying systems thinking for management.</li> <li>▪ Other techniques to justify systems thinking to get top management support.</li> <li>▪ How to deal with people's reactions to systems thinking?</li> </ul>	<p>The creation of a robust implementation methodology for systems thinking service design in service department of manufacturing organisations and other types of organisations.</p>	<ul style="list-style-type: none"> <li>▪ Managing Director</li> <li>▪ Company director</li> <li>▪ Service directors</li> <li>▪ Project Manager</li> <li>▪ Implementation team</li> <li>▪ External consultants</li> </ul>

<ul style="list-style-type: none"> <li>▪ What team is required?</li> <li>▪ Type of messages used to help secure approval to the systems thinking.</li> <li>▪ Role of quantitative measures in leveraging support for systems thinking.</li> </ul>		
<p><b>The role of managers in the service departments and the criteria they follow to measure employees performance.</b></p> <ul style="list-style-type: none"> <li>▪ What kinds of activities does the manager perform in the service department?</li> <li>▪ How do they evaluate good work?</li> <li>▪ What is the criteria used to distinguish between front-line employees?</li> <li>▪ What are the managers main concerns and primary focuses?</li> </ul>	Understanding of how the service design whether mechanistic or organic is affecting the way the managers behave and the extent to which the service design can shape managerial focuses and concerns	<ul style="list-style-type: none"> <li>▪ Managing director</li> <li>▪ Company director</li> <li>▪ Service directors</li> <li>▪ Team leaders</li> <li>▪ Employees' supervisors</li> </ul>

### *Sources of Data*

In order to answer the research questions and to achieve the necessary information for each research element in the studies, data tables was constructed to identify the exact source of information and which research site/s are involved. This data table was given to gatekeepers at research sites to ensure their capability to provide the required information.

Data set	Nottingham	Stockport	VELUX	Outcomes	Res Qu.
<b>Documents</b>	Newsletters		Newsletters	Understanding the nature of communication in the service department and getting evidence on how the systems thinking projects is implemented as a step by step process.	RQ1, RQ2
	Internal Reports	Internal Reports	Internal Reports	Evidence of type of communication used, frequency of communication and the type of information the service department shares with other department.	RQ1, RQ2
	Process flow diagrams	Process flow diagrams	Process flow diagrams	Evidence on the level of waste/clean stream available in the service processes as a result of the service design used.	RQ2
	Performance charts	Performance charts	Performance charts	Understanding the criterion used to evaluate front-line employees. They also acted as an evidence on how the service design participated/hindered value productivity.	RQ1, RQ2
		Power point presentation	Power point presentations	Understanding the problems that the mechanistic structure has caused to the service department before the advent of systems thinking	RQ1, RQ2
<b>Interviews</b>	Service Director	Service Director	company Director	Description of the characteristics of the service design used and how it was implemented.	RQ1, RQ2, RQ3
			Operations director	Additional knowledge on how the service design was implemented and the methodology adopted in this process.	RQ3
		External consultant	External consultant	Description on how the systems thinking was implemented and the methodology adopted in this process.	RQ3
	Team leaders	Team leaders	Team leaders	Description of tasks and role, training provided, skills perception of the job, variety and job satisfaction and turnover.	RQ1, RQ2
	Project manager	Project manager	Project manager	Additional knowledge on how the service design was implemented and the methodology adopted in this process.	RQ3

	Front-line employees	Front-line employees	Front-line employees	Description of job characteristics, detailed knowledge on working experience and what effects the service design has on employees	RQ1, RQ2
		Other departmental managers	Other departmental managers	Understanding the nature of communication between these departments and the service department, the perceptions of the service department, the extent they rely on its information to process daily tasks.	RQ1, RQ2
	Other departmental team leaders			Understanding the nature of communication between these departments and the service department, the perceptions of the service department, the extent they rely on its information to process daily tasks.	RQ1, RQ2
<b>interrupted involvement Observation</b>	Call handling processes	Call handling processes	Call handling processes	Understanding the nature of interaction with customers, what factors are considered when handling calls? What procedures are followed or done to finish a call?	RQ1
	Physical environment	Physical environment	Physical environment	Understanding what technologies are used in place? Whether employees surveillance is used and how often? Managers visits and their activities during visits.	RQ1, RQ2
	General atmosphere	General atmosphere	General atmosphere	Understanding the individual interactions, how formal or informal the communications are between them? and how stress or pleasant the working atmosphere is?	RQ1, RQ2
<b>Questionnaire</b>	Nine-items OCQ	Nine-items OCQ	Nine-items OCQ	Assessment of the affective commitment levels among front-line employees.	RQ1

### Case Study Report

#### Analysis Methodology

The “thematic analysis” technique was used as an inductive strategy in this process to produce patterns/themes from the data collected through interviews. The quantitative data collected through questionnaires were also prepared for statistical analysis. Descriptive statistics from the SPSS software (i.e. standard deviations and means) were calculated to indicate the level of affective commitment among front-line employees. the results from interviews are directly compared with results from questionnaires, documents and observations.

#### Write-up Format

Presentation of each individual case in detail, answering the research questions within the organisation. Cross-case analysis of the findings of the cases, less detailed but giving insight into differences between companies, to view effects of the type of service design on front-line employees affective commitment and on the value added to the organisation. Also, comparison of findings to existing theory.

### 4.10 Construct validity test

Construct validity is the extent to which the operational measures for a construct represents all of the construct’s observable effects, and correlates appropriately with other operational measures of other related constructs (McCutcheon, Meredith 1993). Voss (2002) has pointed out that construct validity can be tested by:

- Verifying whether predicted relationships to other variables are confirmed.
- Verifying whether similar results are gained from multiple sources of evidence.

- Checking if a construct measurement can be differentiated from other constructs.

Therefore, a piece of research should describe how the data were collected from different sources used such as questionnaires, interviews, observations and documents by addressing the known shortcomings of the used methods and how these were dealt with to avoid biases in the case studies (Yin 2009). Whereas similar results from different sources can be presented as a chain of evidence to strengthen the construct validity. In other words, allowing reader to draw a series of steps, beginning with the raw data, to achieve the same conclusions and summaries (Stuart 2002). In this study, the mixed methods of multiple sources of data were used to provide the chain of evidence and to improve the construct validity of the case studies. These are fully discussed in the section below.

#### **4.10.1 Mixed methods as the used technique**

An early discussion on the development of mixed methods has been outlined in the work of Tashakkori and Teddlie (1998). They defined mixed methods as research design at which both qualitative and quantitative methods can be used in the same study. Also, Leech (2009) have defined mixed methods research as one “that involves collecting, analyzing, and interpreting quantitative and qualitative data in a single study or in a series of studies that investigate the same underlying phenomenon”. This type of data collection approach has been fuelled and developed as a result of the paradigm “wars” (Yvonne Feilzer 2010), discussed at the beginning of this chapter. Particularly supported by the Pragmatism movement which refers to the use of both quantitative and qualitative methods in a research inquiry (Onwuegbuzie 2005). In general, pragmatists can use any set of methods of data collection and analysing as long as those methods have the potential of providing clear and complete answers to what is being researched (Yvonne Feilzer 2010). However, Onwuegbuzie (2005) pointed out a number of advantages of being a pragmatic researcher of using mixed methods research. First, it provides researcher with flexibility on choosing the most appropriate investigative technique. Second, it encourages researchers to view a research as a holistic entity that employs triangulation techniques for maximum investigation (Lincoln, Guba 1985).

Third, the bi-focal lens of using both quantitative and qualitative data can be used to inform either the qualitative or quantitative part of a study as they are perceived as complementary to each other.

Mixed methods, in this sense, underlie the use of different philosophical assumptions and research methods as means of inquiry (Modell 2009). The philosophical assumptions involved form the directions through which the data will be collected and analyzed at different levels in the research process. Thus it can be used in a single level or a multilevel study (Tashakkori, Teddlie 1998, Creswell, Plano Clark 2006). In other words, researchers during an investigation have the ability to zoom in to a specified issue or zoom out to a required level, as such, it combines both the macro and micro levels of a research issue (Onwuegbuzie 2005). The practicality of mixed methods makes it possible for researchers to use all the available methods to address a research problem. Creswell and Plano Clark (2006) commented that “It is also practical as researchers tend to solve problems by using both numbers and words”.

Mixed methods use both inductive and deductive logic in the study. This requires that researchers be skilled in different data collection methods such as observing people and recording behaviour. They are also more convincing than using quantitative or qualitative methods alone due to the comprehensive evidence that can emerge (Creswell, Plano Clark 2006). Traditionally, the argument is that the use of quantitative research alone is weak in understanding research problems or settings in which people are working. The use of numeric numbers to measure people’s experiences does not give a chance for the voices of participants to be considered (Onwuegbuzie 2005). In addition, quantitative researchers from an epistemological perspective are usually separated from what is being studied and thus their personal interpretations are more exposed to bias due to the lack of personal interaction with participants as well as the phenomenon. However, the use of qualitative approach alone is unaccredited for many researchers because of the difficulty in generalizing research findings due to the limited number of participants in the study (Easterby-Smith, Thorpe & Lowe 2002) . In addition, the interpretations a researcher makes might not be the same as that some other researcher may make. Interpretations are based on the perspective of the researcher therefore may cause some bias. However, mixed methods are not easy to use.

They may cause confusion when studying the results and may complicate the analysis process (Easterby-Smith, Thorpe & Lowe 2002). They consume time and resources and require high levels of researcher skills in both quantitative and qualitative data collection. But it does seem that the difficulty of this type of research design can be overlooked due to its benefits and value to scientific research (Creswell, Plano Clark 2006). The mixing of both methods can serve two purposes. First, it eliminates the weaknesses of either method used by itself (Amaratunga et al. 2002). Second, qualitative explanations and their attachment to quantitative numbers are required for findings to be accepted by other researchers both in the field and outside it (Meredith 1998). Furthermore, mixed methods are particularly useful when neither of the quantitative or qualitative method alone can provide a clear answer for a research question; this need arise when the researcher requires information that, for example, cannot be achieved through observations or there is a difficulty in gaining access to certain groups of people (Bryman, Bell 2007).

Given all these considerations, mixed methods designs are used in this research methodology as the technique for conducting the research process, the following summary highlights its usability:

1. Mixed methods help explore the research problem introduced in this research by identifying relationships between dependant variables (e.g. affective commitment) and independent variables (e.g. service operations and managerial styles) which help explain the phenomenon in more depth (Onwuegbuzie 2005).
2. They are good in building on the strengths of both quantitative and qualitative data methods used by eliminating the flaws of these two methods that cannot be avoided if they are used alone. The strengths of each type of method are utilized in the research study while the weaknesses are neutralized with the help of mixed methods (Amaratunga et al. 2002, Creswell 2004).
3. The complex nature of the research problem needs the use of numeric values such as the statistical measurement of affective commitment. This broad numeric value requires the convergence of qualitative data from the individuals involved to explore those results in more depth, to understand the underpinning causes and capture the issue with better understanding (Creswell 2003).

4. Comprehensive evidence is required to answer the research questions posed (e.g. how do organic structures for manufacturing support services affect the affective commitment of the individuals who work in manufacturing support services departments?). One method alone will provide a limited perspective that needs further support from other methods. Mixed methods provide a wider range of comprehensive evidences that support the research conclusions (Onwuegbuzie 2005).

Greene (1989) introduced five justifications for using mixed methods: (a) triangulation (i.e. seeking corroboration of results through the use of different methods studying the same phenomenon); (b) Complementarity (i.e. seeking enhancement and illustration of the results from one method with results of others); (c) Development (i.e. using the result of one method to help inform the other method); (d) Initiation (i.e. discovering paradoxes and new perspectives from other methods that lead to re-framing research questions); (e) Expansion (i.e. extending the breadth of enquiry by using different methods for different inquiry components). However, triangulation is considered to be the most common and attractive approach to justify mixing methods in research today (Creswell 2004, Creswell, Plano Clark 2006).

#### **4.10.2 Triangulation in mixed methods**

Triangulation is one of the most frequently employed terms in mixed methods research to the extent it is seen as synonymous to using both quantitative and qualitative methods in a study (Buchanan, Bryman 2009). However, Greene (1989) refers triangulation to the process of checking whether the results from different research methods converge. “If they converge (agree) then we can be reasonably confident that we are getting a true picture” (Gillham 2000). Jick (1979) pointed out that triangulation has been defined by Denzin (1978) as “the combination of methodologies in the study of the same phenomenon”. He added that triangulation is not an end in the research process; rather it is a creative way for enriching the data collection and interpretation. This creative perspective of triangulation allowed the use of its principles at different stages in the research process. For example, Easterby-Smith et al. (2002) stated that triangulation can be categorized into four different forms according to the type of data, investigator,



theory and methodology used. Data triangulation (the collection of different types of data in the study from different sources), investigator triangulation (the involvement of different researchers in the study), theoretical triangulation (the use of different perspectives to explain the results of the study), and methodological triangulation (the use of multiple methods in the study including questionnaires, interviews, and field studies). Triangulation has many advantages that encouraged its adoption in this research, supporters of triangulation such as Jick (1979), Tashakkori and Teddlie (1998), Creswell and Plano Clark (2006), and Modell (2009) have pointed out a number of advantages that are summarized in Table 4.8 below.

However, triangulation has shortcomings as well. It is difficult to replicate the triangulation design due to the involvement of the qualitative methods. This makes the specific time and circumstances at which the study has been made an impossible task to be reconstructed (Jick 1979). This gives uniqueness to the research design that needs further care when it is being used. Also triangulation is time and budget consuming due to the involvement of many methods to be used (Patton 2002), this implies that further planning is required before the commencement of the research project to avoid such constraints.

Table 4.8 Advantages of triangulation

<b>Advantages of Triangulation</b>
1. It enriches our understanding by combining the best from quantitative and qualitative methods, the strengths emerged will offset the shortcoming of every single method used.
2. It provides researchers with confidence on the research results. It enhances the accuracy of a study by providing evidence from other methods and data sources.
3. It is a creative process that helps the development of new methods to capture a problem.
4. Triangulation may also help to uncover the deviant dimension of a phenomenon.
5. The presence of qualitative methods can potentially generate holistic work or deep description.
6. It leverages the qualitative methods usage to their deserved level and at the same time demonstrates that quantitative methods can and should be utilized in complementary fashion.
7. It is efficient design in which all the data are collected during the one phase of the research at roughly the same time.

Triangulation designs of mixing methods are divided into five types of designs to fit different research needs, two of these designs have been used in the three case studies conducted in this research project, these types are introduced by Creswell and Plano Clark (2006) and are discussed below:

1. Triangulation design:

It is the process of simultaneously collecting both the quantitative and qualitative data at the same study. The data collected are then analyzed, compared and interpreted at the same time for final conclusions. The investigator compares the quantitative results with the qualitative results to validate the quantitative results with qualitative data (Creswell, Plano Clark 2006). It is the simplest form of triangulation at which both the quantitative and qualitative methods are given the same level of importance throughout the study (Creswell 2004).

2. Convergence model:

This model is viewed by Creswell and Plano Clark (2006) as the traditional model of mixed methods triangulation design, it is similar to the triangulation designs discussed above but in this design both the quantitative and qualitative data are collected and analyzed separately in the same study. This is followed by converging the results gained to be compared and contrasted for a final interpretation. Also, same level of importance is given for both quantitative and qualitative methods. This model is used when investigator needs to confirm and validate quantitative results with qualitative results.

3. Data transformation model:

This model is quiet similar to the convergence model. Both the quantitative and qualitative data are collected and analyzed separately. After an initial analysis one type of data is transformed to the other type of data (e.g. quantifying qualitative data or qualifying quantitative data) (Tashakkori, Teddlie 1998). This transformation makes it easier to compare the results for final interpretations and conclusions. Both types of data are also given the same level of importance in this model.

4. Validating quantitative data model:

In this model quantitative data is more dominant than the qualitative data (Tashakkori, Teddlie 1998). The researchers give more importance for the quantitative data collected and make use of some qualitative data to validate the quantitative results achieved. It is usually found in survey studies where researchers collect the quantitative data and adds on some qualitative questions in a separate section. Data are then analyzed separately. Qualitative data in this model are not reliable on its own; they are only auxiliary data that help in confirming quantitative results.

5. Multilevel model:

These are research designs at which different data (quantitative and qualitative) from more than one level in the organization or a system are used to reach better inferences and comprehensive interpretations about a phenomenon (Tashakkori, Teddlie 1998). The final interpretations are completed after all the findings from different levels have been merged together (Creswell, Plano Clark 2006). Instead of analyzing the data from each level in the system separately to study the phenomenon, data from multilevel are analyzed simultaneously.

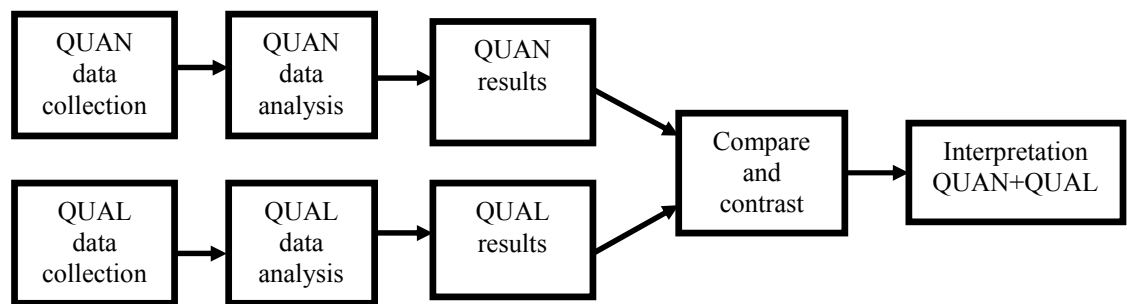
Mixed methods triangulation designs have been used in this research project. Two designs have been employed in the case studies namely the convergence model in “case 1” and the multilevel model in “case 2” and “case 3”.

#### **4.10.2.1 Rationale for using convergence model in “Case 1”**

The convergence model (Figure 4.5) has been used in “case 1” due to two reasons. First, its powerfulness in validating and confirming the conclusion about the phenomenon under investigation through converging quantitative results with qualitative outcomes (Creswell, Plano Clark 2006). The early involvement of the researcher in this project with a service systems redesign project at the research site has dictated the activities of the research inquiry; the researcher had to follow the redesign project as it was planned by Nottingham City Council. However, this has given the

chance to collect in-depth qualitative data from different sources in the organization about the mechanistic structures found in place while using quantitative tools with employees. This has fulfilled the requirements of the convergence model to be employed. These qualitative data collected were needed to explain and validate the results achieved from the quantitative methods, i.e. the affective commitment questionnaires in this study. Second, the use of quantitative results alone (i.e. questionnaires) has the weakness of rigidity and the tendency to present numeric measurement of a situation at a specific period of time. This is compensated through the consideration of qualitative methods to provide an accepted explanation and clear meaning of the numbers achieved (Creswell 2003, Meredith 1998, Amaratunga et al. 2002).

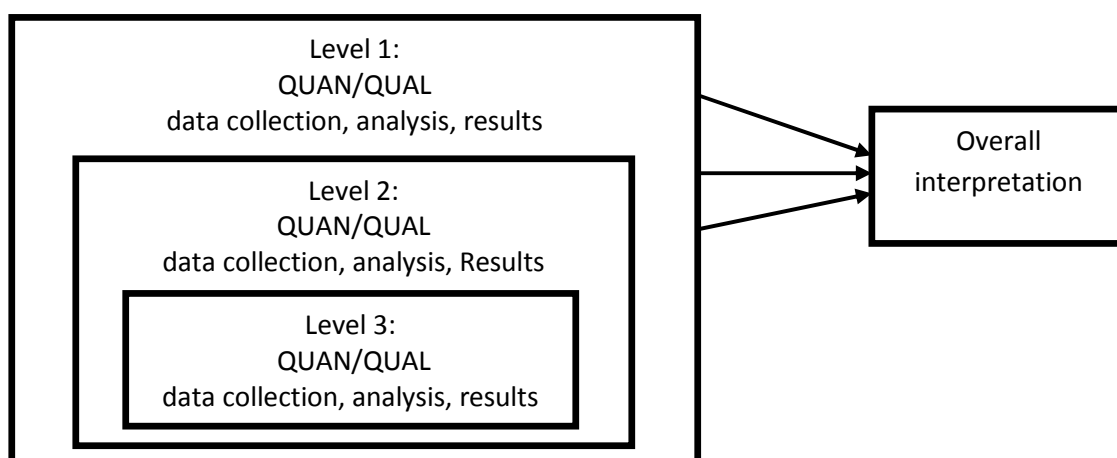
Figure 4.5 Convergence model. Source: Creswell and Plano Clark (2006)



#### 4.10.2.2 Rationale for using multilevel model in “Case 2” and “Case 3”

In addition to the benefits and strengths of triangulation designs presented in Table 4.8, the nature of “case 2” and “case 3” objectives has urged the use of different sources of data. The concept of using organic structures for support services and the effects on affective commitment of individuals, the value adding dimension to the organisation and how to implement organic structures in support services have their impact on every level in the organization. It was necessary to employ a research design that could capture these impacts at all levels in order to provide a holistic image and more comprehensive conclusions on this phenomenon. The “multilevel model” (Figure 4.6) was found most appropriate for providing this comprehensive view (Tashakkori, Teddlie 1998).

Figure 4.6 Multilevel model. Source: Creswell and Plano Clark (2006)



### 4.10.3 Data collection methods

There is a trend nowadays that an increasing number of researchers are collecting both quantitative and qualitative data in one study (Tashakkori, Teddlie 1998). This is because case study research allows the employment of wide variety of data collection and analysis methods, it uses whatever methods that are deemed appropriate and practical (Bassey 1999). However, an emphasis has been made on identifying the differences between collecting quantitative and qualitative data. First, there is a difference in the purpose statement of the two approaches. In quantitative methods the researcher measures differences among people and magnitude of variables required. While in qualitative research the researcher is more interested in constructing a deep understanding about the views of a group of people or individuals (Creswell 2004). Second, Easterby-Smith et al. (2002) have explained that quantitative research can exhibit a clear separation in terms of the data collection and the data analysis stage. When collecting quantitative data, the process is initiated and completed following the same rules set without any changes or modifications due to any circumstances that may arise during the collection process. Further, the data collection process takes place in the research site while the statistical analysis of the collected data usually takes place at a place other than the collection site. Third, quantitative methods tend to give little attention to context by focusing on a set of parameters without understanding how these parameters fit with other aspects of the research context, they also give little attention to operational aspects of organisational reality by offering a static analysis of variables,

whereas qualitative methods make rich understanding of context and linkages between variables possible (Bryman 1989).

Qualitative data collection methods have a different pattern; the separation between data collection and analysis is not clear as in the case of quantitative methods. The researcher has the ability to change questions asked as a result of any new ideas or views collected from participants (Easterby-Smith, Thorpe & Lowe 2002). Thus, data analysis can be initiated while the data collection process is still going on. Third, the sampling approaches used in both qualitative and quantitative methods have been considered as one of the main differences that distinguishes the two methods. The qualitative inquiry is interested in in-depth understanding from relatively small sample size (even one case; N=1) that is selected purposefully to answer specific research questions. In contrast the quantitative inquiry is interested in measuring specific variables or factors from a large sample size that can be selected randomly from a population (Patton 2002). Therefore, qualitative data collection is different from the quantitative data collection in both the skills required and the philosophy of the research approach. However, the contrast in the logic that drives both methods has never been seen as an obstruction for using both techniques in one study. Tashakkori and Teddlie (1998) have highlighted that both quantitative and qualitative data can be used in one setting; benefiting from the mixed methods approach. In this study, the qualitative and quantitative data collected through the mixed methods triangulation design are summarised in Tables 4.9 and fully explained in the sections below.

Table 4.9 Qualitative and quantitative data collection methods used

<b>Qualitative data</b>	<p><b>Observations:</b> An interrupted involvement observations were employed in the three case studies</p> <p><b>Interviews:</b> Semi-structured interviews were employed in the three case studies</p> <p><b>Documents:</b> Internal reports, performance charts, process flow diagrams were collected from the three research sites</p>
<b>Quantitative data</b>	<p><b>Questionnaires:</b> The nine-items organisational commitment questionnaire was employed in the three case studies</p>

#### **4.10.3.1 Sampling techniques**

As it was mentioned before, the sampling approach is the main feature through which the real difference between qualitative and quantitative methods can be understood. Sampling is a process through which a number of elements are selected from available population, the sample is important when conducting a study as the understanding of its properties can be used to generalize the findings to the population (Sekaran 2003). In this research inquiry, the sample size used in qualitative methods is selected to be much smaller than that used in the quantitative methods (Creswell, Plano Clark 2006). The intent in the qualitative inquiry of this research is to understand the issue in depth using case studies intentionally selected to explore and understand the research phenomenon. The intent in quantitative inquiry is to measure trends and test opinions of employees regarding the “affective commitment” possession using large sample size selected through targeting the available population (Tashakkori, Teddlie 1998). Therefore, in this research project, the qualitative data collection methods used different sampling technique from that used in quantitative data collection methods.

##### **Snowball sampling (qualitative methods)**

In qualitative methods a “snowball sampling” (Patton 2002) technique has been used in sampling of participants. The snowball sampling is a sampling technique that is usually employed after the study starts where the researcher asks other participants to recommend other people or places to study (Creswell 2004). Therefore, it is a gradual technique which begins with a few people and increases on the basis of using referrals to make a network of knowledgeable participants (Neuman 2007). The snowballing technique was chosen as it is very helpful in locating information-rich informants to explore the phenomenon. It recruited almost all the most knowledgeable people in the research site to provide high precision information through the interviews conducted (Patton 2002). These information-rich informants were also the source of most of the documents collected.

##### **Target Population (quantitative methods)**

In the quantitative methods, discussed in next section, it was easily possible to target the whole population due to the availability of all participants in one place. Although the

whole population has been used as participants for the questionnaires prepared, some individuals did not respond to the questionnaire used. However, studying the whole population in a research setting (e.g., all people in a country) is not usually possible (Tashakkori, Teddlie 1998). In few situations, where a small population can be listed within a specified time and place (e.g., all students in classroom), studying the whole population is encouraged as the sampling frames in such cases are almost always not accurate (Neuman 2007). Targeting the whole population has the advantage that every individual present in the research site has the same opportunity of being heard and their opinions counted, thus eliminating the biased selection possibility by equally distributing the bias among the population. The more representative the sample is, the less the potential error that the sample will be different from the population, and the greater the probability that the findings have external validity (Tashakkori, Teddlie 1998, Creswell 2004).

#### **4.10.4 Qualitative methods**

Generally speaking, qualitative methods collect language data rather than numbers (Gillham 2000), the value of words that describe an event in this research approach was explicitly acknowledged by Patton (2002): “what people actually say and the description of events observed remain the essence of qualitative inquiry”. A research inquiry may yield significant statistical results that can only be understood through the description and interpretation of qualitative data (Gillham 2000). Qualitative methods are the cornerstone for many research studies in different fields such as organizational studies, healthcare, business studies and many other disciplines (Miles 1994). Creswell (2004) in his textbook on educational research defines qualitative research as a research type “*in which the researcher relies on the views of participants, asks broad, general questions, collects data consisting largely of words (or text) from participants, describes and analyzes these words for themes, and conducts the inquiry in a subjective, biased manner*”. Qualitative research has many characteristics that make it useful in different research strategies; it takes place in natural setting where the researcher collects the data from participants at their own convenience in the research site (Patton 2002, Leech 2007); it has the ability to employ different data collection methods that are information-rich and “humanistic” (Creswell 2004). Qualitative



research are very descriptive in nature, they produce a holistic understanding of human experiences as a result of the extensive interaction between the researcher and the humans concerned. They are also very necessary when a researcher wants to extend, validate or strengthen the quantitative data collected in research (Amaratunga et al. 2002, Leech 2007). Further, qualitative research is a good tool for starting research to explore a topic where full understanding of the theory dictating the situation or the variables involved are not known (Gillham 2000). It is not a surprise then that qualitative data is more preferred than quantitative methods in the density of information collected and in the ability of researcher to make use of new ideas as they emerge due to flexibility in structures (Bryman, Bell 2007, Jick 1979). Qualitative methods have been described sometimes of being “untidy” as it is hard to control their size and the quantity of information included and accompanying complexity in analysis (Kvale 2007). This can be dealt with through proper training on the appropriate methods of approaching participants and preplanning the qualitative activities to be executed at the convenience of the participants at the research site.

In this research inquiry, the three main sources of qualitative data have been employed in the mixed methods triangulation design used; these are observations, interviews and documents (Bryman 1989).

#### **4.10.4.1 Observations**

Observations are a primary source of data in case study research (Merriam 1988). They can be used as an initial data source to help in identifying and shaping the final elements of interest to study, therefore, a researcher is able to modify the intended data collection procedures in the middle of observations (Graziano, Raulin 2007). However, they can be used in addition to words collected through interviews to describe reality and people in natural settings (Amaratunga et al. 2002). Observations can be defined as “the process of gathering open-ended, first hand information by observing people and places at a research site” (Creswell 2004). They are also described by Patton (2002) as the “fieldwork”. Merriam (1988) illustrated the reasons of why and when a researcher might want to use observation methods in a study:

- The degree to which a researcher captures behaviour in interviews is limited; observations notice things that may lead to understanding a phenomenon.
- Observations are powerful in recording behaviours as they are happening.
- Observations are the best technique to use when a fresh perspective about a phenomenon is required.
- Observations are most appropriate alternative when participants do not feel free to discuss the topic under investigation.

The observations carried out in this research both supplemented and preceded the data collected through interviews by studying:

- The workplace atmosphere in the call centre: what is the physical environment like? How many people are in the place? What actions does the management follow? How often does an employee receive phone calls in an hour? The operations aspects of the work?
- Front-line employee's behaviour: what actions the employee does? What type of technologies and facilities are available to him? Does he look like stressed or busy all the time? What type of communication an employee use? With his colleagues and other sections and departments?

An “interrupted involvement” (Easterby-Smith, Thorpe & Lowe 2002) role for the researcher was adopted in all research sites. The researcher was intermittently present in the research site over a period of time moving in and out of the call centre to conduct interviews and meetings. The researcher aim was not to actually participate in the work, but to spend a period of time in a particular setting (i.e. call centres) to form a model of comparing and combining observations with interviews (Easterby-Smith, Thorpe & Lowe 2002). Therefore, the observer measures behaviours that are not obvious to the observed personnel and he has no role in contributing to the situation, consequently, there are less chances to influence the personnel behaviour (Graziano, Raulin 2007).

The gatekeepers of the research sites provided the permission required to gain access to the call centre to spend some time observing the work conditions and the way people interact with each other. An “overt observation” (Patton 2002) was followed where all

the individuals knew about the study being carried out. In order to avoid the effects of the observer on the observed, a slow entry to the call centre was adopted by making shorter visits to the call centre initially with few notes taking in order not to be overwhelmed with information, and then gradually increasing the time of observation. The observer was relatively unobtrusive and put people at ease (Merriam 1988). This helped in the icebreaking between the researcher and the individuals as well as helped in building rapport with them in the site (Creswell 2004). Prior to observations, an “observational protocol” (Creswell 2004) was prepared to take field notes while visiting the call centre. Later on this formed detailed description of the working place layout and technology used, the frequency and nature of interaction between front-line employees and with other teams in other departments. Managers and team leaders’ presence frequency and role were also observed. In addition, notes about the nature of interaction between the front-line employees and customers were also recorded as a result of the opportunity given to listen to calls while they were handled. Multiple visits were completed at the research site which allowed for the information to be assimilated over time obtaining better understanding of the issues observed.

However, taking observations are time consuming and are troublesome to analyze and write up precisely. It is highly recommended that researchers write his observations as soon as possible to be more accurate to record (Gillham 2000). There are many advantages for conducting observation in a research project. These advantages provided the rationale for adopting this strategy for qualitative data collection. Patton (2002), Tashakkori and Teddlie (1998) and Gillham (2000) have discussed these advantages as follows:

1. Observation has an overpowering validity as they are the most direct way of obtaining data. It is not what people say they do, it is what they actually do.
2. The observer through physical presence in the research site is able to capture information that broadens his/her understandings.
3. The observer is more probably able to capture things that escape the people’s awareness in the research site, or during interviews.

4. They eliminate the need for asking individuals about their working settings and behaviours, allowing for interviews to be more focused on things that cannot be observed.
5. And most important, the observer by being on the site for the first time does not build his/her perceptions on previous conceptualizations; this ensures credibility of the taken notes.

#### **4.10.4.2 Interviewing**

Interviews are more popular as a qualitative data collection method rather a quantitative data collection method depending on the nature of the questions used during interviewing (Tashakkori, Teddlie 1998). They are one of the most important sources of information in case study research (Yin 2009). They are defined by Kvale (2007) as “an inter-view where knowledge is constructed in the inter-action between the interviewer and the interviewee”.

Gillham (2000) have pointed out that interviews are most appropriate to be used when:

- Small number of people is involved.
- The people are key and accessible that they must not be missed.
- The questions that need to be answered are mainly open and require probes and explanations to be covered.
- When sensitive information is required, participants usually disclose information in face-to-face interview that they will not disclose when filling questionnaires.

#### **Semi-structured/focused interviews:**

The interviews used to answer the first and the second research questions (i.e. RQ1 and RQ2) (see section 2.14) were of the “semi-structured” type (Gillham 2000, Kvale 2007), also known as “focused interviews” (Yin 2009), in which the interviews were conducted with participants following a list of broad questions or issues derived from the case study protocol. This format allowed the researcher to respond to the emerging new ideas and insights to keep the conversation around the areas of interest (Merriam

1988, Yin 2009, Gillham 2000). Therefore, the questions used are of an open-ended nature (Gillham 2000). The use of open-ended questions in these interviews allowed the participants to provide a more detailed description on their experiences without any restrictions caused by the perspectives of the researcher. This gives the respondent more freedom in choosing the words that defines his unique world, and suit his own experiences the most (Creswell 2004, Merriam 1988). Interviews used are of the “one-to-one” (Tashakkori, Teddlie 1998) type in which only one participant can be interviewed at a time. Although this approach of interviewing is time consuming, it was chosen due to the availability of participants who were not reluctant to speak about their experiences and akin to free-ranging conversation (Easterby-Smith, Thorpe & Lowe 2002).

**In-depth interviews:**

in-depth interviews were conducted with subjects who had experienced a recent systems thinking implementation project and who had actively participated in the implementation process at the research site of “case2” and “case3” to answer the third research question (i.e. RQ3) shown in section 2.14. Similar to semi-structured interviews, the in-depth interviews were of the “one-to-one” type in which only one participant was interviewed at a time and they were given enough time to provide detailed explanations for their personal roles and experiences in the project. The “gatekeeper” (Neuman 2007) at both sites pointed out the importance of interviewing their project consultant and himself as sources of information that would help to understanding the “Systems Thinking” implementation process.

Sixteen In-depth interviews were conducted at “Case2” and ten at “Case3” at which point no significantly new information was achievable from extra interviews. This was in line with McCracken (1988) who found that in order to produce perceptive themes from in-depth interviews eight interviewees are needed but subsequent to that number the returns became minimal for the effort required. Interviewees included departmental managers, intervention team, and a consultant involved in systems thinking implementation at both sites. In-depth interviews were found to be of particular appropriateness to answer this research question as the interviews were to be conducted with professional people concerning their job related issues and experiences. A precise

step-by-step understanding of their personal behaviour and decision making patterns in those experiences was required (Tull, Hawkins 1993). A simple guiding protocol was used as a backup to help in following major concepts in the conversations (Creswell 2004) about systems thinking implementation process. Also, a high level of freedom to develop questions that became relevant at the time of interview was used (Merriam 1988). The questions used were of an open-ended nature to allow detailed probing of the implementation process (Yin 2009).

Prior to the commencement of interviews in the three case studies, a number of emails and phone calls had been progressed with the “gatekeeper” (Neuman 2007) to develop a sense of trust and rapport as well as to explain the study purpose and benefits. Obtaining trust and maintaining rapport both from gatekeepers and subsequently from participants are very important in order to get reliable information in an interview (Easterby-Smith, Thorpe & Lowe 2002). An “interview protocol” was prepared which played the role of a backup to help in structuring the interviews and taking accurate notes (Creswell 2004). It consisted of the company name, interviewer and interviewee name and position, time and date of the interview, list of questions to be asked and a space where the notes on each question is to be written. A suitable quiet place was arranged by the managerial bodies in both case studies to conduct the interviews. The purpose of the study and the estimated time that the interview would take and how the information of the interview would be treated were all explained to participants before starting the interview.

The interviews started with very broad questions about participants’ roles, responsibilities and general working issues and then gradually narrowed down to more focused issues which were the main concern of the research work. This followed the employment of the “funnel interview” concept (Sekaran 2003), which is most applicable to mixed methods research (Tashakkori, Teddlie 1998). To ensure the elimination of the sense of anxiety and discomfort, every interviewee was asked whether he/she was comfortable with brief note taking at the time of the interview as well as the use of audio tape to record the conversation, with which all interviewees had agreed. Tape recording usually supports the researcher producing accurate transcripts and allows for re-listening of conversation to ensure unbiased note taking (Easterby-

Smith, Thorpe & Lowe 2002). After completing the interview, interviewees were thanked for their participation and a confirmation of information confidentiality was provided. Further, the participants were told that a report about the study would be provided for the research site to ensure that results were accessible to every individual concerned.

There are many advantages for interviews that provided the rationale for their usefulness for the research in-hand. The interviews conducted were very powerful for rich data collection; they were very useful in situations where clarifications and explanations about different issues were required (Tashakkori, Teddlie 1998). Further, they provided better control of the information collected as the interviewer could ask further questions to filter this information (Creswell 2004). They were very useful to know about things that were impossible to observe. Patton (2002) stated that *“We cannot observe everything. We cannot observe feelings, thoughts, and intentions. We cannot observe how people organized their work and the meanings they attach to what goes on in the world. We have to ask people questions about those things”*. Interviews have some disadvantages too; in addition to the problem of being time consuming (Gillham 2000), the responses of the interviewees may be deceptive by saying what the interviewer would like to hear (Creswell 2004). There might also be the problem of the interviewer effects on the interviewee through verbal feedback or body language that reflects the interviewer agreement or not on what is being said (Tashakkori, Teddlie 1998). These difficulties in conducting interviews can be reduced by gaining more experience before entering the research site. Two methods were followed to enhance the researcher interviewing skills and these are introduced by Gillham (2000):

- The use of “practice interview” before entering the research site in which the researcher practice interviewing on other colleagues or fellows.
- The use of “prompts” during the real interviews in which the researcher asks questions about elements that he learned from other data sources such as observations that are missed by the interviewee. Asking interviewees questions like “what about....?” will help to cover all elements of interest. This will eliminate the effects of interviewer on interview because the interviewer is not

determining or indicating the answer, he is making sure that all interviews have covered the same elements of investigation (Gillham 2000).

#### **4.10.4.3 Documents**

Another valuable source of information used in case studies is the use of organizational documents (Bryman, Bell 2007). These consisted of both private and public records (Creswell 2004). It is likely that documentary information is valuable to every case study objective (Yin 2009) due to many reasons. First, they can provide information on issues that cannot be clarified through other methods, such as organisational financial performance. Second, they can provide validity for information collected through other methods (Bryman 1989). For case studies, documents play an important role in verifying the correct names of places, people and processes that might have been mentioned in interviews. Further, they help researcher to make inferences about an event or phenomenon by noticing trends in the information they provide (Yin 2009). However, documents have their own disadvantages as well, they may contain information that the researcher does not understand, and it is hard to determine their authenticity and accuracy due to the anonymity of the persons who developed it in some cases (Merriam 1988).

Documents collected in the case studies of this research included:

- newsletters
- internal reports
- processes flow diagrams
- performance charts

These documents were collected during visits from departmental directors and project managers. The research questions posed at the beginning of each case study made it possible for the researcher to identify the type of documents needed to answer research questions. Permission was granted from the individuals in charge in the research sites to use the documents collected for research analysis and interpretation. The documents collected were checked for relatedness to the research questions and contemporariness.



The documents collected represented a good source of data to make inferences about the management style, gain insight about call centre working conditions and capture information about the nature of communication and networking with other departments. They also provided other specific details about call centre operations. The main reasons for using such documents in this research inquiry are their ability in providing information about call centre operations that cannot be directly observed, and their perceived value in discovering things that have taken place before the beginning of the research inquiry (Patton 2002) . However, studying and understanding documents are a part of the skills required for qualitative research inquiry that a researcher needs to equip him/her with before embarking in a research inquiry (Patton 2002).

#### **4.10.5 Quantitative methods**

Quantitative data have been used in this research inquiry according to the definition of mixed methods triangulation designs used. Quantitative research is used to describe trends among people by measuring the overall tendency of responses from participants, it has been defined by Creswell (2004) as a type of research “*in which the researcher decided what to study, asks specific, narrow questions, collects numeric (numbered data) from participants, analyzes these numbers using statistics and conducts the inquiry in an unbiased, objective manner*”. Quantitative methods place a significant trust in numbers to explain a concept, they collect closed-ended information from participants (Tashakkori, Teddlie 1998, Creswell, Plano Clark 2006) through interviews or questionnaires that give them strength in measuring variables such as performance, attitudes and behaviours (Amaratunga et al. 2002). Measuring such variables needs a relatively large sample size selected randomly from the research site to collect the data required (Patton 2002). Easterby-Smith et al. (2002) has defined four methods through which quantitative data can be collected: interviews; questionnaires; tests; and observations. Although interviews and observations have been used in this research as qualitative data collection methods, they can be used to collect data in either qualitative or quantitative manner. This can be determined through the nature of the questions to be asked and whether they are open-ended or closed-ended questions.

As we have mentioned before one of the important features that distinguished quantitative methods from qualitative methods is the clear separation between data collection phase and analysis. Analysis usually uses statistical procedures to identify trends in data that help explain a research issue (Creswell 2004). Quantitative methods have some advantages that make them preferable in some research inquiries such as surveys. The researcher is independent from what is being studied protecting the data from being biased, and the use of numbers allow for easy comparisons and replications of the same issue under investigation. This enables objective validity of the findings. However, these strengths are usually accompanied by some weaknesses; variables are usually tested at some specific time thus limiting the understanding of how these variables have been built or changed overtime due to varying circumstances (Amaratunga et al. 2002). The numbered factors/variables gained from quantitative research still need a qualitative explanation in order to be accepted by other people in and outside the field (Meredith 1998). This is true as the essence of qualitative methods refers to what kind, while that of quantitative methods refers to how much of a kind (Kvale 2007). This enhances the idea that quantitative data are complementary to qualitative data.

#### **4.10.5.1 Questionnaires**

Questionnaires are defined as “a pre-formulated written set of questions to which respondents record their answers, usually within rather closely defined alternatives” (Sekaran 2003). They are widely used for investigations that involve gathering participants’ opinions and preferences (Easterby-Smith, Thorpe & Lowe 2002); they are easily administered personally or conducted through mail as well as through computers allowing for a less expensive method for data collection than interviews (Sekaran 2003). They can be used efficiently to generate quick data that cover a variety of research issues. Questionnaires have their weaknesses as well. The potential respondents might suddenly decide not to respond due to work pressure or they may simply have forgotten about it. Reminders and follow-up need to be used in such cases. Lower rate of response may raise some questions on the ability for generalizing the findings (external validity), and the conclusions quality (internal validity) (Tashakkori, Teddlie 1998).

The nine-item organizational commitment questionnaire (Mowday, Steers & Porter 1979) was piloted in the case studies of this present research to measure the affective commitment among front-line employees in the call centre. It is not unusual to administer questionnaire in organisational case study research where other data collection methods are employed. “This can increase the efficiency of data collection and/or allow for data to be collected from a wider sample of respondents” (Voss 2002). The questionnaire employed “questions of opinions” rather than “questions of facts”. People tend to respond to “questions of opinions” in different ways making them more useful in a research inquiry (Easterby-Smith, Thorpe & Lowe 2002). The organizational commitment questionnaire used an interval five options Likert-type scale with the following anchors (“strongly disagree”, “disagree”, “undecided”, “agree”, and “strongly agree”). Five options with the “undecided” option as the neutral state were preferred as there might be some participants who may not, so far, have built a certain feeling towards their employer yet that must be acknowledged. The Likert-type scale provides a continuous scale with theoretically equal intervals for the responses that reflects the presence or the absence of the attribute (Tashakkori, Teddlie 1998, Creswell 2004). Continuous scales have the advantage of being converted into ordinal or nominal scales to fit different statistical analysis methods (Creswell 2004). An informed consent form was provided as the first part of the questionnaire; a covering letter which explained the reasons of the questionnaire, why it is important and why the employees were selected. It also provided guarantees that the responses from participants would be strictly confidential; that data from the research will be reported only in the aggregate; that information would be coded and will remain confidential (Bryman, Bell 2007). Permission was granted from the persons in charge in the three research sites to start using the questionnaires in the call centres.

### **Self administered questionnaires for “Case1”**

The questionnaires used in “Case 1” were of a paper and pencil type (Tashakkori, Teddlie 1998) as the employees were deprived by the management bodies from using the internet during the working hours. The self-administered questionnaires were distributed over each employee’s desk after a message was sent by the team leader notifying them in advance about the questionnaire and where to submit them after

completion. This has been met with a better response rate from participants (Sekaran 2003). Self-administered questionnaires are considered as one of the cheapest types of surveys where only one researcher is involved. Obviously, since respondents identity is kept anonymous and researcher is not available at the time of questionnaire completion, researcher bias and effects are eliminated (Bryman, Bell 2007). Respondents can complete the questionnaire at their own convenience which can help in providing more accurate data (Neuman 2007). However, the biggest problem with self-administered questionnaire is the low response rate which requires the researcher to send reminders letters which adds to the time and cost of survey (Sekaran 2003). Researchers usually do not have the ability to visually observe the conditions at which the questionnaire was filled which may limit the researcher ability to verify responses accuracy and correctness (Neuman 2007).

### **Web-based questionnaires for “Case 2” and “Case 3”**

The questionnaires used in “Case 2” and “Case 3” were designed using web-based software that was sent through the internet to everyone working in the call centre. This was done with the help of the “Gatekeeper” who had the electronic population list of front-line employees and provided a presentation message about the questionnaire and its purpose. The web-based questionnaire provided quick and easy data gathering and analysis (Creswell 2004). They can be designed in many flexible formats and can use images or other supporting elements to satisfy a research purpose (Neuman 2007). However, web-based questionnaires have disadvantages too. First, some participants might not have much internet access as some others have (Sekaran 2003). Second, protecting respondents privacy is of great concern in some cases. Researcher must seek to find secure websites through which the questionnaires can be distributed. Third, researcher must verify that the questionnaire design is compatible with various software applications at the respondents’ disposal (Neuman 2007).

The front-line employees in the three case studies spent only two minutes on average to complete it, and it did not interfere dramatically with the participants work responsibilities as it was completed in a natural setting. Moreover, keeping the questionnaire short and sending it to the whole population in the call centres provided a large sample of respondents (i.e. high response rates) (Bryman, Bell 2007), “the larger

the sample the less the potential error that the sample will be different from the population” (Creswell 2004).

#### **4.11 Internal validity test**

Internal validity is the degree to which we can establish a causal relationship where the researcher is concerned in determining whether the events or conditions under investigations actually cause the “effects” or “responses” of interest (Amaratunga et al. 2002, Yin 2009). Unlike mathematical modelling or simulations where number of variables are limited and their relationship are easily identified, the case study research requires further attention to the variables involved in the study, as there are numerous sources of problems that can mislead the researcher when attempting to create causal relationships (McCutcheon, Meredith 1993). Yin (2009) suggests the use of “pattern matching” logic in the process of evaluating case study’s internal validity. That is, if the actual data patterns of a case study match predicted or proposed patterns, then there is strong evidence that the propositions are correct. Furthermore, if these data patterns can be replicated in similar cases (literal replication), or do not match the patterns of dissimilar cases (theoretical replication), then the evidence becomes even stronger and the case study is said to have a strong internal validity (Stuart 2002). Therefore, the pattern matching technique has been used in this study to check internal validity of the multi-cases design. This has taken place mainly at the analysis phase by the employment of: First, “thematic analysis” techniques for the qualitative data at each case study. Second, the statistical analysis and testing of the affective commitment questionnaires of each case study. Third, the use of documents and observations results to confirm previous findings. This has allowed for pattern matching technique to be used by comparing and corroborating the results of each case study with the initial propositions of the study as well as with the findings of other case studies. However, there is the added measure of ‘natural validity’ within the present study, that was achieved due to the fact that the researcher played the role of the outsider who collected data about events and settings that are unmodified by the researcher’s actions or presence (Warner 1991).

### **4.11.1 Analysis methods**

Eisenhardt (1989) suggests the use of two steps in analyzing the data in multiple-case study designs: analysis within case data, and searching for cross-case patterns that are used in this study.

#### **4.11.1.1 Analysing data-within cases**

The data from both the qualitative and quantitative methods in this research were collected simultaneously from each study. This is known as triangulation of data (Tashakkori, Teddlie 1998). The qualitative data collected through triangulation were analyzed concurrently with the data collected quantitatively. This was done by linking both data types with each other. Linking qualitative data with quantitative data has many advantages for a research inquiry. Miles (1994) introduced three reasons based on the work of Rossman and Wilson (1984, 1991) to link these two types of data during analysis:

- It enhances the confirmation of one data type by another.
- It helps in developing analysis with richer details, and
- It urges the emergence of new ideas and innovative perspectives.

The analysis process used in this research inquiry is fully explained in the following points:

#### **I. Qualitative data analysis methods**

##### **Preparing the transcribed data**

The analysis process started by organizing the qualitative data into file folders for the field notes, interviews transcripts and the documents collected. Computer folders were also used to categorise the interviews that were audio taped and then transcribed. This was followed by studying the qualitative data (i.e. reading and listening to the audio taped interviews, and revising field notes and documents) collected from each case study. The researcher then started using the hand analysis of qualitative data. The hand analysis of the qualitative data was used in this research inquiry as the amount of pages

to analyze were relatively small (i.e. 178 pages from “Case 1”, 140 pages from “Case 2”, 146 pages from “Case 3”) making tracking of information and consistency of topics a manageable task. Creswell (2004) suggests using hand analysis when the database of transcripts is less than 500 pages. However, the hand analysis helped the researcher to maintain a close interaction with the qualitative data to make sense of the meanings for better interpretations (Creswell 2004). It is worth noting here that there is no general method for analyzing qualitative data (Miles 1994). It is an analysis process in which the researcher uses his innovation and assessment to produce descriptions and/or patterns to capture a research phenomenon (Creswell 2004).

### **Thematic analysis:**

After transcribing the interviews, the “thematic analysis” approach (Taylor, Bogdan 1984, Attride-Stirling 2001) was employed to analyse the data. This is also called the “grounded analysis” (Easterby-Smith, Thorpe & Lowe 2002) which is an inductive strategy aimed at producing patterns/themes from the data (Patton 2002). This helped in constructing a framework for the meaning of what has been collected. Thematic analysis was employed in this study as it provides a holistic context of the phenomenon, in addition, the close interaction of the researcher with the qualitative data in this type of analysis maintain a high level of precision in the themes/patterns produced (Easterby-Smith, Thorpe & Lowe 2002). However, the full process of analysis followed Bryman and Bell's (2007) considerations in coding in order to achieve the analysis themes; these are illustrated in the following stages:

- Code as soon as possible: coding process has started as soon as the data collection process started; this has sharpened the researcher understandings of the collected data as it arrived. Late coding is major cause for weakening the qualitative data analysis (Miles 1994, Minichiello et al. 1990). Early coding helped in avoiding being swamped in data, if the data analysis has been postponed after the data collection is completed (Bryman, Bell 2007).
- Read through your initial set of transcripts, field notes, and documents: The research objectives and interviewees transcripts are studied in order to shed the light on general leading theoretical topics available. These theoretical topics, also called coding schemes (Minichiello et al. 1990), were then used to list a set of words or

topics that represent a general meaning of what has been said in the interviews, this is known as the coding framework of interviews analysis (Attride-Stirling 2001). The benefit of creating such a coding framework is the generation of a list of words which can be linked into common categories during analysis (Minichiello et al. 1990). The codes used were of three different types: individual words to describe a situation, concepts to indicate particular ideas, and sentences that capture an event of interest. Furthermore, the amount of codes generated were dependant on the amount of data collected from the research sites (Minichiello et al. 1990).

- Read it again: This step involved reading again through the transcripts of interviews and coding the content. The interviews transcripts were divided into meaningful fragments to facilitate dealing with the data. Every fragment or text segment was then given a word or a code that represent the meaning perceived and belongs to the pre-defined coding framework (Attride-Stirling 2001).
- Review you codes: This step involved revising the divided transcripts to find codes with common basic themes. This was done by careful reading of the coded fragments, which enabled the identification of underlying structures and connections (Attride-Stirling 2001).
- Consider more general theoretical ideas in relation to codes and data: This final step has allowed for clustering basic themes around more central themes that was used later for interpretations. The analytic unit used in interviews comparison was the theme. The emerging themes were used in the comparison process between the groups of participants to understand the impacts of the service system in each call centre on employees working experience and service performance.

## **II. Quantitative data analysis methods**

### **Statistical Analysis using the SPSS**

At the same time the qualitative data were analyzed. The quantitative data collected through questionnaires were also prepared for statistical analysis in each case study. As a first step, the data collected on the nine-item Organizational Commitment Questionnaire were given scores. Scoring the data involved giving a numeric value to each response of the questions available (Creswell 2004). After scoring the data, the responses collected from these questionnaires were inserted to the SPSS (Statistical



Package for the Social Sciences) software. After inserting the data, the data were checked for errors or missing parts before being analyzed (Neuman 2007). The analysis using the SPSS software provided an examination of the availability of the affective commitment attribute. Descriptive statistics from the SPSS software (i.e. standard deviations and means) were calculated, and a final overall mean for participants was achieved to indicate the tendency of commitment among front-line employees in each research site. This provided a clear indication on the level of affective commitment among the front-line employees in each call centre.

#### **4.11.1.2 Analyzing data- Cross-case patterns and comparisons**

Having analyzed the data from each case study separately. The final step of the analysis process involved searching for cross-case patterns. Cross-case patterns have helped the researcher to enhance the generalisability of the findings drawn from each case alone, and improved the emergence of reliable and accurate theory (Voss 2002, Eisenhardt 1989). Searching for cross-case patterns was completed by picking up the service system design (i.e. mechanistic or organic) as the comparison category, and then a search for similarities and differences between the categories was carried out (Voss 2002). Within the search for cross-case patterns, the results from the thematic analysis of qualitative methods were directly compared with results from the quantitative methods (i.e. questionnaires results) of all cases. This comparison was done through a discussion about the themes emerging from the qualitative data, and how these themes support or reject the statistical analysis achieved (Creswell 2004). For the quantified case data, the use of graphing and a statistical test (i.e. Mann-Whitney U-test) was used to further explore the patterns as explained below.

##### **I. Mann-Whitney U-test**

The Mann-Whitney U-test is a non-parametric test widely used to check whether two samples are “different” (Siegel 1988, Rouncefield 1998). It assumes that the two samples under testing are independent of each other and that the observations are comparable (Sprent, Smeeton 2001). In this study, the Mann-Whitney U-test was used to compare the level of affective commitment between the mechanistic call centre studied and those that are organically structured, this was done by testing the nine-items

questionnaire values achieved from “Case 1” with those achieved from “Case 2” and “Case 3” respectively. This test was selected in order to confirm that the difference in affective commitment values between the call centres is due to the predicted effects of the service systems used (i.e. independent variable) and not to chance. However, in order to prove that the differences in affective commitment levels in these call centres are indeed a result of the service system used and not to chance, the Mann-Whitney *U*-test aimed at testing the following two hypotheses:

*H0: Any observed differences in affective commitment medians at call centres are due to chance (This is the null hypothesis).*

*H1: There is a significant difference between pairs of employees’ affective commitment medians due to the effects of service systems used at both call centres and not due to chance (This is the alternative hypothesis).*

The test aimed at evaluating whether the medians of the affective commitment level differ significantly in the call centres studied. However, the test requires the availability of two variables for each call centre (i.e. categorical variable and a dependant variable) (Spren, Smeeton 2001). The categorical variable used here is the service system employed in each call centre while the dependant variable is the affective commitment level for each respondent. The SPSS software was used to carry out the test for the available data from the call centres. In order for the Null hypothesis (*H0*) to be rejected the Mann Whitney *U* test requires that the exact significance (p-value) be less than 0.05. The calculations provided p-value (Exact Sig. (2-tailed)), which was then compared with p=0.05 significance level.

#### **4.12 Summary of cross-cases quality tests and measures**

In order to ensure the rigour and validity of the research outcomes of this study, four tests for judging the quality of case studies have been employed throughout the research methodology based on Yin's (2009) quality criterion. These were discussed in details earlier in this chapter and summarised in Tables 4.10 below for easier recall.

Table 4.10 Summary of cross-cases quality tests

Tests	Case Study Tactic	Within Case Studies
External validity	<ul style="list-style-type: none"> <li>• Use theory in single-case studies</li> <li>• Use replication logic in multi-case studies</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure research design addresses the theoretical questions</li> <li>• 3 case research design across 2 industry sectors</li> </ul>
Reliability	<ul style="list-style-type: none"> <li>• Use case study protocol</li> <li>• Develop case study database</li> </ul>	<ul style="list-style-type: none"> <li>• Case study protocol was developed and used as a tool for guidance and communication of intensions with research sites</li> <li>• Database was created to collect all necessary information together</li> </ul>
Construct validity	<ul style="list-style-type: none"> <li>• Use multiple sources of evidence</li> <li>• Establish chain of evidence</li> <li>• Have key informants review draft CS report</li> </ul>	<ul style="list-style-type: none"> <li>• (qualitative &amp; quantitative): Semi-structured interviews, document collection, observation, organisational commitment questionnaires.</li> <li>• Chain of evidence established through triangulation</li> <li>• Case study reports were sent to primary contacts at each research site.</li> </ul>
Internal validity	<ul style="list-style-type: none"> <li>• Do pattern-matching</li> <li>• Do explanation-building</li> </ul>	<ul style="list-style-type: none"> <li>• Coding of data and the use of thematic analysis for pattern matching.</li> <li>• Create explanations of phenomenon observed, supported by interviews findings.</li> <li>• Using Mann-Whitney U-test to confirm causal relationships.</li> </ul>

### 4.13 Ethical considerations in organisational research

Ethical issues are usually accompanied with the interaction with research participants during data collection or research site access permission (Easterby-Smith, Thorpe & Lowe 2002, Stafford 1993). Bryman and Bell (2007) pointed out four main ethical principles in organisational research:

- Harm to participants: harm can be defined, in this regard, as any action that may entail harming the participants development in the organisation, or harming their self-esteem by causing stress or harming participant reputation.
- Lack of informed consent: this is one of the most debated issues in ethical research which entails that the researcher practice a covert observation role or do not introduce consent statements to participants before interviews, which confirms how the data will be used and whether participants identities or positions will be disclosed to other parties. These issues arise from the desire of

the researcher to obtain data that is necessary for the research, while overlooking the participant's right of anonymity (Easterby-Smith, Thorpe & Lowe 2002).

- Invasion of privacy: if participants have agreed on the informed consent of the research, this should not be interpreted as they have abrogated their privacy. Participants should keep the right to refuse answering any questions they do not want to answer in an interview. Researcher needs to remember that participants have their own sensitive issues that they may wish not to disclose to others.
- Deception: deception occurs when a researcher hide the real aim of the research by explaining another aim to participants. For example, researcher introduces himself to participants as a student conducting research, whereas he is conducting this research for competitors in the field.

Qualitative data collection methods assign great deal of importance to the ethical considerations more than the quantitative methods. This is because the researcher in qualitative inquiry might need a face to face interview with participants which implies the needs to demonstrate sensitivity and respect for human opinions (Easterby-Smith, Thorpe & Lowe 2002). Participants in a study have certain rights that the researcher must keep in mind. These include their right of understanding the purpose of the study, the use of the research findings and the consequences of the research on their own careers or lives (Creswell 2004). In this research project, the individuals in charge played the role of "gatekeeper" who provided the access permissions and helped in locating people and places to study. To ensure the ethical treatment of all participants in this study all participants' names and positions were kept anonymous and an informed consent statement was used at the beginning of each interview, and as a cover letter of questionnaires. The overt role was adopted during observations. Questionnaires are kept in a secure place following the completion of the surveys. In addition, a case study report was provided to the participating bodies to ensure that results are accessible to company director and other concerned parties.

#### **4.14 Chapter summary**

This chapter has presented an extensive account on the distinct research methodology used in this research. It was focused on introducing a rigorous presentation of the flow of activities followed in the research inquiry. The chapter was divided into different sections. First, It started by a review on the theories of knowledge, the available schools of thoughts and philosophical stances in research paradigms such as positivism, constructivism, and pragmatism that underlie scientific research, this provided the researcher with insights on available theories that suits the present research. Second, a review of the research questions and objectives of research were presented to help in and justify the selection of the most appropriate research design. Third, the research sites were presented and the use of Multiple-case studies as the research strategy was explained. Fourth, the mixed methods technique was illustrated by presenting the triangulation concept of collecting qualitative and quantitative data and the data collection methods used. Finally, the data analysis methods discussed and the ethical considerations followed in the research were presented. The chapter was designed to match every element of the research methodology with a criteria for judging the quality of the multi-case studies design. Four tests were used in this process. These are: external validity test, reliability test, construct validity, and internal validity.

Chapter 5 explores each case study conducted separately; research sites profiles, data collected and results gained will be presented.

# Chapter 5 - Individual Case Studies

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## 5.1 Overview

In the previous chapter, the research methodology has been presented for the present research; an extensive explanation of the multi-case studies design used is illustrated with a discussion on the technique used (i.e. mixed methods) including the triangulation designs and the data collection methods employed; a criteria for judging the quality of the multi-case studies design was developed. Three cases were chosen and the reasons for their selections were also introduced.

In this chapter, each case study will be explored individually. It is very important for the generation of insights that each case study, within case analysis, is written-up and presented separately (Pettigrew 1990, Eisenhardt 1989). Therefore, cases profiles and the data collection and results at each research site will be presented on an intra-case basis, exploring the effects of service designs and structures of departments and analysing each case within its own context. A discussion on the effects of the organic structure implementation and the affective commitment level of employees is also presented.

## 5.2 Nottingham City Council

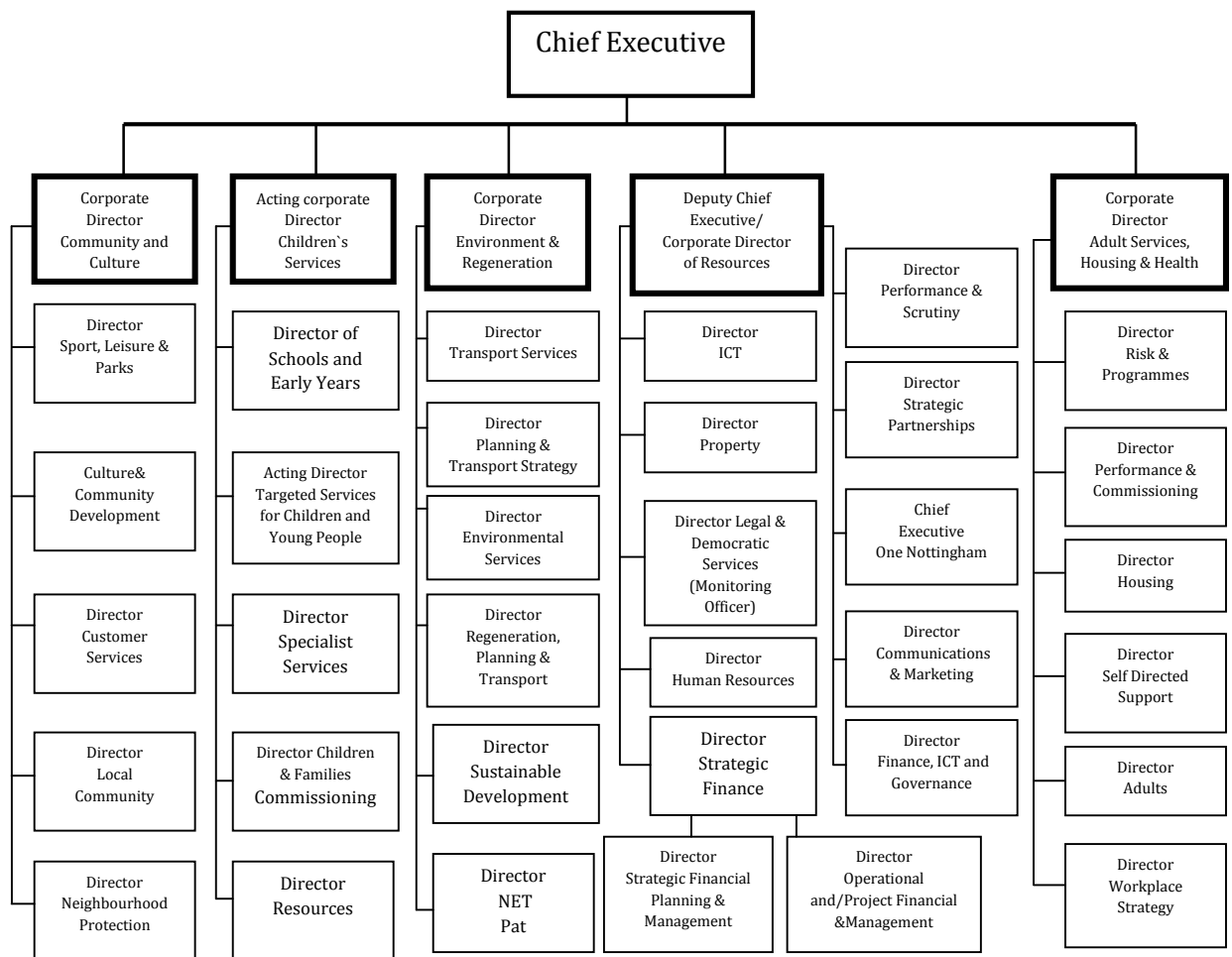


### 5.2.1 Council profile

Nottingham City Council is an all-purpose unitary authority in the UK East Midlands region providing all local government services within the city of Nottingham administrative district. It is a democratic organisation with 55 councillors representing voters in the 20 electoral areas of the city (Anon. 2009a). The councillors meet as a full council once every six weeks to make decisions on some aspects of the council policies and strategies such as approving the level of council tax. The Council has put a plan for 2009-2012 which details the Council's role in delivering Nottingham's priorities and

the vision. The highest priorities, that are at the heart of this plan are reducing crime, increasing educational attainment, making Nottingham England’s cleanest city, increasing recycling rates by double, and further investment in transforming neighbourhoods (Anon. 2009b). However, in order to provide professional guidance, execute decisions and deliver services, the council is divided into six departments, each led by a chief officer as shown in Figure 5.1.

Figure 5.1 Nottingham City Council’s management structure, source: Anon. (2008b)



The chief officer reports to a single chief executive who in turn is responsible to the elected city council (Anon. 2009a). The departments available are:

- Adult Services, Housing and Health: This department exists to provide social care services for adults in Nottingham, it employs carers who look after families

and partners who are ill or disabled. It also exists to improve health and fitness services for the wellbeing of all of its residents.

- **Children's Services:** This department provides a huge range of services for children, young people and families; from education, to Children's Centres, children's social care services and more. The overall aim of all educational services is to help children and young people enjoy their education and to achieve well.
- **Community & Culture:** This department plays a major role in providing equal opportunities and valuing diversity. It provides cleaning and improvement services for neighbourhoods and communities. The department also offers a fantastic programme of cultural events throughout the year.
- **Environment & Regeneration:** This department provides a wealth of services including rubbish and waste treatment, recycling strategies, food safety, how to deal with pests and nuisances, environmental health issues, and animal welfare.
- **Performance & Strategy Group:** This department is responsible for monitoring the financial performance of the council, its marketing and communication campaigns, and to make sure that the council has the necessary partnerships that complement its role and services.
- **Resources:** The council's human resources requirement planning and the ICT requirement is the responsibility of the resources department. The department strives to plan and manage the council's property requirement, and to put financial strategies that ensure the achievement of all resourcing plans.

### **5.2.2 Case study context**

The customer services department at Nottingham City Council has a call centre that is mechanistically structured. It operates weekdays with a total of ten working hours every day and employs 40 staff. They deal with council tax and housing benefit claims and enquiries. In general, employees are local residents in the area surrounding the council and they are a mixture of young and older employees with half of them approximately having university/college degrees and the other half with high school qualifications. The call centre has a main switchboard that receives calls and categorises them according to customers demands (i.e. council tax or housing benefits related issues).



The calls centre has a daily dominant call-arrival pattern, with both early and prior to closure hours of the day are the least congested. Table 5.1 shows average call-arrival pattern for Nottingham City Council's call centre over a week period. The call centre has four team leaders who monitor front-line employees against call handling targets. Performance is displayed on screens visible throughout the call centre with a call average handling time allowance of seven minutes. Table 5.2 summarises the quantitative measures that were a major concern for managers to evaluate the performance level of employees. Managers recognised that employees are spending a considerable amount of their working time on after call work to satisfy the council standards and quality checks. Managers in the call centre monitored front-line employees against call handling targets. For all but the simplest issues front-line employees acted as filters directing callers on to those with experience in the particular area. As a result almost 75 per cent of work was passed to the back office where experts were located to deal with customer enquiries regarding their Tax and Benefits.

Table 5.1 Daily dominant pattern of call-arrival

Time of day	Number of calls received	Average talk time (minutes)
08:00-09:00	13	7
09:00-10:00	22	5.6
10:00-11:00	42	3.5
11:00-12:00	56	3.2
12:00-13:00	49	3.4
13:00-14:00	59	3.2
14:00-15:00	54	3.1
15:00-16:00	43	3.2
16:00-17:00	19	4.3
17:00-18:00	11	5.2

Front-line employees in the call centre have limited knowledge of customers' claims progress due to the limited communication between departments. This situation left

front-line staff with limited ownership of callers' issues. It was recognised in this call centre that the purpose of the service system from the customer's perspective is:

**“To help me pay my rent and/or my council tax”**

Table 5.2 Typical quantitative information describing service performance as for 2008

<b>Quantitative measures</b>	
Total number of calls received per year	147,258
Total number of calls answered per year	92, 512
Average calls abandoned rate per year (%)	37.1
Average answered calls volume per day	367
Average number of calls lost per day	217
Average call handling time (minutes)	7
Actual service level (X percent answer/ 40 seconds)	46/40
Average caller waiting time in queue (minutes)	8.2
Average calls transferred to back office (%)	75
Average days of absence per employee per year	13

In contrast, the purpose from the staff perspective-derived from the management practices is:

**“To do my task and meet my target”**

As a consequence of this mismatch-between management concern and that of customers the working experience of employees in the call centre was not truly rewarding. It did not fulfil their work aspirations despite the fact that they were truly committed to their job of aiding callers to overcome their problems and needs.

Improvement initiatives carried out at Nottingham City Council over the past few years have resulted in a significant increase in services offered. However, the performance of

the service operations is a regular source of criticism from ever more demanding constituency voters. The Government key performance indicators (KPIs), measures and legislations have become a cause of concern in the service operations due to the overwhelming focus on targets, statistics, quality regulations and documents marking and archiving that are currently known as System Conditions. The waste present in the service system makes the service process sluggish and time consuming. Some would say that Government targets have become a greater driver for Nottingham City Council than the customers themselves. However the City Council has to achieve targets of the Government to keep receiving the funds necessary for the projects they run.

### **5.2.3 Data collection at Nottingham City Council- Customer Services department**

In this study, the call centre service systems that operate in the customer services department have been studied. The call centre was the case being studied while the service systems were the distinct unit of analysis used. Table 5.3 presents the case studied and some of the characteristics of unit of analysis.

Table 5.3 Unit of analysis

<b>Case</b>	<b>Service system</b>	<b>Department</b>	<b>No. Employees</b>	<b>No. team leaders</b>
Call centre	Mechanistic structure	Customer Services	40	4

The data in this study was collected through interviews, observations, questionnaires and systems documentation methods.

#### **I. Interviewees selection and interviews design**

A total of 39 employees who are involved in call centre management and operations from across the customer services directorate were interviewed. The interviewees were comprised of a service director who played the role of research site “gatekeeper”, team leaders and front-line staff. The selection of interviewees was done in a way that ensures that the whole aspects of the mechanistic service system in the call centres are

covered. For this purpose an introductory meeting with service director at the research site helped the identification of the key personnel to get a complete list of employees in the service system. Interviewees were then selected from each role with the help of “gatekeeper” who recommended these people and places to study in compliance with “snowball sampling” technique chosen (Patton 2002). This was done with the hope of covering as much knowledgeable employees as possible to enhance the credibility of findings. The selected interviewees were invited to the interview with an explanation of the aims of the study and were provided with an interview structure. Due to interest shown in the study and its objectives, two senior employees helped the researcher in transcribing and analyzing the data collected from these interviews. Table 5.4 illustrates the distribution of interviewees between roles in the call centre.

Table 5.4 Interviewees distribution at Nottingham City Council- customer services call centre.

<b>Role</b>	<b>No. of interviewees</b>
Service director	1
Team leader	4
Front-line	34
<b>Total</b>	<b>39</b>

Over a period of seven weeks, the interviews were conducted on a one to one basis in confidence and took 40 minutes on average to complete. Individuals had the option of anonymity, some interviewees took this option. The questions of the interviews were divided into six parts and focused on the mechanistic structure offerings in the call centre, working experience, management concerns and attentions, departmental relationships, customer satisfaction and any related issues.

## **II. Observations**

The second source of data was the use of observations technique by studying the work atmosphere of front-line employees in the call centre. This was done by spending a period of time in the call centre moving in and out. An “interrupted involvement”

(Easterby-Smith, Thorpe & Lowe 2002) observer role was adopted where the researcher intention was not to participate in the work, but to form a model of comparing and combining observations with interviews. An observational protocol was used to take field notes while visiting the call centre. On this form, a detailed description of the working place layout and technology used, the frequency and nature of interaction between front-line employees and other teams in other departments as well as among front-line employees themselves were all recorded. In addition, notes about the nature of interaction between the front-line employees and callers were also recorded. These observations in this case study provided a better understanding of how the people communicated and interacted. They catered for the recording of information as generated in the call centre and provided another instrument to study actual behaviour of front-line employees. They also helped to uncover issues related to the mechanistic call centre service design that may have escaped the awareness of interviewees (Patton 2002).

### **III. Questionnaire**

In an efforts to provide a meaningful measure of the mechanistic service system impact on employees commitment, the nine-items OCQ (Mowday, Steers & Porter 1979) was used. It measured the affective commitment level among the call centre front-line employees. The questionnaire instrument was administered to the 40 front-line employees available. Out of the total 40 questionnaires sent 27 questionnaires contained usable information. The questionnaire used five interval options Likert scale with the following anchors (“strongly disagree”, “disagree”, “undecided”, “agree”, and “strongly agree”). It sought responses from statements such as “I would accept almost any type of job assignment in order to keep working for Nottingham City Council” and “Nottingham City Council really inspires the best in me in the way of job performance”, as shown in Table 5.6.

However, the questionnaires were distributed to each employee’ desk and a message was sent by team leaders informing them about the questionnaire and where to submit it after completion. A web-based questionnaire was not feasible as front-line employees did not have access to the internet. The front-line employees on the research site spent

only two minutes on average to complete it, and it did not interfere with the participants work responsibilities.

#### **IV. Call centre Systems documentation**

During the case study, documents were collected from the service director and team leaders at the call centre. These consisted of both private and public records. The documentary information was of valuable importance to the case study objectives to triangulate what was found through interviews, observations and questionnaires. However, the main source of information was interviews and questionnaires, with documents mainly used for better understanding on the mechanistic service systems operations. Documents collected included: newsletters, internal reports including job descriptions and workplace management structures, processes flow diagrams, and service performance charts.

#### **5.2.4 Data analysis approach**

Data from interviews, observations, documentation and questionnaires in this research were collected simultaneously from research site. This is known as triangulation of data (Tashakkori, Teddlie 1998) which was explained in the previous chapter, where both qualitative and quantitative data are collected from a research site. The interviews were transcribed in order to be used in the data analysis. The interviews transcripts, observation notes and documentation were analyzed concurrently with the data collected through questionnaires. Linking these types of data during analysis has enhanced the confirmation of one data type by another. Further, it helped in developing analysis with richer details and urged the emergence of new innovative perspectives (Miles 1994).

The interviews analysis process used in this research inquiry followed the “thematic analysis” approach (Taylor, Bogdan 1984, Attride-Stirling 2001), this is fully explained in the following points:

1. The research objectives along with the interview transcripts of this study were revised in order to identify general theoretical topics that could help generate a

coding framework for the interview transcripts. A coding framework is a set of words or topics that are carefully selected to represent a general meaning of what has been said in the interviews segments (Attride-Stirling 2001).

2. The interview transcripts were carefully revised again with the aim of dividing the text into meaningful parts to reduce the data. Every part was then given a code that belongs to a pre-defined criteria (i.e. specific word or topic).
3. After a signing a code for each text in the interviews, another revision was carried out to find codes with similar themes. This way allowed for clustering text segments around specific themes that was used later for interpretations (see Appendix 2 for individual case thematic matrices).

Documents and field notes taken during observations were used throughout the interviews analysis process to compare and confirm the findings to establish a chain of evidence. However, the emerging themes were used in the process of drawing robust conclusions to understand the impacts of the mechanistic service system in call centre on employees working experience and service performance. At the time interviews were analyzed, the questionnaires were also prepared for statistical analysis. Firstly, the data collected from the nine-items OCQ was given scores, scoring the data involved giving a numeric value to each response of the questions available (Creswell 2004). After scoring the data, the responses collected from these questionnaires were inserted to the SPSS software. The data was then checked for errors or missing parts before it was analyzed.

The analysis using the SPSS software provided an examination of the availability of the affective commitment attribute. Descriptive statistics from the SPSS software (i.e. standard deviation and the mean of each item in the questionnaire) was calculated, and a final overall mean for participants was achieved. This provided a clear indication on the level of affective commitment among the front-line employees in the call centre.

Finally, the results from interviews are directly compared with results from questionnaires. This study was completed through a discussion about the themes emerging from interviews, and how these themes support or reject the statistical analysis achieved (Creswell 2004). This was due to the nature of this study in which a

holistic capturing of the potential service improvement can only be sensed through critical investigation of the managerial activities at all levels.

### **5.2.5 Validity checks**

In studies where qualitative data play a major role in the interpretation of the findings, there is always the risk that the analysis and interpretations are biased by the researcher (Creswell, Plano Clark 2006). Therefore, a case study report about the interpretations and findings was provided to the service director and a team leader at Nottingham City Council's call centre to validate the findings. The service director have an in-depth knowledge and experience of the service system performance in general and team leaders have in-depth knowledge about working conditions among front-line employees. General agreement on the findings was provided with some suggestions on how to present results. Therefore, it can be assumed that findings from this study are of high quality.

### **5.2.6 Findings regarding call centre's mechanistic structure**

#### **I. Interviews and observations**

The themes presented below were identified after interviewing 39 participant at the call centre (See Table 5.4 for the distribution of participants), and after reviewing documents and observations field notes that have reflected much of what was said in interviews:

#### **Theme 1 - Management style and focus:**

With this theme the aim was to understand what the managerial practices are in the call centre, and what the management focus was. The majority of participants indicated that the management was focused on targets and numbers more than the quality of service. Participants identified that the main concern was to maintain low queues by talking with customers for not more than the allowed time of seven minutes. For this reason front-line employees were equipped with scripts and they were encouraged to use them when discussing customer demands and enquiries, according to participants this was



done to make sure that employees provide precise information to customers. However, screens were distributed in different places to show the rate of calls being processed and how many calls are left in queue. The service director at this call centre stated:

*“We are basically target oriented, not customer oriented...the KPIs must be followed...simply we need to achieve targets of the government to receive the funds necessary for the projects we run..”*

Furthermore, it was found that the role of team leaders was to monitor front-line employees' performance to make sure that they are on phones and to generate overall performance reports that is shared periodically with service director.

### **Theme 2 - Front-line employees working experience:**

The second theme is centred on the exploration of employees working experiences in the call centre. Understanding the working experience of employees in the call centre was very important to predict the availability/absence of affective commitment foundations. In this theme participants stated that tasks are narrow in scope due to the presence of rules and procedures that standardized performance. It was also stated by majority of participants that employees' performance monitoring was in place to make sure that employees achieve the daily set targets and to coordinate their reporting tasks. As a result the main feature of work under such condition is the inflexibility of service procedures which explains the referring of most of the work to the back office.

Participants knew that front-line employees could do a better job with more rapid processes, better communication between departments, more training and more information, and they believed customers were not happy with the service they were getting. One of the participants stated:

*“what we lack is better access to information...if I can make decisions myself on the phone there would be no need to pass the caller to back offices”*

The majority of front-line employees stated that they were looking for power to change the simplest of things and that customers must be first and not targets. In addition, it

was noted that the ability of employees to approach each other informally was limited due to the workloads. Meetings with top management were held to listen to employees demands and ideas but they were not taken on board due to lack of transformation initiatives.

### **Theme 3 - Performance measurement**

The third theme is focused on employees performance measurement in the call centre. This facet of the call centre service system is an important indicator of the system operational boundaries that guides the management focus. Participants indicated that they are mainly measured on the basis of how many calls they are able to handle per day, and what the average calls handling time is. In addition, participants have noted that measures like average abandonment rate, average customer waiting time per day was also used for group performance evaluation.

### **Theme 4 - Departmental integration and internal communication**

With this theme the aim was to understand the effects of service system design in the call centre on departmental integration and internal communication. Almost all participants stated that departmental relationships were very poor and there was a silo working between sections and departments. They indicated that the call centre was viewed as a separate entity that should not interfere with the work of other departments. The service director interviewed stated:

*“We know that customers follow-up for their council tax and housing benefits demands is not an easy task for staff....they (i.e. staff) do not know where it is in the system, usually staff send an internal message requesting that department to contact the customer with updates...”*

They also commented that this has resulted in reducing productivity due to the time wasted in finding customer related information. In addition, it was recognised among participants that the rigidity and tightness of the service system obstructed the communication of the call centre with other units in the organization due to the sluggish response procedures and lack of pre-defined channels of communication.

## II. Documents results

In this section the outcomes of the service performance charts study of the service delivery time to customer will be introduced in terms of the number of days it took to process new customer claims, three cases were chased that provided results as shown in Table 5.5 which were confirmed as typical:

Table 5.5 Service delivery time study

No.	Type of Service	Service Delivery Time
service 1	Claim for Housing Benefit from the City Council owned houses.	80 days
service 2	Claim for Housing Benefit from the City Council owned houses.	28 days
service 3	Claim for Housing Benefit for tenant renting accommodation from a private landlord.	54 days

The total number of days it took to process a service to customers was found to be due to the checking procedures, awaiting more documents to arrive, awaiting documents scanning to system, and system conditions that restricts responding to customers at certain stages until after a specified period of time has passed.

## III. Affective commitment measurement

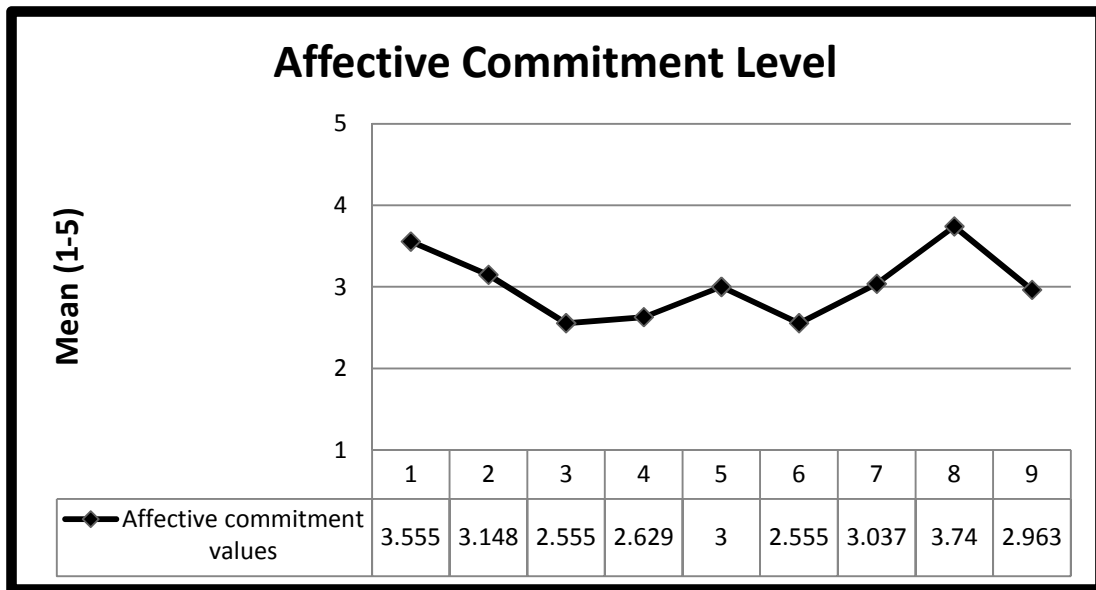
The purpose of this section is to document the affective commitment measuring outcomes at the call centre in order to facilitate the study of the effects of the mechanistic service system used on front-line employees commitment. The internal consistency reliability test revealed a Cronbach alpha (Cronbach 1951) value of 0.87 for front-line employees. The OCQ instrument usually exhibits an internal consistency that ranges from 0.82 to 0.93 (Porter, Steers & Boulian 1974), this ensures that the obtained results is a good fit. This indicates that the correlation between the questionnaire items is very strong and that they measure the unidirectional construct of the affective commitment among front line employees in the call centre. The results of the questions analysis are outlined in Table 5.6. A visual representation is also provided in Figure 5.2 for each call centre's affective commitment item.

Table 5.6 Affective commitment means and standard deviations.

Items				Standard	
No.	Min.	Max.	Mean	Deviation	
Q1: I am willing to put great deal of effort beyond that normally expected to help Nottingham city council be successful.	27	1	5	3.55	1.013
Q2: I talk up Nottingham City Council to my friends as a great organization to work for.	27	2	5	3.14	.907
Q3: I would accept almost any type of job assignment in order to keep working for Nottingham City Council.	27	1	4	2.55	.974
Q4: I find that my values and this City Council's Values are very similar.	27	1	4	2.62	.839
Q5: I am proud to tell others that I am part of this City Council.	27	2	5	3.00	.877
Q6: Nottingham City Council really inspires the best in me in the way of job Performance.	27	1	5	2.55	1.086
Q7: I am extremely glad I chose this Council to work for over others I was considering at the time I joined.	27	1	4	3.03	.808
Q8: I really care about the fate of this council.	27	1	5	3.74	1.023
Q9: For me, this is the best of all city councils for which to work	27	1	5	2.96	.759
<b>Overall Mean</b>				<b>3.02</b>	
<b>Internal consistency (coefficient <math>\alpha</math>)</b>				<b>0.87</b>	

The final calculations for the affective commitment level at the call centre provided an overall mean of 3.02 for front-line employees. Typically, an affective commitment value of 3.0 reflects a lack of affective commitment among employees (Porter, Steers & Boulian 1974, Jaaron 2009). However, a return of higher than 3.5 would statistically indicate that on average employees demonstrated high levels of affective commitment. Therefore, an initial evidence has been provided that the working experience of front-line employees at the call centre is not rewarding and that this owes much to the mechanistic service system used.

Figure 5.2 Affective commitment measuring level.



### 5.2.7 Barriers to affective commitment development

In the current study the service system design employed at the call centre of Nottingham City Council’s customer services department was studied to explore the impact of the mechanistic service design on employees affective commitment level and on service performance. It provides empirical evidence on the link between the service operations and the affective commitment of employees, which has received little attention from researchers who instead have tended to focus on employee well-being, job satisfaction, turnover and low customer satisfaction without linking it to the service operations systems.

The qualitative results presented in this study complement and validate the quantitative results achieved through questionnaires in a number of ways. The mechanistic structure employed was seen as an obstruct for a rewarding job experience for front-line employees for two reasons. First, Nottingham City Council has a traditional call centre where the emphasis was on targets and statistics. This model is widely used in call centres in many different organizations. Tasks are so well defined by rules and procedures that standardize performance, and a clear hierarchy of control exists to monitor employees’ performance and to coordinate their reporting tasks. As a result the main feature of work under such condition is the inflexibility of service procedures

which explains the referring of most of the work to the back office. The work philosophy is, then, all around the “Principles of Taylorism” commonly found in traditional call centres (Bain et al. 2002, Batt, Moynihan 2002). Second, service operations structural characteristics, job related characteristics were found to be the main reasons for an unrewarding and unsatisfying working environment. Employees whose work experiences within an organization are pleasant and satisfying tend to develop a stronger affective attachment to the organization than do those whose work experiences are less rewarding. However, low service quality to customers is also a product of the poor departmental relationships. Enhanced collaboration between call centre and other departments at Nottingham City Council inevitably stimulates the flow of information that governs speed of service, and can provide opportunities for appropriate data sharing in a timely manner to provide a service intelligence of great value.

It is argued that increasing the mechanisation of the customer-employee contact and decreasing service flexibility will cause front-line employees to lose personal control of their activities and on their ability to negotiate issues with customers (Deery, Iverson & Walsh 2002). Employees at this call centre processed a limited scope of demand in a repetitive manner. This was seen as a job deskilling practice as it did not allow for job progress prospects and eventually did not contribute towards satisfying employee’s personal ambitions of achievement and development.

Further, depriving employees from decision making authority resulted in a lack of control on the demand they received. As a result, the majority of the work was passed to the back office to deal with. The consequence is that employees have a feeling of not being of value to their council and simply acted as filters to direct enquiries and demands after initial basic evaluation. It is clear that the mechanistic service system design did not create the foundations, discussed in chapter two, to leverage employees’ affective commitment. As a result lower levels of affective commitment were achieved in the call centre. This was further evidenced by the level of turnover found which targeted 25% in the year preceding the case study.

Drawing on previous research that has been conducted in the field of organizational commitment, affective commitment has been found of particular importance in influencing organizational efforts for financial savings and profit-making potential. If an employee lacks the affective component of commitment he/she is more likely to leave the organization than those who have developed affective commitment with their employer (Mowday, Steers & Porter 1979, Mowday, Porter & Steers 1982). Employee turnover is extremely costly for call centres due to the direct and indirect costs related to it (Krenzelok, Dean 1994). Furthermore, the qualitative results evidence a communication problem in the call centre. Employees felt that they were not performing well due to the unavailability of open channels of communication and support from other departments when needed.

### **5.3 Stockport Metropolitan Borough Council**



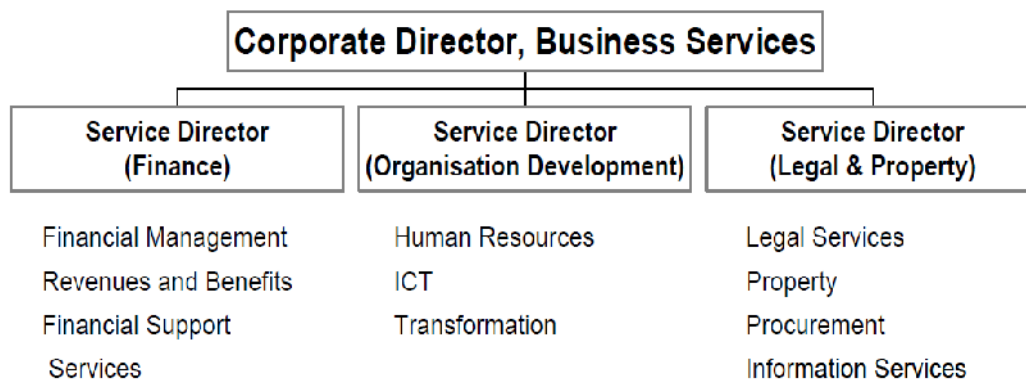
#### **5.3.1 Council profile**

Stockport metropolitan borough council serves more than 280,000 people in the borough. The area is a major attraction for employment or entertainment. In all cases, Stockport Council provides the services to make these and hundreds of other daily activities possible. With a net annual revenue budget for 2008/09 of £216.032m, and a full and part-time staff of around 10,000 people, the Council is a major organisation and the biggest employer in the borough (Anon. 2010c). It delivers a range of key services such as education, social services, housing, planning and transportation, community and leisure services, environmental health, and finance (Anon. 2010c). In order to provide professional and high quality services to residents, visitors and businesses, the council is divided into five directorate areas:

- **Business Services Directorate:** Business Services makes improvements to the way the Council conducts business transactions and supports front-line services. It embraces the Information and Communication Technologies department where the present research was conducted (see Figure 5.3).

- **Chief Executive's Directorate:** The Chief Executive's Directorate exists to provide corporate leadership and support to help make the borough cleaner, greener, safer and stronger.
- **Children and Young People's Directorate:** This directorate exists to drive forward the strategy and workforce changes necessary to ensure services are centred on children and young people's needs, and secure improved outcomes for all. This Directorate includes education for all ages, children's social care, and the Youth Offending Team.
- **Communities, Regeneration and Environment Directorate:** This directorate aims to provide a broad and diverse range of services for citizens, including leisure, regeneration & economic development, public protection, tourism, transportation and planning.
- **Corporate Leadership Team:** Stockport Council's Corporate Leadership Team comprises the Chief Executive and three Corporate Directors and a Director of Adult Social Services who each head up a Directorate of services provided either to the public or the local authority itself.

Figure 5.3 Business services directorate's management structure, source: Anon. (2008a)



### 5.3.2 Case study context

An independent case study was carried out in the Information and Communication Technologies (ICT) department of Stockport Metropolitan Borough Council in England. The ICT Department has a help desk that supports more than 6000 customers



across the council departments and related directorates for their hardware and software needs and IT problem solving. The help desk has a total of 18 employees working on phones and emails. There were two team leaders in the ICT help desk responsible for day to day operations of the work. Employees have varied educational backgrounds, some were college degree holders, some have received IT training and some have taken further education before joining Stockport Council. They are a mixture of young and older employees, most of them are in the age range of (20-35). They are local residents in the area surrounding the council. In general, the work of the employees is very similar to call centre environment where customers call seeking information on how to solve IT problems or for technical support. The ICT help desk was granted one phone number for all of its customer regardless of the nature of their demand, and with no Interactive Voice Response (IVR) Technologies in use.

**Original situation and drivers for change:**

The ICT department had a traditional mechanistic help desk, similar to that available at Nottingham City Council's customer services department. Under the mechanistic structure the purpose of the help desk from customer perspective was:

**“ to provide customer with IT support and systems he needs and will need to do his job effectively”**

In contrast, the purpose of the original system from employees perspective, derived from the management practices, was:

**“to do my task and meet the set targets”**

This mismatch of perceived purpose was identified as resulting in a sub-optimum solution. The call centre management was originally focused on quantitative measures similar to those found at Nottingham City Council to evaluate performance. Although Stockport Council was in a good position, significant improvements have been made in recent years, the Council's aspirations for moving from excellent to exceptional require a continuation in the improvement of both performance and the use of resources. Further, the government's expectations include local authorities identifying 3% 'cash releasing efficiency gains' each year and demonstrating and embedding Value For

Money (VFM) in a more explicit manner. The performance of authorities in these areas is measured and reported upon by the Audit Commission, primarily within the use of resources element of the Comprehensive Area Assessment (CAA). The CAA takes a broader view of VFM and use of resources, looking not only at the Council but at its relationship with partner organisations. Therefore, it was likely that some form of 'step change' will be necessary to meet in full the challenges that lie ahead. In response to the need for improvement initiatives the ICT department was a part of a strategic approach to achieving the improvements and efficiencies necessary to enable the council to demonstrate VFM in the delivery of its priority outcomes, through the transformation of business and service delivery processes and methods according to the systems thinking principles discussed in chapter two to produce an organically structured call centre. Eventually, the primary objectives of the ICT Transformation programme revolved around the generation of substantial cost reductions and efficiency savings, accompanied by performance improvement and increased customer satisfaction, thereby increasing the VFM provided by the council. The transformation programme covered all functions of the ICT department, engaged with all employees within ICT and interacted with a wide cross section of customers who use the services. The systems thinking transformation programme progressed in three stages:

### ***Check***

This stage started with demand analysis. A check team was recruited to perform this crucial stage of the programme, the team was selected on the basis of their ability to deal with demand end-to-end (collectively) and constructively challenge the status quo, in addition to their being respected within and beyond their team. The check team collated information about what customers expect and want from the ICT help desk and what matters to them most. Data collated in this process enabled identification of the major demands coming into the area. A visual representation of each operation carried out in the help desk was developed as a flow chart with three key checks on accuracy being:

- It must be end to end (from customer view)
- It must be followed - wherever it goes
- It must capture what the staff actually do

Identification of waste (actions not adding any value from the customer's point of view) present in the service operations flow was then carried out. All processes classified as waste were marked in red on the process flow chart. Processes that add value from a customer's point of view were marked in green.

### ***Redesign***

This stage involved defining purpose and new operating principles of the ICT help desk. The team redesigned the processes flow taking what have been learned in the check phase considering the customer "wants" and then mapping out the service of the future. The new design focused on minimizing non-value adding activities from a customer point of view. However, it was recognized that complete elimination of non-value adding activities from a customer point of view was never going to be possible. A government targets project was set up to meet the reporting expectations of the local authority and inspectorate regimes. The help desk had to report back progress against measures and targets set by the various inspectorate regimes. This project helped the help desk translate targets into permanent measures. These measures relate to the customer purpose and enable the help desk to actively improve the system on an ongoing basis. The new processes were tested, re-designed and re-tested again to make sure that customers get the best possible service before going live in the help desk. The outcome of these new operating principles was productivity improvement in the processing of customers demands; which by implication, resulted in a responsive and positive customer feedback.

### ***Roll-In***

This stage covered implementation of the new model within the ICT help desk by a gradual rolling in of employees. As the check team progressed and the discussion was held about the roll-in of staff to this new way of working, it was key to continue the identification of appropriate training. This training included learning about systems thinking and putting that into practice; understanding and using the new ways of working as progressed by the check team. To ensure the ongoing sustainability of the new system design smaller changes to the way of working to improve the service

offered was made. This stage involved the identification of further comprehensive staff training needs as they arose in the help desk.

The call centre has two team leaders who support employees in handling calls and provide information on how to serve them better. Unlike Nottingham City Council, managers concern at Stockport Council ICT help desk was to make sure that employees handle calls one stop in order to increase system capacity and decrease resources consumption. Table 5.7 summarises the quantitative measures that were helpful for managers to evaluate the performance level of employees.

Table 5.7 Quantitative measures used at Stockport Council as for 2009

<b>Quantitative measures</b>	
Total number of calls received per year	63,450
Total number of calls abandoned	1050
Average rate of calls abandoned per year	1.6%
Total number of calls answered per year	62,400
Total number of calls handled one stop	53,040
Average rate of calls repeated per year	15%
Average rate of calls handled one-stop	85%
Average rate of employee turnover per year	5%
Average days of employees absence per year	3.5

### **5.3.3 Data collection at Stockport council- ICT Department**

In this second study, the help desk service systems that operate in the Information and Communication Technologies (ICT) department have been studied. The call centre was the case being studied while the service systems were the distinct unit of analysis used. Table 5.8 presents the case studied and some of the characteristics of unit of analysis.

Table 5.8 Unit of analysis

<i>Case</i>	<i>Service system</i>	<i>Department</i>	<i>No. Employees</i>	<i>No. team leaders</i>
Call centre	Systems thinking (i.e. organic structure)	Information and communication technologies	18	2*

*Note.* \*The number of team leaders are included in the number of employees as they used to attend customer calls.

### **I. Interviewees selection and interviews design**

The data was primarily collected through in-depth interviews and questionnaires conducted within the premises of Stockport Metropolitan Borough Council, followed by observations and documents gathering. Prior to the commencement of interviews a number of emails and a visit have been established with the “gatekeeper” (Neuman 2007) to develop a sense of trust as well as to explain the purpose of research. An “interview protocol” has been prepared as a backup to help in structuring the interviews and taking accurate notes (Creswell 2004), it consisted of interviewer and interviewee name and position, time and date of the interview, list of questions to be asked and a space where the notes on each question is to be written. A suitable quiet place was arranged by the “gatekeeper” to conduct the interviews. 16 interviews in total were conducted in research site as shown in Table 5.9, 12 were front-line employees from the help desk, two team leaders from the ICT department and two senior managers one is holding the services director position and the other is the head of transformation who works in close relation with the services director.

The front-line employees were interviewed about their working experience before and after the project as a part of a comparison study to explore the changes happened at the workplace. The remaining interviewees were interviewed about the introduction process of lean systems thinking and the benefits achieved so far at all levels. The purpose of the study and the estimated interview time and how the information of the interview will be treated were all explained to participants before starting the interview. The interviews started with a very broad questions about participants roles, responsibilities and general working issues and gradually were narrowing down to a more focused

issues which are the main concern of the research work, allowing for the employment of the “funnel interview” (Tashakkori, Teddlie 1998).

Table 5.9 Interviewees distribution at Stockport Council-ICT department.

<b>Role</b>	<b>No. of interviewees</b>
Service director	1
Head of transformation	1
Team leader	2
Front-line	12
<b>Total</b>	<b>16</b>

To ensure the elimination of the sense of anxiety and discomfort, every interviewee was asked whether he is comfortable with brief note taking and the use of audio tape to record the conversation, with which all interviewees have agreed. After completing the interview, interviewees were thanked for their participation, a confirmation for the information confidentiality was reassured. Further, the participants were told that a report about the study will be provided for the research site to ensure that results are accessible to every individual concerned. “Thematic analysis” methods (Taylor, Bogdan 1984) were employed to identify the main themes constituting the interviewee replies. The process of “Thematic analysis” is similar to that used in the previous case study, and it is illustrated in section 5.2.3 of this chapter (see Appendix 2 for individual case thematic matrices).

## **II. Questionnaires**

The nine-items OCQ (Mowday, Steers & Porter 1979) was used in the help desk to measure the affective commitment among front-line employees. It used an interval five options likert-type scale with the following anchors (“strongly disagree”, “disagree”, “undecided”, “agree”, and “strongly agree”). An informed consent form was provided as the first part of the questionnaire; a statement which guarantees that the responses from participants will be strictly confidential and data from this research will be reported only in the aggregate. Permission was granted by the head of transformation to

start using the questionnaires in the help desk. A web-based questionnaire was sent through the internet to everyone working in the help desk. This provided a quick and easy data gathering and analysis (Creswell 2004). The front-line employees spent only two minutes on average to complete it, and it did not interfere dramatically with the participants work responsibilities as it was completed in a natural setting.

### **III. Observations and documents**

An “interrupted involvement” (Easterby-Smith, Thorpe & Lowe 2002) role was adopted during observations; this was done through roaming in the research site over a period of time moving in and out of the help desk, and later documenting the general behaviour atmosphere and the relationship between employees. Documents were also collected through the Head of Transformation and Services Director. These comprised mainly reports about the nature of the project, progress achieved and the project management plans. They represented a good source of data to make inferences about the management style. They were of particular importance due to their perceived value in discovering things that have taken place before the beginning of the research inquiry (Patton 2002).

#### **5.3.4 Results and findings**

The in-depth interviews conducted were divided into two groups during the analysis stage.

##### **I. Help desk employees interviews**

The front-line employees interviews explored the working conditions under the systems thinking principles and the impact on employees perceptions regarding their working experience. The findings from the thematic analysis (Taylor, Bogdan 1984) derived the following central themes:

##### **Theme 1 - management style**

Team leaders and supervisors focus at the help desk shifted from targets and statistics towards percentage of one stop calls and demand analysis, to know what has been done

better and how to even more reduce the repeated phone calls. No phone calls recording or monitoring was required and no restrictions were applied on employees to finish call within a specified time. In addition, no scripts were used for employees to follow when talking to customers. Another primary focus for the management is to make sure that employees are on phone and that they are ready to help in any phone call if required.

### **Theme 2 - working experience**

Employees are now enjoying wider scope of demand which allows for skill development and authority to make decisions on phones. They commented that customers, once they get through, know that they will get what they want in the same phone call. The feedback from customers is very positive. The team share responsibility of the work and informal channels of communication is encouraged to allow for a quicker transfer of knowledge between members. Employees are now getting correct information from customers that could deliver a better service without the need for repeating phone calls.

### **Theme 3 - customer experience and feedback**

Interviewees indicated that customers have the facility of reporting their opinions and views about the help desk service through phones and emails. Customer feedback has been very positive. Customers get what they want with the elimination of transfer from pillar to post. One employee is now dealing with the demand in a very efficient way with more time to speak to customer. No IVR technology is used in the help desk with the availability of only one calling number. Employees indicated that 85% of incoming phone calls are now dealt one stop.

### **Theme 4 - performance measurement**

Employees are measured and evaluated on the basis of sticking to working principles of meeting customer demand. Team leaders log into the systems to track each employee profile on daily basis to see the frequency of phone calls that have been met one stop, each employee is expected to handle at least 5 calls every day and complete them one stop. Employees commented that it is now possible to complete phone calls one stop due to the authority they have to make decisions and deliver the optimal solution



required. In addition, The correct information collected from customers allowed for the precise identification of problems and thus a satisfactory solution to be provided.

### **Theme 5 - systems thinking contributions to workplace**

Interviewees regarded the following as the most important contribution to the help desk after the implementation of systems thinking:

- Identification of customer problems very quickly.
- Clarity on the system due to the continuous demand analysis.
- One stop handling of one or more customer demands.
- Focus on what customer wants and not caught by procedures and targets.
- System waste (unproductive processes) elimination and performance transparency.
- Freedom to act on the system.

### **Theme 6 - barriers against implementing systems thinking in other organizations**

Most of the employees claimed that lack of knowledge about systems thinking and the lack of investigating their current systems performance were behind the limited utilization of these systems in other public service departments and organizations. They indicated that if managers study the flow of processes in their systems they will find out that the systems is hiding a lot of waste and operational problems, and that probably could be the main endeavour to convince them of systems thinking instead of traditional functional specialization. Other reasons indicated by employees were the ignorance of the voice of customer when designing service systems and the managers need to protect a bad system because it is their own achievement. Other reasons indicated by employees where the fear of change and losing control on the systems as this changes the whole working philosophy. However, some very skilled employees commented that they opposed the new systems at the beginning because it added trivial tasks to their daily work, this was considered, in their point of view, a source of deskilling practise and not a job enrichment.

## **II. Senior and middle managers and intervention team interviews**

The senior and middle managers and intervention team interviews explored the introduction process of the new systems to the ICT department and significant potential

for value creation. A thematic analysis for these interviews generated the following themes:

### **Theme 1 - departmental Integration**

Managers recognised communication between departments at the city council as important. However, they indicated that the functional specialization model created a silo between sections and departments as every department was viewed as a separate entity that should not interfere with the work of other departments, one manager stated “we though functional specialization was an efficient way to do the work but it was not...the system was frustrating and did not allow for open doors policy”. All Managers claimed that they have witnessed huge improvements in communication, formal and informal meetings at managers level. This allowed for significant information sharing that was necessary to streamline service operations for better customer service. Also meetings with other teams and directors in other departments were carried out to share the effects of the new system on them in a relevant way.

### **Theme 2 - how to justify systems thinking as a counter-intuitive initiative**

All managers regarded the availability of implementation leadership as the main step to initiate the process of introducing systems thinking to the service department. It was also regarded that the perspective benefits of implementing systems thinking play an important role to justify it as a counter-intuitive initiative in public service departments. The following are the main contributions of the systems thinking to the workplace:

- cutting down the waste in the service system that makes the service process sluggish and time consuming.
- Saving resources/money without cut in service.
- Passing on calls from pillar to post was too high in the old system. Currently, 85% of calls are done one stop by one employee for each call.
- Systems thinking is the only model that works with the “Human side” to change the nature of work.
- Customer feedback and percentage of calls done first time.
- Reduction in repeated calls and thus improved productivity.
- Systems clarity and transparency.

- Focus on the job rather than maintaining the system.

However, it was indicated that these justifications and contributions was used to formulate an intervention team, called “Check Team”, whose role is crucial to help in executing project phases and in disseminating knowledge to other colleagues in the service department and across the organisation. Those team members were chosen by the project leadership to be from those who showed work-related stress and expressed their desire for a change or improvement. This was done due to the leadership believe that these people are the most knowledgeable about the traditional system’s problems and will be highly committed to improve it.

### **Theme 3 - communication plan for implementation**

Four managers indicted that they had a communication plan to use with their peers and subordinates that accompanied the project and even before it. The communication with the subordinates was done on daily basis and was informal in most of the times, whilst communication with peers and higher level of management was formal and was done on regular basis, a senior manager commented “*I learned to tailor the message according to the type of receiver...for a person who is factual I tell him that ROI was in 9 months...for other types of people I invite them to come and have a look*”. Mangers communicated with government funding bodies, council’s senior board level, council’s elected members, other departmental managers and trade unions for consultation.

### **Theme 4 - tools and strategies to get management approval**

knowledge about systems thinking and awareness about its benefits to the business were discussed. Managers found that knowledge and awareness is a key step in this process, they indicated that top management involvement in a fundamentals course about systems thinking and in the work itself is very vital to change the way they think about their current systems. For this purpose, process mapping of the current system was used to show the amount of waste available in the service operations represented by unnecessary steps that do not add value to the service encounter. They also indicated that quantitative measures of the new working model would play a major role in the process of securing top management support. Quantitative measures should indicate

improvements in efficiency and demonstrate VFM, for example they used measures like:

- 85% of demand now is met and dealt with one stop against 17% demand that met before.
- It takes less than a day now to fix a call against 11 days for the same type of call.
- Fewer people are required to do more job, an opportunity has aroused to remove some agency workers and save money.

### **Theme 5 - capacity building**

All managers indicated that as a part of the development of ‘expert’ internal capacity, an educational element for interventionists was employed. This was called core curriculum, it gave underpinning knowledge to colleagues who are being developed to be potential lead interventionists in the future. The first programme has been completed with the intention of running future educational elements to give this cohort the opportunity to develop their competence as lead interventionists. To build curiosity among other departmental managers around 100 internal managers were invited to take the fundamental educational element course on systems thinking to spread the word, the educational course tailored information extracted from demand analysis and process mapping to show the current system problems and the benefits that can be achieved after the redesign. An emphasis was made that messages used in these educational elements were tailored according to the type of attendees. This was followed by some follow-up visits to other departments whose managers and personnel have attended the educational course to capture any opportunity in the system to make interventions.

### **III. Affective commitment measurement**

The affective commitment of employees was measured using the nine-item OCQ. Responses are sought from statements such as “I talk up this council to my friends as a great organizations to work for” and “this council really inspires the best in me in the way of job performance”. A total of 18 employees working at the help desk were available at the time of the questionnaire, all employees responded targeting a 100% response rate.

Figure 5.4 Affective commitment measuring level

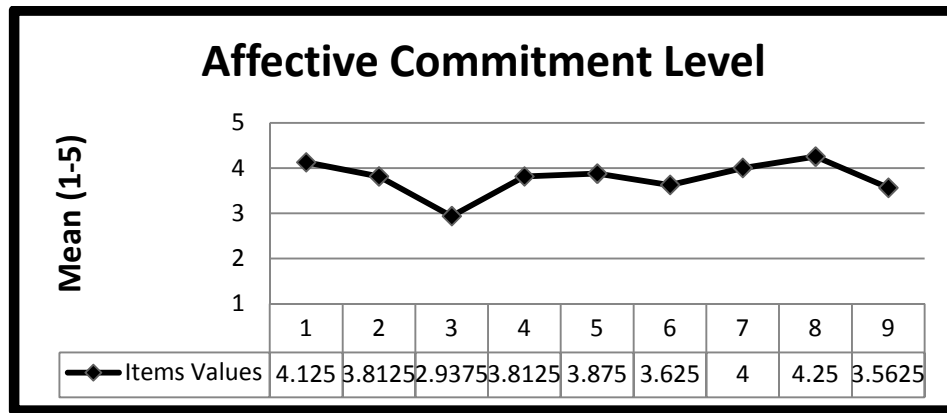


Table 5.10 Mean and standard deviation for affective commitment questionnaire

Item	No.	Minimum	Maximum	Mean	S.D.
<i>Q1: I am willing to put great deal of effort beyond that normally expected to this council be successful.</i>	18	3.00	5.00	4.0588	0.8726
<i>Q2: I talk up Stockport council to my friends as a great organization to work for.</i>	18	2.00	5.00	3.8125	1.0740
<i>Q3: I would accept almost any type of job assignment in order to keep working for Stockport Council.</i>	18	1.00	4.00	2.9375	1.0289
<i>Q4: I find that my values and Stockport council's Values are very similar.</i>	18	2.00	5.00	3.8125	1.0178
<i>Q5: I am proud to tell others that I am part of this council.</i>	18	2.00	5.00	3.8750	1.1143
<i>Q6: This council really inspires the best in me in the way of job Performance.</i>	18	1.00	4.00	3.6250	1.0416
<i>Q7: I am extremely glad I chose Stockport Council to work for over others I was considering at the time I joined.</i>	18	2.00	5.00	4.0000	1.0226
<i>Q8: I really care about the fate of this council.</i>	18	3.00	5.00	4.2500	0.7859
<i>Q9: For me, this is the best of all councils for which to work</i>	18	2.00	5.00	3.5625	1.0431
<b>Overall mean</b>				<b>3.77</b>	
<b>Internal consistency (coefficient <math>\alpha</math>)</b>				<b>0.94</b>	

The data collected from this questionnaire was analysed to examine how affectively committed the help desk employees were. Responses to the nine-items are averaged to

obtain a single score for each item; the standard deviation for each item was also calculated – see Table 5.10. An overall mean for the nine items of 3.77 was achieved. This provided a clear indication of fairly a high affective commitment level among employees in the help desk, where a return of 3.0 would indicate a neutral level of affective commitment and where values of 3.5 are typical in many organisations. This value shows that on average all the respondents agreed on the questionnaire items. A summary of the results is shown in Figure 5.4.

### **5.3.5 Offerings of organic structure at Stockport council’s call centre**

The traditional help desk environment represents the latest form of “Taylorist” principle as it is a common trend in call centres globally to practice high levels of monitoring over their employees (Armistead et al. 2002). However, the results of interviews conducted with front-line employees at the help desk have shown that the implementation of systems thinking principles (i.e. organic structure) has delivered numerous improvements. Employees under the new system are no longer restricted to repetitive job handling procedures or target achieving dilemma, they are empowered to do the job in the best way they see is vital to satisfy customer needs. Hence, employees have opportunities to develop their working skills by handling a wide range of challenging demands on daily basis. Their performance is evaluated on their ability to help the customer solve his problem from the first interaction without the need for the customer to call again. Further, Employees operate as a team that shares the work responsibility; an employee can seek support from a more skilled colleague to solve a customer problem while on phone. Obviously, employees working in this environment have a feeling of belonging and ownership of the workplace, they have the freedom to make decisions to provide a high quality service at relatively shorter time, and they enjoy the open channels of communication between themselves as well as other departments. When linking these job characteristics and environment offerings for employees with the foundations of affective commitment discussed in Chapter 2, an expectation of high affective commitment level among employees can be concluded. The nine-item OCQ provided a value of 3.77 for the affective commitment level among

employees that indeed proved the value-added to front-line employees life in the help desk in terms of work experience and personal achievements.

The results achieved from interviews have indicated that adopting systems thinking principles has provided clarity on the system due to the continuous demand analysis performed, this helped managers to identify potential problems in the services offered and thus the immediate corrective measures to be taken. Systems thinking principles of creating an organically structured service unit were found to eliminate the waste in operations that helped managers to achieve automatic productivity and capacity improvements. Customers do not need to call again which allowed employees to handle more demands in an efficient way without cut in service, and eventually reduce resources consumption and overall costs. Further, the creation of a committed front-line employees in the help desk has significantly resulted in reducing the burden of managing people behaviour in the help desk as the general moral system of the workplace controls the human resources behaviour and not the traditional top-down hierarchy. Apparently, the affective commitment of employees accompanied with system waste elimination created a difference for the customer experience and added-value to the service encounter, no unproductive processes are used anymore and employees are willing to exert more effort on behalf of their organization to deliver excellent service.

Employees can provide a fast service even though the customers may be misunderstood and their information incorrectly entered (Cleveland 2006). Thus, business resources can be lost due to poor service delivery. Interviews with managers have identified that systems thinking principles have provided workplace with a relaxed environment without the need to stick to a pre-specified time allowance, this inevitably helped improve solution delivery processes, prevented calls repetition, and eventually allowed for resources savings. Another significant dimension of interest is the departmental integration. Open channels of communication between the ICT help desk and other departments affected by its work were established. Formal and informal communication at managers level allowed for significant information sharing. Further, systems thinking principles made it possible for management to identify the opportunities for making cost savings and performance improvements in the short and medium term, both from a

corporate and service perspective. The waste elimination element of the system was viewed as a resources saving activity that used to be a major cause for capacity reduction. In addition, systems thinking allowed the ICT help desk to do more with less, fewer people are required to do more job, an opportunity has aroused to remove some agency workers and save money.

The fundamental objective of this particular case study has been to investigate the utilization of systems thinking principles in service departments. In this context, systems thinking principles are based on designing service operation systems around customer demand instead of in functional hierarchies. Managers in services departments are realizing the need to employ more innovative interventions to achieve financial savings and better performance. As a result a shift has been noticed recently in management thinking in customer services departments to adopt systems engineering models utilized in manufacturing sector. This has occurred due to the economical and global competition pressures exerted on organisations and services to generate substantial cost reductions and efficiency savings. The evidence from this research indicates that the utilization of systems thinking in the customer services departments has significantly contributed to the achievement of significant added value to the business, employees, and eventually customers.

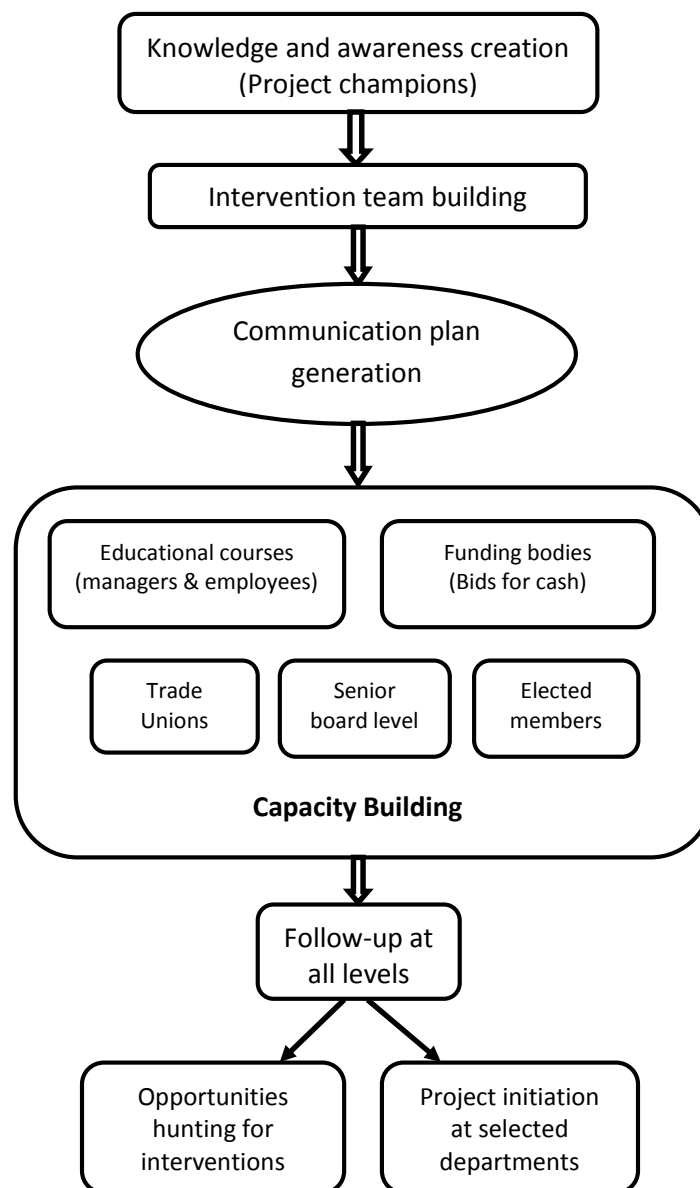
### **5.3.6 Implementation methodology: initial model**

Interviews with senior and middle managers and intervention team allowed the presentation of all the activities carried out to implement the project in the ICT help desk. An implementation methodology that maybe used by managers in other public service departments were generated as a result (see Figure 5.5). A small-scale pilot study of the initial methodology was shared with the senior and middle managers, who were the core intervention team members, at the research site. Managers have emphasised that the project was of a highly sensitive nature as communication were required at different levels throughout the project. The communication plan included justification of systems thinking project and the problems discovered in the current system due to the initial demand analysis. As a convincing tool, quantitative measures such as service delivery times, percentage of one stop calls and customer surveys were



also used in the communication process. Government funding bodies, senior board level, elected members, trade unions and other department managers were targeted in this process. Lack of knowledge about systems thinking and the hidden problems of the current system, in addition to the ignorance of customer voice when designing service systems were identified by interviewees as the main barriers against systems thinking implementation. Therefore, interviewees have indicated that knowledge and creating awareness about systems thinking among managers and other bodies in charge were of great importance, educational presentations and courses were organized were top managers and peers were invited, this has helped building curiosity among people and thus capacity building in the council to support the project.

Figure 5.5 Systems thinking implementation roadmap: initial model



## 5.4 VELUX Company Limited (GB)



### 5.4.1 company profile

VELUX is a multinational company founded on a vision of daylight, fresh air and quality of life by Villum Kann Rasmussen (KR) in 1941 (Anon. 2010a). It is appropriate that the name VELUX is a combination of the Latin words VEntilatio and LUX for ventilation and light. For over sixty years the company has manufactured a high quality roof windows and blinds. From the first products of 1941 the company has developed an extensive range of windows, blinds and accessories envied throughout the marketplace, and was registered as a trademark in 1942. Due to the wide success of the idea of living under a slop roof in different parts of the world, the company started to establish connections with neighbouring countries. The first step out into the world was a licence agreement with Sweden. Another major step took place when KR with the help of a German partner, E.G. Albers, started up production and sales of VELUX windows in Germany soon after the Swedish agreement. In 1954, the company started its sales in the United Kingdom market. Gradually, the markets of Europe were taken on in many countries such as France as early as 1962, Italy in 1970 and Spain in 1973 (Anon. 2010a).

In 1968, as a result of a large development project a new type of roof windows was produced at VELUX factories, the VELUX GGL. This product provided many advantages to consumers that has added to the success of the company. A new pivot hinge allowed the window to be rotated through 180°, and a special friction feature in the hinge allowed it to stay open without the use of a peg bar.

In 1975, VELUX made another major development by crossing the Atlantic and setting up a sales company and later a production company in the United States and Canada. VELUX has developed a number of products for special weather requirements in various Markets. The North American market had a tradition for skylights fitted high in the roof, so VELUX had to develop a series of such skylights especially for this market. The Japanese market that needed products that can resist the climatic extremes of the

country. The product programme has developed from a single product type into a full range of products in many variants, offering integration in the roof .

In the 1980s, progress was made on the markets of Central and Eastern Europe, beginning with a joint venture with a Hungarian partner for production and sales of roof windows. Also in the same decade, VELUX established sales companies in countries such as Australia, Japan, and Chile. The development continued throughout the 1990s and included establishment of local sales companies as well as several production companies, e.g. in Russia and China (Anon. 2010a).

Today, VELUX provides not only solutions to immediate problems, but offer an unequalled variety of different products and solutions, as shown in Figure 5.6, allowing the architect to make positive design statements. More than sixty years after the first VELUX roof window was installed in a Danish school, VELUX has manufacturing companies in 10 countries and sales companies in just under 40 countries, as shown in Figure 5.7. It is one of the strong brands in the global building materials sector and its products are now sold in most parts of the world. The Group has more than 10,000 employees and has its head office in the north of Copenhagen, Denmark. The VELUX Group is owned by VKR Holding A/S. VKR Holding A/S is a limited company wholly owned by the family. In 2007, VKR Holding's turnover amounted to Euro 2.3 billion and profit after tax came to Euro 189 million. VELUX factories are certified in accordance with ISO 9001 (quality, 2004), ISO 14001 (environment, 2004) and OHSAS 18001 certification (health and safety, 2005) (Anon. 2010b).

However, VELUX (GB) is one of the major companies of the group with a manufacturing plant and a sales company. It is considered one of the market leaders in the manufacture of roof windows in the United Kingdom (Anon. 2010b). The company employs just over 200 people, approximately half of them are employed in manufacturing operations. A customer call centre is located within the operations department site and deals with all customer enquiries (trade and retail) and orders. VELUX (GB) has further improved by the major changes in the company's management structures as shown in Figure 5.8. Shared responsibility and the customer voice is at the heart of this evolution (Anon. 2010b). The Systems Concepts

organisation model is introduced to break down managerial barriers and increase operational flexibility.

Figure 5.6 VELUX company's family of products

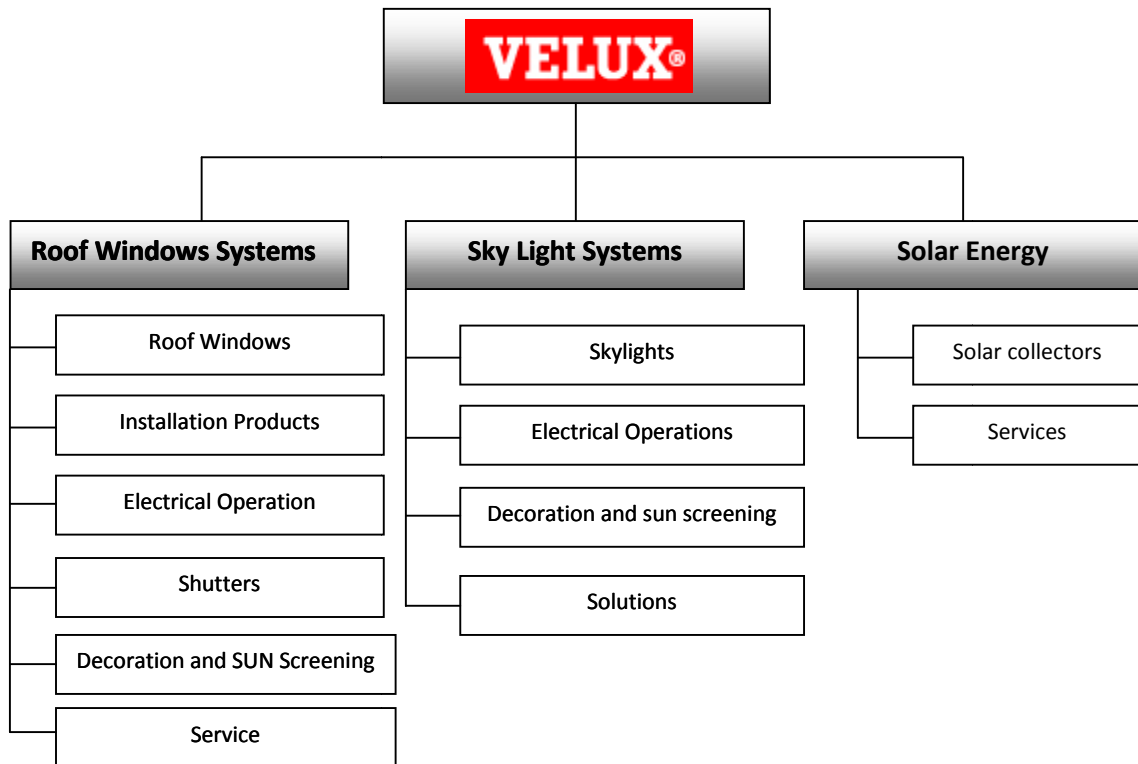


Figure 5.7 VELUX presence around the world

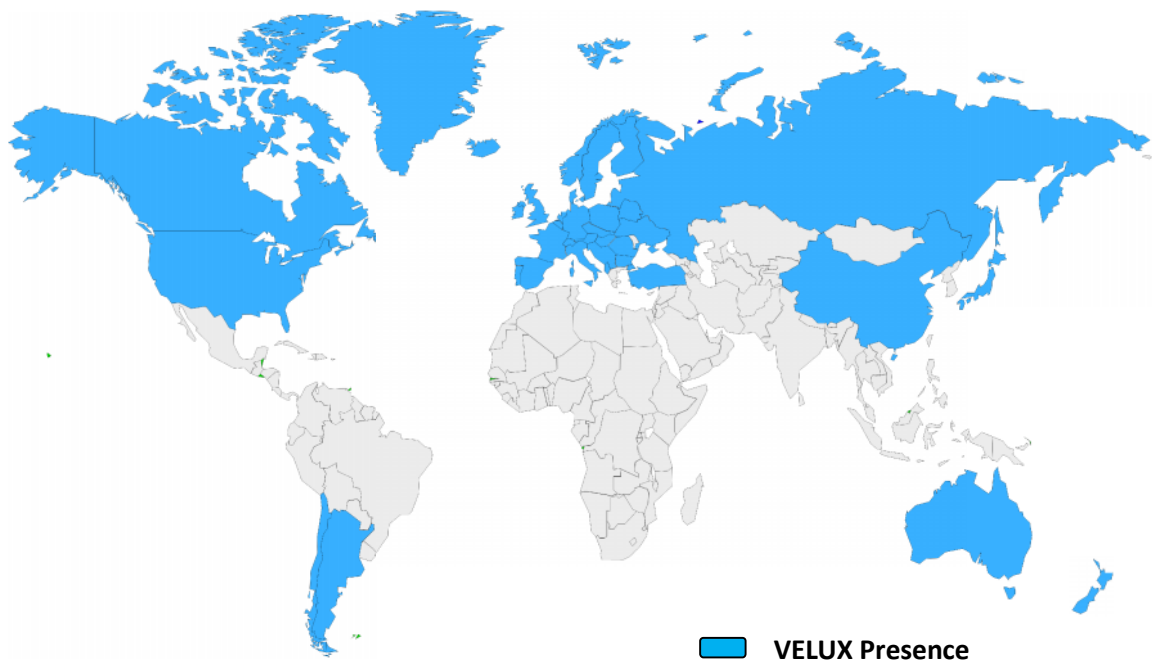
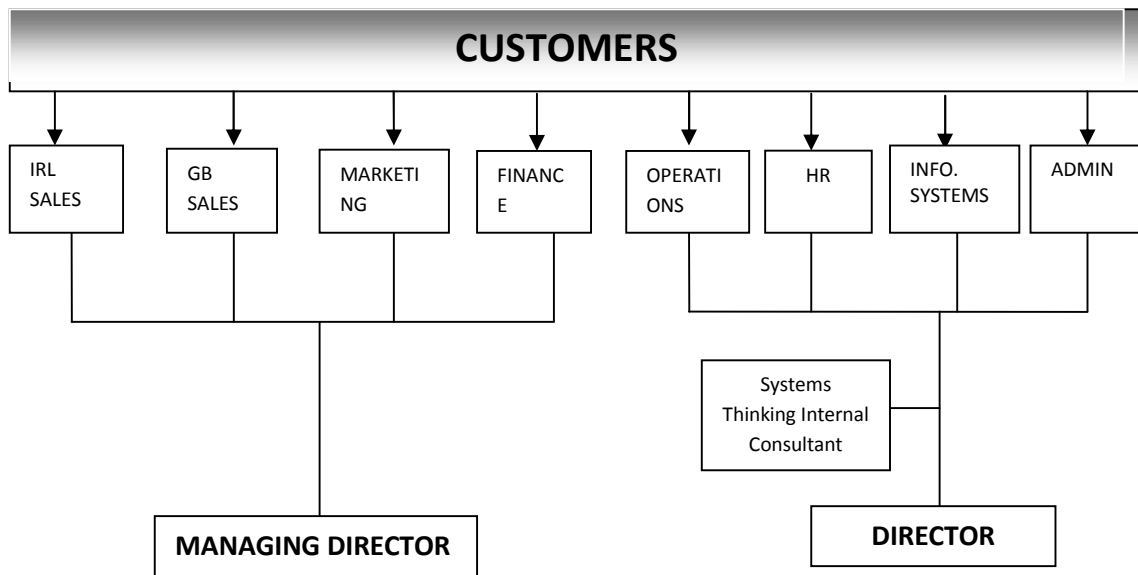


Figure 5.8 VELUX(GB) management structure.



#### 5.4.2 Case study context

The case study was conducted after a change management programme based on systems thinking had been implemented to refocus call centre operations. The call centre was designed such that customers experienced personal service with a single operator, they were never “passed-on” but where further input was required then another operator with greater experience in the specific issue was brought into a conference call. This not only provided strong customer support but also provided a significant form of training. The purpose of the new structure in the call centre from the management perspective was:

**“To create an outstanding experience for customers , and a rewarding environment for our staff, whilst making a profit”**

While the purpose of the new structure from employees perspective was:

**“Take demands at the point of contact, process them one-stop and then deliver the right product or service when, where and how the customer wants it”**

In preliminary studies it had been identified that 80% of the most requested demand comprised 20% of issues. By focussing formal training on the 20% of issues the actual training period was significantly shortened and trainees became operational much more quickly than in previous arrangements. Training to develop understanding in the remaining 80% of issues was conducted during a three months coaching period whilst employees were productively handling calls.

However, the call centre at VELUX (GB) is directly supervised by the operations director who supports front-line employees in handling calls and provide information, on daily basis, on how to serve customers better. Table 5.11 summarises the quantitative measures that were helpful for operations director to evaluate the performance level of the service system.

Table 5.11 Quantitative measures used at VELUX (GB) as for 2008

<b>Quantitative measures</b>	
Average rate of calls abandoned per year	4%
Total number of calls answered per year	240,000
Total number of calls handled one stop	192,000
Average rate of calls repeated per year	20%
Average rate of calls handled one-stop	80%
Average rate of employee turnover per year	8%
Average days of employees absence per year	3

### **5.4.3 Data collection at VELUX (GB)- Operations Department**

The success or otherwise of the case study was seen to be contingent on the establishment of a good working rapport. Therefore the approach taken is detailed here. The data collection process began after access permission has been approved by the Company's chief executive. Operational access was granted by the operations director following an explanation of the issues to be studied and the development of a case study design based on the work of Yin (2009). A research program of four months duration was provided along with the consent criteria used. The operations director played the

role of “gatekeeper” (Neuman 2007) in this study, locating people, assisting in the interviews setting and identifying places to study.

## I. Interviews

Qualitative data was collected during multiple visits to the company where the call centre was situated. The data was elicited from ten semi-structured interviews predominantly held on-site. The interviews were classified into three distinct groups according to the interviewee’s role (i) company director, (ii) departmental managers, (iii) consultant, (iv) front-line employees in the call centre, as shown in Table 5.12.

These interviews were designed to be linked with the research questions posed in section 2.14. An interview protocol was used as a backup to help in structuring the interviews and taking accurate notes (Creswell 2004). The interviews were of the one-on-one type in which open-ended questions were asked. To ensure the elimination of the sense of anxiety and discomfort, every interviewee was asked whether he/she was comfortable with note taking at the time of the interview. The interviews were taped to support the researcher in producing accurate transcripts and for re-listening of conversation to ensure unbiased note taking (Easterby-Smith, Thorpe & Lowe 2002).

Table 5.12 Interviewees distribution at VELUX(GB)- operations department.

<b>Role</b>	<b>No. of interviewees</b>
Company director	1
Departmental managers	2
Consultant	1
Front-line employees	6
<b>Total</b>	<b>10</b>

## II. Questionnaire

The nine-items organizational commitment questionnaire was used in this case study to measure affective commitment among front-line employees in the call centre. The OCQ used a five interval Likert scale with the following anchors “strongly disagree”,

“disagree”, “undecided”, “agree”, and “strongly agree”. The questionnaire was designed using web-based software that was then sent over the internet to everyone working in the call centre. This questionnaire provided a quick and easy data gathering method. The front-line employees spent only two minutes on average to complete it, and it did not interfere dramatically with the participants work responsibilities as it was completed in a natural setting. Moreover, sending the questionnaire to the whole population in the call centre provided a large sample of respondents, “the larger the sample the less the potential error that the sample will be different from the population” (Creswell 2004).

### **III. Observations**

The data was supplemented by studying the work atmosphere of front-line employees in the call centre through the means of observation of both place and people. A non-participant observer role was adopted. An observational protocol was used to take field notes while visiting the call centre. On this form, a detailed description of the working place layout and technology used, the frequency and nature of interaction between front-line employees and other teams in other departments as well as among front-line employees themselves were all recorded. In addition, notes about the nature of interaction between the front-line employees and callers were also recorded as a result of the opportunity given to listen to calls whilst they were handled. These observations in this case study provided a better understanding of how the people communicated and interacted. They catered for the recording of information as generated in the call centre and provided another instrument to study actual behaviour of front-line employees. They also helped to uncover issues that may have escaped the awareness of interviewees (Patton 2002).

### **IV. Documents**

Another valuable source of information were company reports, processes flow diagrams, power point presentations. These documents represented a good source of data to make inferences about the management style, call centre strategic value and communication and networking within the company. They also provided other specific details about call centre operations that was not covered fully through other research



methods and were used to collect information about the type of data the call centre shared with other departments.

Documents collected throughout the case study provided a detailed description of the type of information the call centre was able to provide to other business units on timely manner. This information was classified into two types; the information that the call centre provides to other departments in the company itself, and the information that the call centre shares with the other branches worldwide. Among this information is the call centre statistics which was used only for capacity planning purposes to decide about the right number of employees required. The wide spectrum of the information shared by the call centre with other departments in the company is illustrated in Table 5.13 and those shared with other branches worldwide is illustrated in Table 5.14.

Table 5.13 Information shared by the call centre with other departments

<b>Information shared with other departments</b>	<b>Type of information</b>
<b>Issues</b>	What's 'hot' (positive developments: e.g.: a demand that has been met better than before), What's 'not' (problems: a demand that has not been met correctly or had a low one stop service), Special causes (one-off problems that have an impact on customer service)
<b>Demand</b>	Value demand, Failure demand (type and frequency)
<b>Logistics</b>	Delivery performance, Returns
<b>Orders</b>	Volume, Type (fax, phone, email etc), Frequency
<b>Customers</b>	Type and frequency of demand
<b>Performance (end to end times)</b>	Sales (from date of order to delivery), Service (from request to completed), Deliveries
<b>Personnel issues</b>	Headcount – budgeted v actual, Turnover, Absence rates
<b>Call statistics</b>	Call volume, Lost calls, Answer time, Length of call

Table 5.14 Information shared by call centre with other global branches (group wide)

<b>Information shared companywide (with other global groups)</b>	<b>Type of information</b>
Sales	Type and frequency, Product mix, Trends
Finance	Profit and Loss, Balance Sheet, Operating Costs, Product margins and trends, Aged Debt Summary
Customers	Top 20 Customers, Sales by customer, Sales Force Call Analysis
Other departments (IT, Admin and HR)	Issues, value and failure demand and end-to-end times

#### **5.4.4 Findings regarding systems thinking**

##### **I. Interviews, observations and documents**

Ten interviews were conducted at three different levels in the company exploring six identified themes in relation to the effectiveness of systems thinking in the operation of the call centre. Since the call centre is a service provider to the overall manufacturing operation a direct measure of adding value is not possible. However by interviewing, observing staff, and reviewing documents at all levels in the business it was recognised that a qualitative measure of such added value was possible.

The full process of analysis followed in this study is similar to that followed in the previous two case studies and illustrated in section 5.2.3 of this chapter (see Appendix 2 for individual case thematic matrices). However, the findings from the “Thematic analysis” of the qualitative data were as shown below:

##### **Theme 1- The role of managers**

Interviewees were asked about the managers’ role in the call centre after implementing systems thinking. They stated that their role was supportive rather than top-down monitors. They were viewed as a part of the workforce as they had the capability, and on occasions acted on this capability, to substitute for front-line employees where available to help front-line employees serve the customer. It was also indicated that managers measure front-line employee’s performance in the call centre on the basis of

how good they were in matching the company's principles of serving the customer. The number of value-adding calls was measured against the non-value adding calls to form the basis for measuring and evaluating employees work in general. The front-line employees in the call centre were primarily stimulated via feedback recognition on their work. The company employed a bonus system which depended on the overall profits gained. If the company achieved x% profit increase then everyone would receive x% of salary bonus payment.

### **Theme 2- Communication & networking:**

Interviewees were asked about the form of communication between the call centre and other business departments and between front-line employees themselves. It was indicated that the call centre had regular channels of communication with all departments in the company. Managers from other departments met with the call centre operations manager to review the most beneficial information sought and to review customer feedback (see Table 5.13). The call centre also provided information that could also be shared with other units of the parent company (see Table 5.14). Informal forms of communication were encouraged where employees would seek the help of their colleagues to provide better customer support. In these instances it was common for a conference call to be used where two or more employees were discussing the issue with the customer. This approach prevented the customer being "handed-over" between employees and significantly enhanced customer satisfaction.

### **Theme 3- Training:**

Interviewees revealed that initial training periods were reduced under the systems thinking approach in the call centre whilst performance was noticeably improved. They also revealed that more calls were handled with the same number of less people enabling an increase in business. This counter-intuitive result was probed deeply and was found to be based on the clear recognition that 20% of the training addressed 80% of the issues and that skills to cover the remaining 20% of issues could be developed "on-the-job" via the conference call approach detailed in theme two.

**Theme 4- Call centre position in the company:**

When asked about how the call centre was viewed in the company, interviewees commented that the call centre was central to the work of other departments who depended on the call centre to obtain the necessary information for processes planning and identifying future trends. Marketing viewed the call centre as vital in measuring the success of their campaigns and how the customers felt about the products.

**Theme 5- Employees working experience:**

Interviewees were asked about front-line employees' working experiences. All have revealed that key performance indicators and targets such as call handling queuing time were not used in the call centre. No scripts are used when talking to customers; no performance screens were installed in the working place; employees could handle a wide range of demands and tasks but could always seek help from others within their team or in other teams.

**Theme 6- Continuous improvement:**

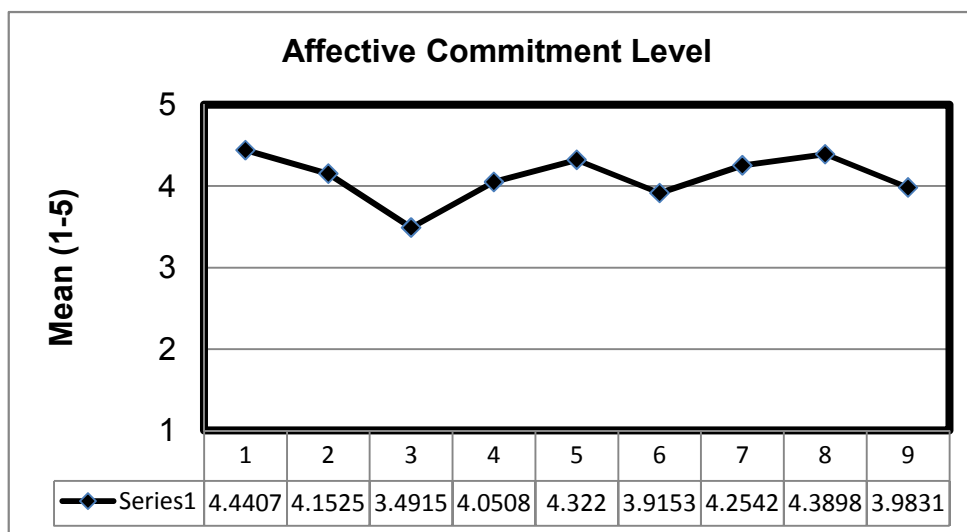
When asked about the role of call centre in the continuous improvement process, all interviewees focussed on the need to continue understanding customer demand and the way they responded to that demand. A "board meeting" (i.e. call centre employees are invited to gather around a white board) was held once weekly inside the premises of the call centre to discuss the top ten issues to have emerged in the call centre in that particular week. Such issues include mainly, but not exclusively, failure demand or positive developments that need recognition. Departmental managers stated that front-line employees, when attending these meetings, took the responsibility for identifying and initiating improvements. They also encouraged the interdepartmental participation in these board meetings to enhance mutual understanding.

Overall it was clearly apparent that the systems thinking approach to call centre operations was seen as highly beneficial amongst all staff and added significant value to the manufacturing enterprise.

## II. Affective commitment measurement

At the time of the questionnaire, there were 65 people working in the call centre of which 59 responded to the questionnaire. The affective commitment of employees was measured using the nine-item OCQ developed by Mowday et al. (1979). Responses are sought from statements such as “I talk up this company to my friends as a great organizations to work for” and “this company really inspires the best in me in the way of job performance”. The data collected from this questionnaire was analysed to examine how affectively committed the call centre front-line employees were under the systems thinking design. Responses to the nine items are averaged to obtain a single score for each item; the standard deviation for each item was also calculated – see Table 5.15.

Figure 5.9 Affective commitment of call centre staff



A final overall mean for the nine items of 4.17 was achieved. The Internal consistency reliability test yielded a score of 0.86 for the questionnaire results obtained. While the standard internal consistency of the instrument ranges from 0.82 to 0.93 (Porter, Steers & Boulian 1974), this obtained result is a good fit and within the acceptable range of the reliability test. However, previous research indicated that the value of affective commitment level found in mechanistic call centres is typically 3.0, which reflects employees’ lack of affective commitment (Jaaron 2009, Jaaron, Backhouse 2009a) . Therefore, the overall mean of 4.17 found in this study provided a clear indication of the high level of affective commitment among the front-line employees in the call

centre. This value shows that on average all the respondents agreed on the questionnaire items that reflected a highly affectively committed workforce. A summary of the results is shown in Figure 5.9.

Table 5.15 Mean and standard deviation for affective commitment questionnaire

<b>Item</b>	<b>No.</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>S.D.</b>
<i>Q1: I am willing to put great deal of effort beyond that normally expected to this company be successful.</i>	59	1.00	5.00	4.4407	.70151
<i>Q2: I talk up this company to my friends as a great organization to work for.</i>	59	1.00	5.00	4.1525	.92501
<i>Q3: I would accept almost any type of job assignment in order to keep working for this company.</i>	59	1.00	5.00	3.4915	1.15031
<i>Q4: I find that my values and this Company's Values are very similar.</i>	59	2.00	5.00	4.0508	.68036
<i>Q5: I am proud to tell others that I am part of this Company.</i>	59	1.00	5.00	4.3220	.85985
<i>Q6: This company really inspires the best in me in the way of job Performance.</i>	59	1.00	5.00	3.9153	.91516
<i>Q7: I am extremely glad I chose this company to work for over others I was considering at the time I joined.</i>	59	1.00	5.00	4.2542	.80072
<i>Q8: I really care about the fate of this company.</i>	59	1.00	5.00	4.3898	.85131
<i>Q9: For me, this is the best of all companies for which to work</i>	59	1.00	5.00	3.9831	1.07465
<b>Overall mean</b>				<b>4.17</b>	
<b>Internal consistency (coefficient <math>\alpha</math>)</b>				<b>0.86</b>	

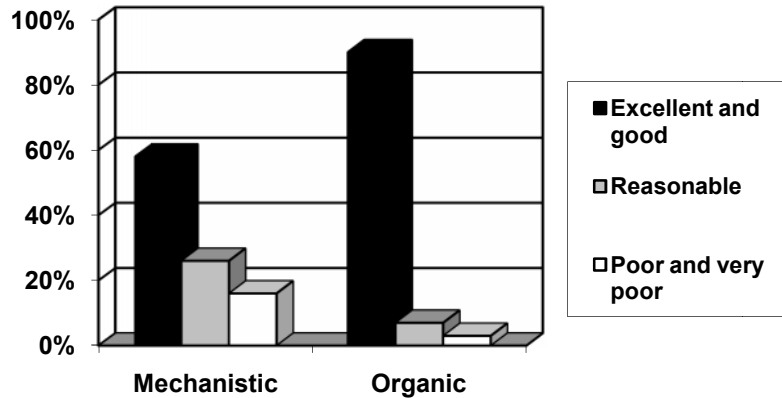
#### **5.4.5 Offerings of systems thinking at VELUX(GB)'s call centre**

Results from the organizational affective commitment questionnaire blended with the interviews conducted, documents collected and the observations undertaken have reflected the working experience of the employees in the call centre under the principles of systems thinking design. The main features of this experience stemmed from the ability of employees to enjoy the informal communication among them and with other teams in other departments. This has obviously satisfied the social needs of employees. In addition, employees were not monitored by technology nor by their managers. Rather the managers' role was very supportive and did not show any direct control on the way the employees should handle calls. Employees were trusted to do the work in the way that provided them with a sense of ownership and authority to make decisions on phone. This inevitably enhanced the employees feeling of importance and responsibility of company's success. Furthermore, designing the call centre service operations this way has contributed to the creation of less stressful working environment in the call centre, employees were enjoying a rewarding job experience that fulfilled their own aspirations and needs both socially and morally. Therefore, the characteristics of the systems thinking approach has been found to be vital for creating the antecedents of affective commitment discussed earlier, in other words using systems thinking to design the call centre service operations would help the development of affective commitment among front-line employees. This has been approved by the results of the OCQ for measuring the affective commitment, and further enhanced by the low levels of turnover among front-line employees which did not exceed 8% per year as compared to 28% per year before the introduction of systems thinking design.

However, employees whose level of affective commitment is high enough are ready to exert more efforts on behalf of the organization to deliver high levels of service quality than those whose working experience are less rewarding (Meyer , Allen 1991, Mayer, Allen & Smith 1993). Since the introduction of the systems thinking (i.e. organic structure) in 2004, VELUX (GB) has been known among its customers for the high levels of service quality that their service department provides. Figure 5.10 shows a customer survey carried out by the manufacturing enterprise to compare the customers' service experience under the mechanistic structure model previously used with that of

systems thinking design. The figure shows that customers are enjoying a better service experience after the introduction of systems thinking into the call centre service operations.

Figure 5.10 Service experience comparison (mechanistic vs. systems thinking)



Furthermore, the company has achieved both tremendous sales and profit increase as a result of the service excellence. Table 5.16 shows the company’s profit, market share and windows sales figures for the period of 2003-2008. However, Due to the confidential nature of the figures, they had to be indexed to a base of 100. This supports the direct relationship between systems thinking introduction into the call centre design, the level of affective commitment of employees, and its impact on service quality and financial development of the manufacturing enterprise’s call centre studied.

Table 5.16 Company’s profit, market share and sales of 2003-2008

<b>Year</b>	<b>Profit Figures</b>	<b>Market Share</b>	<b>Roof windows sales</b>
2003	100%	100%	100%
2004	101%	101%	109%
2005	112%	103%	111%
2006	127%	104%	115%
2007	128%	104%	117%
2008	134%	104%	99%

However, the importance of affective commitment to manufacturing organizations embracing call centres is paramount and twofold. First, leveraging affective commitment among front-line employees would mean that these employees have a reduced tendency to turnover and selective absenteeism. In fact, employee turnover is



of extreme cost to manufacturing organizations, it causes waste to organizations and loss of money spent on advertising, interviewing, orientation, training, and employment application processing. This is a quantifiable amount that manufacturing organizations can calculate for the employees leaving (Krenzelok, Dean 1994). Other costs that are difficult or impossible to quantify include reduced quality assurance, increased sick time and decreased morale (Krenzelok, Dean 1994). Second, employees with high affective commitment levels play a major role in retaining customers. Customers decide to continue with an organization on the basis of how good the service encounter is in delivering what customers want and the way they want it (Brown, Maxwell 2002). Affectively committed employees are more willing to exert more efforts on behalf of the employer to do exceptional job of delivering a quality service (Meyer , Allen 1991, Mayer, Allen & Smith 1993). The longer an organization keeps a customer the more profitable the customer will be over time. Customers tend to make more purchases from an organization as they have become accustomed to and happy with the service it provides. They also provide free advertising by talking to their referrals about the organization and how happy they are dealing with it (Reichheld, Sasser 1990). In addition, long staying customers tend to have reduced demands on operating costs as the long staying employees gain experience on how customers would like to be served with fewer problems (Reichheld, Sasser 1990). Hence, a manufacturing organization embracing a call centre should make sure that affective commitment among call centre front-line employees is high enough to retain both of its employees and customers. However, this can only be done by tying affective commitment building strategies to service system design.

Another value creation aspect provided by the systems thinking design is the flexibility in communication practices and the availability of well-designed communication channels between the call centre and other departments. This promotes the ability of the information collected in the call centre to be disseminated in a timely and easily understood manner to other concerned parts of the manufacturing organization. This information can be compiled and analysed by departmental managers to provide valuable insights on customer trends and preferences as well as product design problems. Due to this policy the call centre described in this case study was able to share valuable information with the company's global branches worldwide. It is

therefore an obvious conclusion for the call centre to be given a central position in the manufacturing organization since it is where most of the information are being generated and shared. The types of information collected and shared by the call centre and shared with other departments and other global branches are shown in Table 5.9 and Table 5.10. However, the manufacturing organization studied here was only able to grant the call centre this central position through using the systems thinking principles to design their call centre service operations, this provided significant “business intelligence” to the organization and its global branches (Cleveland 2006, Stockford 2007).

Recent research in the management systems of call centres as a means of mitigating the highly stressful workplace environment, such as the work of Deery and Kinnie (2002), suggests that the call centre management needs to adopt forward thinking working strategies. They need to ensure that call centre employees enjoy a better and rewarding working experience whilst their performance is in line with the objectives of the organization. These management strategies should not be based on the performance monitoring as in the mass production model discussed by Batt and Moynihan (2002). Rather they should be based on the managers and supervisors support to the employees based on the statement “Do what you think is necessary to get the job done” (Robey, Sales 1994). This kind of management strategy and support, available in systems thinking, increases the authority of the lower level employees in call centre and develops them as experts in that field and thus able to add enhanced value to the enterprise.

#### **5.4.6 Implementation methodology**

The earlier research in this manufacturing organization ensured easy access to the organization and rapid identification of the people involved in systems thinking implementation process. In this research, in-depth interviews were conducted with subjects who had experienced a recent systems thinking implementation project and who had actively participated in the implementation process at a manufacturing organization. The interviews were of the “one-to-one” type in which only one participant was interviewed at a time and they were given enough time to provide

detailed explanations for their personal roles and experiences in the project. Although this approach of interviewing was time consuming (Tashakkori, Teddlie 1998), it was chosen due to the availability of professional participants who were not reluctant to speak about their experiences and akin to free-ranging conversation (Easterby-Smith, Thorpe & Lowe 2002, Creswell 2004). The operations manager provided entrance to the site, helped in locating people and assisted in the interviews setting. He also pointed out the importance of interviewing their project consultant and himself as sources of information that would help to understanding the “Systems Thinking” implementation process.

In total, ten in-depth interviews were conducted at which point no significantly new information was achievable from extra interviews. This was in line with McCracken (1988) who found that in order to produce perceptive themes from in-depth interviews eight interviewees are needed but subsequent to that number the returns became minimal for the effort required. Interviewees included the company director, operations department manager, external systems thinking consultant whilst the remainder were operations department personnel who were a part of the systems thinking intervention team and experienced in the call centre operations (see Table 5.17 for demographics of interviewees).

Table 5.17 Demographics of Interviewees

<b>Identifier</b>	<b>Job Role</b>	<b>project role</b>
1	Company Director	Project Champion
2	Operations manager	Project Champion
3	External Consultant	Project Consultant
4	Operational personnel	Intervention Team
5	Operational personnel	Intervention Team
6	Operational personnel	Intervention Team
7	Operational personnel	Intervention Team
8	Operational personnel	Intervention Team
9	Operational personnel	Intervention Team
10	Operational personnel	Intervention Team

In-depth interviews were found to be of particular appropriateness for this research project as the interviews were to be conducted with professional people concerning their job related issues and experiences. A precise step-by-step understanding of their

personal behaviour and decision making patterns in those experiences was required (Tull, Hawkins 1993). A simple guiding protocol was used as a backup to help in following major concepts in the conversations about systems thinking implementation process. Also, a high level of freedom to develop questions that became relevant at the time of interview was used. The questions used were of an open-ended nature to allow detailed probing of the implementation process (Yin 2009). Every interviewee was asked whether he/she was comfortable with the use of audio tape to record the interview in order to remove the sense of anxiety and discomfort. Recording interviews was very helpful in supporting the researcher producing accurate transcripts and allowed for re-listening of interviews to ensure unbiased note taking (Easterby-Smith, Thorpe & Lowe 2002). A confirmation of information confidentiality and that the collected data would only be used for research purposes was provided. After transcribing the interviews, the “thematic analysis” approach (Taylor, Bogdan 1984, Attride-Stirling 2001) was used to analyse the data. The full process of analysis followed in this research is similar to that followed in the previous two case studies and illustrated in section 5.2.3 of this chapter.

#### **5.4.7 Implementation methodology findings**

The results from the in-depth interviews were classified into five themes. Table 5.18 provides a summary of all used codes, basic themes found and the five central themes identified. It was clear from the in-depth interviews that the systems thinking is a continuous project due to the continuous improvement virtue this model provides to the work place. Further, it was viewed as a new way of thinking in the call centre that needed a lot of efforts to instil in the rest of the manufacturing organization (Jaaron, Backhouse 2011a). It is because of this reason that an implementation methodology was needed to convince top management that this is the way forward for their business. The five themes emerged from the in-depth interviews are presented below:

##### **Theme 1- Systems Thinking Introduction**

This theme is aimed at identifying the foundations for the systems thinking project introduction to the manufacturing organization as a re-design tool for the call centre service operations. The prevalent feeling was that a strong need for certain foundations

to be in place in order for the systems thinking implementation to be initiated. Three main foundations emerged from the in-depth interviews that are discussed below.

**Leadership/project champions availability:**

It was recognized by interviewees that it is a must to have committed and effective leadership that could motivate and create enthusiasm among colleagues in order to foster support to the systems thinking concept prior to implementation. The responsibility of this leadership, also called project champion, is to play the role of “a new way of thinking” sponsor. They must be prepared to address the reasons that necessitate migration from the mechanistic systems design. They also need to communicate what is systems thinking, what is it like to implement it, and what are the expected results at all levels. This foundation was viewed by interviewees as the corner stone for the implementation process success. The leadership must be at a high level of competence in terms of their ability to raise moral and motivation of colleagues to support the project.

**Systems thinking Justification:**

As a part of the effective leadership role, the initial reasons to redesign the service system according to systems thinking principles must be clearly introduced. There was a strong feeling among interviewees that employees come to work to do a good job and that any constraints on performance lies in the system previously used and not in the people. The interviewees identified the following reasons as central to justify systems thinking to employees and top management:

- Customer complaints of being passed from “pillar to post”.
- High percentage of customer demands not being met.
- Turnover, stress and frustration of employees.
- Employee voice is not heard (they must be involved in the service system design as they are the most knowledgeable about what customers want and how to serve them)
- High rate of repeated calls.
- People did everything they were instructed to do but still no improvement was achieved in the service.

- Lack of communication channels between departments that hampered information sharing and thus service quality.

Table 5.18 Summary of identified codes, basic themes and central themes.

codes	Issues discussed	Basic Themes	Central Themes
<ul style="list-style-type: none"> <li>• Problems found</li> <li>• Project needs</li> </ul>	<ul style="list-style-type: none"> <li>• customer complaints</li> <li>• turnover and stress</li> <li>• frustration of employees</li> <li>• managers role</li> <li>• project sponsor</li> <li>• team members availability</li> <li>• team members training</li> <li>• rate of lost calls</li> <li>• problem is in the system</li> </ul>	<ul style="list-style-type: none"> <li>• Justifying systems thinking</li> <li>• Leadership availability</li> <li>• Team formulation</li> </ul>	<b>Systems thinking introduction</b>
<ul style="list-style-type: none"> <li>• Spread the word</li> <li>• Attraction</li> <li>• Curiosity</li> </ul>	<ul style="list-style-type: none"> <li>• value and failure demand</li> <li>• communication at all level</li> <li>• system waste</li> <li>• using process flow diagrams in redesign phase</li> <li>• improvements identification importance</li> </ul>	<ul style="list-style-type: none"> <li>• Role of demand analysis</li> <li>• Redesign phase role</li> <li>• Improvement evidence achievement</li> </ul>	<b>Capacity building</b>
<ul style="list-style-type: none"> <li>• Desire</li> <li>• Perception</li> <li>• Good</li> <li>• Bad</li> </ul>	<ul style="list-style-type: none"> <li>• top management don't agree on systems thinking</li> <li>• initial evidence was not able to convince top management</li> <li>• systems thinking is seen as a threat</li> <li>• top management rely on statistics</li> <li>• managers wants to keep the role of controller</li> <li>• decision making is seen top management property</li> </ul>	<ul style="list-style-type: none"> <li>• Top management way of thinking</li> <li>• System thinking image</li> </ul>	<b>Top management reactions</b>
<ul style="list-style-type: none"> <li>• Choice</li> <li>• Options</li> </ul>	<ul style="list-style-type: none"> <li>• savings through process mapping</li> <li>• information from process mapping</li> <li>• financial measures necessity</li> <li>• financial person availability</li> <li>• top management visits to workplace</li> <li>• top management need to touch and feel reality</li> <li>• power of demand analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Process mapping role</li> <li>• Management involvement role</li> <li>• Management accountant role</li> </ul>	<b>Confronting top management reactions</b>
<ul style="list-style-type: none"> <li>• Strategy</li> <li>• Action applied</li> </ul>	<ul style="list-style-type: none"> <li>• regular communication about improvements</li> <li>• more knowledge sharing about systems thinking</li> <li>• migration from old system</li> <li>• other areas transformation</li> <li>• new demand identification</li> <li>• new demand process mapping generation</li> </ul>	<ul style="list-style-type: none"> <li>• New evidence and real examples role</li> <li>• Roll in of employees</li> <li>• Continuous improvement</li> </ul>	<b>Systems thinking "beyond confrontation"</b>

Clarification of these issues was regarded by interviewees as a major step towards creating curiosity among top management. These issues were highlighted via a

normative scoping exercise in which top management and other colleagues were confronted with evidence that challenged their perceptions about organizational performance.

### **Intervention team formulation:**

The intervention team formation was seen by interviewees as a primary requirement of the leadership efforts to communicate systems thinking justifications. The intervention team members were selected from those who had high levels of operational problems and work-related stress and from those who have shown high likelihood of turnover and absenteeism. This was based on the belief that people with high levels of work-related stress and problems are the most knowledgeable about the systems pitfalls, and will tend to accept improvement initiatives targeted at solving their own work problems. The nominated members were invited to a workshop explaining to them the vision of systems thinking and the benefits of having it in place both at personal and business levels. This was followed by a training course for those who had agreed to take part in the implementation process. It was indicated by interviewees that the majority of the invited employees accepted to take part in the implementation process. The team formation allowed the next stage of the systems thinking introduction process to be initiated (i.e. the demand analysis).

### **Theme 2- Capacity Building**

With the intervention team equipped with the right level of information about systems thinking service design and the way to implement it, an analysis for the demand coming in to the call centre was carried out. Demand analysis and the identification of service system waste was regarded by interviewees as one of the most powerful tools used in the communication process in order to build capacity for the systems thinking implementation. Participants agreed that demand analysis aimed at collating information about what customers expect and want from the manufacturing organization and what matters to them most was of prime importance. Data collated in this process enabled identification of the major demands coming into the call centre. Further, actions not adding any value from the customer's perspective and the percentage of failure calls (i.e. percentage of not met demands) were identified for the main demands coming in. These actions were viewed as the waste present in the system

that must be eliminated in order to improve service performance and increase value productivity.

Demand analysis formed the basis for the plan phase to be initiated. The plan phase involved redesigning the processes flow diagrams taking what had been learned in the demand analysis and considering the customer “wants” and then mapping out the new service processes. This was followed by experimenting with redesign of processes in order to achieve evidence of improvement through focusing on minimizing non-value adding activities from a customer point of view.

Interviewees stated that evidence of improvement was primarily used to build capacity for the project. Capacity building is from within front-line employees, other department managers and the top management in the organization. For this purpose, communication at all levels and with other departments in the organization was emphasized by interviewees. The messages used were centered about the systems thinking offerings and the current system problems found in the demand analysis. It was also emphasized that the correct terminology should be used (i.e. tailoring the message) according to the receiver so that a common language can be initiated to build curiosity and possibly securing support for the project.

### **Theme 3- Top Management Reaction:**

The third theme is centred on the exploration of top management perceptions to the systems thinking project. Understanding the top management perceptions and reactions is of great significance to find out the best ways of convincing them of the benefits of systems thinking. Interviewees were asked about the top management reactions to the systems thinking initiative and how they would characterise the top management reactions to it. When systems thinking was first introduced in the call centre, top management and other departmental managers were sceptical about it. Interviewees revealed that this scepticism was due to the belief among managers that systems thinking is a source of threat for the control they have on work. This perspective was inherited from the idea that where front line employees are given decision making authority when interacting with customers then the managers role will change and they will lose authority and control.



A second issue is that difficulty in quantifying the impact of systems thinking, contributed to certain managers lack of support to the project. Typically management rely on statistics and numbers to evaluate success in the work place. Interviewees indicated that they felt certain managers saw systems thinking as limited to being yet another service initiative and did not recognise that it was a new way of thinking that encompasses conducting the work quite differently.

#### **Theme 4- Confronting Top Management Reactions:**

Almost all the interviewees in this study have discussed the techniques that must be used in order to overcome the top management rejection of systems thinking if a communication plan was not helpful in doing so.

#### **Process Mapping:**

Of particular importance here is the process mapping of the current processes used in the call centre and the identification of the amount of waste present on them. It was emphasized that information derived from process mapping could show a strong evidence of savings and impact on work when compared with the redesigned process mappings. For example, one of the interviewees noted that the credit control manager in the organization was convinced by the benefits of systems thinking as a result of the potential savings shown on process mapping of the visa card payments. Customer payments through visa cards had an impact on the business and it was costly due to the service charges. As a result of the demand analysis process it was found that the number of customers paying through their visa cards is of a tiny percentage (less than 1%), and that most of the payments were arranged through cheques payable to the company or through their debit cards made on phone. The process mapping was used to show each step in the visa payment process, what problems arise at each step, how often it happens, and what is the impact of these problems on the business aspects. It was in the impact column that it was possible to identify the waste and the impact of the process how it was. This column included aspects such as frustrated customers, time delay, company brand, the potential for error (i.e. charging the wrong amount), and legal obligations. This process flow had over 50 steps in it just to take a card payment, the real saving being if the process was changed by ceasing to accept the visa card payment. It meant reduced time for the team to work on this and ultimately no charge

for the hire of the machine that is needed to enable processing of payments. To accompany this, a demand analysis was also carried out over a month of all credit card payments. This showed that out of all payments a very small amount was with Laser Card. Therefore, making the case stronger that why should so much time and money should be invested in a process that was very rarely required? This typical example is one of many examples that were used to convince managers of the benefits of implementing systems thinking in place.

**Management Involvement:**

The majority of interviewees insisted that if the process mapping tool did not fully create top management approval, then the alternative option available was to involve the top management in the work itself. This could be done by inviting them to come to the work place to see things on reality by listening to phone calls and viewing the demand analysis and process mapping activities. The deliverables of the process mapping of value and failure actions from the customer perspective and the waste present in the service operations have been viewed by interviewees as very logical and very convincing if the management is involved in the process of creating them.

**Management Accountant**

Interviewees highlighted the importance of the availability of quantitative measures of success to enhance overcoming top management reactions to systems thinking. Having a management accountant from the first day of the project who could show measures of success in a quantitative manner has been considered as vital by interviewees and that they should have done to facilitate communication with top management. Quantifying the benefits of systems thinking, such as reduction in waste, reductions in lost calls, absence drops, customer retention, and employees moral and retention are used by the intervention team to convince top management. This is emphasized due to the importance the top management grant to savings and financial aspects related to any improvement initiative.

**Theme 5- Systems Thinking “Beyond confrontation”:**

It is evident that the intervention team attempts to get the top management support may not always be successful. This theme is aimed at discussing “what is after the top management confrontation stage?”. Interviewees were asked what they do if the above mentioned techniques were not helpful in getting the top management approval and

support for the systems thinking. The objective most frequently used by interviewees was to keep trying with new messages and real examples as they develop from the work until they see the real importance of it. Interviewees have stated that systems thinking is very logical and it will take some time before the top management can see the logic behind it. However, if the top management granted support to the project then the final stage of the project could be started. This stage covered implementation of the new model within the rest of the call centre by a gradual rolling in of employees. It was key at this stage to continue the identification of appropriate training and better ways of working to improve the service offered in the form of continuous improvement. Continuous improvement stage was embedded into the fully operational environment and involved the identification of new demands coming in to the call centre and designing new processes that ensure dealing with new demands as value demands.

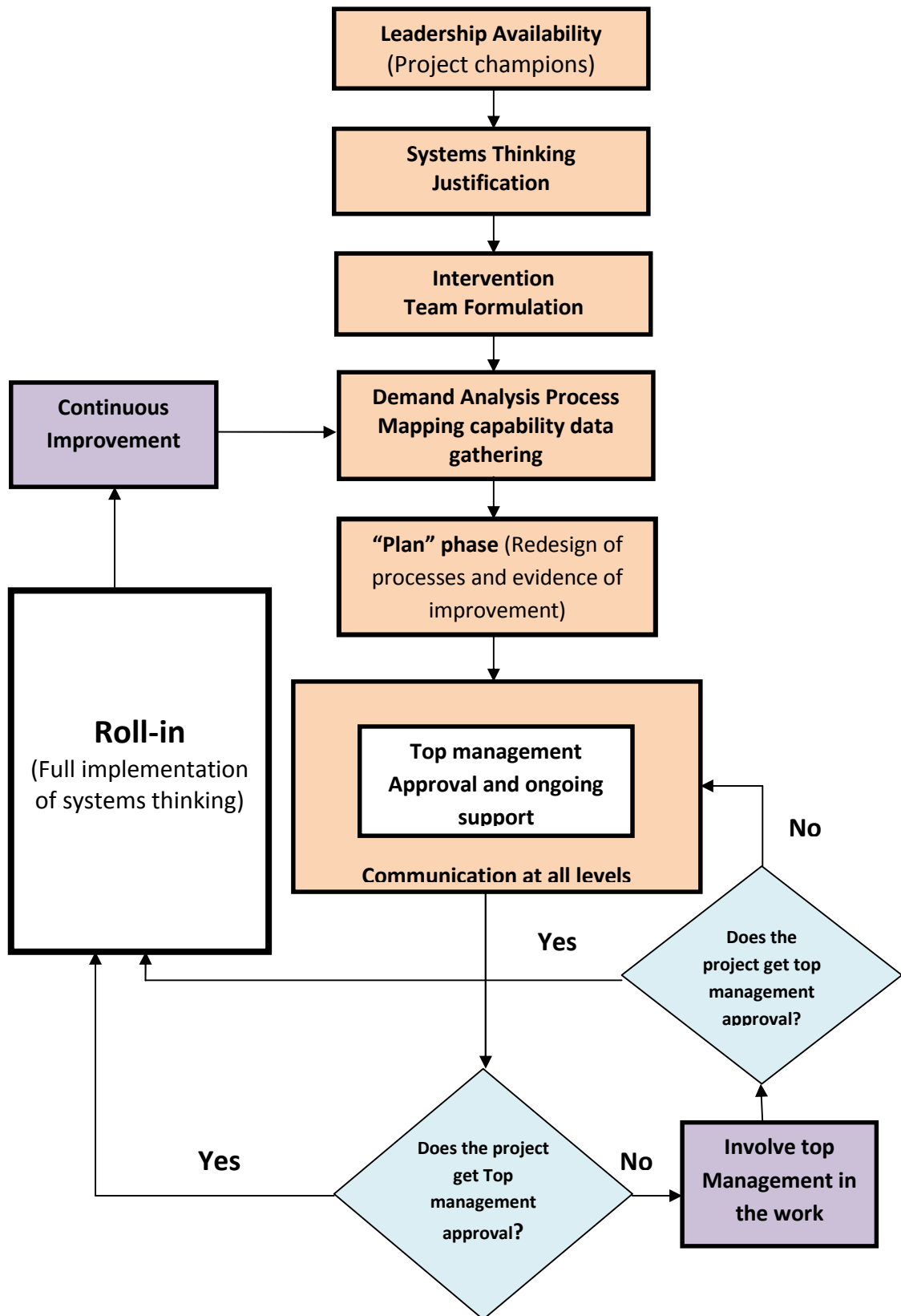
#### **5.4.8 Synthesising the implementation methodology**

In summary, the emerged themes presented above have identified a methodology for the creation and implementation of a systems thinking service model into call centres embraced by manufacturing organizations. The data would suggest that the techniques identified from the interviews are an important mediator between the people-process factors and the successful systems thinking implementation as shown in Figure 5.11.

### **5.5 Chapter Summary**

In this chapter each case study was presented as a stand-alone entity. This included a presentation of research sites profiles and case studies context. The data collected for each case study were also presented and included four sources; interviews, observations, documents, and questionnaires. Having the necessary data from each site allowed for the analysis processes chosen to be employed to achieve research results for each case within its own context. This helped in exploring the unique patterns of each case of the effects of both mechanistic and organic service designs on the affective commitment level of employees and on the service departments performance.

Figure 5.11 Systems thinking implementation methodology



Chapter 6 is focused on cross-case analysis by combining the results of the three cases for comparison and to show cross-case patterns. The tactics used to identify cross-case patterns is used as a cornerstone for accurate and reliable research questions answering and theory building.

# Chapter 6 – Cross Case Comparisons and Discussion

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## 6.1 Overview

Having presented each case study separately including the data collection, and analyzed the pattern of data within each case in the previous chapter, this chapter is structured to present the second step in the multiple-case studies analysis by searching for cross-case patterns. This is done as analyzing the cases in relation to each other strengthen both the quality and robustness of the findings (Rowley 2002).

Chapter 6 and 7 outline the cross-case analysis process along with a discussion of the findings, which are then aligned with the theory available in the literature introduced in Chapter 2 and 3. This chapter uses the thematic format developed during within-case analysis for cross-case analysis and comparison, it explores the effects of mechanistic and organic structures implementation on front-line employees, looking at changes in affective commitment levels and job role offerings. It also explores the effects of organic structure implementation on service departments performance, specifically looking at value added opportunities at all levels in the organisation in comparison with mechanistic structure constraints. The findings of the cross-case comparison are then aligned with those previously presented in the literature of service systems structure, service operations design and organisational commitment.

## 6.2 Cross-case comparison

One reason behind the importance of cross-case analysis and the search for patterns is the powerfulness these tactics provide to enhance generalisability of the research findings (Miles 1994). Cross-case analysis employs a wide variety of tactics and tools to deepen the explanation and understanding of structural settings in which the phenomena of interest is available (Voss 2002). In addition, “multiple cases also help the researcher find negative cases to strengthen a theory, built through examination of similarities and differences across cases” (Miles 1994).

Table 6.1 Cross-case comparison of research sites attributes

<b>Dimension</b>	<b>Nottingham City Council- Services Department</b>	<b>Stockport Metropolitan borough Council- ICT Department</b>	<b>VELUX Company Limited (GB)- Operations Department</b>
<b>Organisation</b>	Public sector	Public sector	Manufacturing- roof windows manufacturer
<b>Research department</b>	Customer service and enquiries (council tax and housing benefits)	Customer services and enquiries (computer hardware and software support, information technologies support)	customer service and enquiries (trade, retail, technical support and orders)
<b>Location</b>	Nottingham, England	Stockport, England	Glenrothes, Scotland
<b>Front-line employees</b>	40	18	65
<b>Service system Structure</b>	Mechanistic	Organic (i.e. systems thinking)	Organic (i.e. systems thinking)
<b>Initial drivers</b>	N/A	Council's aspirations for improvement and cost reduction	Customer complaints, employees turnover, and cost reduction
<b>Leader of change</b>	N/A	Service director	Company director
<b>Core Implementation staff</b>	N/A	Service director, head of transformation, 2 team leaders, 4 front-line employees	Company director, operations manager, external consultant, 7 front-line employees
<b>Management support</b>	N/A	Full support	Full support
<b>Training</b>	In-house Formal Training prior to employment	In house formal and informal training after employment	In house formal and informal training after employment
<b>Employees Turnover</b>	25%	5%	8%
<b>Affective commitment level</b>	A score of 3.02, lack of affective commitment	A score of 3.77, high affective commitment	A score of 4.17, high affective commitment

Table 6.1 presents an initial comparison of the attributes of the three research sites involved in this study. The table provides an overall perspective on cases and summarizes the diversity of research sites and the contextual parameters in relation to industry sector and location, employees numbers, type of service system structure, and issues related to system implementation and employees. The use of table summarizations of initial evidence could include qualitative descriptions and quantitative scores from questionnaires, this is a part of the theory building research (Eisenhardt 1989).

### 6.3 Cross-case thematic analysis

The inductive logic of “thematic analysis” (Taylor, Bogdan 1984, Attride-Stirling 2001) was used to reduce the qualitative data collected through interviews, documents and observations into central themes in each individual case. The emerged themes from all case were then compiled into one table to facilitate the process of synthesising the results, as shown in Table 6.2 (see Appendix 3 for cross-case thematic matrices). This was done to identify the service system structure’s factors that have the potential to affect: First, the affective commitment of front-line employees working in manufacturing support services. Second, the value adding opportunities of support services to the whole manufacturing organisation.

Table 6.2 Cross-case thematic analysis

Cases	Nottingham City Council- Services Department	Stockport Metropolitan Council- ICT Department	VELUX Company Limited (GB)- Operations Department
<b>Common Themes</b>			
<b>Management style and focus</b>	Theme 1	Theme 1 (part I)	Theme 1
<b>Front-line employees working experience</b>	Theme 2	Theme 2 (Part I)	Theme 5
<b>Departmental Integrations and Internal communication</b>	Theme 4	Theme 2 (Part I), Theme 1 (Part II)	Theme 2
<b>Performance measurement</b>	Theme 3	Theme 4 (Part I)	Theme 1
<b>Customer experience</b>	Theme2, Theme 4	Theme 3 (Part I), Theme 5 (Part I)	Theme 2
<b>Employees Training</b>	Theme 2, and overall themes abstracts	Overall themes abstract	Theme 3
<b>Call centre position</b>	Overall themes abstracts	Overall themes abstract	Theme 4
<b>Continuous improvement</b>	Overall themes abstracts	Theme 5 (part I)	Theme 6

The compilation of themes, shown in Table 6.2, helped in identifying initial patterns in the data as the individual case studies themes were comparable to a great extent (see chapter 4), and began to cluster together around common themes. Each of these common themes are used to illustrate the effects of the service system structure from



different perspectives in the following sections to answer the first and the second research questions (i.e. RQ1 and RQ2) presented in section 2.14.

The availability of additional two case studies with rich matching themes from the public sector has the advantage of producing a robust informative pattern that will refute any counterarguments. Such as that the effects on employees affective commitment, and on value adding opportunities of manufacturing support services are due to some managerial decisions and not to the service system structure used. In other words, the existence of additional two case studies with similar contextual parameters show that counterarguments “would not explain certain parts of the pattern found” (Yin 1994).

### **6.3.1 Management style and focus**

With this common theme the aim of the cross-case comparison was to compare and contrast the results to identify differences and similarities in the managerial practices used in the three call centres, and what the management focus was in each service structure.

At Nottingham City Council’s services department it was indicated that the management ultimate focus was on achieving preset targets and numbers more than the quality of service. This is echoed by the management concern to maintain low queues of waiting calls by talking with customers for not more than the allowed time of seven minutes. For this reason front-line employees were equipped with scripts and they were encouraged to use them when discussing customer demands and enquiries, according to participants this was done to make sure that employees provide precise information to customers. However, screens were distributed in different places to show the rate of calls being processed and how many calls are left in queue.

*“We are basically target oriented, not customer oriented...the KPIs must be followed...simply we need to achieve targets of the government to receive the funds necessary for the projects we run..”- Service Director, Nottingham city council*

*"I don't think she (manager) pays attention to anything I say on phone, she talks about figures and statistics all the time. She is always available in the call centre to make sure that we are on phone and that calls are answered quickly, waiting time to be kept to a minimum....time lost sheets are a big thing."- Front-line Employee, Nottingham City Council*

In order to achieve the preset targets, it was found that the role of team leaders was to monitor front-line employees' performance. This was done to make sure that they are on phones and to generate overall performance reports that is shared periodically with service director.

In the two case studies with organic structure for their service systems a formalised evidence was found that management focus including team leaders was shifted from targets and statistics towards the percentage of one stop calls and demand analysis. This is supplemented with the managers endeavour to further improve service operations to reduce, and ultimately prevent, repeated calls.

*"We use different measures to identify the well performance of our employees, one stop is the major concern behind the measures we do, currently we handle 85% of calls one stop and we aim to increase this percentage in the next improvement phase...we use capability charts on daily basis and we try to understand demand changes."- Services Director- Stockport Metropolitan Borough Council*

*"No targets at all in the call centre, we do traditional measures to know what resources are needed. What we really measure is whether the demand is met and how many calls are done one time....we do not use screens and end to end measures, it takes longer to service calls but we do it right the first time which eventually reduces the number of callers."- Operations Manager, VELUX (GB) Company Ltd*

This included the elimination of the need to record or monitor incoming calls and no restrictions were applied on employees to finish calls within a specified period of time. This is echoed by the management elimination of the use of scripts for employees to follow when talking to customers. However, another primary focus for the management was to ensure that employees are ready to help other colleagues in any phone call when required and to share the responsibility of the work.

*“we have an excellent bunch of young people working on phones, they do pay attention to the learning aspect of their job, they ask and interact with each other at constant basis to discuss any new issues arising at work....free interaction is what we want to see in the help desk to make sure our employees are at the highest level of knowledge to handle any demand coming in...systems thinking teaches us to be open.”- Head of Transformation, Stockport Metropolitan Borough Council*

*“we encourage employees to use informal communications, no Mr or Mrs. An employee asks a knowledgeable colleagues to give him a hand by joining the conversation with the customer until an answer is provided for the complex situation, we believe that this is the best way for an employee to gain knowledge; it is by taking knowledge from his colleagues who are better on it.”- Company Director, VELUX(GB) Company Ltd*

A further show of management role comes from the employees perspective in the two cases who perceived their managers role as supportive rather than top-down monitors. They were viewed as a part of the workforce as they had the capability, and on occasions acted on this capability, to substitute for front-line employees where available to help front-line employees serve the customer. This role is obviously contingent of the need to match the company’s principles of serving the customer one stop with minimal repeated calls.

*“we have two team leaders, one for day to day tasks and the other for demand trends and analysis. They help us to deal with customer demands when a difficult call is received...I think without their feedback and help in taking calls the workload will definitely increase.” Front-line Employee, Stockport Metropolitan Borough Council*

*“he (operations manager) is very helpful, it is not unusual to see him taking calls when we have shortage of staff over the lunch break or even going for a delivery.”-Front-line Employee, VELUX(GB) Company Ltd*

A summary of the cross-case comparison regarding the management style and focus is shown in Table 6.3.

Table 6.3 Management focus at mechanistic and organic service departments

	<b>Nottingham City Council- Services Department (Mechanistic)</b>	<b>Stockport Metropolitan borough Council- ICT Department (Organic)</b>	<b>VELUX Company Limited (GB)- Operations Department (Organic)</b>
<b>Management style and focus</b>	<ul style="list-style-type: none"> <li>• Achieving targets and numbers</li> <li>• Following preset call handling time</li> <li>• Using scripts</li> <li>• Monitoring employees</li> <li>• Report performance</li> </ul>	<ul style="list-style-type: none"> <li>• Supporting employees</li> <li>• One stop calls percentage</li> <li>• Demand analysis</li> <li>• Making sure that employees shares the responsibility of the work</li> </ul>	<ul style="list-style-type: none"> <li>• Supporting employees</li> <li>• One stop calls percentage</li> <li>• Demand analysis</li> <li>• Making sure that employees shares the responsibility of the work</li> </ul>

### 6.3.2 Front-line employees working experience

The second common theme is centred on the exploration of employees working experiences in the three call centres. Understanding the working experience of employees in the call centres is very important to predict the availability/absence of affective commitment foundations.

At Nottingham City Council’s services department tasks are narrow in scope and repetitive in nature due to the presence of rules and procedures that standardized performance. Employees’ performance monitoring was in place to make sure that employees achieve the daily set targets and to coordinate their reporting tasks. Employees had to be quick in handling calls for two reasons: First, so that the total call duration is within the allowed time period. Second, the criteria used for assessing employees is purely quantitative depending on the number of calls handled in a work shift. As a result the main feature of work under such condition is the mechanisation and inflexibility of service procedures, which explains the referring of most of the work to the back office.

Building on the requirements of the mechanistic structure management style and focus presented above, front-line employees experience an increase in stress and a feeling of being a part of a “production factory” (Varca 2006) due to emphasize on quantity over quality. Front-line employees expressed that they could do a better job with more rapid processes, better communication between departments, more training and more

information, and they believed that technology surveillance is not the right way of controlling the work.

*"I would like the managers to be transferred to front-line positions to understand the work stress and pressure of the job, I feel that we are here to meet the targets...answering calls within 18 seconds, handling time, and after call work are a nightmare...the structure is a mess."- Front-line Employee, Nottingham City Council*

*"what we lack is better access to information...if I can make decisions myself on the phone there would be no need to pass the caller to back offices."- Front-line employee, Nottingham City Council*

Front-line employees were looking for authority and power to change the simplest of things and that customers must be first and not targets. In addition, it was noted that the ability of employees to approach each other informally was limited due to the workloads and continuous performance monitoring. On the other hand, employees were deprived from using internet due to the management scepticism that it will be used for personal purposes which will waste employees time. Meetings with top management were held to listen to employees demands and ideas but they were not taken on board due to lack of transformation initiatives.

*"No, they (concerns/ideas) are listened to and then ignored."- Front-line Employees, Nottingham City Council*

*"Not always. It (concerns/ideas) may be taken into account but not followed up as we never get any feedback."- Front-line Employee, Nottingham City Council*

Conversely, for those who were working under the organic structure service system at the two cases, an evidence was provided that they were enjoying varied types of demand which allowed for skills development. It was clearly regarded that authority to make decisions over the phone was of great importance to employees in dealing with customer demands. They noted that this virtue was vital to make sure that they would be able to deal with customer demands in "one stop". Employees at the two cases, however, commented that due to this (i.e. one stop demand handling), once customers

get through, they know that they will get what they want in the same phone call, and this was crucial to reduce workloads and pressures as customer do not need to call again to achieve what they want.

*“I enjoy what I do, it is very varied, I could get a phone call with totally different demand that I can handle myself or ask for some help from a colleague to help me if it is beyond my skills level...we are concentrating on doing things right one stop whatever it takes. we don't go by numbers...”- Front-line Employees, Stockport Metropolitan Borough Council*

*“Now I have a different kind of pressure, it is to keep doing the right things as I want to deliver a quality service..knowing that you don't need to hit targets or numbers keeps you concentrated on the work at hand, we are relaxed at work with less pressure.”- Front-line Employee, VELUX (GB) Company Ltd*

At both cases, the approach taken to assess the service delivery was through the collection of customer feedback. The feedback employees received was very positive, this has added to employees self-esteem and satisfaction. Further, front-line employees shared responsibility of the work, they sought help from each other to handle new demands. In addition, informal channels of communication were encouraged to allow for a quicker transfer of knowledge between members.

*“It is much rewarding personally when you know that the service you provide has created happy customers”- Front-line Employee, VELUX (GB) Company Ltd*

*“I go home very happy when I know that I was able to solve someone's problem and make his life easier...I think systems thinking has increased the numbers of happy customers..that's why we are buying into it now.”- Front-line Employee, Stockport Metropolitan Borough Council*

The organic structure, at both cases, appears to provide front-line employees with enough time to talk to customers without the need to rush, they are delivering correct information as a result that provides a better service without the need for repeating phone calls. A feeling was provided that the general working atmosphere was pleasant and relaxing.

A summary of the cross-case comparison regarding front-line employees working experience under both mechanistic and organic structures is shown in Table 6.4

Table 6.4 Front-line employees working experience at mechanistic and organic service departments

	<b>Nottingham City Council- Services Department (Mechanistic)</b>	<b>Stockport Metropolitan borough Council- ICT Department (Organic)</b>	<b>VELUX Company Limited (GB)- Operations Department (Organic)</b>
<b>Front-line Employees Working Experience</b>	<ul style="list-style-type: none"> <li>• Work narrow in scope</li> <li>• Repetitive work</li> <li>• Employees monitoring</li> <li>• Quick calls handling</li> <li>• Inflexibility of service</li> <li>• Stress</li> <li>• Lack of authority</li> <li>• Limited communication s (formal)</li> </ul>	<ul style="list-style-type: none"> <li>• Varied demand types</li> <li>• Authority to make decisions</li> <li>• No need to rush in handling calls</li> <li>• Rewarding customer feedback</li> <li>• Open communications between colleagues (informal)</li> <li>• Relaxing job atmosphere</li> </ul>	<ul style="list-style-type: none"> <li>• Varied demand types</li> <li>• Authority to make decisions</li> <li>• No need to rush in handling calls</li> <li>• Rewarding customer feedback</li> <li>• Open communications between colleagues (informal)</li> <li>• Relaxing job atmosphere</li> </ul>

### 6.3.3 Departmental integration and internal communication

With this common theme the aim was to understand the effects of service system design in each call centre on departmental integration and internal communication.

At Nottingham City Council’s service department the departmental relationships were very poor and there was a silo working between sections and departments. Due to the impact of the functional specialisation concept used at the council, it was indicated that the call centre is a separate entity that should not interfere with the work of other departments.

*“We know that customers follow-up for their council tax and housing benefits demands is not an easy task for staff....they (i.e. staff) do not know where it is in the system, usually staff send an internal message requesting that department to contact the customer with updates...”- Services Director, Nottingham City Council*

In this case, an evidence was presented that lack of open channels of communications has resulted in reducing productivity due to the time wasted in finding customer related information. In addition, rigidity and tightness of the service system obstructed the communication of the call centre with other units in the organization due to the sluggish response procedures and lack of pre-defined channels of communication.

*“other departments do not share anything with us. I remember in one occasion that we kept on transferring customers to the payment team, no-one was available as the department was decorating their office and unplugged the phone line, they did not make us aware! This causes a lot of pressure and frustration to us and to the customers.”- Front-line Employee, Nottingham City Council*

*“there isn’t any communication between departments i.e. council tax may not communicate with benefits and vice versa. This leaves the customer being passed from pillar to post.”- Front-line Employee, Nottingham City Council*

However, at Stockport Metropolitan Borough Council’s ICT department communication between departments was regarded as important. The flexibility offered by work management practices and the availability of well-designed communication channels are all factors that promoted the ability of the information to be disseminated in a timely, and easily understood manner to other concerned parts of the council. This was represented by regular meetings at managerial levels to discuss common issues of interest and how the work of the call centre can continue to be essential part of the work of other departments. These reports involved information about the problems found in the call centre, due to lack of information or lack of enough resources, and how these problems impact on the level of service provided by other departments. In addition, feedback reports were prepared as a result of customers feedback on council’s services and how these services affected them.

*“ we work as one, I have the ability to approach other departments managers to share with them any concerns we get from customers on phones...through customers feedback and comments we prepare reports about council campaigns and services and we share these with the meant departments in case necessary actions need to be taken or for them to*



*improve their services.”- Call Centre Team Leader, Stockport Metropolitan Borough Council*

At VELUX(GB) the form of communication between the call centre and other business departments and between front-line employees themselves was quite similar to that found at Stockport Council’s ICT department. Communication was also regarded as a paramount priority at the work place. The call centre had regular channels of communication with all departments in the company at both managerial and employees levels. Managers from other departments met with the call centre operations manager to review the most beneficial information sought and to review customer feedback. The call centre also provided information that could also be shared with other units of the parent company.

*“Together with the operations manager we started looking at the problems we get in the credit control department, the call centre provides us with information that helped in minimizing and solving many of them...for example the call centre helped us in cases where the technicians forgot to collect cheque from customers by collecting credit card information on our behalf...and where refunds are required.”- Credit Control Manager, VELUX(GB) Company Ltd*

Informal forms of communication were encouraged where employees would seek the help of employees in other departments in addition to their colleagues to provide better customer support. In some instances it was common for a conference call to be used where two or more employees were discussing the issue with the customer.

*“It is very interesting because you could get the help of people in the logistics department while having a customer on phone who needs to know where his shipment is...I know all the people in the logistics department.”- Front-line Employee, VELUX(GB) Company Ltd*

This approach prevented the customer being “handed-over” between employees and significantly enhanced customer satisfaction. The characteristics of this form of “open doors policy” along with the decision making ability at employees level was a key factor in handling calls one stop and minimizing the number of non-value-adding calls.

Formal and informal communication between employees allowed for significant information sharing that was necessary to develop skills and to streamline service operations for better customer service.

However, a summary of the cross-case comparison of the nature of communication and departmental integration is provided in Table 6.5 below.

Table 6.5 Departmental integrations and internal communication at mechanistic and organic service departments

	<b>Nottingham City Council- Services Department (Mechanistic)</b>	<b>Stockport Metropolitan borough Council- ICT Department (Organic)</b>	<b>VELUX Company Limited (GB)- Operations Department (Organic)</b>
<b>Departmental integration and internal communication</b>	<ul style="list-style-type: none"> <li>• Poor departmental relationships</li> <li>• Lack of open channels of communication</li> <li>• Formal communication between employees</li> </ul>	<ul style="list-style-type: none"> <li>• Communication at all levels is important</li> <li>• Open channels between business units</li> <li>• Informal communication between colleagues</li> </ul>	<ul style="list-style-type: none"> <li>• Communication at all levels is important</li> <li>• Open channels between business units</li> <li>• Informal communication between colleagues</li> </ul>

### 6.3.4 Performance measurement

The third theme is focused on employees performance measurement in the three call centres. This facet of the call centre service system in each place is an important indicator of the system operational boundaries that guides the management practices.

At Nottingham City Council’s service department performance measurement is done through the monitoring practices at the work place. The quality of call centre service was perceived to be measured quantitatively on the basis of how many calls employees are able to handle per day, average work time after call, and what the average calls handling time is. In addition, measures like average abandonment rate, average customer waiting time per day, and the average number of employees taking calls was also used for group performance evaluation.

*“ I think statistics and most importantly is the number of calls is what matters when I’m evaluated...on our statistics sheet we have to show other measure as well...specify exactly what we did when we left our seats i.e. toilets- how long, make tea- how long, open and close the blinds- how long...this is a waste of time and paper.”- Front-line Employee, Nottingham City Council*

In contrast, at Stockport Council’s ICT department the measurement of front-line employees is done on the basis of how good they are in matching the company’s principles of serving the customer and meeting the demand. Team leaders have the ability to access each front-line employee’s profile to find out how many one stop calls were handled per day. The concern of the team leaders is to count the number of value-adding calls against the non-value adding calls to form the basis for measuring and evaluating employees work in general. A particularly strong benefit of this measurement is that explanations are provided to the whole group of employees on the non-value adding calls captured and how to deal with them one stop the next time they come in.

*“our team leader looks at value work by counting the calls that have been resolved at the first contact...by this way he chooses the best people to help others in handling difficult calls.”- Front-line Employees, Stockport Metropolitan Borough Council*

*“our concern is to find how many calls our staff met or closed one stop....we don’t go by targets.”-Team leader, Stockport Metropolitan Borough Council*

Similarly, the operations manager at VELUX (GB) measured front-line employee’s performance in the call centre on the basis of how good they were in matching the company’s principles of serving the customer. The number of value-adding calls was measured against the non-value adding calls to form the basis for measuring and evaluating employees work in general.

*“what we measure is the whether the demand is met i.e. it is done one time and at the first time, we have a generic plan for doing this, we log in to every employee’s account with the presence of the employee and we see how many calls were closed one stop, we then provide feedback and advice on how to deal with non-one stop calls in the next time”- Company Director, VELUX(GB) Company Ltd*

The front-line employees in the call centre were primarily stimulated via feedback recognition on their work on periodical basis. The company employed a bonus system which depended on the overall profits gained. If the company achieved x% profit increase then everyone, who provided value-adding calls, would receive x% of salary bonus payment. However, Table 6.6 summarize the cross-case comparison on how performance measurement is done at the three cases studies.

Table 6.6 Performance measurement at mechanistic and organic service departments

	<b>Nottingham City Council- Services Department (Mechanistic)</b>	<b>Stockport Metropolitan borough Council- ICT Department (Organic)</b>	<b>VELUX Company Limited (GB)- Operations Department (Organic)</b>
<b>Performance measurement</b>	<ul style="list-style-type: none"> <li>Quantitative measure (no. of calls handled per day/shift and average handling time)</li> </ul>	<ul style="list-style-type: none"> <li>No. of value adding calls (one stop calls)</li> </ul>	<ul style="list-style-type: none"> <li>No. of value adding calls (one stop calls)</li> </ul>

### 6.3.5 Customer experience

This common theme is focused on customer experience and feedback in the three call centres. At Nottingham City Council’s service department the service was sluggish and inflexible, which gave a first indication on how the customers felt about the services delivered to them. The standardization of performance and the continuous monitoring of employees gave limited freedom for them when dealing with customer. Customers were viewed, as a result of the system requirement, as target.

*“Customers must be first and not targets...we’ve got to be quick when dealing with customers...the system sees them as numbers...but this is all we do, be quick!!! You know I don’t want to do it but how can my record look good?”- Front-line Employee, Nottingham City Council*

However, an evidence based on these contextual factors were provided that front-line employees could deliver better service if they get better communication between departments, more training and more information. Therefore, customers were not happy

with the service they were getting as they had to wait for long time to get the information required and in many cases the information were not available. Another aspect for the lack of departmental integration and internal communication is that customers had to be passed from pillar to post in order to get what they want. Apparently, the service was relatively limited due to the restrictions in place.

*“we collect customer feedback through the council’s website, mail, and phones...we know that many customers are not happy with our call centre, that’s why some of them do come down to the reception to enquire about a last bill or request information...we like to see less complaints from customers, but the current system conditions must be followed”- Services Director, Nottingham City Council*

On the other hand, for organic structures implemented at both Stockport’s ICT department and VELUX(GB)’s operations department customers have the facility of reporting their opinions and views about the call centre service through phones and emails. Customer feedback has been very positive. Customers get what they want with the elimination of transfer from pillar to post.

*“customer get what they want from the first time they get through, we are now able to provide an excellent service and our customers are very happy with it...people and service is the only thing we could think about to become distinguished from our competitors...systems thinking helped us to un-leash the potential the people have to deliver a better service that keeps our customers.”-Managing Director, VELUX(GB) Company Ltd*

One employee is now able to identify the customer problem very quickly and deal with the demand in a very efficient way with more time to speak to customer. This allows employees to focus on what customer is actually saying and not caught by procedures and targets. No IVR technology is used in both the call centres with the availability of only one calling number. Employees indicated that 85% of incoming phone calls are now dealt one stop at Stockport, and more than 80% are now dealt one stop at VELUX(GB).

A cross case comparison of the customer experience dimensions as a result of the service system design used in the three cases is shown in Table 6.7 below.

Table 6.7 Customer experience at mechanistic and organic service departments

	Nottingham City Council- Services Department (Mechanistic)	Stockport Metropolitan borough Council- ICT Department (Organic)	VELUX Company Limited (GB)- Operations Department (Organic)
<b>Customer experience</b>	<ul style="list-style-type: none"> <li>Limited freedom when dealing with customers</li> <li>Customers are viewed as targets</li> <li>Passed from pillar to post</li> </ul>	<ul style="list-style-type: none"> <li>Get what they want from first contact</li> <li>No transfer from pillar to post</li> <li>More time to speak to customer</li> </ul>	<ul style="list-style-type: none"> <li>Get what they want from first contact</li> <li>No transfer from pillar to post</li> <li>More time to speak to customer</li> </ul>

### 6.3.6 Employees training

The common theme is centred on the exploration of employees training techniques at the three cases studied. At Nottingham City Council’s service department, the training was provided in-house with formal procedures and protocols in order to ensure covering all the aspects of the system as well as the way of dealing with demands and the after call work. The training was done over a period of eight weeks prior to employment. Although training was provided to employees after the commencement of employment, many employees found it difficult to find the time to get training. After employment training was focused on software learning of recording customers information and documenting contacts, after call processing of private claims, benefit systems and government regulations. It was evidenced that no training was provided on how to deal with difficult demands while on phone or what type of demand is expected to come in to the call centre, a part from scripts training and how to use them to guide employees.

*“I spend too much time going to meeting and reviews of meetings, and there is no time left for training...there is no such thing as self development”- Front-line Employee, Nottingham City Council*

*“we have been trained on different computer softwares...but it seems we tend to forget the knowledge we get due to lack of practice...we feel that something else is lacking our training such as ways on how to deal with a completely new demand”- Front-line Employee, Nottingham City Council*

Training at Stockport’s ICT department and VELUX(GB)’s operations department was done in house via formal and informal training sessions as soon as the employment started. An

induction course is provided followed by a period of almost two weeks of IT training. Building on the requirements of dealing with a variety of demand in organic structure service departments, it was revealed that new innovative training methods were required in addition to the preliminary IT training. However, the initial training periods at both of the organic departments studied were reduced under the systems thinking approach in the call centre whilst performance was noticeably improved. It was also revealed that more calls were handled with the same number of less people enabling an increase in business. This counter-intuitive result was probed deeply and was found to be based on the clear recognition that 20% of the training addressed 80% of the issues and that skills to cover the remaining 20% of issues could be developed “on-the-job” via the conference call approach discussed earlier or through the informal networking between new employees and those experienced. The identification of the 80% of the issues was accomplished through collating information about what customers expect and want from the organization and what matters to them most. Data collated in this process enabled the identification of the major demands coming into the area.

*“we are better in taking calls every single day, this is because our employees skills is improved following the 20:80 rule, they now know what is waiting for them to serve...demand analysis is the key in order to identify the most requested demands before we train our employees”- Company Director, VELUX(GB) Company Ltd*

*“the only thing is that we know the majority of our customers’ demands before hand, this is what training is all about”- Front line Employee, Stockport Metropolitan Borough Council*

A summary of the cross-case comparison of employees training at mechanistic and organic service departments is shown in Table 6.8 below.

Table 6.8 Employees training at mechanistic and organic service departments

	<b>Nottingham City Council- Services Department (Mechanistic)</b>	<b>Stockport Metropolitan borough Council- ICT Department (Organic)</b>	<b>VELUX Company Limited (GB)- Operations Department (Organic)</b>
<b>Employees Training</b>	<ul style="list-style-type: none"> <li>• Formal software training</li> <li>• After call work</li> <li>• No training on type of demand coming in</li> </ul>	<ul style="list-style-type: none"> <li>• Formal IT training</li> <li>• Informal 20:80 training rule</li> </ul>	<ul style="list-style-type: none"> <li>• Formal IT training</li> <li>• Informal 20:80 training rule</li> </ul>

### 6.3.7 Call centre position

With this common theme the aim was to explore how the call centre was viewed by other business units and whether it was central to the operations of other departments at the three cases. Building on the type of communication and the functional specialisation employed at Nottingham City Council, each department was viewed as a separate entity that must not interfere with the work of others but through formal channels and when something goes wrong. The call centre had no ongoing communication with predefined key individuals in other departments. Seemingly, managers both inside and outside the call centre had no understanding of the significant role that can be played by the call centre.

*“everyone seems not to understand the benefits of the letters and information we send to them...managers in other departments feel that the information we send is an extra work which adds to their job pressures, if they think enough about what we already know about customers they would have avoided doing many things...we need to be one team, this is going to serve the customer better.”-Front-line Employee, Nottingham City Council*

However, the requirements of the mechanistic structure, to focus on targets and numbers, did not help in promoting the essence of demand analysis to leveraging the call centre inputs in this case.

On the other hand, the two organically structured call centres studied were viewed as central to the work of other departments who depended on the call centre to obtain the necessary information for processes planning and identifying future trends. Obviously, this was a result of the open channels of communication found in the two call centre where the dissemination of information and sharing of knowledge was a priority. Key individuals were identified in other departments by the two call centres with whom the reports and information was shared. This information was communicated through face-to-face meetings and was focused on how the demand analysis and findings can benefit concerned departments to accomplish the most for their operations and services.



*“we have seen huge improvements in communication between us and other departments...when we were in the initial stages of demand analysis we invited other managers to come and have a look...it is all well and good...just come and have a look, they were amazed with the type of knowledge we were getting and was very much relevant to their departments, that was where we started talking on what we are going to do to benefit from it...I think many regard the call centre as the source for answers”- ICT Manager, Stockport Metropolitan Borough Council.*

At VELUX(GB), the marketing department viewed the call centre as vital in measuring the success of their campaigns and how the customers felt about the products. In addition, the logistics department depended completely on the call centre operations to coordinate delivery schedules and time of delivery for their customers.

*“we do not exist without them (i.e. call centre), we get almost all the information from the call centre; information from couriers about problems with deliveries, telling customers of when we will submit their orders and making appointments...we pull our reports from the call centre such as the rate of return and we work in close relation with the call centre to solve all of our problems....it is our first entry to the business”- Logistics Manager, VELUX(GB) Company Ltd*

The cross-case comparison of this dimension is summarised in Table 6.9 below.

**Table 6.9 Call centre position in mechanistic versus organic service departments**

	<b>Nottingham City Council- Services Department (Mechanistic)</b>	<b>Stockport Metropolitan borough Council- ICT Department (Organic)</b>	<b>VELUX Company Limited (GB)- Operations Department (Organic)</b>
<b>Call centre position</b>	<ul style="list-style-type: none"> <li>No understanding of the significant role of call centre</li> <li>Call centre information is seen as a source of more workload and pressure</li> </ul>	<ul style="list-style-type: none"> <li>Central to the work of relevant departments</li> <li>Relevant departments Rely on call centre information to evaluate performance</li> </ul>	<ul style="list-style-type: none"> <li>Central to the work of relevant departments</li> <li>Relevant departments Rely on call centre information to evaluate performance</li> </ul>

### **6.3.8 Continuous improvement**

In this common theme a cross-case comparison is presented on the contribution of the service system design used to maintain and act on the service delivery system. At

Nottingham City Council's service department an evidence was provided on the tendency to put control on employees and quantitative measures as the only way through which the system can function and the service targets can be achieved. To create this level of control, the management has put an overwhelming focus on targets, statistics, quality regulations and documents marking and archiving that are known as System Conditions. This was done regardless of the fact that the service targets have become a greater driver for Nottingham City Council than the customers themselves.

*"we thought that by taking phones quicker, customers will be more happy and will help us improve the service...this didn't happen..56% of our customers were not happy with the service they were getting."- Services Director, Nottingham City Council*

However, in the two organic service departments studied it was vital for systems thinking to keep looking for ways to improve the service delivery system. Managers believed that this was the only way to put the system under control.

*"we follow Deming's teachings that 95% of variations are in the system and 5% only is in the people...to give employees a better system you need to understand its inputs"- Head of Transformation, Stockport Metropolitan Borough Council*

This is mainly done through continuing understanding customer demands and the way employees responded to that demand. This was embedded into the fully operational environment and involves making smaller changes to the way of working to improve the service offered. The priority in this process was the identification of new demands coming in to the call centre and designing new processes that ensure dealing with new demands as value demands.

At VELUX(GB), a "board meeting" (i.e. call centre employees are invited to gather around a white board) was held once weekly inside the call centre to discuss the top ten issues that have emerged in the call centre in that particular week. These issues include mainly, but not exclusively, failure demand or positive developments that need recognition. Front-line employees, when attending these meetings, took the responsibility for identifying and initiating improvements. They also encouraged the

participation of other departments managers in these board meetings to enhance mutual understanding.

*“since the moment we started using it (i.e. systems thinking) we gave the chance to employee’s voice to be heard..I’ve started seeing results very quickly, everyone brought his problems on the board and discussion sessions revolved about how to solve these problems and see things working...every new demand we received was noted down in the board and shared with everyone..that’s the way we felt will keep things running better.”- Company Director, VELUX(GB) Company Ltd*

Table 6.10 Continuous improvement of service delivery system in mechanistic versus organic service department

	<b>Nottingham City Council- Services Department (Mechanistic)</b>	<b>Stockport Metropolitan borough Council- ICT Department (Organic)</b>	<b>VELUX Company Limited (GB)- Operations Department (Organic)</b>
<b>Continuous Improvement</b>	<ul style="list-style-type: none"> <li>Improving service through keeping control on employees to achieve targets and quicker service</li> </ul>	<ul style="list-style-type: none"> <li>Continuous demand analysis</li> <li>Designing new processes to deal with new demands</li> </ul>	<ul style="list-style-type: none"> <li>Continuous demand analysis</li> <li>Designing new processes to deal with new demands</li> </ul>

#### 6.4 Mann Whitney U-test

Having calculated the affective commitment level of front-line employees at each of the individual cases, the purpose of this section is to compile the affective commitment measuring outcomes at the three call centres into a cross-case format. This is done in order to facilitate the study of the effects of both the mechanistic and organic service system design on front-line employees affective commitment. Table 6.11 outlines the results of the questions analysis at the three call centres. A visual comparison is also provided in Figure 6.1 for the three affective commitment levels achieved.

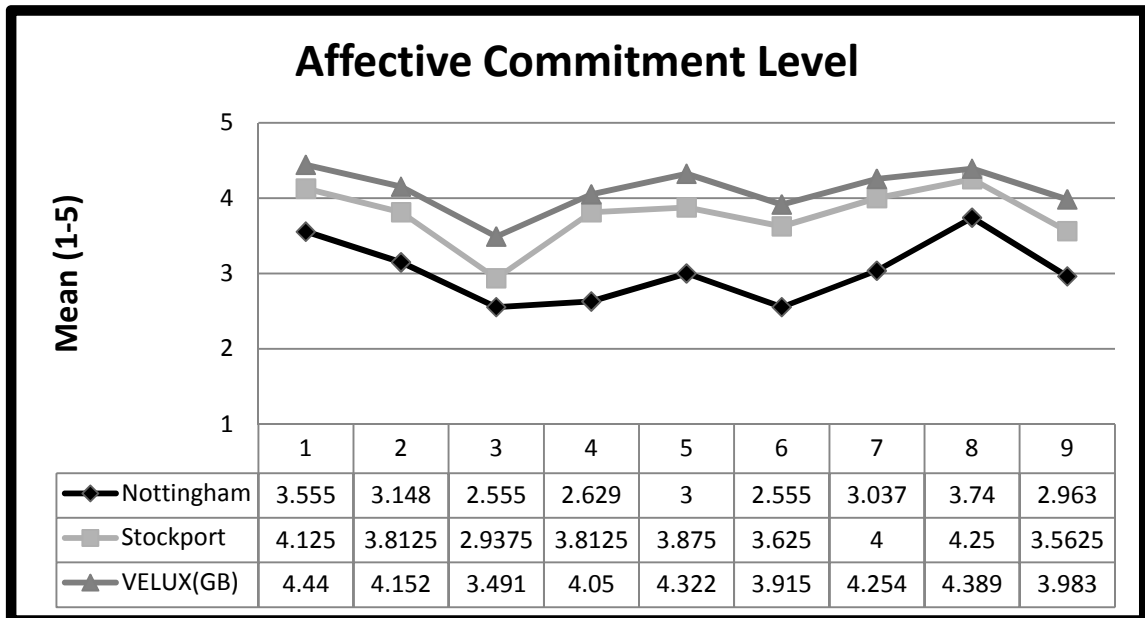
The internal consistency reliability test revealed a Cronbach alpha (Cronbach 1951) value of 0.87 for employees working at Nottingham City Council’s services department, while their Stockport’s ICT department and VELUX(GB)’s operations department counterparts produced an alpha value of 0.94 and 0.86 respectively. The OCQ instrument usually exhibits an internal consistency that ranges from 0.82 to 0.93

(Porter, Steers & Boulian 1974), this ensures that the obtained results is a good fit, while Stockport Council's value of 0.94 is even exceeding the anticipated range. This indicates that the correlation between the questionnaire items is very strong and that they measure the unidirectional construct of the affective commitment among front line employees in all cases.

Table 6.11 Front-line employees affective commitment measurement comparison

Questionnaire Item	Nottingham City Council		Stockport Metropolitan Borough Council		VELUX (GB) Company Ltd	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
	<i>Q1: I am willing to put great deal of effort beyond that normally expected to this organisation be successful.</i>	3.555	1.013	4.125	0.718	4.440
<i>Q2: I talk up this organisation to my friends as a great organization to work for.</i>	3.148	0.907	3.812	0.834	4.152	0.925
<i>Q3: I would accept almost any type of job assignment in order to keep working for this organisation.</i>	2.555	0.974	2.937	0.928	3.491	1.150
<i>Q4: I find that my values and this organisation's Values are very similar.</i>	2.629	0.839	3.812	0.750	4.050	0.680
<i>Q5: I am proud to tell others that I am part of this organisation.</i>	3.000	0.877	3.875	0.885	4.322	0.859
<i>Q6: This organisation really inspires the best in me in the way of job Performance.</i>	2.555	1.086	3.625	0.806	3.915	0.915
<i>Q7: I am extremely glad I chose this organisation to work for over others I was considering at the time I joined.</i>	3.037	0.808	4.000	0.730	4.254	0.800
<i>Q8: I really care about the fate of this organisation.</i>	3.740	1.023	4.250	0.577	4.389	0.851
<i>Q9: For me, this is the best of all organisations for which to work</i>	2.963	0.759	3.562	0.813	3.983	1.074
<b>Overall mean</b>	<b>3.02</b>		<b>3.77</b>		<b>4.17</b>	
<b>Internal consistency (coefficient <math>\alpha</math>)</b>	<b>0.87</b>		<b>0.94</b>		<b>0.86</b>	

Figure 6.1 Visual comparison of affective commitment levels achieved at the three cases



The final calculations for the affective commitment levels at the three call centres provided an overall mean of 3.02 for front-line employees at Nottingham City Council and an overall mean of 3.77 and 4.17 for their Stockport and VELUX(GB) counterparts respectively. Typically, the affective commitment level in mechanistic call centres is around 3.0 which reflects a lack of affective commitment among employees (Jaaron, Backhouse 2009a). However, a return of higher than 3.5 would statistically indicate that on average employees demonstrated high levels of affective commitment. As can be discerned then from the achieved values, front-line employees at Nottingham City Council exhibited a lack of affective commitment, whereas both Stockport and VELUX(GB) front-line employees evidenced high level of affective commitment. Therefore, another strong evidence has been provided that the working experience of front-line employees at Nottingham City Council’s service department is not rewarding and that this owes much to the requirements of the service system used (i.e. mechanistic structure). In addition, the systems thinking service design (i.e. organic structure) employed at both Stockport Council’s ICT department and VELUX(GB)’s operations department has contributed to the achievement of a rewarding working experience of front-line employees and leveraged their affective commitment level.

The affective commitment literature presented in chapter 2 provided a clear connection between affective commitment levels among employees and the offerings of the service system design in the call centre. However, in order to prove that the differences in affective commitment levels among the three call centres are indeed a result of the service system used and not to chance, the non-parametric Mann-Whitney U-test was used for this purpose.

The Mann-Whitney U-test is used “to test for differences between two independent groups on a continuous measure” (Pallant 2007). It needs the availability of only two groups of comparisons to be conducted (Sprent, Smeeton 2001). Therefore, the test will be conducted two times: between the values of Nottingham City Council and Stockport Council, and then between Nottingham City Council and VELUX(GB) to provide a meaningful comparison. It transforms the scores on the continuous variable of interest across the two groups to ranks, the test then assess whether these ranks differ from each other significantly on the basis of differences found in the medians. As a result of converting the scores into ranks across the two groups, the original distribution of the scores does not matter (Pallant 2007).

The Mann Whitney U-test aims at testing the following two hypotheses:

H0: Any observed differences in affective commitment medians at both centres are due to chance (This is the null hypothesis).

H1: There is a significant difference between pairs of employees’ affective commitment medians due to the effects of service systems used at both call centres and not due to chance (This is the alternative hypothesis).

The test aims at evaluating whether the medians of the affective commitment level differ significantly in the two call centre chosen. However, the test requires the availability of two variables for each call centre (i.e. one categorical/independent variable with two groups and a continuous dependant variable) (Siegel 1988, Sprent, Smeeton 2001):

- The one categorical variable used here is the service system employed in each call centre with mechanistic and organic groups.
- The continuous dependant variable is the corresponding affective commitment level for each group.

The SPSS software was used to carry out the test for the available data from the call centres.

#### **6.4.1 Nottingham City Council versus Stockport Council**

After processing the test using the SPSS software, Table 6.12 was developed. The main values of interest in the tables are the value of Z and the significance level, which is given as Asymp. Sig (2-tailed) (Pallant 2007). In order for the Null hypothesis to be rejected the Mann Whitney U test requires that the significance level (p-value) to be less than or equal to 0.05. The test calculations provide p-value= 0.000 (Asymp. Sig. (2-tailed)), which is less than  $p < 0.05$  significance level. Therefore, we shall reject the null hypothesis and the alternative hypothesis will be accepted. Thus, at  $p = 0.000$  level of significance, there is enough evidence to conclude that there is a significant difference in the median grades of the affective commitment levels of the two call centres and that these differences do not belong to chance, but due to the effects of the service system design employed at each call centre.

In the process of calculating the value of U for the Mann Whitney test shown in Table 6.12, all the scores in the data set are ranked in order of magnitude (Kinnear, Gray 2006), the means of ranks of the scores in each of the two groups are then calculated as shown in Table 6.13. The mean ranks column of the scores obtained under the mechanistic structure of Nottingham City Council is much less than that of the scores obtained under the organic structure of Stockport Council.

Table 6.12 Mann-Whitney U-test: SPSS results for Nottingham City Council and Stockport Council

Test Statistics <sup>a</sup>	
Affective commitment	
Mann-Whitney U	68.500
Wilcoxon W	446.500
Z	-4.049
Asymp. Sig. (2-tailed)	.000
Exact Sig. (2-tailed)	.000
Exact Sig. (1-tailed)	.000
Point Probability	.000

a. Grouping Variable: service system (i.e. mechanistic or organic).

Table 6.13 The table of ranks for the Mann Whitney U-test

Service system	N	Mean Rank	Sum of Ranks
Affective commitment Mechanistic structure- Nottingham City Council	27	16.54	446.50
Organic Structure- Stockport Council	18	32.69	588.50
Total	45		

**Effect size (r):**

The output from the Mann Whitney U-test does not provide an effect size statistical value of the independent variable (i.e. service system) on the dependent variable (i.e. affective commitment level). For this purpose the Z value provided in Table 6.12 will be used to calculate an approximate value for the effect size (r). Pallant (2007) presents the Effect size formula in terms of the value Z as:

$$r = |Z| / \text{square root of } N$$

where:

N= the total number of cases in the two groups

In this case, Z= -4.049 and N= 45; therefore the value of r can be calculated as:



$$r = \left| -4.049 \right| / \sqrt{45} = 0.60$$

A value of effect size (r) of 0.60 would be considered a very large effect size using the criteria of Cohen (1988) for measuring an independent variable statistical effects on dependent variable. Where 0.1 or below= small effect, 0.3= medium effect, 0.5 or above= large effect (Pallant 2007).

Having found a statistically significant difference between the two groups, it is also advisable to report the median values of each group (Pallant 2007) which will be used in the final interpretation statement of the output from the Mann Whitney U-test. Table 6.14 presents the median values for the two groups.

Table 6.14 Median values for each group

Service system	N	Median
Mechanistic- Nottingham City Council	27	3.1100
Organic- Stockport Council	18	3.8889
Total	45	3.2222

**Final interpretation and presentation of results:**

The results of the Mann Whitney U-test for the affective commitment scores obtained from Nottingham City Council’ services department (mechanistic structure) and Stockport council’s ICT Department (organic structure) can be presented as:

A Mann Whitney U-test revealed a significant difference in the affective commitment levels of mechanistic structure (Median=3.11, n=27) and Organic structure (Median= 3.89, n=18), U=68.500, Z= -4.049, p= 0.00, r= 0.60. And this difference do not belong to chance, but due to the effects of the service system design employed at each call centre.

## 6.4.2 Nottingham City Council versus VELUX(GB) Company Ltd

The difference between the affective commitment levels at Nottingham City Council and VELUX (GB) Company Ltd is calculated using the same procedure as described for the Mann Whitney U-test at Nottingham City Council and Stockport Council. Table 6.15 for the Mann Whitney U-test was developed using the SPSS. As discussed earlier, the main values of interest in the tables are the value of Z and the significance level, which is given as Asymp. Sig (2-tailed) (Pallant 2007). The test calculations provide p-value= 0.000 (Asymp. Sig. (2-tailed)), which is less than 0.05 significance level. Therefore, we shall reject the null hypothesis and the alternative hypothesis will be accepted. Thus, at p=0.000 level of significance, there is enough evidence to conclude that there is a significant difference in the median grades of the affective commitment levels of the two call centres and that these differences do not belong to chance, but due to the effects of the service system design employed at each call centre.

Table 6.15 Mann-Whitney U-test: SPSS results for Nottingham City Council and VELUX (GB) Company Ltd

<b>Test Statistics<sup>a</sup></b>	
Affective commitment	
Mann-Whitney U	118.500
Wilcoxon W	496.500
Z	-6.316
Asymp. Sig. (2-tailed)	.000
Exact Sig. (2-tailed)	.000
Exact Sig. (1-tailed)	.000
Point Probability	.000

a. Grouping Variable: Service system (i.e. mechanistic or organic)

All the scores in the data set, across the two groups, are ranked in order of magnitude to calculate the value of U for the Mann Whitney U-test (Kinnear, Gray 2006). The means of ranks of the scores in each of the two groups are then calculated as shown in Table 6.16. The mean ranks column of the scores obtained under the mechanistic structure of Nottingham City Council is much less than that of the scores obtained under the organic structure of VELUX (GB) Company Ltd.

Table 6.16 The table of ranks for the Mann Whitney U-test

	Service system	N	Mean Rank	Sum of Ranks
Affective commitment	Mechanistic- Nottingham City Council	27	18.39	496.50
	Organic- VELUX (GB) Company Ltd	59	54.99	3244.50
	Total	86		

**Effect size (r):**

In this test the Effect size statistical value (r) of the independent variable (i.e. service system) on the dependent variable (i.e. affective commitment level) is calculated using the same formula presented in the previous test:

$$r = |Z| / \text{square root of } N$$

where:

N= the total number of cases in the two groups

In this case, Z= -6.316 and N= 86; therefore the value of r can be calculated as:

$$r = |-6.316| / \sqrt{86} = 0.68$$

A value of effect size (r) of 0.68 would be considered a very large effect size using the criteria of Cohen (1988) for measuring an independent variable statistical effects on dependent variable. Where 0.1 or below= small effect, 0.3= medium effect, 0.5 or above= large effect (Pallant 2007).

Similarly, having found a statistically significant difference between the two groups, it is also advisable to report the median values of each group (Pallant 2007) which will be used in the final interpretation statement of the output from the Mann Whitney U-test. Table 6.17 presents the median values for the two groups.

Table 6.17 Median values for each group

Service system	N	Median
Mechanistic- Nottingham City Council	27	3.1100
Organic- VELUX (GB) Company Ltd	59	4.1111
Total	86	3.8333

**Final interpretation and presentation of results:**

The results of the Mann Whitney U-test for the affective commitment scores obtained from Nottingham City Council’ services department (mechanistic structure) and VELUX (GB) Company Ltd (organic structure) can be presented in the same way presented in the previous test, as:

A Mann Whitney U-test revealed a significant difference in the affective commitment levels of mechanistic structure (Median=3.11, n=27) and Organic structure (Median= 4.11, n=59),  $U=118.500$ ,  $Z= -6.316$ ,  $p= 0.00$ ,  $r= 0.68$ . And this difference do not belong to chance, but due to the effects of the service system design employed at each call centre.

**6.5 Cross-case assessment of comparison**

In the current cross case comparison both the mechanistic and organic service system designs employed in the three call centres were studied to explore the impact of each service design on employees affective commitment level and on the potential to add value to the organisation as a whole. The empirical pattern achieved from the cross-case analysis clearly shows a “replication logic” (Yin 2009) between the three case; a theoretical replication between Nottingham City Council’s case and the other two cases due to the delivery of contrary results due to the effects of mechanistic structure, and a literal replication between Stockport Council’s case and VELUX(GB)’s case as they share the same pattern and configurations.

The common thematic analysis results presented in this comparison complement and validate the quantitative results achieved through questionnaires and the Mann Whitney

u-test in a number of ways. The following two sections discuss the patterns found at the three cases and relate the findings to two dimensions; the effects on affective commitment and the effects on value adding potential.

### **6.5.1 Service system effects on affective commitment: answering RQ1**

The common themes discussed above and the results of the Mann Whitney U-test have revealed that the mechanistic structure employed at Nottingham City Council was an obstruct for leveraging employee's affective commitment. It hampered the achievement of a rewarding job experience for front-line employees, as well as for a quality service that could satisfy customers. The management practices explored in this service design focused on achieving pre-specified targets and minimising operational costs, the work philosophy is, then, all around the "Principles of Taylorism" commonly found in traditional call centres (Bain et al. 2002, Batt, Moynihan 2002).

Due to the increase in the mechanisation of the customer-employee contact and decreasing service flexibility, front-line employees lost personal control of their activities and on their ability to negotiate issues with customers (Bain, Taylor 2004, Deery, Iverson & Walsh 2002). This has negatively affected employees attempts to provide a value work of delivering what customers want at the first time of contact. Failing to provide customers what they want as they want it has apparently contributed to the low customisation ability of customers of providing single customers an individual service. Lack of call handling time, necessary information, and support from other departments have been found central to this problem. Employees at the mechanistic structure call centre processed a limited scope of demand in a repetitive manner. This was seen as a job deskilling practice as it did not allow for job progress prospects and eventually did not contribute towards satisfying employee's personal ambitions of achievement and development.

Further, depriving employees from decision making authority resulted in a lack of control on the demand they received. As a result, the majority of the work was passed to the back office to deal with. The consequence is that employees have a feeling of not

being of value to their organisation and simply acted as filters to direct enquiries and demands after initial basic evaluation. It is clear that the service system design at the mechanistic structure call centre did not create the antecedents to instil the foundations of affective commitment discussed in Chapter 2. As a result lower levels of affective commitment were achieved. This was further evidenced by the level of turnover found in the call centre which targeted 25% in the year preceding the case study. However, central to all these issues is the communication problem in the call centre. Employees felt that they were paralysed due to the unavailability of predefined open channels of communication and support from other departments when needed.

In terms of the organic structure found at Stockport Council' ICT department and VELUX (GB)'s operations department, there was a strong link between using the systems thinking service design (i.e. organic structure) and the creation of affective commitment foundations. This was evidenced by the results of the affective commitment questionnaires, the common themes discussed, and the Mann Whitney U-test which confirmed that it is a strong relationship. The offerings of the organic structure service design has contributed to the development of employees' sense of job ownership and promoted feeling of belonging and value to the work place. This is because systems thinking provides the opportunity for employees to fulfil their personal ambitions; desire of achievement, autonomy, and a sense of control on what they have. Furthermore, it was revealed that organic structure is related to the employer ability to empower employees to make work decisions at their own level to provide a customised service, with this in place employees can develop a feeling of personal importance to the organization (Mowday, Porter & Steers 1982, van Emmrik, Sanders 2005). Constructive team leaders' relationships with employees, and their ability to play the role of front-line employee when needed, has a particular importance in creating a supporting culture in the work place rather than a monitoring culture that could destroy employees morale (Seddon 2003). This inevitably creates a rewarding working experience for employees and explains the tendency found through questionnaires among employees both at Stockport and VELUX (GB) to develop the affective component of commitment with their employer. Employees in Stockport Council and VELUX (GB) had only 5% and 8% turnover rate respectively, which enhanced our findings of high levels of affective commitment to their employer.

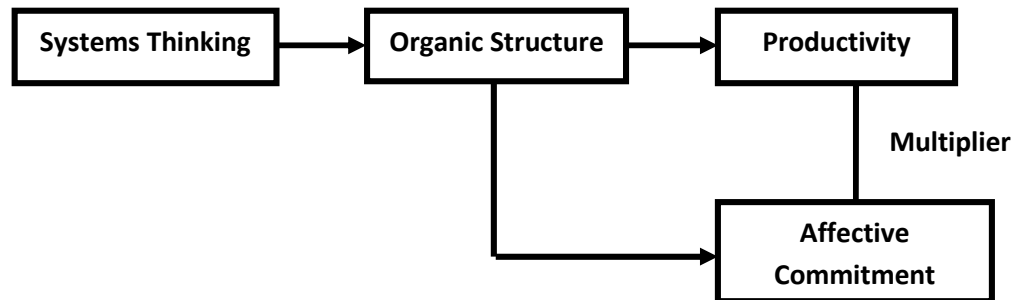
All considered, organically structured call centres, through the implementation of systems thinking principles, employ open channels of communication with other business units in the organisation as well as among employees themselves. Decentralising decision making processes to be at employees' level was a result of this open communication strategy. Employees could access the information necessary for them to process demands and thus allow them to provide solutions during same phone call without the need for customers to call again. Handling calls this way allowed employees to process more requests and increase value productivity in an efficient way without a cut in service, and eventually enhanced their self-esteem of ability to act and personal achievement. Continuous demand analysis carried out by managers, team leaders, and employees for the issues raised by customers has further enhanced their feeling of ownership and empowerment as they were viewed as the source of potential improvement in the system and were actively involved in the creation of corrective and development measures. This has clearly increased employees affective commitment which provided them with more determination to do more efforts on behalf of their employer in processing demands one stop to satisfy and retain customers. These discussed relationships and effects are described as shown in Figure 6.2.

### **Summary**

The development of an organic structure call centre has contributed to the achievement of all the foundations necessary to leverage the affective commitment of front-line employees. Within this structure employees were given the chance to fulfil their personal ambitions of development and achievement due to challenging and empowering environment available, this has saturated front-line employees' personal needs. Managerial attitudes within a service department with an organic structure is more of supporting where the decision making processes are found at the employee's level; this has given employees a feeling of being of value in the organisation. Inevitably, this has met employees expectations of employer loyalty and preferences consideration at work which further enhances employees satisfaction and sense of belonging. This also has a direct impact on employee's fair treatment and having a rewarding working experience that fulfilled their own aspirations. However, these traits

and characteristics were found lacking the mechanistic structures for service departments.

Figure 6.2 Conceptual framework for leveraging affective commitment in manufacturing support services.



For all of that the first research questions (i.e. RQ1) posed in section 2.14 can now be answered.

**RQ1: How do organic structures for manufacturing support services affect the affective commitment of the individuals who work in manufacturing support services departments?**

**Answer: The organic structure is a system for respect for human resources, it meets employees needs and desires, it fulfils their expectations of employer fair treatment and the use of personal skills and innovation. In brief, it creates a rewarding working experience that enhances employees' feelings of being a part of the organisational context. Therefore, organic structures for manufacturing support services will maintain a high level of affective commitment among front-line employees.**

### **6.5.2 Service system effects on value adding potential: answering RQ2**

Having compiled the themes from each of the individual cases into a cross-case format begins to shed the light on common potentials for value adding that the organic structures could deliver in the organisation. These potentials were a result of the systems thinking contributions to the service department and the organisation as a



whole. Four major elements in the organisation were found where the value was added, these are discussed below:

### **I. Value for employees**

The results reported above, of building service department around the principles of organic structures, show a dramatic change in the philosophy of work as compared to the traditional office values found in the mechanistic structure of service departments. The management style usually found in traditional service departments, including call centres, is focused on achieving job targets and minimising costs, the internal work is designed around the “Principles of Taylorism” (Bain et al. 2002, Cartwright 2003, Batt, Moynihan 2002). This approach is based on standardising work procedures in which the employees need to handle demand in a repetitive manner with detailed descriptions of procedures and work standards. The standardisation of procedures is perceived to increase rigidity of the customer-employee contact and decrease service flexibility. Call centre employees following this kind of model will lose large measure of control over their self-presentation to customers, and will inhibit their personal initiatives for innovation and skills employment. This will leave them with little autonomy in negotiating their interactions with customers (Deery, Iverson & Walsh 2002). The traditional call centre environment represents the latest form of Taylorist principle as it is a common trend in call centres globally to practice high levels of monitoring over their employees (Armistead et al. 2002).

However, the results of common themes conducted with front-line employees at the call centre have shown that the implementation of systems thinking approach has delivered numerous improvements. Employees under the new system are no longer restricted to repetitive job handling procedures or target achieving dilemma, they are empowered to do the job in the best way they see is vital to satisfy customer needs. Hence, employees have opportunities to develop their working skills by handling a wide range of challenging demands on daily basis. Their performance is evaluated on their ability to help the customer solve his problem from the first interaction without the need for the customer to call again.

Further, employees operate as a team that shares the work responsibility; an employee can seek support from a more skilled colleague to solve a customer problem while on phone. Obviously, employees working in this environment have a feeling of belonging and ownership of the workplace, they have the freedom to make decisions to provide a high quality service at relatively shorter time, and they enjoy the open channels of communication between themselves as well as with other departments. Employees, thus, have a sense of freedom to act and excel in their job roles. When linking these job characteristics and environment offerings for employees with the antecedents of affective commitment discussed earlier, an expectation of high affective commitment level among employees can be concluded. The nine-item OCQ provided a value of 3.77 and 4.17 in the two organic cases studied for the affective commitment level among employees that indeed proved the value-added to front-line employees life in the call centre in terms of work experience and job-related characteristics.

## **II. Value for Managers**

Support services represent an organizational structure with relatively few layers of management where managers comprise 12% of the employees (Holman, Batt & Holtgrewe 2007). They are top-down flat organizations (T-Form organizations) operating in a functional specialized parent organization (Holman, Batt & Holtgrewe 2007, Adria, Chowdhury 1999) with a rigid management model that controls employees behaviour to match the requirements of management, monitors their activities and intensively focus on achieving work targets and reduce operational costs (Seddon, Brand 2008). However, these management practices does not provide clarity on the system operations, they also can not indicate whether the demand received was resolved by providing a reasonable solution that satisfy a customer.

The results achieved from the common themes have indicated that systems thinking has provided service directors and middle managers with clarity on the system due to the continuous demand analysis performed, this helped managers to identify potential problems in the services offered and thus the immediate corrective measures to be taken. In addition, system clarity and continuous improvement have allowed managers to focus on the main purpose of the support services (i.e. supporting customers) rather than maintaining the system against failures or achieving the service targets. Systems

thinking was found to eliminate the waste in operations that helped managers to achieve automatic productivity and capacity improvements, customers do not need to call again which allowed employees to handle more demands in an efficient way without cut in service, and eventually reduce resources consumption and overall costs.

Significantly, the employment of an economical way to improve the work was another contribution given to managers by systems thinking, managers indicated that systems thinking deals with human side to change the nature of work without the need of any tools or technologies to be brought in. Further, the creation of a committed front-line employees in the call centre has significantly resulted in reducing the burden of managing people behaviour as the general moral system of the workplace controls the human resources behaviour and not the traditional top-down hierarchy or performance monitoring. This is similar to the research of Hackman & Oldham (1976) on the motivation and management of employees through the design of the work; managers found no need to monitor or force the employees to do well. This assumption is emanating from the fact that systems thinking has provided a work design with a satisfying and rewarding job environment (Murray, Jordan & Bowden 2004).

### **III. Value for customers**

Many organizations have realized that the relationship with the customers should not end at the moment they receive their demand (Feinberg et al. 2000). It is believed that organizations should provide communication channels that can add value to the customers experience with the organization (Marisco 1996). As a result call centres have emerged as an important port for customer relationship management activities (Kotorov 2002) and the call centre employees are seen as the main link between organizations and customers (Burgers et al. 2000). However, although the “caller behaviour is difficult to objectively measure” (Betts, Meadows & Walley 2000), he/she evaluates the quality of the service on the basis of the service encounter itself and the expected benefits he/she can achieve from that encounter. Therefore, it is important for organizations to pay attention to the structures and quality of their services to achieve the value added and satisfaction in their customer interactions.

The results of the common themes have shown that both front-line employees and managers reinforced the strong association of systems thinking and customer satisfaction. This came as a result of the rapport initiated between customers and employees, customers are not transferred from pillar to post anymore, only one employee handle the customer demand. They are now enjoying a solution delivery service at the same phone call without the need for them to call again. Apparently, the affective commitment of employees accompanied with system waste elimination created a difference for the customer experience and added-value to the service encounter, no unproductive processes are used anymore and employees are willing to exert more effort on behalf of their organization to help customers and deliver excellent service.

#### **IV. Value for business**

One may argue that managers may know from targets and statistics whether people are doing according to requirements or not. However, employees may rush to achieve their target for answering their customers' demands with low abandonment rates, but the question remains is that, are they doing the right work whilst having customers on the phone? Are they communicating in the manner that reflects the company's values and are they achieving the contact benefits? Employees may learn how to cheat their numbers to avoid management attention (Seddon, Brand 2008), they can provide a fast service even though the customers may be misunderstood and their information incorrectly entered (Cleveland 2006). Thus, business resources can be lost due to poor service delivery.

The results of the cross-case common themes have identified that systems thinking have provided workplace with a relaxed environment where service encounter can be done without the need to stick to a pre-specified time allowance, this inevitably helped improve solution delivery processes, prevented calls repetition, and eventually allowed for resources savings. Another significant dimension of interest is the departmental integration, open channels of communication between the service department and other business units affected by its work were established. Formal and informal communication at managers level allowed for significant information sharing. Interestingly, this created consistency in the services offered by other departments

through streamlining service operations. Further, systems thinking made it possible for management to identify the opportunities for making cost savings and performance improvements in the short and medium term, both from a corporate and service perspective. The waste elimination element of the system was viewed as a resources saving activity that used to be a major cause for capacity reduction (Seddon, Brand 2008). In addition, systems thinking allowed the call centre in both cases to do more with less, fewer people are required to do more job, an opportunity has aroused to increase value work productivity and save money.

Generally speaking, by paying higher wages, employees would feel an obligation to do more work (Ulman 1992). This is a basic feature of the efficiency-wage theory widely supported in labour economic studies (Ulman 1992, Barth 1994, Riveros 1994, Rigdon 2002, Helper 2002, Toulemonde 2003, Gaumont 2006, Stanley 2009). Helper (2002) pointed out that there are three main mechanisms through which wages can affect productivity. First, employees who are paid higher wages are more willing to increase their effort to avoid being dismissed for low performance. Second, a higher wage will improve employees moral, and thus this will cause them to increase effort. Third, higher wages will retain employees and thus turnover and recruitment costs will decrease. It is the first mechanism that Shapiro and Stiglitz (1984) regards as a “shirking model” which they consider as a solution for the employees monitoring problem. It claims that employees paid higher wages than expected from outside the firm, they are less likely to reduce performance or shirk in order not to lose their jobs (Taylor 2003). Whereas the second mechanism is regarded by Akerlof (1982) as a “gift exchange” where the employer provides higher wages and in return the employee respond with improved loyalty and performance. Furthermore, Muhlau (2003) found that the “gift exchange” perspective of efficiency wages would create employees’ organisational commitment through changing the nature of employment relation to be more of a mutual cooperative type.

However, the results of the cross-case common themes explicitly propose that the use of organic structures for support services department for affective commitment building is favoured over the employment of efficiency wages theories, and other techniques, for productivity improvement. It is vastly supported that employees with high levels of

affective commitment have invaluable tendency to increase productivity by doing extra efforts on behalf of their employer to do exceptional job of delivering a quality service that keeps customers (Mowday, Steers & Porter 1979, Mathieu, Zajac 1990, Meyer , Allen 1991, Mowday, Porter & Steers 1982, Mayer, Allen & Smith 1993). Higher efficiency wages causes more productivity that increases profits to a degree that a portion of the organisation profit is deducted to outweigh the payment increase (Taylor 2003, Muhlau 2003). In contrast, higher employees' affective commitment causes paramount savings and these are of twofold. First, more productivity that increases profit. Second, huge savings on wages as there is no need to increase wages in the first place as in the case of employing efficiency wage theories.

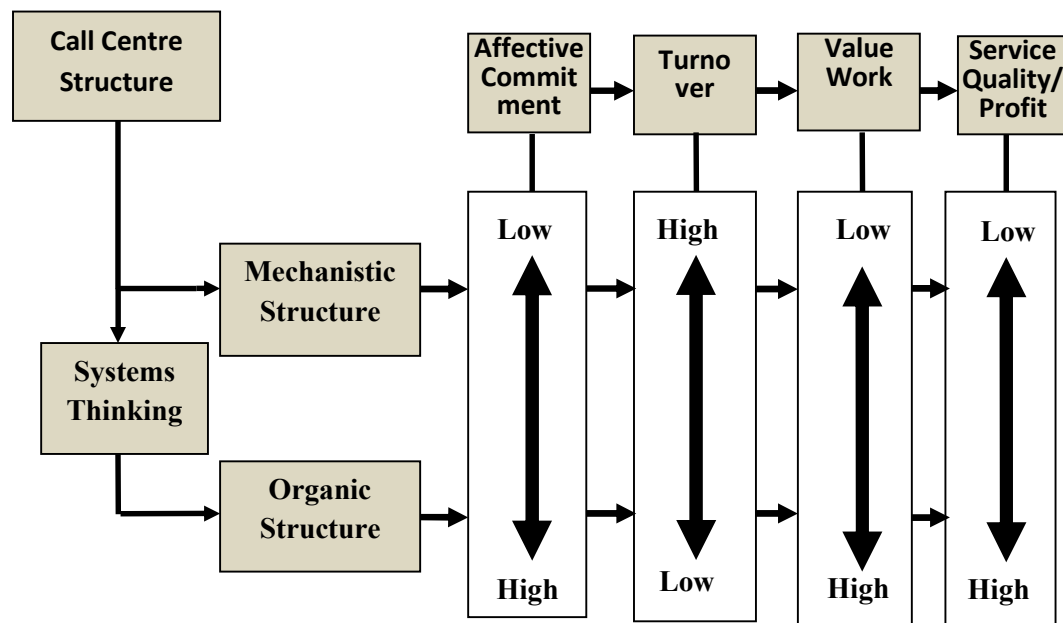
Furthermore, Vandenberghe (2009) have identified that employees affective commitment is associated with reduced turnover levels and intentions to quit. It is in this regard that affective commitment leveraging through organic structures is vital to reducing financial costs through employees reduced turnover and absenteeism (Somers 2009). As it was discussed in Chapter 2, two types of costs have been identified for employees turnover. First, a quantifiable cost which include advertising and recruiting cost, interviewing cost, orientation or training cost, and employment application processing cost. Second, unquantifiable cost which include reduced quality assurance, increased sick time, loss of considerable experience, skills, and talent, and decreased morale. These are perceived as having significant effect on call centre operational cost (Krenzelok, Dean 1994).

Similar to affective commitment, efficiency-wage theory plays a major role in reducing the cost of employees monitoring (Barth 1994, Rigdon 2002, Shapiro, Stiglitz 1984). Efficiency wages rely on higher payments to motivate employees not to shirk (Stanley 2009, Muhlau 2003), whereas affective commitment depends on the general moral system of the workplace that will guide the human resources actions (Jaaron, Backhouse 2009b, Mowday, Steers & Porter 1979, Meyer , Allen 1991, Mowday, Porter & Steers 1982).

### Cross-ordered effects matrix

In order to summarise and display the effects of both mechanistic and organic structures on the diverse organisational elements discussed above, Figure 6.3 shows both the mechanistic and organic structures as the independent variables and the diverse effects for each case. Miles (1994) pointed out that a cross-ordered effects matrix is preferable when several cases have an important independent variable that is expected to have a variety of results. The focus of such matrices is on the dependent variables or outcomes (Miles 1994).

Figure 6.3 Cross-ordered effects matrix



### Summary

Findings from the cross-case common themes have shown the influence of the role of organic structures in achieving organisational benefits. At employees level, organic structures have changed the philosophy of work to be more focused on respect for human skills and mutual respect that raised employees affective commitment. At managers level, more control on the service system was possible due to continuous demand analysis that helped in identifying corrective measures quickly and efficiently. At customers level, they are now enjoying a service delivery over the first phone call with high levels of proficiency and rapport from the affectively committed employees, this has inevitably contributed to retaining customers for future demands of the service.

At business level, affectively committed employees are now doing more work with less resources, the waste present in the service operations has been minimised, and thus significant reduction in cost has been achieved.

For all of that the second research questions (i.e. RQ2) posed in section 2.14 can now be answered as follows:

**RQ2: Why do organic structures for manufacturing support services add value to the manufacturing enterprise?**

**Answer: Organic structures focus on giving front-line employees decision making authority and freedom to act when dealing with customers. This raises employees affective commitment through a rewarding working experience that stimulates value productivity of dealing with customer demands one stop. Customers enjoy high levels of service quality that retains them. Managers practice easier control on the business due to the continuous demand analysis that keeps managers aware of new demands coming in for service redesign and improvement. No need for expensive employees' monitoring. Therefore, the business organisation experience increased value productivity with less resources, retain customers, and thus achieves significant cost reductions.**

## **6.6 Chapter summary**

This chapter gave an account of the cross-case analysis of findings; it used the thematic analysis to highlight areas of similar effects for those employing organic structures for their service departments, and contradictory, but expected, effects from the individual case employing mechanistic structures in its services department. The thematic analysis created for each case was combined in this chapter by the use of common themes to validate the data by showing patterns in the affective commitment levels and value adding prospects. These patterns were then discussed in details to show how it aligns with the literature review presented in Chapter 2 and 3. This has allowed for answering the first and the second research questions (i.e. RQ1 & RQ2) presented in section 2.14.



Chapter 7 follows a similar format to Chapter 6 by combining common thematic from all cases to synthesis an implementation methodology for the organic structures in manufacturing support services.

# Chapter 7 - Discussion of Analysis Findings on Organic Structures Implementation

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## 7.1 Overview

Chapter 6 has explored the effects of both mechanistic and organic structures on employees affective commitment and potentials for organisational value adding, and discussed these effects in relation to each other. Also, the first and the second research questions were answered.

This chapter follows a similar format to that found in Chapter 6. It uses the cross-case thematic analysis to explore the managerial and operational issues related to the organic structures (i.e. systems thinking) implementation at the two case organisations that have implemented it. A novel methodology for its implementation as a value creating model has been formulated. It is concluded that the emerged methodology can be used as an initial strategic tool for senior management intervention in order to provide systems thinking leadership and to develop alternative implementation recommendations. These findings are then aligned with those of past service innovation implementation models presented in the literature.

## 7.2 Cross case thematic analysis for organic structures implementation

The cross case thematic analysis presented in this chapter drags common themes from only the two case studies where the organic structure was implemented (i.e. Stockport Council and VELUX Company Ltd (GB)). The common themes that emerged from this comparison were used to synthesis the implementation methodology. Table 7.1, shows the compilation of comparable themes (see Appendix 3 for cross-case thematic matrices). This process helped in matching patterns available in the data as the themes of the two case studies were comparable to a great extent (see chapter 4 for the systems thinking implementation thematic analysis results). An initial evidence was provided on

the availability of a common pattern for the two cases. This further strengthens the internal validity of the case studies findings (Yin 2009). The discussion around the common themes found in the results will be used to answer the third research question (i.e. RQ3) posed in section 2.14.

Table 7.1 Cross-case thematic analysis for organic structures implementation

Cases	VELUX (GB) Company Ltd- Operations Department	Stockport Metropolitan borough Council- ICT Department
	<b>Common Themes</b>	
<b>Introducing organic structures</b>	Theme 1	Theme 2 (Part II)
<b>Capacity Building</b>	Theme 2	Theme 5 (Part II)
<b>Confronting top management reactions</b>	Theme 3	Theme 4 (Part II)
<b>Beyond top management confrontation</b>	Theme 5	Overall themes abstracts

### 7.2.1 Introducing organic structures to support services departments

The aim of this common theme is to explore the process of justifying the redesign of service operations around the principles of systems thinking to create an organic structure service department. The identification of the foundations for the systems thinking project introduction to the support services department is considered as the cornerstone for the implementation project.

It was prevalent at the two case studies that there is a significant importance for the availability and readiness of three main foundations for the project to be initiated, these are: availability of project champions, contributions and justifications of systems thinking, and formulation of an intervention team, these foundations are discussed below:

#### **Leadership/project champions availability:**

Perhaps one of the most obvious reasons for creating a motivated and enthusiastic supporters to systems thinking project is the availability of a strong leadership (Jaaron, Backhouse 2011a), also called project champions, that can communicate future vision

of the work prior to the implementation phase. The responsibility of this effective leadership is to play the role of “a new way of thinking” sponsor. Their role is to address the reasons that necessitate migration from the mechanistic systems design to the organic one. They also need to communicate what is systems thinking, what is it like to implement it, and what are the expected contributions at all levels. The leadership must be at a high level of competence in terms of their ability to raise moral and motivation of colleagues to support the project. The two case studies emphasised on this foundation as the one through which the other two foundations of this phase will emanate.

*“I have approached my people in the organisation with determination...in this project you cannot be only a manager, but a striver to make them understand the hidden problems of the system...there are a lot of factual data that you need to collect first before you can convince people...the factual data that will make a difference for them...without facts and determination we couldn't have made it.”- operations director (project champion), VELUX(GB) Company Ltd*

### **Systems thinking contributions and Justifications**

The project managers and the early supporters regarded the future contributions of systems thinking and the current system problems as a vital part of this process in order to present a strong case in front of their top management, peers, and front-line employees. These contributions included the following points:

- cutting down the waste in the service system that makes the service process sluggish and time consuming.
- Saving resources/money without cut in service.
- There will be no need to pass the caller from pillar to post to give him what he wants. Calls are done one stop by one employee for each call.
- Systems thinking is the only model that works with the “Human side” to change the nature of work.
- Customer feedback and percentage of calls done first time.
- Reduction in repeated calls and thus improved productivity.
- Systems clarity and transparency as a result of continuous demand analysis.

- Focus on the job of serving customers rather than maintaining the system and achieving targets.
- Reducing turnover, stress and frustration of employees by creating a rewarding working experience.
- Employee voice is heard (they will be involved in the service system redesign as they are the most knowledgeable about what customers want and how to serve them).
- Open channels of communication between departments that stimulate information sharing and thus service quality.

Explaining these issues to the top management as well as to colleagues and front-line employees was regarded as a major step towards creating curiosity among people at those levels. These issues were highlighted via a normative scoping exercise in which top management and other colleagues were confronted with evidence that challenged their perceptions about organizational performance.

*“it was brought by Phil Badley, Phil is my boss and he is highly respected among us...he explained for us the amount of waste we had in the system and the link of that waste to what our employees face on phones and the after call work...he showed us how is this going to change and how it will affect everyone’s life at the ICT department...it was clear from those problems that it was the solution for us.”- ICT department Manager, Stockport Metropolitan Borough Council*

*“ we had two days of discussions but I was not convinced, he told us to have a look at our capability and process flow charts, we saw a lot of steps being repeated and that was not adding value at all...the number of passing on calls was too high...this evidence made me interested and I felt there was a need to know more about it.”-Intervention Team Member, VELUX (GB) Company Ltd*

#### **Intervention team formulation:**

There was a need at the two cases studies for a well-structured intervention team to widen the dissemination of leadership system’s findings and to communicate systems thinking justifications to employees at all levels. The intervention team members at both cases were selected from those who had high levels of operational problems and

work-related stress and from those who have shown desire for system change and improvement. This was based on the belief that people with high levels of work-related stress and problems are the most knowledgeable about the systems pitfalls, and will tend to accept improvement initiatives targeted at solving their own work problems. The nominated members were invited to a workshop explaining to them the vision of systems thinking and the benefits of having it in place both at personal and business levels. This was followed by a training course for those who had agreed to take part in the implementation process. The team formation allowed the next stage of the systems thinking implementation process to be initiated.

*“prior to selecting members, we asked people to inform us of any problems they face, every time it happens...and we asked them to say their opinions about the system...it was like waiting for the hint to know who is better than others to join the team...if you know what is the problem, you are half way towards a solution and you will work hard to get to that solution”-  
Company Director (Project Champion), VELUX(GB) Company Ltd*

Table 7.2 Summary of the main activities carried out to justify and introduce systems thinking to support services department

<b>Introducing systems thinking (i.e. organic structures) to support services departments</b>	<ul style="list-style-type: none"> <li>• Leadership availability and readiness</li> <li>• Dissemination of systems thinking contributions and current systems hidden problems</li> <li>• Intervention team members search and team formulation</li> </ul>
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### 7.2.2 Capacity Building

This common theme highlighted the second phase of the systems thinking implementation process at both cases. After the formulation of a knowledgeable intervention team equipped with the right level of tools and information about systems thinking, it was felt at both cases that there is a need to build capacity to support the project from within the organisation by increasing the numbers of supporters and experts in systems thinking. This started with lower levels up towards the top management in both cases.

At VELUX (GB) a deep analysis for the customer demands coming in to the call centre was carried out at the same time of constructing a communication plan to communicate findings to the rest of the organisation. Demand analysis and the identification of service system waste was regarded as one of the most powerful tools used in the communication process in order to convince people and confront them with evidence to build capacity for the systems thinking implementation. To build curiosity among other departmental managers at Stockport Council, educational elements and presentations was done on systems thinking to spread the word, this is followed by some follow-up visits to the invited managers' departments to capture any opportunity in the system to make intervention where that manager operates.

*"...absolutely crucial, without them (i.e. demand analysis) we cannot get the picture and they (i.e. other people) will not get interested...we focused on demand analysis to show them what we have been facing in the old system...we meant to get them interested and, obviously, to get them on board."- Company Director (Project Champion), VELUX(GB) Company Ltd*

*"one of the critical things we wanted to do strategically was to build capacity for us to be able to support and deliver, so we worked hard to get people to be tempted, we invited people to attend the systems thinking fundamental course, then we made an explanation of the demand analysis results..we got four people full-time interventionists due to that.."-Services Director (Project Champion), Stockport Metropolitan Borough Council*

Both of the educational elements and the demand analysis formed the basis for the plan phase to be initiated. These two techniques gave underpinning knowledge to colleagues who are being developed to be potential lead interventionists in the future. The plan phase was actually the redesign phase and involved all the processes in the service department. Processes flow diagrams for the service operations was developed taking what had been learned in the demand analysis and considering the customer "wants" and then mapping out the new service processes. The plan phase was followed by an experimental stage where the new redesign of processes was used for a period of time to achieve evidence of improvement. The intervention team was focused, at this stage, on observing the reduction in non-value adding activities from a customer perspective. The outcome of this assessment process of the new design has also been used to build

further capacity by communicating improvements to other front-line employees, middle managers, and top management bodies.

However, the communication plan, used in this process of communicating benefits, was designed so that the correct terminology is used (i.e. tailoring the message according to the recipient) so that a common language can be initiated to build curiosity and possibly securing further support for the project.

*“I learned to tailor the message according to the type of receiver...for a person who is factual I tell him that ROI was in 9 months...for other types of people I invite them to come and have a look.”- Service Director, Stockport Metropolitan Borough Council*

Table 7.3 Summary of the main activities carried out to build project capacity

<b>Capacity Building</b>	<ul style="list-style-type: none"> <li>• Using demand analysis and old system waste</li> <li>• Educational elements for managers and employees</li> <li>• Improvements: e.g. reduction in non-value adding activities</li> <li>• Tailoring the message according to the recipient</li> </ul>
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### 7.2.3 Confronting top management reactions

This common theme is centred on understanding the top management reactions to the systems thinking project and what tools were used by intervention teams to secure top management’s approval and support to the project implementation at both cases. A summarisation of these tools are given in Table 7.4.

The introduction of the systems thinking and the underpinning activities of demand analysis and team formulations was received by the top management with scepticism and rejection. As a result of the early messages communicated about its future contributions and the change of work philosophy that it calls for, top management and managers in other departments viewed it as a source of threat to their authority and control on the work.



*“so we talked to the middle managers at various departments with the hope that we might help them think a little bit different...since what we are doing does not fit the targets and changes the managers focus to be on value work, managers felt that it causes loss of control.”-Head of Transformation, Stockport Metropolitan Borough Council*

The idea of making decisions at employees level was the main source for this perspective. Furthermore, top management did not show awareness about the traditional system problems and claimed that it was working for them by achieving the target they aim for. It was clear that the top management disconnect from the real work place was a major obstruct for them to see the hidden problems in the system and to accept the systems thinking early messages.

*“There was a lot of scepticism about it...communication is not going to help them understand it, managers are very factual and away from their employees...they do not see the system problems...performance reports is the only thing they get from the services department, I think what they need to know is what are the problems in the system and what systems thinking will do for us.”-Intervention Team Member, VELUX (GB) Company Ltd*

Due to the fact that managers rely only on statistics and numbers to make decisions (Payne, Chelsom & Reavill 1996), there was a feeling at both cases that significant progress in convincing top management is of twofold; by providing them with knowledge and awareness about systems thinking, and by quantifying the impact of the new design (Jaaron, Backhouse 2011a). For this purpose the following tools have been used:

### **Process Mapping:**

One of the major tools used at this stage of the project is the process mapping of the traditional service system against the new design. This step involved the identification of the amount of waste present in the processes in terms of time and resources. This process is of great importance as it introduces an evidence on the amount of savings and improvements that could be achieved. The use of process mapping made the case of using systems thinking contributions even stronger by emphasising on why should so much time and money be invested in a process that can be done quicker and with least resources requirement?

*“it is in the process mapping where I have shown the problems arising at each step and how often does it happen, what is the impact...It was in the impact column that I could identify the waste and the impact of the process how it was. This columns included aspects such as frustrated customers, time delay, company brand, the potential for error i.e. charging the wrong amount, legal obligations...etc. This process flow had over 50 steps in it just to take a card payment, the real saving being if we changed the process it would mean less time for the team to work on this and ultimately no charge for the hire of the machine that we would need to enable us to process this payment.”- Intervention Team Member, VELUX(GB) company Ltd*

### **Management Involvement:**

The other tool that was found of great benefit for the systems thinking implementation project is the involvement of the top management in the work itself. The intervention team at both cases invited top managers and other colleagues and peers to come to the work place. This was done to provide managers with an opportunity to experience the reality of work, they were also involved in the process of creating demand analysis and process mapping activities to provide an evidence for the hidden problems of the system.

*“managers are tougher to understand, we asked them to come and try the job and listen to people on phones, we have visual boards to show what we have achieved...they are better in understanding our new language at work.”-Intervention Team Member, VELUX (GB) Company Ltd*

### **Management Accountant**

One of the most powerful, and most difficult, tools to secure management approval and support is the development of quantitative measures for the new design improvements. Having a management accountant from the first day of the project who could show measures of success in a quantitative manner is vital. Quantitative measures should indicate improvements in efficiency and demonstrate value for money. There was many attempts at both cases to quantify a wide spectrum of system improvements, these include:

- reduction in waste, reductions in lost calls, and absence drops.
- customer retention, and employees moral and retention.

- Percentage of demand that is met and dealt with one stop against percentage of demand that was met before.
- The duration of time it takes to fix a call and deliver a service against the duration of time it took before for the same type of call.
- The number of people required to do the job: systems thinking has the advantage of requiring fewer people to do more job. The growth in value productivity stands as an attractive measure to minimise resources consumption and save money.

*“we were in the redesign phase when we realised that we do not need all workers. So we decided to use that as an opportunity to cut down costs..we removed agency workers and did not fill vacancies.”- Service Director (Project Champion), Stockport Metropolitan Borough Council*

Table 7.4 Summary of tactics used to confront top management reactions

<b>Confronting top management reactions</b>	<ul style="list-style-type: none"> <li>• Using process mapping to show waste in the system</li> <li>• Involve management</li> <li>• Using management accountant to quantify improvements</li> </ul>
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## 7.2.4 Beyond top management confrontation

This common theme is aimed at discussing “what is after the top management confrontation stage?”. However, the above discussed techniques have been regarded at both cases that it does not always guarantee top management approval. Nevertheless, the objective most frequently emphasised at both places was to keep trying with new evidences and real examples as they develop from the work until they see the real importance of it. This was due to the belief that systems thinking is very logical and that continuous attempts will eventually lead to top management understanding and support.

*“customers are the main thing from which the profit will be generated and we are here for them, we were like robots but systems thinking was the only logic that allowed us to start thinking right, I would say that any manager will eventually reach to the same conclusions we reached, and will get interested in the information we take from process mapping; the financial savings and the impact it has on the work.”- Intervention Team Member, VELUX (GB) Company Ltd*

Once the top management grants support to the project then the final stage of the implementation project could be initiated. The final stage is the full rolling in of employees working in the call centre to join the new design of the service. This stage was focused on providing newly migrating employees with the opportunities to develop their skills to work using the new work principles; intervention team members and project champions trained the rest of employees on how to deal with the most frequent demands.

*“As employees started to work on the new design, they helped each other to serve customers, the intervention team only provided training on the most coming demand...we have noticed that training periods has become much shorter due to this.”- Company Director (Project Champion), VELUX (GB) Company Ltd*

However, for the rest of demands and work tasks training, the open channel of communication available in the new design allowed for expertise sharing. This has helped in shortening training periods and helped in building employees skills up to the required level. These training arrangements were viewed at both cases as a part of the continuous improvement that constitute a major characteristic of the system thinking logic. In addition to this, continuous improvement involved the identification of any new demands coming in to the call centre. New processes on how to deal with the new demands were then designed in order to ensure dealing with new demands as value demands.

Table 7.5 Summary of activities beyond top management confrontation

<b>Beyond management confrontation</b>	<ul style="list-style-type: none"> <li>• Use newly find evidence until securing management approval</li> <li>• Rolling in of the rest of employees to work in the new design</li> <li>• Employees training on top demands</li> </ul>
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### 7.3 Cross-case synthesis of the implementation methodology

This section presents the proposed methodology for implementing organic structures (i.e. systems thinking) for a support services department functioning as a call centre.

The methodology was synthesised on the basis of the cross-case analysis of the common themes discussed in this chapter. Figure 7.1 presents the flowchart of the main features of the methodology, this figure is also presented at the end of Chapter 5. The methodology is composed of seven main tasks that was fully explained in the common themes discussed earlier. The first six steps are the set of prerequisites necessary to get the senior management approval, whereas the seventh task encompasses the actual proliferation of the new design. These tasks are summarised in the following points:

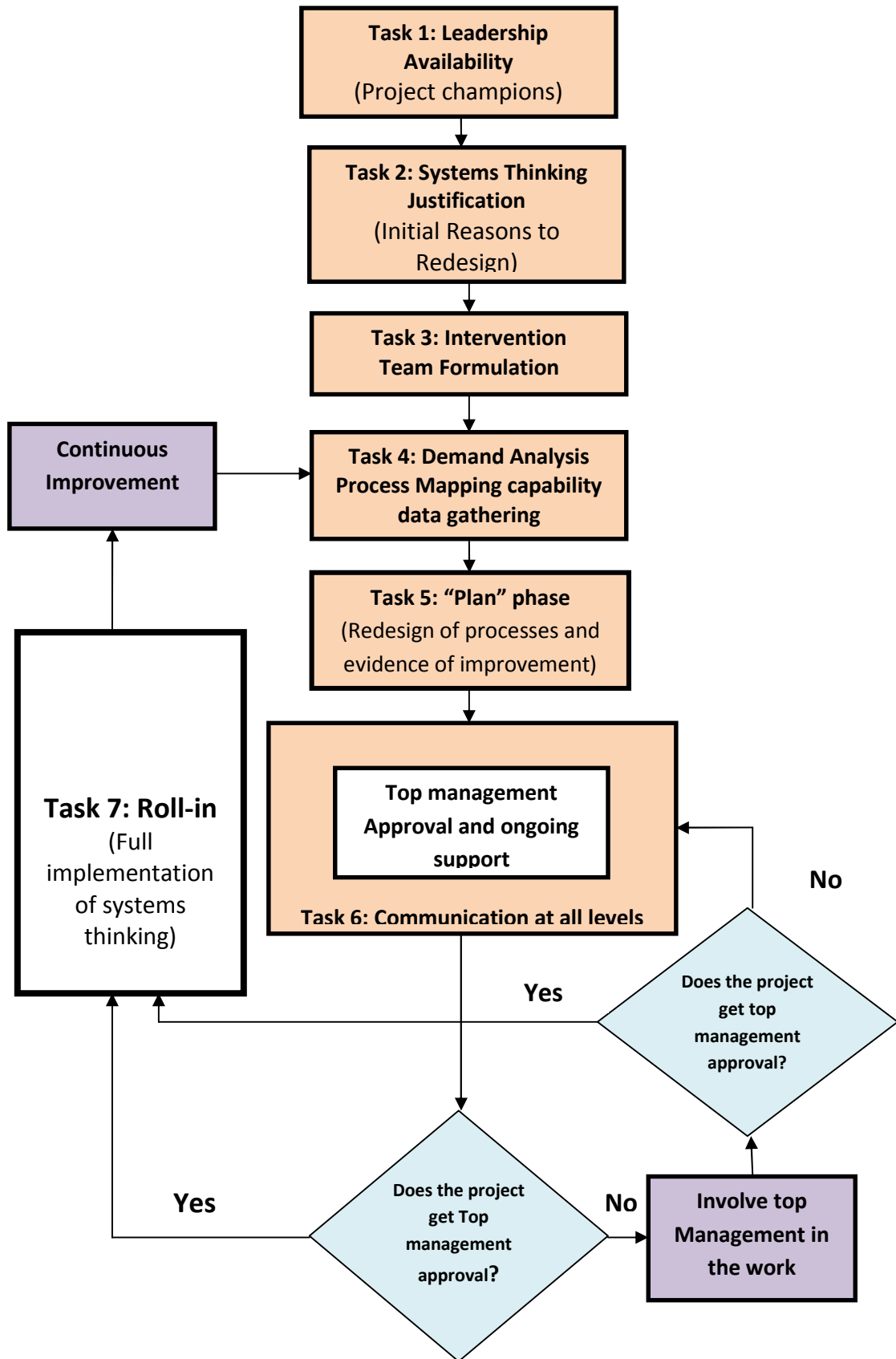
- Readiness of leadership
- Systems thinking (i.e. organic structure) justifications and advantages.
- Intervention team formulation and readiness
- Demand analysis of the most frequent demand coming in to the workplace.
- Redesign of service processes and achievement of initial evidence.
- Capacity building and securing management approval.
- Final roll in of employees to join the new design after management approval for the project.

The findings of the cross-case comparison for the two cases regarding the implementation of organic structures suggest that this methodology is used to implement counter-intuitive support service designs (i.e. systems thinking) in organizations. It fills a very important gap of how manufacturing organizations should manage and implement systems thinking service design in their call centres. Conventional managers usually perceive improvements in services as a financial burden that is avoided in most of times in order to reduce operational costs. This is particularly not the case when the improvement in services is on the basis of systems thinking model, which, through system waste elimination and demand analysis, can produce a process flow that will reduce costs (Seddon, Brand 2008). In terms of direct effects, focusing on demand analysis and flow of processes is vital for the exposure of waste and the causes of failures in the system; eventually this provides a straight forward solution for the optimisation of resource utilisation (Ohno 1988). This is what Seddon and Brand (2008) has described as “the paradox: focus on flow and costs will fall, focus on costs and costs will rise”. This conventional management perception about systems

thinking made it necessary to create an implementation methodology that can provide an initial evidence of improvement and cost reduction prior to actual implementation.

The results suggest that leadership availability is the cornerstone for the systems thinking implementation success. However, the leader has to be at a high level of calibre to motivate people and create emotional bonds with them. This is vital to inspire and convince subordinates of transferring the way they think about work operations. More importantly, the leader has to provide mechanisms and rationale for the systems thinking introduction. It is apparent then that a “transformational leadership” (Maslow 1968, Burns 1978) is what raises the systems thinking to a higher level of being accepted and valued in the workplace. In other words, available transformational leadership has a special influence on performance and followers when introducing organizational change of this type (Masood et al. 2006). Another major implication of the availability of transformational leadership can be related to the formation of a committed intervention team. Team members were sourced from those employees with high levels of stress and those who showed tendency to absenteeism and turnover; leadership showed commitment to employees with problems found in the old system that exposed them as supportive leaders. It was believed that this type of supportive leadership has participated in the creation of a clan culture (Cameron, Quinn 1999). It is at this culture where intervention team members were encouraged to follow teamwork principles, be involved in the project actively and continuously, in addition to the ability of members to raise suggestions and create changes regarding the redesign of their own service operations.

Figure 7.1 Systems thinking (i.e. organic structures) implementation



In the context of this research, the identification of methods and techniques to increase support and acceptance to the systems thinking principles was associated with the presentation of hard evidence for improvement. The intervention team used the process flow charts and demand analysis as a confronting, but also curiosity creating, tools to attract the attention to the potential value that can be pulled from the systems in terms of waste reduction and performance improvement. This is controversial to the traditional tools usually used in call centre industry of using financial figures to convince senior management of business changes or departmental effectiveness. Nevertheless, showing financial improvements are very important to facilitate management acceptance and involvement. Robinson and Morley (2006) have found that senior management sees call centres as a means of reducing costs and customer service is seen as a second class priority. However, this conventional “one-goal” intent of having call centres did not help their contribution in the organizational effectiveness.

In fact, organizational effectiveness is closely related to goals achievement (Robey 1991). Systems thinking, in this regard, was able to show savings and cost reduction as a result of the identification of economical ways of executing demands and optimisation of resource utilisation. This will shift the image of call centres from “cost reduction centres” to “business intelligence and profit generation” (Nix 1998). Thus, the capacity building tools and the senior management confronting tools used in this methodology are also long term departmental effectiveness enhancement strategies. Nevertheless, the emerged methodology for systems thinking implementation in manufacturing organisations is particularly useful for transforming the human side of the call centres without much infusion of technology. The systems thinking, this way, is an economical way to improve the work in relatively short time (Seddon 2005).

In this study an attempt was made to present a step by step methodology for the implementation of systems thinking design model for call centre service operations in manufacturing organizations. The methodology consists of six steps and a decision criterion, and is based on the ability of showing improvement evidence prior to senior management approval and full roll in of employees in the service department. This is done due to the counter-intuitive, but often significant, nature of the systems thinking benefits. The methodology is useful as it could be used as a sensing tool for senior



management reactions in the early stages of the project. It provides systems thinking leadership with alternative recommendations for steering efforts to confront senior management reactions.

Based on this methodology, a set of prerequisite foundations have been identified before attempting to get the senior management approval; leadership availability, systems thinking justifications and intervention team readiness. However, the focus of justifications is on system waste reduction and performance improvement that could demonstrate financial savings. By considering these issues when justifying systems thinking, the redesign initiative is basically revolving around business goals. For that reason other departments and business units should be consulted to develop a dynamic interaction base that will positively influence customer services (Adria, Chowdhury 1999). In practice leadership availability is the corner stone for successful implementation. Cleveland (2002) emphasise on the importance of powerful leadership availability that can disseminate an understanding of the call centre role in the organisation, and the value that can be achieved when identifying what information will have the most impact on each department's work. The requirement of leadership, therefore, is to be of the "transformational leadership" (Maslow 1968, Burns 1978) type which is able, through its influence, to leverage systems thinking support and build organizational capacity.

**Summary:**

Although existing literature shows scarcity in the necessary antecedents for implementing customer support services in manufacturing organisations (Gebauer 2007), a set of major prerequisite foundations have been identified in this study to be essential before attempting to get the senior management approval; leadership availability, systems thinking justifications and intervention team readiness. This leadership is responsible for the proliferation of systems thinking justifications and advantages that will attract employees to formulate an intervention team and participate in the project.

The methodology aids the synthesis of ideas by project leadership, and offers the intervention team guidance on various options available during migration. The

methodology also shows that demand analysis and process mapping of new services processes are very important tools to further emphasise the problems of the previous systems, and could be employed to widen new design acceptance and legitimisation.

For all of that, the third research questions (i.e. RQ3) posed in section 2.14 can now be answered as follows:

**RQ3: How can manufacturing organisations implement organic structures in their support services departments?**

**Answer: There are six main tasks that manufacturing organisations need to follow in order to make sure that the implementation of organic structures (i.e. systems thinking) projects be successful, these are:**

**Task1- Readiness of leadership**

**Task2- The use of systems thinking (i.e. organic structure) justifications and advantages to build curiosity.**

**Task3- Intervention team formulation and readiness**

**Task4- Demand analysis of the most frequent demand coming in to the workplace.**

**Task5- Redesign of service processes and achievement of initial evidence.**

**Task6- Capacity building and securing management approval.**

**Once these prerequisites have been fulfilled then the full rolling in of employees to follow the new design principles can be done.**

## **7.4 Cross-case assessment on adopting organic structures**

The evidence on the diffusion of organic structures (i.e. systems thinking) in manufacturing organisations, through the proposed methodology presented in this chapter, is compared with the main characteristics of the theoretical models most frequently used in the studies of service innovation implementation.

The methodology showed that the voice of the customer was vastly present in the implementation process; the customer demand was viewed as central in the systems thinking redesign phase (Seddon, Brand 2008). This is contradictory to many service innovation and redesign projects where the customer voice is often not given enough room in the R&D and the service reengineering projects. In addition, service design and building logics are based on manufacturing models that is good for tangible products, “but not well suited to intangible, value-based services” (Oxton 2008). Furthermore, several theoretical approaches used in service innovation implementation context have shown that front-line employees involvement is a major determinant for successful innovation implementation (Jarvis 2010). In the case of systems thinking implementation, the involvement and participation of front-line employees is very vast to an extent that they are the people through which the search for evidence for justifying the project and practical implementation is to be made.

Prior research has shown that any attempt to implement service innovation or redesign leads to organisational instability and conflict (Brown 1993, McAdam 2005). In their study, Burns & Stalker (1994) concluded that organisational attempts to change from a mechanistic firm to an organic one is not without difficulties. This is due to the fact that organisations’ powers will struggle to maintain control of new functions and systems that inhibits the adaptation of organic structure, and will develop further systems to retain the mechanistic one. Roffe (1999) in his discussions on the management of innovation pointed out that one strong individual availability at the early stages of the redesign is crucial to confront and quarantine conflicts. However, the proposed methodology of organic structures implementation clearly emphasises this element, of early availability of strong leadership, who is able to persuade people at all levels.

The need to go beyond management confrontation and conflict is evident in innovation implementation projects. This is because the innovations and redesigns of today are the norms of tomorrow (Brown 1993). In this regard, Rogers (1983), one of the most important developers of innovation adoption theories, proposed the widely known “Innovation Diffusion Theory”. This theory has five variables that are considered as determinants for successful organisations’ ability to adopt innovation, these are:

- Showing the innovation relative advantage as compared to all previous ideas or solutions.
- Showing the extent to which the innovation is compatible with values, needs and expectations of the people adopting it.
- Explaining the extent to which the innovation is complex or difficult to understand or use.
- Showing the extent to which the innovation's benefits and contributions can be observed, captured and, then, presented to prospective adopters.
- Emphasising the trial ability of the innovation by explaining the extent to which the innovation can be tested and experienced before its full adoption.

With the exception of the third variable (i.e. complexity to understand innovation), the relationship between each of these variables and the attractiveness of the innovation adoption to prospective adopters is positive, and less likely to cause conflicts if the case is well presented (Hernandez, Mazzon 2007). However, the proposed methodology of this research captures the primary characteristics of Rogers's (1983) innovation diffusion theory by:

- Using the benefits of systems thinking in Task 2 of the methodology (see Figure 7.1) to show the relative advantage of organic structures as compared to previous ideas of adopting mechanistic structures.
- Showing the respect for humans and the value added to the adopters of systems thinking in Task 2-4 of the methodology to show how compatible the innovation with perspective adopters needs and values.
- The methodology uses the educational elements of Task 6 of the methodology to explain the counter-intuitive nature of the systems thinking principles and provide answers on how to overcome this misconception.
- Task 5 of the methodology is all about the redesign of the service processes that captures two characteristics of Rogers's (1983) theory. First, this task is used to gain observable evidence of improvement that can, then, be presented to prospective adopters. Second, this task proves that the methodology gives an

opportunity for the new design to be tested and experienced before it is fully implemented.

However, Rogers (1983) is partially analogous to Klein (1996) multi-level model of innovation implementation. Their model asserts two key elements for effective innovation implementation: First, climate for implementation which refers to employees shared perception of the extent to which their involvement in the innovation is rewarded, supported, and expected within their organisation. This is accomplished by ensuring that employees skills are used in the project, and providing incentives for innovation use (Dong 2008). Second, innovation-values fit which refers to employees shared perceptions that the innovation will meet (or inhibit) their values. The proposed methodology of organic structures implementation delineates a strong climate for the implementation of innovation due to the availability of strong leadership that consistently cultivate and encourage targeted employees to participate in the innovation making and using. On the other hand, the methodology delineates respect for employees opinions, and presents a platform for their voices to be heard in the redesign process as the people doing it are selected from them. This shows to them how compatible the innovation is with their values and needs.

According to McAdam (2005), the process of innovation implementation involves a no static equilibrium for conflicts, and that innovation implementation conflicts follow a cyclical pattern, of four steps, in their endeavour for a resolution, these steps are summarised as:

- Destabilise legitimisation by addressing the reasons that necessitate migration from current systems to another innovative one.
- Attract audiences/stakeholders to alternatives by focusing on the contributions and benefits of implementing the new design; in the form of “what is in it for you?”.
- Socially construct alternatives by involving individuals in the formulation of the new innovative redesign.
- Gain legitimacy by using evidence of improvement to eliminate causes of dissent.

Similarly, the methodology fully captures and explains McAdam's (2005) cyclical pattern of conflicts resolution during innovation implementation. First, systems thinking implementation methodology uses the current system problems to destabilise legitimisation of current systems, these include customer complaints of being passed from “pillar to post”, high percentage of customer demands not being met, turnover, stress and frustration of employees, employee voice is not heard (they must be involved in the service system design as they are the most knowledgeable about what customers want and how to serve them), and lack of communication channels between departments that hampers information sharing and thus service quality. Second, the methodology also uses the contributions and benefits of the new design to attract individuals to support the project, these contributions include cutting down service waste that saves resources/money without cut in service, demands will be dealt with one stop by one employee for each call, it does not cost much to implement as it is the only model that works with the “Human side” to change the nature of work, reducing repeated calls and thus improved productivity, systems clarity and transparency as a result of continuous demand analysis, and hearing employees’ voice in the redesign process. Third, one of the major elements in the methodology, that can socially construct alternatives, is the focus on the redesign phase that depends completely on employees efforts to map the service of the future, using what they have learned during the initial phases of the current system process mapping searching for hidden problems in the service. Fourth, the methodology uses variety of techniques to confront top management reactions in order to gain legitimacy of the new service design. This stage, as discussed earlier, involves the use of new processes flow charts to show improvements as compared to old processes flow charts, in addition to involving management in the work itself and using accountants that can quantify the new system benefits and contributions. In fact, this methodology is congruent to Rogers's (1983) three stages model of unfreeze “As Is” situation, change situation, and refreeze change which adds more validity to the proposed methodology.

Accordingly, the proposed methodology of organic structures implementation explicitly detects and holds all the variables presented by most influential theories available in the

literature and presents techniques for their treatment to ensure successful implementation.

## **7.5 Chapter summary**

This chapter has answered the third and the final research question (i.e. RQ3) posed in section 2.14. The chapter explained the synthesis of the organic structures (i.e. systems thinking) implementation methodology on the basis of the results achieved from the cross-case thematic analysis. The methodology is composed of seven general tasks; leadership availability, justifying the project, readiness of intervention team, demand analysis, redesign of service processes, capacity building, and full roll in of employees. The first six steps were identified as the set of prerequisites necessary to get the senior management approval, whereas the seventh task encompasses the actual proliferation of the new design in the support services department. The emerged methodology was then aligned with available theoretical models in the literature for service innovation implementation.

Chapter 8 concludes the work, and brings together the findings and literature alignment on both affective commitment and value adding issues, it shows how the objectives were met and how the research questions were answered. It offers suggestions for future study of organisations support services designs and implementations.

# Chapter 8 - Conclusions and Recommendations

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## 8.1 Overview

The opening chapters of this thesis provided an extensive literature review of the issues and problems related to call centre service departments. They were used to highlight gaps in the knowledge and the motivation for the present work. Chapter 4 presented the methodology designed in order to carry out the research and achieve findings. Whereas Chapters 5 presented the three research sites and the data collected at each site before the cross-case analysis was employed in chapters 6 and 7. It is at this stage where the search for patterns was undertaken in order to validate the data and the achieved findings, and to answer research questions.

This chapter concludes the work done in this research, it explains how the research objectives were met and provides clear answers for the research questions posed in section 2.14. The chapter proceeds to present the implications of the research findings to academics and practitioners. The chapter also outlines the substantial contributions to theory concerning manufacturing support services structures and the call centre management. The final section introduces recommendations for future research in order to take potential researchers to a new level of research directions.

## 8.2 Achievement of research objectives

The literature review carried out in the fields of call centre management, service quality, employee's organisational commitment, customer behaviour, organisational and operational structures clearly identified a paucity in the current literature about structuring and managing support services in manufacturing organisations. In the light of this paucity, the completed work aimed at studying manufacturing support services, often operating as call centres, to identify suitable support services design models and the implications associated with the implementation on employees' affective



commitment within manufacturing enterprises context. In order to achieve this aim, the main objectives devised for this research were:

**Objective 1-** To explore the impact of mechanistic manufacturing support services design models on front-line employees' affective commitment level.

After conducting an extensive review of the literature published in the areas of organisational commitment and organisational structures, a case study was conducted at a UK city council to explore the relationship between designing service operations around the principles of mechanistic structures and the affective commitment of frontline employees within their call centre. The objective was met through the identification of a strong relationship between the affective commitment among front-line employees in the call centre and the form of call centre service operation systems used. This was attributed to service operations structural characteristics, job related characteristics and work experiences.

**Objective 2-** To identify alternative service design models applied to manufacturing support services, often operating as call centres.

After conducting an extensive review of the literature published in areas of organisational structures and lean thinking for service departments, it was strongly indicated that structuring call centres around the principles of systems thinking will produce an organically structured support services department that will improve employees working conditions, and will formally institute the integration of call centre with other business units in the manufacturing organisation.

**Objective 3-** To compare the impact of organic structures (i.e. systems thinking) for designing manufacturing support services as compared to mechanistic models on employees affective commitment and productivity.

In order to meet this objective a comparative in-depth study of two service system designs, i.e. mechanistic and organic, were conducted at three different organisations; case 1- a public services department operating in a city council and employing a

mechanistic structure; case 2- a public services department operating in a metropolitan borough council and employing an organic structure; case 3- an operations department operating in a large manufacturing organisation in the roof windows industry and employing an organic structure. The cross-case study explored the impact of each of these two service designs on employees' working experiences, work design, managerial practices, and job role characteristics. The cross-case comparison revealed significant improvement in employees' affective commitment level using systems thinking design for creating an organic structure when contrasted with employees working under mechanistic structure design.

**Objective 4-** To understand how organic structures for designing manufacturing support services impact on value addition opportunities to the manufacturing enterprise.

The data collected from the three cases studied were analysed and organised into common themes. The value adding contributions of organic structures to organisations were discussed. It was revealed, by discussing these themes at length and using comments of individual interviewees, that by implementing an organic structure to the design of employee empowered customer service delivery significant, but often counter-intuitive, benefits can be created. These discussions were also classified into four different levels at which the value was added; an employee's level, managerial level, customer level, and the overall business level.

**Objective 5-** To examine how systems thinking model (i.e. organic structures) for designing manufacturing support services is being implemented within leading manufacturing organisations.

The cross-case thematic analysis dragged common themes from two of the cases studied where the systems thinking model was implemented. Interviews at all levels and documentations were used to formulate these common themes. This has allowed for an exploration of the managerial and operational issues related to the organic structures (i.e. systems thinking) implementation at the two case organisations. A novel methodology for its implementation as a value creating model was formulated. The

emerged methodology consists of six major tasks and a decision making criteria that facilitates the implementation of systems thinking in manufacturing service centres. It was also concluded that the methodology can be used as an initial strategic tool for senior management intervention in order to provide systems thinking leadership and to develop alternative implementation recommendations.

**Objective 6-** To suggest further research guidelines for designing manufacturing support services, and to add to the existing theory on the role of affective commitment for manufacturing organisations.

Having performed an extensive literature review of published work on organisational structures, employees' organisational commitment, and lean thinking for service departments, the findings about affective commitment, value addition and implementation issues were compared to available theories and previous studies. Further, on the light of this research findings and the underpinning literature review completed, a number of recommendation for future research will be introduced in this chapter.

### **8.3 Answering research questions**

This research sets out to answer three research questions, as posited at the end of Chapter 2. The answers produced by this research are depicted below with respect to each research question:

**RQ1: Why does the organic structures for manufacturing support services affect the affective commitment of the individuals who work in these departments?**

**Summary of findings:**

As it was found in the literature, organic structures contribute to the achievement of all the foundations necessary to leverage the affective commitment of front-line employees. Within this structure employees were given the chance to fulfil their personal ambitions of development and achievement due to the challenging and

empowering environment available, this has satisfied front-line employees' personal needs. Managerial attitudes within a service department with an organic structure is more focussed on supporting where the decision making processes are found, i.e. at the employee's level. This has given employees a feeling of being of value in the organisation. Inevitably, this has met employees expectations of employer loyalty and consideration at work which further enhances employees satisfaction and sense of belonging. This also has a direct impact on employee's fair treatment and the creation of a rewarding working experience that fulfilled their own aspirations. However, these traits and characteristics were found lacking in the mechanistic structures for service departments.

**Answer:**

The organic structure is a system for respect for human resources, it meets employees needs and desires, it fulfils their expectations of employer fair treatment and the use of personal skills and innovation. In brief, it creates a rewarding working experience that enhances employees' feelings of being a part of the organisational context. Therefore, organic structures for manufacturing support services will maintain a high level of affective commitment among front-line employees.

**RQ2: How does the organic structures for manufacturing support services add value to the manufacturing enterprise?**

**Summary of findings:**

Findings from the cross-case common themes have shown the influence of the role of organic structures in achieving organisational benefits. At employees level, organic structures have changed the philosophy of work to be more focused on respect for human skills and mutual respect which have the effect of raising employees affective commitment. At management level, more control on the service system was possible due to continuous demand analysis that helped in identifying corrective measures quickly and efficiently. At customers level, they experience a single phone call service delivery with high levels of proficiency and rapport from affectively committed employees. This has inevitably contributed to retaining customers and thus building

business performance. At business level, affectively committed employees are now doing more work with less resources, the waste present in the service operations has been minimised, and thus significant reduction in cost has been achieved.

**Answer:**

Organic structures focus on giving front-line employees decision making authority and freedom to act when dealing with customers. This raises employees affective commitment through a rewarding working experience that stimulates value productivity of dealing with customer demands one stop. Customers enjoy high levels of service quality that retains them. Managers practice easier control on the business due to the continuous demand analysis that keeps managers aware of new demands coming in for service redesign and improvement. There is no need for expensive employees' monitoring. Therefore, the business organisation experiences increased value productivity with less resources, retains customers, and thus achieves significant cost reductions.

**RQ3: How can manufacturing organisations implement organic structures in their support services departments?**

**Summary of findings:**

A set of major prerequisite foundations have been identified to be essential before attempting to get the senior management approval; leadership availability, systems thinking justifications and intervention team readiness. This leadership is responsible for the proliferation of systems thinking justifications and advantages that will attract employees to formulate an intervention team and participate in the project.

The methodology aids the synthesis of ideas by project leadership, and offers the intervention team guidance on various options available during migration. The methodology also shows that demand analysis and process mapping of new services processes are very important tools to further emphasise the problems of the previous systems, and could be employed to widen new design acceptance and legitimisation.

**Answer:**

There are six main tasks that manufacturing organisations need to follow in order to make sure that the implementation of organic structures (i.e. systems thinking) projects be successful, these are:

Task1- Readiness of leadership

Task2- The use of systems thinking (i.e. organic structure) justifications and advantages to build curiosity.

Task3- Intervention team formulation and readiness

Task4- Demand analysis of the most frequent demand coming in to the workplace.

Task5- Redesign of service processes and achievement of initial evidence.

Task6- Capacity building and securing management approval.

Once these prerequisites have been fulfilled then the full rolling-in of employees to follow the new design principles can be done.

## **8.4 Implications for theory and practitioners**

The findings of this research have some prominent insights for academics and practitioners as shown in Appendix 4 & 5. The first is that this research has examined the mechanism through which employees' affective commitment can be increased. While majority of existing literature on organisational commitment has extensively combined the development of employee's affective commitment with social exchange theories (Lee 2007), this research has shown that increasing the affective commitment level of front-line employees in manufacturing support services is mainly dependant on the type of service system structure used. This is because the type of service system structure has been found a major element for providing a fair treatment for employees and matching their believes and values, in addition to deciding how rewarding the employees' working experiences are. Thus, to increase the front-line employees' level of affective commitment in support services, manufacturing organisations need to structure their support services departments following organic structures that could provide a rewarding working experience for their employees while achieving organisational goals. The principles of systems thinking for organically structuring

service departments puts great emphasis on giving employees freedom to make decisions and use their own skills in serving customers while enjoying the open channels of communications between themselves and other departments. This has the advantage of satisfying the social needs of employees that will eventually increase their affective component of commitment. On the other hand, if organisations attempts to develop employees' affective commitment on the basis of social interactions only within inappropriate organisational structure, then these attempts will not help in fulfilling the socio-emotional element as the focus on social interactions needs a pre-defined channels of communications that is protected by a legitimate structure.

Second, this research has also shown that imposing service employees as experts in their field and giving them freedom and decision making authority, through organic structures, is major determinant for employees' high levels of affective commitment, and substitute for the traditional system control mechanisms of target setting and performance surveillance widely emphasised in the existing call centre management literature (e.g. Cartwright (2003), Batt & Moynihan (2002), and Varca (2006)). This is because the general moral system of commitment and belonging in addition to employees feeling of shared believes and values will control employees' behaviour and not the technology surveillance. Therefore, this research provides insight on how managerial bodies in manufacturing support services can rely on high levels of affective commitment to maintain control in the workplace without the existence of other tools that could be costly for organisations such as employees monitoring.

Third, another widely discussed problem in call centre management literature is the quality-quantity contradiction of focusing on efficiency (volume of calls handled and job related targets) rather than effectiveness (service quality and customer orientation) (Cleveland 2006, Dean 2002, Bain et al. 2002, Mahesh 2006). According to the results shown in section 5.5.2, in order to increase the focus on effectiveness of the service, manufacturing organisations need to redesign their service department to follow organic structures principles that provide workplace with a relaxed working environment. The service encounter in organic departments can be done without the need to stick to a pre-specified time allowance which fosters employees sense of focus and concentration while having customers on phone. This inevitably helps practitioners in improving

solution delivery processes in the same phone call, and prevents errors making during the service encounter. Moreover, handling customer demands this way dramatically reduces calls repetition which keeps waiting queues short, and eventually allows for resources savings due to the elimination of rework.

Fourth, The use of organic structures in support services working as call centres have provided useful insights into what organisations, including manufacturing, should do to reduce turnover rates. The results clearly suggest that practitioners need to improve call centre service operations design using organic structures to create a supportive culture that tends to involve employees in the process of decision making and giving them more control as they are the people handling the work and receiving the valuable information, this is a key factor for satisfying employees career needs and building affective commitment that will eventually mitigate turnover and absenteeism in these service departments. On the other hand, if organisations provided the necessary structures to build employee's affective commitment and reduce turnover, then these structures can provide significant support for practitioners to achieve operational savings and further profits from within services. As discussed in section 5.5.2, organisations can achieve these savings through reduced expenses on recruiting people, to compensate for leaving ones, and through retaining experts in the service that can retain customers to achieve further profits. In addition, building front-line employees' affective commitment substitute for paying higher wages to increase employees productivity. Moreover, systems thinking for creating organic structures strive to eliminate waste in the service to do more with less, this has been found of great importance for organisations to reduce costs and save resources that add value.

Finally, this research represents the first attempt to present a model to decide the organizational structure of the call centre prior to creating it within the manufacturing enterprise. It creates a roadmap to formally institute the integration of call centres with other business units through the application of open channels of communications granted by the principles of organic structures. Moreover, the study builds an initial understanding of call centre strategic value and potential contribution to the manufacturing organisation business units as organic structures provide an opportunity for call centres to speed service delivery and reduce back office work. Therefore, it



provides tentative steps on how to turn the by-products of call centres into business intelligence opportunities.

## **8.5 Theoretical Contributions**

This research work has been successful in studying manufacturing support services organisational structures and their service systems design, exploring whether the affective commitment of front-line employees working in these departments is mediated and impacted by organisational structures and service system designs. The importance of this study emanates from the assumption that the traditional mechanistic structures widely used in these departments are a major source of low levels of employees' affective commitment that hampers value adding opportunities for the manufacturing organisation. The study builds on the work of Burns and Stalker (1961) and Seddon (2003) by proposing the implementation of systems thinking principles to produce an organically structured support services department, which has been found a major determinant towards leveraging front-line employees' affective commitment. This makes an explicit practical contribution for manufacturing organisations in the selection of proper support service design.

The work presented in this thesis contribute substantially to the theory about manufacturing support services structures and the call centre management as follows:

1. The study has identified the availability of alternative service design model that could be applied to manufacturing support services operations, namely organic structures, that have the potential to mitigate some of the effects of the traditional mechanistic models widely implemented in these strategic departments.
2. The study has demonstrated that affective commitment makes a contribution to the design of manufacturing support services.

3. As an extension to the previous point, the effects that organic structures have on leveraging front-line employees' affective commitment level have been debated.
4. Previous research on organisations design have suggested that mechanistic structures will bring control on the system and will increase organisational productivity. This study shows that the development of organic organisations can offer counter-intuitive benefits, including value adding opportunities to the manufacturing enterprise.
5. This study identifies the barriers and enabling factors involved in implementing organic structures, through systems thinking approach developed by Seddon (2003), into manufacturing organisations support services. It introduces a novel implementation methodology that can be used as an initial strategic tool for senior management intervention in order to provide systems thinking leadership and to develop alternative implementation recommendations.
6. The research suggests some analogy between complementarity of quality and efficiency in manufacturing environments and service quality and efficiency in call centre environments. This study represents the first attempt in the existing theory to show that service quality and efficiency is complementary to the contributions of organic structures of doing more with less.

## **8.6 Recommendations for future research**

Recommendation for future research in the field of manufacturing organisations design, organisational commitment, and service operations management are listed below:

- Further research is required to explore the utilisation of organic structures in other service departments and in other industrial sectors, in order to understand the appropriateness of organic structures in other working environments, and the extent to which they impact employees' affective commitment and employees' working experiences.

- Extend the present research to develop economical models that captures the financial rewards of implementing organic structures or systems thinking in manufacturing organisations.
- Follow-up studies are recommended to quantify the impact of higher levels of front-line employees' affective commitment on manufacturing organisations with organically structured service departments.
- More research is needed to develop a performance measurement systems for monitoring the process of transforming manufacturing support services into organic departments. As well as an investigation into the nature of barriers and enabling factors to implement organic structures in these manufacturing departments.
- Another direction for follow-up studies is to involve a researcher, on participant basis, in a longitudinal study with a manufacturing organisation in the early stages of implementing systems thinking into its support services department to provide advice on the light of this research and further improve the already gained results.
- An extension of this work is required to understand the impact of organic structures on improving competence and influence of leaders and middle-managers on organisational performance.
- It is also recommended that a retrospective study in required to track the impact of organic structures in manufacturing support services on the overall culture of the manufacturing organisation.

## **8.7 Chapter summary**

The completed work aimed at studying manufacturing support services, often operating as call centres, to identify suitable support services design models and the implications associated with the implementation on employees' affective commitment within manufacturing enterprises context. The chapter concluded the work done in this research study, it discussed how the research objectives were met and provided a clear answers for the research questions posed at section 2.14. The implications of the research findings to academics and practitioners community were explained. The

chapter also stated the research substantial contributions to the theory about manufacturing support services structures and the call centre management. Recommendations for future research were also introduced in order to take potential researchers to a new level of research directions.

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# Appendix 1 – Case studies database

<b>Case 1- Nottingham City Council</b>				
<b>Date</b>	<b>Description</b>	<b>Source</b>	<b>Format</b>	<b>Role</b>
24 <sup>th</sup> April 2008	Minutes of the initial meeting with the check team	Check Team	Manually noted minutes	Systems thinking check team; evaluating mechanistic systems
24 <sup>th</sup> April 2008	Minutes of the initial meeting with Helen Shipway	Helen Shipway	Manually noted minutes	Services director
30 <sup>th</sup> April 2008	Internal reports for mechanistic structure performance evaluation	Check Team	Statistics & reports	Systems thinking check team; evaluating mechanistic systems
6 <sup>th</sup> June 2008	Process flow diagrams of mechanistic system's service operations	Check Team	Figures and diagrams	Systems thinking check team; evaluating mechanistic systems
6 <sup>th</sup> & 7 <sup>th</sup> June 2008	Minutes of the observations carried out in call centre.	Calls handling & general environment	Manually noted minutes	*****
9 <sup>th</sup> June 2008	Nine-items organisational commitment questionnaire	Call centre employees	Paper-based questionnaires	Call centre front-line employee
20 <sup>th</sup> June 2008	Transcripts of semi-structured interviews with front-line staff	Front-line staff	Digitally recorded	Call centre front-line employees
23 <sup>rd</sup> June 2008	Service delivery performance charts	Check Team	Reports and diagrams	Systems thinking check team; evaluating mechanistic systems
23 <sup>rd</sup> June 2008	Check team news	Ruby Bhattal	newsletter	Marketing and communication manager

2 <sup>nd</sup> July 2008	Transcripts of semi-structured interview with Helen Shipway	Helen Shipway	Digitally recorded	Service director
7 <sup>th</sup> July 2008	Check team news	Ruby Bhattal	Newsletter	Marketing and communication manager
8 <sup>th</sup> July 2008	Transcripts of semi-structured interview with Gary Crawford	Gary Crawford	Digitally recorded	Check team trainer
8 <sup>th</sup> July 2008	Transcripts of semi-structured interview with Farah Bhatti	Farah Bhatti	Digitally recorded	Call centre team leader
8 <sup>th</sup> July 2008	Transcripts of semi structured interview with Steve Jackson	Steve Jackson	Digitally recorded	Call centre team leader
16 <sup>th</sup> July 2008	Transcripts of semi-structured interviews with front-line staff	Front-line staff	Digitally recorded	Call centre front-line employees
17 <sup>th</sup> July 2008	Transcripts of semi-structured interviews with front-line staff	Front-line staff	Digitally recorded	Call centre front-line employees
21 <sup>st</sup> July 2008	Check team news	Ruby Bhattal	Newsletter	Marketing and communication manager
23 <sup>rd</sup> July 2008	Transcripts of semi structured interview with Carol Green	Carol Green	Digitally recorded	Council tax team leader
23 <sup>rd</sup> July 2008	Transcripts of semi structured interview with John Moy	Gill Moy	Digitally recorded	Housing benefit team leader
28 <sup>th</sup> July 2008	Transcripts of semi structured interview with Lisa Black	Lisa Black	Digitally recorded	Systems thinking project manager
30 <sup>th</sup> July 2008	Check team news	Ruby Bhattal	Newsletter	Marketing and communication manager
18 <sup>th</sup> August	Check team news	Ruby Bhattal	Newsletter	Marketing and communication



2008				manager
22 <sup>nd</sup> August 2008	Transcripts of semi structured interview with Jon Wells	Jon Wells	Digitally recorded	Senior assistant, council tax
22 <sup>nd</sup> August 2008	Transcripts of semi structured interview with Scott Freeman	Scott Freeman	Digitally recorded	Administrator, benefits processing
18 <sup>th</sup> September 2008	Check team news	Ruby Bhattal	Newsletter	Marketing and communication manager
24 <sup>th</sup> October 2008	Check team news	Ruby Bhattal	Newsletter	Marketing and communication manager
24 <sup>th</sup> November 2008	Check team news	Ruby Bhattal	Newsletter	Marketing and communication manager

**Case 2 - Stockport Metropolitan Borough Council**

<b>Date</b>	<b>Description</b>	<b>Source</b>	<b>Format</b>	<b>Role</b>
30 <sup>th</sup> March 2009	Minutes of the initial meeting with Jo Lane	Jo Lane	Manually noted minutes	Head of transformation project
31 <sup>st</sup> March 2009	Minutes of the initial meeting with Phil Badley	Phil Badley	Manually noted minutes	Services director
5 <sup>th</sup> April 2009	Nine-items organisational commitment questionnaire	Call centre employees	Web-based questionnaire	Call centre front-line employee
23 <sup>rd</sup> April 2009	Process flow diagrams of ICT department service operations after re-design.	Adrian Davis	Figures and diagrams	Systems thinking check team
23 <sup>rd</sup> April 2009	Minutes of the observations carried out in call centre.	Calls handling & general environment	Manually noted minutes	*****

23 <sup>rd</sup> April 2009	Transcripts of semi-structured interviews with Adrian Davis	Adrian Davis	Digitally Recorded	Systems thinking check team
5 <sup>th</sup> May 2009	Transcripts of semi-structured interviews with Dominic Johnston	Dominic Johnston	Digitally Recorded	Call centre team leader
6 <sup>th</sup> May 2009	Transcripts of semi-structured interviews with Andy Kirkham	Andy Kirkham	Digitally Recorded	ICT Manager
6 <sup>th</sup> May 2009	Transcripts of semi-structured interviews with Chris Baker	Chris Baker	Digitally Recorded	Information services officer
6 <sup>th</sup> May 2009	Transcripts of semi-structured interviews with John Smith	John Smith	Digitally Recorded	Legal services manager
21 <sup>st</sup> May 2009	Transcripts of semi-structured interviews with front-line staff	Front-line staff	Digitally recorded	Call centre front-line employees
21 <sup>st</sup> May 2009	Service delivery performance charts	Chris Troughton	Internal reports	Call centre team leader
22 <sup>nd</sup> May 2009	Transcripts of semi-structured interviews with front-line staff	Front-line staff	Digitally recorded	Call centre front-line employees
28 <sup>th</sup> May 2009	Transcripts of in-depth interview with Phil Badley	Phil Badley	Digitally recorded	Service director
28 <sup>th</sup> May 2009	Transcripts of in-depth interview with Jo Lane	Jo Lane	Digitally recorded	Head of transformation project
9 <sup>th</sup> June 2009	Copy of the power point presentation about systems thinking educational element	Sally Pearson	Power point file	PA to service director
23 <sup>rd</sup> June 2009	Transcripts of semi-structured interview with Geremy Cox	Geremy Cox	Digitally recorded	Check team trainer and consultant

**Case 3 - VELUX Company Limited (GB)**

<b>Date</b>	<b>Description</b>	<b>Source</b>	<b>Format</b>	<b>Role</b>
27 <sup>th</sup> August 2008	Minutes of the initial meeting with Ron Skea	Ron Skea	Manually noted minutes	Operations director & project champion
27 <sup>th</sup> August 2008	Minutes of the initial meeting with Laurence Barrett	Laurence Barrett	Manually noted minutes	Company director & project champion
27 <sup>th</sup> August 2008	Minutes of the initial meeting with Ron Hogg	Ron Hogg	Manually noted minutes	Operations administrator & team leader
27 <sup>th</sup> August 2008	Minutes of Initial meeting with Jacqui Dalziel	Jacqui Dalziel	Manually noted minutes	Operations administrator & team leader
10 <sup>th</sup> September 2008	Copy of the power point presentation about VELUX, systems thinking project, performance charts before and after project	Ron Skea	Power point file	Operations director
10 <sup>th</sup> September 2008	Copy of the company's success stories and progress	Ron Skea	Newsletter	Operations director
10 <sup>th</sup> September 2008	Transcripts of semi-structured interview with Laurence Barrett	Laurence Barrett	Digitally recorded	Company director
10 <sup>th</sup> September 2008	Minutes of the observations carried out in call centre.	Calls handling & general environment	Manually noted minutes	*****
17 <sup>th</sup> September 2008	Nine-items organisational commitment questionnaire	Call centre employees	web-based questionnaire	Call centre front-line employee
2 <sup>nd</sup> October 2008	Transcripts of semi-structured interview with Ron Skea	Ron Skea	Digitally recorded	Operations director
2 <sup>nd</sup> October	Transcripts of semi-	Ingrid Tailor	Digitally	Logistics

2008	structured interview with Ingrid Tailor		recorded	departments director
2 <sup>nd</sup> October 2008	Transcripts of semi-structured interview with John Pettit	John Pettit	Digitally recorded	Credit control director
23 <sup>rd</sup> October 2008	Transcripts of semi-structured interview with Jacqui Dalziel	Jacqui Dalziel	Digitally recorded	Operations administrator and intervention team member
23 <sup>rd</sup> October 2008	Transcripts of semi-structured interview with Ron Hogg	Ron Hogg	Digitally recorded	Operations administrator and intervention team member
23 <sup>rd</sup> October 2008	Transcripts of semi-structured interview with Sharon Douglas	Sharon Douglas	Digitally recorded	Front-line employee & intervention team member
23 <sup>rd</sup> October 2008	Demand analysis and problem solver documents	Sharon Douglas	Internal reports/ documents	Front-line employee & intervention team member
23 <sup>rd</sup> October 2008	Transcripts of semi-structured interview with Sharon Cairns	Sharon Cairns	Digitally recorded	Front-line employee & intervention team member
23 <sup>rd</sup> October 2008	End user aged debt analysis and call centre contributions	John Pettit	Internal reports	Credit control director
12 <sup>th</sup> November 2008	Call centre & Payment processes flow charts, call centre & products delivery processes flow charts	John Pettit	Process flow diagrams	Credit Control director
12 <sup>th</sup> November 2008	Transcripts of semi-structured interview with Nicola Dicotteo	Nicola Dicotteo	Digitally recorded	Front-line employee & intervention team member
12 <sup>th</sup> November	Transcripts of semi-structured interview with	Moira Thomson	Digitally recorded	Front-line employee &

2008	Moira Thomson			intervention team member
12 <sup>th</sup> November 2008	Transcripts of semi-structured interview with Kelly Renwick	Kelly Renwick	Digitally recorded	Front-line employee & intervention team member
12 <sup>th</sup> November 2008	Transcripts of semi-structured interview with John Wood	John Wood	Digitally recorded	Front-line employee
20 <sup>th</sup> November 2008	Transcripts of semi-structured interview with Elaine Baird	Elaine Baird	Digitally recorded	Marketing department director
20 <sup>th</sup> November 2008	Transcripts of semi-structured interview with Keith Riddle	Keith Riddle	Digitally recorded	Managing director
5 <sup>th</sup> December 2008	Transcripts of in-depth interview with Stuart Corrigan	Stuart Corrigan	Digitally recorded	Systems thinking external consultant (managing director, Vanguard Scotland)
5 <sup>th</sup> December 2008	Information gathered in call centre and shared with other department and global branches	Ron Skea	Internal reports	Operations director & project champion
10 <sup>th</sup> Februarys 2009	Profit and market share figures 2003-2008	Laurence Barrett	Internal reports	Company Director
9 <sup>th</sup> April 2009	Systems thinking savings	Ron Skea	Internal report	Operations director & project champion
1 <sup>st</sup> June 2009	Transcripts of in-depth interview with Ron Skea (systems thinking implementation)	Ron Skea	Digitally recorded	Systems thinking Project champion
1 <sup>st</sup> June 2009	Transcripts of in-depth interview with Laurence Barrett (systems thinking implementation)	Laurence Barrett	Digitally recorded	Systems thinking Project champion

2 <sup>nd</sup> June 2009	Transcripts of in-depth interview with Ron Hogg (systems thinking implementation)	Ron Hogg	Digitally recorded	Intervention team member
2 <sup>nd</sup> June 2009	Transcripts of in-depth interview with Jacqui Dalziel (systems thinking implementation)	Jacqui Dalziel	Digitally recorded	Intervention team member
2 <sup>nd</sup> June 2009	Transcripts of in-depth interview with Sharon Douglas (systems thinking implementation)	Sharon Douglas	Digitally recorded	Intervention team member
2 <sup>nd</sup> June 2009	Transcripts of in-depth interview with Sharon cairns (systems thinking implementation)	Sharon cairns	Digitally recorded	Intervention team member
8 <sup>th</sup> June 2009	Transcripts of in-depth interview with Nicola Dicotteo (systems thinking implementation)	Nicola Dicotteo	Digitally recorded	Intervention team member
8 <sup>th</sup> June 2009	Transcripts of in-depth interview with (systems thinking implementation)	Maira Thomson	Digitally recorded	Intervention team member
8 <sup>th</sup> June 2009	Transcripts of in-depth interview with Kelly Renwick (systems thinking implementation)	Kelly Renwick	Digitally recorded	Intervention team member

# Appendix 2- Individual case thematic matrices

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## Case1 - Nottingham City Council

### Findings regarding call centre's mechanistic structure

codes	Issues discussed	Basic Themes	Central Themes
<ul style="list-style-type: none"> <li>Statistics</li> <li>Focus</li> <li>Targets</li> <li>Monitoring</li> <li>Control</li> </ul>	<ul style="list-style-type: none"> <li>Management focus is on achieving daily targets and numbers.</li> <li>Maintaining low queues of callers</li> <li>Handling calls within the time specified.</li> <li>Necessity of using scripts when talking to customer</li> <li>Monitoring front-line employees for most of the time.</li> </ul>	<ul style="list-style-type: none"> <li>Management focus is on quantity rather than quality.</li> <li>Quantity is perceived to generate quality through monitoring and scripts usage.</li> </ul>	<p><b>Management style and focus</b></p>
<ul style="list-style-type: none"> <li>Workloads</li> <li>Desires</li> <li>Problems</li> <li>pressures</li> </ul>	<ul style="list-style-type: none"> <li>Tasks are repetitive and narrow in scope.</li> <li>Training is around following preset methods.</li> <li>High levels of pressures and workloads</li> <li>Performance is generally standardised.</li> <li>Technology surveillance to put employees under control.</li> <li>Lack of flexibility in the service and lack of communication with other departments.</li> <li>Lack of power to change things and make decision to serve customer.</li> </ul>	<ul style="list-style-type: none"> <li>Employees lack of essential freedom</li> <li>Work is all about mass processing of demands.</li> <li>Employees have a desire to act and change things.</li> </ul>	<p><b>Front-line employees working experience</b></p>
<ul style="list-style-type: none"> <li>Numbers</li> <li>Time</li> <li>Call statistics</li> </ul>	<ul style="list-style-type: none"> <li>The use of the number of calls handled per day.</li> <li>The average duration of each call.</li> </ul>	<ul style="list-style-type: none"> <li>Managers methods of employees assessment.</li> <li>Workplace performance</li> </ul>	<p><b>Performance measurement</b></p>

<ul style="list-style-type: none"> <li>Relationship</li> <li>Communication</li> <li>Openness</li> </ul>	<ul style="list-style-type: none"> <li>Average abandonment rate</li> <li>Caller waiting time in queue before being answered.</li> <li>Very poor departmental relationships.</li> <li>Functional specialisation viewed every department as a separate entity.</li> <li>Effects of departmental separation on call centre employees and their ability to serve the caller.</li> <li>Increased waste in trying to meet caller demands.</li> </ul>	<p>measures.</p> <ul style="list-style-type: none"> <li>Silo working is the dominate type of relationship.</li> <li>Functional specialisation creates rigid communication methods and lack of coherence.</li> </ul>	<p><b>Departmental integration and internal communication</b></p>
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## Case 2 – Stockport Metropolitan Borough Council

### Part 1- Help desk employees interviews (offerings of systems thinking)

codes	Issues discussed	Basic Themes	Central Themes
<ul style="list-style-type: none"> <li>Focus</li> <li>Statistics</li> <li>targets</li> </ul>	<ul style="list-style-type: none"> <li>Number of calls done</li> <li>Time allowance</li> <li>Focus of managers</li> <li>Supervisor involvement</li> <li>Reporting (%age of one-stop calls)</li> <li>Demand analysis to know what we have done better</li> <li>Surveillance or recording of calls, time restrictions or scripts to follow.</li> </ul>	<ul style="list-style-type: none"> <li>Workplace measures used</li> <li>managers role</li> </ul>	<p><b>Management Style</b></p>
<ul style="list-style-type: none"> <li>Attraction</li> <li>Speed</li> <li>Access</li> <li>Co-workers relationships</li> <li>Skills</li> <li>Workloads</li> <li>Feedback</li> </ul>	<ul style="list-style-type: none"> <li>Wider scope of demand</li> <li>One stop calls</li> <li>Feedback from customers</li> <li>Skills development</li> <li>Team relationships</li> <li>Team share responsibility</li> <li>Domain access</li> <li>Common sense system</li> <li>Logical procedures</li> <li>Doing things right and once</li> </ul>	<ul style="list-style-type: none"> <li>Employees perceptions</li> <li>Employees reactions and effects</li> </ul>	<p><b>Working Experience</b></p>
<ul style="list-style-type: none"> <li>External Feedback</li> </ul>	<ul style="list-style-type: none"> <li>People get what they want</li> <li>No transfer from pillar to</li> </ul>	<ul style="list-style-type: none"> <li>Customers perceptions and</li> </ul>	<p><b>Customer Experience and</b></p>



<ul style="list-style-type: none"> <li>• Service performance</li> <li>• One person</li> <li>• One stop</li> </ul>	<ul style="list-style-type: none"> <li>• post (up to 6-8 teams)</li> <li>• One call handling of demands</li> <li>• Waiting time</li> <li>• Reference/ticket number cancellation</li> <li>• Emails feedback</li> <li>• Efficient way</li> <li>• No filters or IVR Tech. and one calling number is available now.</li> <li>• Correct information</li> <li>• Time to talk</li> </ul>	<ul style="list-style-type: none"> <li>• reactions</li> <li>• Customer demand resolution</li> <li>• Service efficient procedures</li> </ul>	<b>Feedback</b>
<ul style="list-style-type: none"> <li>• Incoming calls</li> <li>• Demand handling</li> <li>• Efficiency</li> </ul>	<ul style="list-style-type: none"> <li>• Managers log in to system</li> <li>• Number of calls one stop</li> <li>• Call repetition prevention</li> <li>• Meeting demand</li> <li>• Sticking to working principles.</li> <li>• Multi-tasking on phone</li> <li>• Five completed cases per day</li> </ul>	<ul style="list-style-type: none"> <li>• Number of completed transactions</li> <li>• Value service</li> </ul>	<b>Performance Measurement</b>
<ul style="list-style-type: none"> <li>• Problems quarantined</li> <li>• Certainty</li> <li>• One stop process</li> <li>• Flexibility</li> <li>• Feedback</li> </ul>	<ul style="list-style-type: none"> <li>• Identification of problems very quickly.</li> <li>• Continuous search for ways to meet new demands</li> <li>• Clarity on the system</li> <li>• One stop handling of one or more demands.</li> <li>• Focus on what customer wants</li> <li>• Not caught by procedures and numbers</li> <li>• Employees are given variety of tasks</li> <li>• Plan and handle your own day.</li> <li>• Freedom to act on initiatives</li> <li>• Happy customers</li> </ul>	<ul style="list-style-type: none"> <li>• efficiency of the service processes.</li> <li>• customer orientation</li> <li>• employee ownership and decision making</li> <li>• system control and transparency</li> </ul>	<b>Systems Thinking Contributions to Workplace</b>
<ul style="list-style-type: none"> <li>• Publicity</li> <li>• Traditional system</li> <li>• People motivation</li> <li>• Change</li> <li>• Knowledge improvement initiatives</li> <li>• working philosophy</li> </ul>	<ul style="list-style-type: none"> <li>• Did not hear about it.</li> <li>• Managers are not aware about it.</li> <li>• Not investigating their current systems performance.</li> <li>• No customer voice when designing their system</li> <li>• Protecting a bad system because it is their achievement.</li> <li>• Good feedback from</li> </ul>	<ul style="list-style-type: none"> <li>• lack of awareness about current systems</li> <li>• Employees skills level and motivation to learn.</li> <li>• Managers Fear of losing authority and control.</li> <li>• No statistics, the</li> </ul>	<b>Barriers against implementing systems thinking in other organizations</b>

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<ul style="list-style-type: none"> <li>• deskillling</li> <li>• Top management rejection</li> </ul>	<p>customer might hide the problems of the system</p> <ul style="list-style-type: none"> <li>• Hidden problems in the old system.</li> <li>• Employee's Willingness to learn <ul style="list-style-type: none"> <li>• Fear of change</li> <li>• Need for high skills.</li> </ul> </li> <li>• Changes the whole working philosophy with no statistics.</li> <li>• Deskillling to some employees.</li> </ul>	<p>evidence is qualitative.</p>
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## Part 2- Senior and middle managers interviews (offering and implementation of systems thinking)

codes	Issues discussed	Basic Themes	Central Themes
<ul style="list-style-type: none"> <li>• Informal messages</li> <li>• Formal messages</li> <li>• Meetings</li> <li>• Contact</li> </ul>	<ul style="list-style-type: none"> <li>• Thinking that old system (i.e. functional specialisation) was communicating well but it is "not".</li> <li>• Huge improvements in communication.</li> <li>• Formal and informal meeting at managers level on monthly basis.</li> <li>• Meetings with other teams and directors.</li> <li>• Open doors policy.</li> <li>• We advertise what is happening on phones to tell others about our work and the effect on them in a relevant way</li> <li>• Specific contacts with individuals to tell them what we do informally.</li> </ul>	<ul style="list-style-type: none"> <li>• Intensity of communication</li> <li>• Exchange of information is improved.</li> </ul>	<p><b>Departmental integration</b></p>
<ul style="list-style-type: none"> <li>• Problems</li> <li>• Project needs</li> <li>• Driver</li> </ul>	<ul style="list-style-type: none"> <li>• The visible waste in the old system.</li> <li>• Using logical evidence that the old system had a lot of waste through process flow diagrams.</li> <li>• Systems thinking is very logical system.</li> <li>• System working work</li> </ul>	<ul style="list-style-type: none"> <li>• Role of logical evidence from both systems (i.e. traditional &amp; systems thinking).</li> <li>• People awareness and involvement</li> </ul>	<p><b>How to justify systems thinking as a counter-intuitive initiative</b></p>

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<ul style="list-style-type: none"> <li>• Convincing</li> <li>• Attraction</li> <li>• Curiosity</li> </ul>	<p>with the human Side to change the nature of work.</p> <ul style="list-style-type: none"> <li>• Get people involved in the check process is ideal solution.</li> <li>• Creation of intervention team to widen exposure.</li> <li>• Intervention team role in creating awareness.</li> <li>• Using customers feedback to put validity on numbers.</li> <li>• Reduction in repeated calls (waste).</li> <li>• Reduce number of agency workers (save money).</li> <li>• ROI in 9 months.</li> <li>• Focusing on the job rather than maintaining the system.</li> <li>• communication at all levels</li> <li>• Daily communication with subordinates.</li> <li>• Regular communication with peers and top management.</li> <li>• Using system waste and failure demand findings</li> <li>• Service processes flow charts and after redesign.</li> <li>• Communication with other departments.</li> <li>• Compiling evidence</li> <li>• Defining effects and impacts on individuals and departments of relation.</li> </ul>	<ul style="list-style-type: none"> <li>• Spreading findings from demand analysis and old systems processes flow</li> <li>• Redesign phase role</li> <li>• Improvement evidence achievement at all levels to attract people.</li> </ul>	<p><b>Communication plan for implementation</b></p>
<ul style="list-style-type: none"> <li>• Involvement</li> <li>• Understanding</li> <li>• Benefits</li> </ul>	<ul style="list-style-type: none"> <li>• The use of fundamental educational element about system thinking</li> <li>• Top management involvement through invitation to workplace</li> <li>• Top management involvement through participation in understanding processes flow charts.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge and awareness about systems thinking motivate management.</li> <li>• Involvement of managers is essential in attracting them.</li> <li>• Financial evidence is most</li> </ul>	<p><b>Tools and strategies to get management approval</b></p>

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	<ul style="list-style-type: none"> <li>Quantitative measures role in identifying systems thinking benefits to the organisation.</li> </ul>	important to get approval.	
<ul style="list-style-type: none"> <li>Learning</li> <li>Desire</li> <li>Option</li> <li>Opportunity hunting</li> </ul>	<ul style="list-style-type: none"> <li>Teaching subordinates, peers and colleagues about systems thinking.</li> <li>Using educational elements to increase awareness.</li> <li>Using elements from demand analysis and process mapping to get people on board.</li> <li>Visit managers who attended awareness creation elements to capture opportunities for intervention and approval.</li> </ul>	<ul style="list-style-type: none"> <li>Knowledge about nature of systems thinking and its logic is significant to widen support.</li> <li>Follow up to capture opportunities</li> </ul>	<b>capacity building</b>

### Case 3 - VELUX Company Limited (GB)

#### Part 1- Systems thinking offerings

codes	Issues discussed	Basic Themes	Central Themes
<ul style="list-style-type: none"> <li>Help</li> <li>Motivation</li> <li>Pleasure</li> </ul>	<ul style="list-style-type: none"> <li>Focused on meeting calls one stop</li> <li>Assessing employees on delivering value service.</li> <li>Managers are very close to us</li> <li>Managers are dedicated to solve problems and improve processes</li> <li>Managers take part in the work when needed</li> </ul>	<ul style="list-style-type: none"> <li>Managers as a part of team</li> <li>Managers help and support</li> <li>Equality and unity</li> </ul>	<b>Role of managers</b>
<ul style="list-style-type: none"> <li>Open</li> <li>Choice</li> <li>Interaction</li> <li>Needs</li> </ul>	<ul style="list-style-type: none"> <li>No barriers between employees</li> <li>channels of communication</li> <li>Type of contact</li> <li>Employees are viewed as one unit</li> <li>Friendship between employees</li> <li>Interaction with other departments</li> <li>Nature of interaction with other departments</li> </ul>	<ul style="list-style-type: none"> <li>Communication essential qualities</li> <li>Preferable contact</li> <li>Human resources interaction</li> </ul>	<b>Communication and networking</b>

<ul style="list-style-type: none"> <li>• Adoption</li> <li>• Learning</li> <li>• Skills</li> </ul>	<ul style="list-style-type: none"> <li>• Training periods</li> <li>• Training strategies</li> <li>• Training tools</li> <li>• Training nature</li> </ul>	<ul style="list-style-type: none"> <li>• Self-fulfilling system</li> <li>• Employees skills enhancement</li> </ul>	<b>Training</b>
<ul style="list-style-type: none"> <li>• Perspective</li> <li>• Reliance</li> </ul>	<ul style="list-style-type: none"> <li>• Main channel of contact essential to the work of other departments</li> <li>• Provide information to allow other departments decisions</li> <li>• Source of information</li> </ul>	<ul style="list-style-type: none"> <li>• Call centre is Central</li> <li>• Departments rely on its information</li> <li>• Facilitator for business decisions making</li> </ul>	<b>Call centre position in the company</b>
<ul style="list-style-type: none"> <li>• Good</li> <li>• Intimacy</li> <li>• Happy</li> <li>• Attraction</li> <li>• Free will</li> </ul>	<ul style="list-style-type: none"> <li>• Key performance indicators</li> <li>• Working enjoyment</li> <li>• Handling calls nature</li> <li>• Use of scripts</li> <li>• Use of surveillance</li> <li>• Personal Benefits</li> <li>• Nature of demand</li> <li>• Communication in and outside the workplace</li> </ul>	<ul style="list-style-type: none"> <li>• Employees achievement at work</li> <li>• Employees rights and obligations</li> <li>• Work nature and contributions</li> </ul>	<b>Employees working experience</b>
<ul style="list-style-type: none"> <li>• New issues</li> <li>• Evolution</li> </ul>	<ul style="list-style-type: none"> <li>• Demand analysis</li> <li>• “Board” meeting</li> <li>• Recognition of positive demand</li> <li>• Failure demand</li> <li>• Employees involvement</li> <li>• Other departments role</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding new customer demands</li> <li>• System maintenance</li> </ul>	<b>Continuous improvement</b>

## Part 2- Systems thinking implementation

<b>codes</b>	<b>Issues discussed</b>	<b>Basic Themes</b>	<b>Central Themes</b>
<ul style="list-style-type: none"> <li>• Problems found</li> <li>• Project needs</li> </ul>	<ul style="list-style-type: none"> <li>• customer complaints</li> <li>• turnover and stress</li> <li>• frustration of employees</li> <li>• managers role</li> <li>• project sponsor</li> <li>• team members availability</li> <li>• team members training</li> <li>• rate of lost calls</li> <li>• problem is in the system</li> </ul>	<ul style="list-style-type: none"> <li>• Justifying systems thinking</li> <li>• Leadership availability</li> <li>• Team formulation</li> </ul>	<b>Systems thinking introduction</b>
<ul style="list-style-type: none"> <li>• Spread the word</li> <li>• Attraction</li> <li>• Curiosity</li> </ul>	<ul style="list-style-type: none"> <li>• value and failure demand</li> <li>• communication at all level</li> <li>• system waste</li> <li>• using process flow diagrams in redesign</li> </ul>	<ul style="list-style-type: none"> <li>• Role of demand analysis</li> <li>• Redesign phase role</li> <li>• Improvement evidence achievement</li> </ul>	<b>Capacity building</b>

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	phase		
<ul style="list-style-type: none"> <li>• Desire</li> <li>• Perception</li> <li>• Good</li> <li>• Bad</li> </ul>	<ul style="list-style-type: none"> <li>• top management don't agree on systems thinking</li> <li>• initial evidence was not able to convince top management</li> <li>• systems thinking is seen as a threat</li> <li>• top management rely on statistics</li> <li>• managers wants to keep the role of controller</li> <li>• decision making is seen as top management property</li> </ul>	<ul style="list-style-type: none"> <li>• Top management way of thinking</li> <li>• System thinking image</li> </ul>	<b>Top management reactions</b>
<ul style="list-style-type: none"> <li>• Choice</li> <li>• Options</li> </ul>	<ul style="list-style-type: none"> <li>• savings through process mapping</li> <li>• information from process mapping</li> <li>• financial measures necessity</li> <li>• financial person availability</li> <li>• top management visits to workplace</li> <li>• top management need to touch and feel reality</li> <li>• power of demand analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Process mapping role</li> <li>• Management involvement role</li> <li>• Management accountant role</li> </ul>	<b>Confronting top management reactions</b>
<ul style="list-style-type: none"> <li>• Strategy</li> <li>• Action applied</li> </ul>	<ul style="list-style-type: none"> <li>• regular communication about improvements</li> <li>• more knowledge sharing about systems thinking</li> <li>• migration from old system</li> <li>• other areas transformation</li> <li>• new demand identification</li> <li>• new demand process mapping generation</li> </ul>	<ul style="list-style-type: none"> <li>• New evidence and real examples role</li> <li>• Roll in of employees</li> <li>• Continuous improvement</li> </ul>	<b>Systems thinking "beyond confrontation"</b>

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# Appendix 3 - Cross case thematic matrices

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## Part 1 – Cross-case thematic matrices for answering RQ1 & RQ2.

Case Study	Issues discussed	Basic Themes	Common Themes
<b>Nottingham city Council</b>	<ul style="list-style-type: none"> <li>• Management focus is on achieving daily targets and numbers.</li> <li>• Maintaining low queues of callers</li> <li>• Handling calls within the time specified.</li> <li>• Necessity of using scripts when talking to customer</li> <li>• Keeping workplace screens on eye.</li> <li>• Monitoring front-line employees for most of the time.</li> </ul>	<ul style="list-style-type: none"> <li>• Management focus is on quantity rather than quality.</li> <li>• Quantity is perceived to generate quality through monitoring and scripts usage.</li> </ul>	<b>Management style and focus</b>
<b>Stockport Metropolitan Borough Council</b>	<ul style="list-style-type: none"> <li>• Number of calls done</li> <li>• Time allowance</li> <li>• Focus of managers</li> <li>• Supervisor involvement</li> <li>• Reporting (%age of one-stop calls)</li> <li>• Demand analysis to know what we have done better</li> <li>• Surveillance or recording of calls, time restrictions or scripts to follow.</li> </ul>	<ul style="list-style-type: none"> <li>• Workplace measures used</li> <li>• managers role</li> </ul>	
<b>VELUX Company Limited (GB)</b>	<ul style="list-style-type: none"> <li>• Very helpful, major pillar to ask help from</li> <li>• No managers in place, we are all here to help customer</li> <li>• Managers are very close to us</li> <li>• Managers are dedicated to solve problems and improve processes</li> <li>• Managers take part in the work when needed</li> </ul>	<ul style="list-style-type: none"> <li>• Managers as a part of team</li> <li>• Managers help and support</li> <li>• Equality and unity</li> </ul>	
<b>Nottingham City Council</b>	<ul style="list-style-type: none"> <li>• Tasks are repetitive and narrow in scope.</li> </ul>	<ul style="list-style-type: none"> <li>• Employees lack of essential freedom</li> </ul>	<b>Front-line employees</b>

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	<ul style="list-style-type: none"> <li>• High levels of pressures and workloads</li> <li>• Performance is generally standardised.</li> <li>• Technology surveillance its role in putting employees under control.</li> <li>• Lack of flexibility in the service and lack of communication with other departments.</li> <li>• Lack of power to change things and make decision.</li> </ul>	<ul style="list-style-type: none"> <li>• Work is all about mass processing of demands.</li> <li>• Employees have a desire to act and change things.</li> </ul>	<b>working experience</b>
<b>Stockport Metropolitan Borough Council</b>	<ul style="list-style-type: none"> <li>• Wider scope of demand</li> <li>• One stop calls</li> <li>• Feedback from customers</li> <li>• Skills development</li> <li>• Team relationships</li> <li>• Team share responsibility</li> <li>• Domain access</li> <li>• Common sense system</li> <li>• Logical procedures</li> <li>• Doing things right and once</li> </ul>	<ul style="list-style-type: none"> <li>• Employees perceptions</li> <li>• Employees reactions and effects</li> </ul>	
<b>VELUX Company Limited (GB)</b>	<ul style="list-style-type: none"> <li>• Key performance indicators</li> <li>• Working enjoyment</li> <li>• Handling calls nature</li> <li>• Use of scripts</li> <li>• Use of surveillance</li> <li>• Personal Benefits</li> <li>• Nature of demand</li> <li>• Communication in and outside the workplace</li> </ul>	<ul style="list-style-type: none"> <li>• Employees achievement at work</li> <li>• Employees rights and obligations</li> <li>• Work nature and contributions</li> </ul>	
<b>Nottingham City Council</b>	<ul style="list-style-type: none"> <li>• Very poor departmental relationships.</li> <li>• Functional specialisation viewed every department as a separate entity.</li> <li>• Effects of departmental separation on call centre employees and their ability to serve the caller.</li> <li>• Increased waste in trying to meet caller demands.</li> </ul>	<ul style="list-style-type: none"> <li>• Silo working is the dominate type of relationship.</li> <li>• Functional specialisation creates rigid communication methods and lack of coherence.</li> </ul>	<b>Departmental integration and internal communication</b>

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<b>Stockport Metropolitan Borough Council</b>	<ul style="list-style-type: none"> <li>• Team relationships</li> <li>• Team share responsibility</li> <li>• Domain access</li> <li>• Thinking that old system (i.e. functional specialisation) was communicating well but it is “not”.</li> <li>• Huge improvements in communication.</li> <li>• Formal and informal meeting at managers level on monthly basis.</li> <li>• Meetings with other teams and directors.</li> <li>• Open doors policy.</li> <li>• We advertise what is happening on phones to tell others about our work and the effect on them in a relevant way</li> <li>• Specific contacts with individuals to tell them what we do informally.</li> </ul>	<ul style="list-style-type: none"> <li>• Intensity of communication</li> <li>• Exchange of information is improved</li> </ul>	
<b>VELUX Company Limited (GB)</b>	<ul style="list-style-type: none"> <li>• No barriers between employees</li> <li>• channels of communication</li> <li>• Type of contact</li> <li>• Employees are viewed as one unit</li> <li>• Friendship between employees</li> <li>• Interaction with other departments</li> <li>• Nature of interaction with other departments</li> </ul>	<ul style="list-style-type: none"> <li>• Communication essential qualities</li> <li>• Preferable contact</li> <li>• Human resources interaction</li> </ul>	
<b>Nottingham City Council</b>	<ul style="list-style-type: none"> <li>• The use of the number of calls handled per day.</li> <li>• The average duration of each call.</li> <li>• Average abandonment rate</li> <li>• Caller waiting time in queue before being answered.</li> </ul>	<ul style="list-style-type: none"> <li>• Managers methods of employees assessment.</li> <li>• Workplace performance measures.</li> </ul>	<b>Performance measurement</b>
<b>Stockport Metropolitan Borough Council</b>	<ul style="list-style-type: none"> <li>• Managers log in to system</li> <li>• Number of calls one stop</li> <li>• Call repetition prevention</li> </ul>	<ul style="list-style-type: none"> <li>• Number of completed transactions</li> <li>• Value service</li> </ul>	

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	<ul style="list-style-type: none"> <li>• Meeting demand</li> <li>• Sticking to working principles.</li> <li>• Multi-tasking on phone</li> <li>• Five completed cases per day</li> </ul>		
<b>VELUX Company Limited (GB)</b>	<ul style="list-style-type: none"> <li>• Focused on meeting calls one stop</li> <li>• Assessing employees on delivering value service.</li> </ul>	<ul style="list-style-type: none"> <li>• Number of completed transactions</li> <li>• Value service</li> </ul>	
<b>Nottingham City Council</b>	<ul style="list-style-type: none"> <li>• Lack of power to make decision to serve customer.</li> <li>• Effects of departmental separation on call centre employees and their ability to serve the caller.</li> </ul>	<ul style="list-style-type: none"> <li>• Customers are passed from pillar to post before they get what they want</li> <li>• Customers find it difficult to track their claims and demands.</li> </ul>	<b>Customer experience</b>
<b>Stockport Metropolitan Borough Council</b>	<ul style="list-style-type: none"> <li>• People get what they want</li> <li>• No transfer from pillar to post (up to 6-8 teams)</li> <li>• One call handling of demands</li> <li>• Waiting time</li> <li>• Reference/ticket number cancellation</li> <li>• Emails feedback</li> <li>• Efficient way</li> <li>• No filters or IVR Tech. and one calling number is available now.</li> <li>• Correct information</li> <li>• Time to talk</li> <li>• Strong communication between departments to process customer inquiries.</li> </ul>	<ul style="list-style-type: none"> <li>• Customers perceptions and reactions</li> <li>• Customer demand resolution</li> <li>• Service efficient procedures</li> </ul>	
<b>VELUX Company Limited (GB)</b>	<ul style="list-style-type: none"> <li>• Interaction with other departments delivers high quality service</li> <li>• Open communications between employees allow the most experienced employee to deal with customer demands.</li> </ul>	<ul style="list-style-type: none"> <li>• Speed of customer demand resolution</li> <li>• Efficient procedures that meets customers expectations.</li> </ul>	
<b>Nottingham City Council</b>	<ul style="list-style-type: none"> <li>• Training is around following preset methods.</li> <li>• Formal Training lasts for 8 weeks before</li> </ul>	<ul style="list-style-type: none"> <li>• In-house Formal Training prior to employment</li> </ul>	<b>Employees Training</b>

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		they start receiving calls.		
<b>Stockport Metropolitan Borough Council</b>	<ul style="list-style-type: none"> <li>• Training within normal working hours.</li> <li>• Team members share the responsibility of teaching and supporting new workers on most frequent demands,</li> </ul>	<ul style="list-style-type: none"> <li>• In house formal and informal training after employment</li> <li>• Concentration on learning from team</li> </ul>		
<b>VELUX Company Limited (GB)</b>	<ul style="list-style-type: none"> <li>• Training periods are much shorter</li> <li>• Training strategies depend on 20:80 rule</li> <li>• Training tools rely on team experience sharing</li> <li>• Training within normal working hours on most frequent demands.</li> </ul>	<ul style="list-style-type: none"> <li>• Self-fulfilling system</li> <li>• Employees skills enhancement through team sharing</li> </ul>		
<b>Nottingham City Council</b>	<ul style="list-style-type: none"> <li>• Separate entity</li> <li>• No reliance on its feedback or reports.</li> <li>• It is not allowed to interfere in other departments work.</li> </ul>	<ul style="list-style-type: none"> <li>• Silo working prevents call centre contributions.</li> </ul>		<b>Call centre position</b>
<b>Stockport Metropolitan Borough Council</b>	<ul style="list-style-type: none"> <li>• Essential to the work of other departments with relation</li> <li>• Provide information to allow other departments to make decisions</li> </ul>	<ul style="list-style-type: none"> <li>• Facilitator for business decisions making in related departments.</li> </ul>		
<b>VELUX Company Limited (GB)</b>	<ul style="list-style-type: none"> <li>• Main channel of contact</li> <li>• essential to the work of other departments</li> <li>• Provide information to allow other departments decisions</li> <li>• Source of information</li> </ul>	<ul style="list-style-type: none"> <li>• Call centre is Central</li> <li>• Departments rely on its information</li> <li>• Facilitator for business decisions making</li> </ul>		
<b>Nottingham City Council</b>	<ul style="list-style-type: none"> <li>• System is unchangeable</li> <li>• Problems are solved by passing callers to other departments.</li> </ul>	<ul style="list-style-type: none"> <li>• System is caught up in waste effects and failures.</li> <li>• Employees are not allowed to act on the system.</li> </ul>		<b>Continuous improvement</b>
<b>Stockport Metropolitan Borough Council</b>	<ul style="list-style-type: none"> <li>• Identification of problems as soon as they appear.</li> <li>• Continuous search for ways to meet new demands.</li> </ul>	<ul style="list-style-type: none"> <li>• System maintenance against failure demand or new demands</li> </ul>		
<b>VELUX Company</b>	<ul style="list-style-type: none"> <li>• Demand analysis</li> <li>• “Board” meeting</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding new customer demands</li> </ul>		

<b>Limited (GB)</b>	<ul style="list-style-type: none"> <li>• Recognition of positive demand</li> <li>• Failure demand</li> <li>• Employees involvement</li> <li>• Other departments role</li> </ul>	<ul style="list-style-type: none"> <li>• System maintenance</li> </ul>
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## Part 2 – Cross case thematic matrices for answering RQ3.

Case study	Issues discussed	Basic Themes	Common Themes
<b>VELUX Company Limited (GB)</b>	<ul style="list-style-type: none"> <li>• customer complaints</li> <li>• turnover and stress</li> <li>• frustration of employees</li> <li>• managers role</li> <li>• project sponsor</li> <li>• team members availability</li> <li>• team members training</li> <li>• rate of lost calls</li> <li>• problem is in the system</li> </ul>	<ul style="list-style-type: none"> <li>• Justifying systems thinking</li> <li>• Leadership availability</li> <li>• Team formulation</li> </ul>	<b>Introducing organic structures</b>
<b>Stockport Metropolitan Borough Council</b>	<ul style="list-style-type: none"> <li>• The visible waste in the old system.</li> <li>• Using logical evidence that the old system had a lot of waste through process flow diagrams.</li> <li>• Systems thinking is very logical system.</li> <li>• System working work with the human Side to change the nature of work.</li> <li>• Get people involved in the check process is ideal solution.</li> <li>• Creation of intervention team to widen exposure.</li> <li>• Intervention team role in creating awareness.</li> <li>• Using customers feedback to put validity on numbers.</li> <li>• Reduction in repeated calls (waste).</li> <li>• Reduce number of agency workers (save money).</li> <li>• ROI in 9 months.</li> <li>• Focusing on the job rather than maintaining</li> </ul>	<ul style="list-style-type: none"> <li>• Role of logical evidence from both systems (i.e. traditional &amp; systems thinking).</li> <li>• People awareness and involvement</li> </ul>	

	the system.		
<b>VELUX Company Limited (GB)</b>	<ul style="list-style-type: none"> <li>• value and failure demand</li> <li>• communication at all level</li> <li>• system waste</li> <li>• using process flow diagrams in redesign phase</li> <li>• improvements identification importance</li> </ul>	<ul style="list-style-type: none"> <li>• Role of demand analysis</li> <li>• Redesign phase role</li> <li>• Improvement evidence achievement</li> </ul>	<b>Capacity Building</b>
<b>Stockport Metropolitan Borough Council</b>	<ul style="list-style-type: none"> <li>• Teaching subordinates, peers and colleagues about systems thinking.</li> <li>• Using educational elements to increase awareness.</li> <li>• Using elements from demand analysis and process mapping to get people on board.</li> <li>• Visit managers who attended awareness creation elements to capture opportunities for intervention and approval.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge about nature of systems thinking and its logic is significant to widen support.</li> <li>• Follow up to capture opportunities</li> </ul>	
<b>VELUX Company Limited (GB)</b>	<ul style="list-style-type: none"> <li>• top management don't agree on systems thinking</li> <li>• initial evidence was not able to convince top management</li> <li>• systems thinking is seen as a threat</li> <li>• top management rely on statistics</li> <li>• managers wants to keep the role of controller</li> <li>• decision making is seen top management property</li> </ul>	<ul style="list-style-type: none"> <li>• Top management way of thinking</li> <li>• System thinking image</li> </ul>	<b>Confronting top management reactions</b>
<b>Stockport Metropolitan Borough Council</b>	<ul style="list-style-type: none"> <li>• The use of fundamental educational element about system thinking</li> <li>• Top management involvement through invitation to workplace</li> <li>• Top management involvement through participation in understanding processes flow charts.</li> <li>• Quantitative measures</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge and awareness about systems thinking motivate management.</li> <li>• Involvement of managers is essential in attracting them.</li> <li>• Financial evidence is most important to get approval.</li> </ul>	

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<b>VELUX Company Limited (GB)</b>	<p>role in identifying systems thinking benefits to the organisation.</p> <ul style="list-style-type: none"> <li>• regular communication about improvements</li> <li>• more knowledge sharing about systems thinking</li> <li>• migration from old system</li> <li>• other areas transformation</li> <li>• new demand identification</li> <li>• new demand process mapping generation</li> </ul>	<ul style="list-style-type: none"> <li>• New evidence and real examples role</li> <li>• Roll in of employees</li> <li>• Continuous improvement</li> </ul>	<b>Beyond top management confrontation</b>
<b>Stockport Metropolitan Borough Council</b>	<ul style="list-style-type: none"> <li>• Communicating improvements and achievements.</li> <li>• The gradual adoption of new service design.</li> <li>• Targeting other areas impacted by the change</li> <li>• new demands process mapping generation</li> </ul>	<ul style="list-style-type: none"> <li>• Roll in of the rest of employees</li> <li>• Continuous improvement</li> </ul>	

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# Appendix – 4: Accepted journal paper for publication

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## **International Journal of Services Sciences (IJSSci)**

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Special Issue on: "Systems Thinking in Service Organisations"

### **Systems Thinking for Public Services: Adopting Manufacturing Management Principles**

#### **Abstract:**

A management thinking shift has recently been noticed in public services to adopt manufacturing systems in their attempt to face economical and operational challenges. This paper investigates the utilization of systems thinking in public service operations for potential added value. A case study of systems thinking implementation at a UK city council help desk was carried out using in-depth interviews with key personnel coupled with observations and document evaluation. The Organizational Commitment Questionnaire (OCQ) was administered among front-line employees. Results show that systems thinking could create significant added value to the business and the working place, also a strong relationship was demonstrated between the systems thinking implementation and the affective commitment level of employees. This paper is one of a few studies that demonstrate the applicability of manufacturing systems in other settings and that they can generate significant added value for the overall service department.

**Key words** public services; systems thinking; systems engineering; affective commitment; service delivery; service design; value creation.

#### **1. Introduction:**

Studies of call centre management practices and environment have revealed that there is a tendency to focus on efficiency rather than effectiveness (Dean, 2002), in other words there is a focus on "quantity" rather than "quality" (Bain et al., 2002, Mahesh, 2006, Raz and Blank, 2007). This focus on quantity explains such issues as control on employees, high workloads and less empowerment. Obviously, it is difficult for employees to be customer-oriented in such an environment. This explains one of the reasons for the low levels of service quality in certain call centres (Dean, 2002). It was also found that this focus on quantity at the expense of quality came as a result of a mismatch between what was required from call centres and what was measured within call centres (Robinson and Morley, 2006). To improve service quality in call centres, an integrated approach to service operations construction is required to deliver its anticipated benefits (Schelp and winter, 2008). However, the creation and implementation of call centres in different organizations have been perceived in many cases as the responsibility of the customer service department without the involvement

of other business units. This came in response to the functional specialization principals applied mainly to large size organizations (Blau, 1971). As a result, employees feel that they are constrained to the unavailability of necessary links with other units when needed (Corea, 2006). Despite this fact, managers in many organizations including public organizations remain committed to “an ineffective course of action” of continuing executing call centre projects that are failing to achieve a satisfactory level of service quality (McElhinney, 2005). In many occasions, the entrapment to ineffective call centre’s projects implementations and management was a result of the application of key performance indicators (KPIs), resulting in the excessive focus on statistics and regulations to satisfy government targets. This causes the system to hide many repetitive tasks and procedures that are considered as waste. The waste present in the service system makes the service process sluggish and time consuming which in turns harms the customer service level and dissipate monetary resources. However, public service departments have to achieve targets in order to maintain funding (Jaaron and Backhouse, 2009).

Due to the current economical pressures, the expectations of local authorities include a requirement for Value For Money (VFM) for the operations and services they run. This necessitates substantial cashable efficiency savings, ideally without impacting upon service performance, particularly in priority areas. This means that the challenge is to maintain the same service level, if not better, with less resource. All this was built upon in the local authorities quest for ways to achieve its aim to save money through the application of transformational reviews of systems and managerial regimes.

This paper aims to explain the gradual shift in management thinking in public sector service departments towards adopting manufacturing support services models as a substitute for traditional functional specialization. The paper investigates the impact of the manufacturing support service models on the public services departments and the achievement of twin benefits of significant added value to the business and employees. In the following sections, the concepts of systems thinking are presented, the concept of *affective commitment* and both its prerequisites and significance on service quality are then discussed. This is followed by a description of the case study organization and data collection procedures. Finally, results are presented and conclusions discussed.

## **2. Lean manufacturing for service operations:**

Lean manufacturing principles was introduced for the first time in Toyota Production System (TPS) as a comprehensive strategy for the elimination of waste from work operations (Ohno, 1988). The elimination of waste is achieved through the creation of value stream mapping of operations that deliver solutions and products in minimal time (Christopher, 2000, Busi, 2005). Lean manufacturing is defined as the ability of the organization to do more work with less resources (Christopher, 2000), thus reducing overall costs. It embraces a number of strategies that comprise the whole leanness philosophy, these are JIT (whereby products and parts are only produced when a customer demand is received), workers empowerment, zero inventory, team working, continuous improvement, small production quantities, value streams and quick systems set-ups (Forrester, 1995). Nowadays, Lean Manufacturing Systems are widely used in many manufacturing industries around the globe. They have recently witnessed acceptance from service industries (Robertson, 1999) as a possible strategy to face



increasing customer expectations and intensive economical pressures for reduced costs. However, a gap seems to be present in service organizations between the management focus and that of front-line staff. While the premium interest of management in service organizations, similar to other types of organizations, is the cost, the concern used at the customer interface level is of service quality and customer satisfaction (Busi, 2005). To cover this gap of interest the management has to understand that as the service level increases the operating costs decrease. If the customer receives what he wants from the organization, then the customer is receiving a quality service with least-cost incurred by the organization as he/she does not need to call again asking for further resources. Likewise, if the organization is not providing what customer wants, then most probably the service encounter is poor and the customer is consuming more resources from the organization since he/she needs to call again until he/she gets what he/she wants. Eventually, if the customer does not get what he/she wants from an organization, this may cause him/her to stop using the service and switch over to other competitors (Seddon, 2008). However, the need to satisfy customer demands and reduce the frequency of demand failure requires the elimination of waste in the service systems and the creation of a variety absorbing operations that can reduce resources consumption and improve capacity. In the context of this paper, the words “systems thinking” are used to describe the system that has emerged from the translation of lean manufacturing principles for service departments.

Systems thinking is an approach for the design and management of work. It is based on designing the organizational systems around customer demand instead of in functional hierarchies at which customer demand is analyzed over a period of time to collect information about what customers want and expect and what matters to them most. Demand is analyzed on the basis of value and failure demand, value demand is what the service department has been established to serve and what the customers want which is of value to them; failure demand is the demand that the service department was not able to serve due to the lack of information or supporting operations. Systems thinking integrates the decision-making processes with the work itself (Seddon, 2005). To design against customer demand is to be more responsive to them. This implies that the waste present in the current system has to be reduced in the new design to enable the quick response. Removing waste implies the redesign of the service processes flow by focusing on minimizing the non-value adding activities from the customer point of view. When waste is removed the capacity of the system increases which allows for costs reductions and service quality improvements (Seddon, 2003). This way allows for more control because data is in the hands of the people doing the work. Measures used are built in so they automatically tell you what is happening. The result is a self-adapting system. Table 1 presents the main features of the systems thinking approach and compares them with the traditional managerial thinking found typically in “Mechanistic” structures (Robey and Sales, 1994).

Service departments are typically exposed to a greater demand variety from the customer than are manufacturing departments (Seddon, 2003). In order for the service organization to absorb demand variety it needs an adaptive mechanism similar to that of a living organism that can adapt to the surrounding environment in order to function and thrive. Such an organic structure is typified by devolved decision making processes (Robey and Sales, 1994). Organizations where employees are given the ability to make work decisions are more able to create a variety absorbing system. In addition people who are working under such standards have a sense of freedom and ownership. The

characteristics of this approach are that jobs are wide in scope and employees are allowed to act on a variety of tasks, to learn and to build relationships with customers (Seddon, 2005). These tasks are not governed by rigid rules and procedures; the team shares the responsibility of the work. Hierarchy of control is not usually present thus allowing the team to identify the right person to solve a particular problem. This is congruent to the characteristics of the organic structures introduced by (Robey and Sales, 1994), and eventually systems thinking approach is the opposite of “Mechanistic” structures. Help desks, for example, are typically mechanistic structure units by the managerial systems they use. However they are outward-facing entities exposed to the ever-changing, uncertain and demanding surrounding environment, they represent the most intensive and the main channel of interaction with customers (Burgers et al., 2000). These units typically face different demands and conditions than those that are shielded from the environment (e.g., production department, quality assurance department, etc.), the unpredictable demands and conditions increase the uncertainty of the inputs (Robey and Sales, 1994). The emphasis that mechanistic structures must be shielded from the environment strongly indicates that call centres must be given an organic face.

<b>Comparative dimension</b>	<b>Traditional management</b>	<b>Systems thinking</b>
Perspective	Top-down	Outside-in
Design	Functional specialisation	Demand value flow
Decision making	Separated from work	Integrated with work
Measures	Budget, activity, targets, output, standards	Related to purpose, variation and capability
Motivation	Extrinsic	Intrinsic
Management Ethic	Manage budget and people	Act on the system
Attitude to customers	Contractual	What matters

Table 1: Traditional Management Thinking Vs. Systems Thinking (Seddon, 2003)

### **3. Affective commitment (significance and antecedents):**

In the past few decades, organizational commitment has emerged as a platform for the identification of the relationship between organizations and their individuals (Commeiras and Fournier, 2001). Mathieu and Zajac (1990) have found that the concept of organizational commitment has taken two dimensions in empirical studies, some have described it as a consequence when linking it with work environment, role states and organizational structures, others have described it as an antecedent when linking it with turnover, absenteeism and personal behaviour. In the review of Literature, organizational commitment has been defined as the employee's psychological attachment to the organization (Mowday et al., 1979, Meyer and Allen, 1991). Allen and Meyer (1990) argued that organizational commitment which reflects a psychological state has three different components, these are:

### ***Affective Commitment***

It is the employee's emotional attachment to the organization. As a consequence, the person strongly identifies with the goals of the organization and desires to remain a part of it because he wants to do so.

### ***Continuance Commitment***

The employee commits to an organization because of the high cost associated with leaving the organization, including different forms of monetary losses such as pension accruals and social costs such as friendship ties with co-workers. The employee remains a part of the organization because he has to do so.

### ***Normative Commitment***

The employee attaches himself to and remains a part of the organization because of a feeling of obligation. For example, the organization may have invested resources in training or educating an employee who then feels an obligation to put in a corresponding amount of effort with a view to “repaying a debt”.

Several studies have demonstrated that organizational commitment, job satisfaction and quality of service are interrelated (Mathieu and Zajac, 1990, De Ruyter, 1999, Malhotra and Mukherjee, 2004). Among the three components, the *affective commitment* was found to be more effective than the other two components in influencing the service quality of customer-contact employees. There is also evidence from the relationship marketing literature of the importance of *affective commitment* in motivating clients and customers to continue their relationship with an organization. De Ruyter (1999) findings show the availability of different pre requirements and consequences of commitment in auditor-client relationships. *Affective commitment* was found to have an important role in this context. He argued that service quality and trust have a positive impact on *affective commitment*. Customers usually evaluate the overall image of the organization solely on the basis of their experience with the service encounter and then decide whether to continue with it or not (Brown and Maxwell, 2002).

The impact of *affective commitment* on service quality can be explained by understanding its antecedents, these were introduced by Mowday et al. (1982) and van Emmrik and Sanders (2005):

- Employee's personal characteristics: if the organization provided the chance for its employees to fulfil their personal ambitions; desire of achievement, autonomy, and a sense of control on what the employees have, then employees are more likely to develop *affective commitment* with their employer.
- Organizational structure and job-related characteristics: *affective commitment* is also related to the employer ability to decentralize decisions making processes to be at the employee's level. This gives employees a feeling of personal importance and value in the organization. In addition, role clarity and constructive supervisors relationships with employees is particularly important in this regard.
- Psychological contract: The psychological contract refers to the expectations set by employees and employer concerning each other's obligations (Van Emmrik and Sanders, 2005). Employees have expectation of job promotion, employer loyalty and preferences considerations at work. Unmet employee's expectations could result in dissatisfaction and ultimately turnover.

- Work experiences: Employees whose working experiences are rewarding and fulfilled their own aspirations are ready to exert more effort on behalf of the organization to deliver high levels of service quality than those whose working experiences were less rewarding (Meyer and Allen, 1991, Mayer et al., 1993).

Despite the fact that ever-changing business environment calls for new forms of organizational structures and management styles, managerial practices and organizational structures commonly implemented in call centres across the service industry can inhibit the development of a rewarding job experience for employees. This is due to standardised work procedures, monitored dialogue (Taylor et al., 2002, Ellis and Taylor, 2006), mechanisation of customer-employee contact and an emphasis on quantity statistics and targets over the quality of interaction (Mahesh, 2006, Varca, 2006). Eventually employees experience reduced empowerment in making decisions, they also perceive that their values and the ethical norms are not confirming with those of the organization. As a result employees possess reduced levels of *affective commitment*. In fact, shared values and ethical norms have been found to be positively related to the development of *affective commitment* in business relationships (De Ruyter, 1999). However, there are tools to measure the *affective commitment* of employees; one of these is the Organizational Commitment Questionnaire (OCQ) (Porter et al., 1974). A 15-items version OCQ was introduced by Porter et al. (1974) which was further shortened to a nine-items version. The shortened nine-items version was found to be more superior than the full 15-items version and more effective for measuring *affective commitment* (Commeiras and Fournier, 2001).

#### **4. Research questions:**

A shift has been witnessed recently in management thinking in public services to depart from traditional functional specialization, this came as a result of the need for new operational models that could potentially achieve the twin benefits of enhanced customer service and reduced overall cost of the business. Therefore, the research questions identified for exploration in this paper are the following:

RQ1. Whether the public service departments are adopting alternative management models applied to manufacturing support services for the management of their operations?

RQ2. Whether these alternative models add-value to the public service department (both in terms of enhanced customer service and reduced overall operational cost) and help improve the *Affective Commitment* of their employees and thus improve their value to their company?

To help answer these research questions, In the following sections, a description of a detailed case study within a UK city council will be presented.

#### **5. Research site:**

An independent case study was carried out in the Information and Communication Technologies (ICT) department of Stockport Metropolitan Borough Council in England. The ICT Department has a help desk that supports more than 6000 customers

across the council departments and related directorates for their hardware and software needs and IT problem solving. The help desk has a total of 18 employees working on phones and emails. There were two team leaders in the ICT help desk responsible for day to day operations of the work. Employees have varied educational backgrounds, some were college degree holders, some have received IT training and some have taken further education before joining Stockport Council. They are a mixture of young and older employees, most of them are in the age range of (20-35). They are local residents in the area surrounding the council. In general, the work of the employees is very similar to call centre environment where customers call seeking information on how to solve IT problems or for technical support. The ICT help desk was granted one phone number for all of its customer regardless of the nature of their demand, and with no Interactive Voice Response (IVR) Technologies in use. The Purpose of the help desk from Customer perspective was “ to provide customer with IT support and systems he needs and will need to do his job effectively”. In contrast, the purpose of the original system from employees perspective-derived from the management practices- is “to do my task and meet the set targets”. This mismatch of perceived purpose was identified as resulting in a sub-optimum solution.

Although Stockport Council was in a good position, significant improvements have been made in recent years, the Council’s aspirations for moving from excellent to exceptional require a continuation in the improvement of both performance and the use of resources. Further, the government’s expectations include local authorities identifying 3% ‘cash releasing efficiency gains’ each year and demonstrating and embedding VFM in a more explicit manner. The performance of authorities in these areas is measured and reported upon by the Audit Commission, primarily within the use of resources element of the Comprehensive Area Assessment (CAA). The CAA takes a broader view of VFM and use of resources, looking not only at the Council but at its relationship with partner organisations. Therefore, it was likely that some form of ‘step change’ will be necessary to meet in full the challenges that lie ahead. In response to the need for improvement initiatives the ICT department was a part of a strategic approach to achieving the improvements and efficiencies necessary to enable the Council to demonstrate VFM in the delivery of its priority outcomes, through the transformation of business and service delivery processes and methods. Eventually, the primary objectives of the ICT Transformation programme revolved around the generation of substantial cost reductions and efficiency savings, accompanied by performance improvement and increased customer satisfaction, thereby increasing the VFM provided by the Council. The transformation programme covered all functions of the ICT department, engaged with all employees within ICT and interacted with a wide cross section of customers who use the services. The transformation programme progressed in three stages:

### ***Check***

This stage started with demand analysis. A check team was recruited to perform this crucial stage of the programme, the team was selected on the basis of their ability to deal with demand end-to-end (collectively) and constructively challenge the status quo, in addition to their being respected within and beyond their team. The check team collated information about what customers expect and want from the ICT help desk and what matters to them most. Data collated in this process enabled identification of the major demands coming into the area. A visual representation of each operation carried

out in the help desk was developed as a flow chart with three key checks on accuracy being:

- It must be end to end (from customer view)
- It must be followed - wherever it goes
- It must capture what the staff actually do

Identification of waste (actions not adding any value from the customer's point of view) present in the service operations flow was then carried out. All processes classified as waste were marked in red on the process flow chart. Processes that add value from a customer's point of view were marked in green.

### ***Redesign***

This stage involved defining purpose and new operating principles of the ICT help desk. The team redesigned the processes flow taking what have been learned in the check phase considering the customer "wants" and then mapping out the service of the future. The new design focused on minimizing non-value adding activities from a customer point of view. However, it was recognized that complete elimination of non-value adding activities from a customer point of view was never going to be possible. A government targets project was set up to meet the reporting expectations of the local authority and inspectorate regimes. The help desk had to report back progress against measures and targets set by the various inspectorate regimes. This project helped the help desk translate targets into permanent measures. These measures relate to the customer purpose and enable the help desk to actively improve the system on an ongoing basis. The new processes were tested, re-designed and re-tested again to make sure that customers get the best possible service before going live in the help desk. The outcome of these new operating principles was productivity improvement in the processing of customers demands; which by implication, resulted in a responsive and positive customer feedback.

### ***Roll-In***

This stage covered implementation of the new model within the ICT help desk by a gradual rolling in of employees. As the check team progressed and the discussion was held about the roll-in of staff to this new way of working, it was key to continue the identification of appropriate training. This training included learning about systems thinking and putting that into practice; understanding and using the new ways of working as progressed by the check team. To ensure the ongoing sustainability of the new system design smaller changes to the way of working to improve the service offered was made. This stage involved the identification of further comprehensive staff training needs as they arose in the help desk.

## **6. Research methodology:**

The data was primarily collected through in-depth interviews and questionnaires conducted within the premises of Stockport city council, followed by observations and documents gathering. Prior to the commencement of interviews a number of emails and a visit have been established with the "gatekeeper" (Creswell, 2004) to develop a sense of trust as well as to explain the purpose of research. An "interview protocol" has been prepared as a backup to help in structuring the interviews and taking accurate notes (Creswell, 2004), it consisted of interviewer and interviewee name and position, time

and date of the interview, list of questions to be asked and a space where the notes on each question is to be written. A suitable quiet place was arranged by the “gatekeeper” to conduct the interviews. 16 interviews in total were conducted in research site, 11 were front-line employees from the help desk, three middle managers from the ICT department and two senior managers one is holding the services director position and the other is the head of transformation. The 11 front-line employees were interviewed about their working experience before and after the project as a part of a comparison study to explore the changes happened at the workplace. The remaining interviewees (middle and senior managers) were interviewed about the introduction process of lean systems thinking and the benefits achieved so far at all levels. The purpose of the study and the estimated interview time and how the information of the interview will be treated were all explained to participants before starting the interview. The interviews started with a very broad questions about participants roles, responsibilities and general working issues and gradually were narrowing down to a more focused issues which are the main concern of the research work, allowing for the employment of the “funnel interview” (Tashakkori and Teddlie, 1998). To ensure the elimination of the sense of anxiety and discomfort, every interviewee was asked whether he is comfortable with brief note taking and the use of audio tape to record the conversation, with which all interviewees have agreed. After completing the interview, interviewees were thanked for their participation, a confirmation for the information confidentiality was reassured. Further, the participants were told that a report about the study will be provided for the research site to ensure that results are accessible to every individual concerned. “Thematic analysis” methods (Taylor and Bogdan, 1984) were employed to identify the main themes constituting the interviewee replies.

The nine-items OCQ (Commeiras and Fournier, 2001) was used in the help desk to measure the *affective commitment* among front-line employees. It used an interval five options likert-type scale with the following anchors (“strongly disagree”, “disagree”, “undecided”, “agree”, and “strongly agree”). An informed consent form was provided as the first part of the questionnaire; a statement which guarantees that the responses from participants will be strictly confidential and data from this research will be reported only in the aggregate. Permission was granted by the head of transformation to start using the questionnaires in the help desk. A web-based questionnaire was sent through the internet to everyone working in the help desk. This provided a quick and easy data gathering and analysis (Creswell, 2004). The front-line employees spent only two minutes on average to complete it, and it did not interfere dramatically with the participants work responsibilities as it was completed in a natural setting. An “interrupted involvement” (Easterby-Smith et al., 2002) role was adopted during observations; this was done through roaming in the research site over a period of time moving in and out of the help desk, and later documenting the general behaviour atmosphere and the relationship between employees. Documents were also collected through the Head of Transformation and Services Director. These comprised mainly reports about the nature of the project, progressed achieved and the project management plans. They represented a good source of data to make inferences about the management style. They were of particular importance due to their perceived value in discovering things that have taken place before the beginning of the research inquiry (Patton, 2002).

## **7. Results and findings:**

The in-depth interviews conducted were divided into two groups during the analysis stage.

### **7.1 Results: help desk employees:**

the front-line employees interviews that explore the working conditions under the systems thinking principles and the impact on employees perceptions regarding their working experience. The findings from the thematic analysis (Taylor and Bogdan, 1984) derived the following central themes:

#### **Theme 1- management style**

Team leaders and supervisors focus at the help desk shifted from targets and statistics towards percentage of one stop calls and demand analysis, to know what has been done better and how to even more reduce the repeated phone calls. No phone calls recording or monitoring was required and no restrictions were applied on employees to finish call within a specified time. In addition, no scripts were used for employees to follow when taking to customers. Another primary focus for the management is to make sure that employees are on phone and that they are ready to help in any phone call if required.

#### **Theme 2- working experience**

Employees are now enjoying wider scope of demand which allows for skill development and authority to make decisions on phones. They commented that customers, once they get through, know that they will get what they want in the same phone call. The feedback from customers is very positive. The team share responsibility of the work and informal channels of communication is encouraged to allow for a quicker transfer of knowledge between members. Employees are now getting correct information from customers that could deliver a better service without the need for repeating phone calls.

#### **Theme 3- customer experience and feedback**

Interviewees indicted that Customers have the facility of reporting their opinions and views about the help desk service through phones and emails. Customer feedback has been very positive. Customers get what they want with the elimination of transfer from pillar to post. One employee is now dealing with the demand in a very efficient way with more time to speak to customer. No IVR technology is used in the help desk with the availability of only one calling number. Employees indicated that 85% of incoming phone calls are now dealt one stop.

#### **Theme 4- performance measurement**

Employees are measured and evaluated on the basis of sticking to working principles of meeting customer demand. Team leaders log into the systems to track each employee profile on daily basis to see the frequency of phone calls that have been met one stop, each employee is expected to handle at least 5 calls every day and complete them one stop. Employees commented that it is now possible to complete phone calls one stop due to the authority they have to make decisions and deliver the optimal solution required. In addition, The correct information collected from customers allowed for the precise identification of problems and thus a satisfactory solution to be provided.

#### **Theme 5- systems thinking contributions to workplace**

Interviewees regarded the following as the most important contribution to the help desk after the implementation of systems thinking:



- Identification of customer problems very quickly.
- Clarity on the system due to the continuous demand analysis.
- One stop handling of one or more customer demands.
- Focus on what customer wants and not caught by procedures and targets.
- System waste (unproductive processes) elimination and performance transparency.
- Freedom to act on the system.

**Theme 6- barriers against implementing systems thinking in other organizations**

Most of the employees claimed that lack of knowledge about systems thinking and the lack of investigating their current systems performance were behind the limited utilization of these systems in other public service departments and organizations. They indicated that if managers study the flow of processes in their systems they will find out that the systems is hiding a lot of waste and operational problems, and that probably could be the main endeavour to convince them of systems thinking instead of traditional functional specialization. Other reasons indicated by employees were the ignorance of the voice of customer when designing service systems and the managers need to protect a bad system because it is their own achievement. Other reasons indicated by employees where the fear of change and losing control on the systems as this changes the whole working philosophy. However, some very skilled employees commented that they opposed the new systems at the beginning because it added trivial tasks to their daily work, this was considered, in their point of view, a source of deskilling practise and not a job enrichment.

**7.2 Results: senior and middle managers:**

The senior and middle managers interviews explored the introduction process of the new systems to the ICT department and significant potential for value creation. A thematic analysis for these interviews generated the following themes:

**Theme 1- departmental Integration**

Managers recognised communication between departments at the city council as important. However, they indicated that the functional specialization model created a silo between sections and departments as every department was viewed as a separate entity that should not interfere with the work of other departments, one manager stated “we though functional specialization was an efficient way to do the work but it was not...the system was frustrating and did not allow for open doors policy”. All Managers claimed that they have witnessed huge improvements in communication, formal and informal meetings at managers level. This allowed for significant information sharing that was necessary to streamline service operations for better customer service. Also meetings with other teams and directors in other departments were carried out to share the effects of the new system on them in a relevant way.

**Theme 2- how to justify systems thinking as a counter-intuitive initiative**

All managers regarded the following contributions of systems thinking as an important tool to justify it as a counter-intuitive initiative in public service departments:

- cutting down the waste in the service system that makes the service process sluggish and time consuming.
- Saving resources/money without cut in service.
- Passing on calls from pillar to post was too high in the old system. Currently, 85% of calls are done one stop by one employee for each call.

- Systems thinking is the only model that works with the “Human side” to change the nature of work.
- Customer feedback and percentage of calls done first time.
- Reduction in repeated calls and thus improved productivity.
- Systems clarity and transparency.
- Focus on the job rather than maintaining the system.

### **Theme 3- communication plan for implementation**

Four managers indicated that they had a communication plan to use with their peers and subordinates that accompanied the project and even before it. The communication with the subordinates was done on daily basis and was informal in most of the times, whilst communication with peers and higher level of management was formal and was done on regular basis, a senior manager commented “I learned to tailor the message according to the type of receiver...for a person who is factual I tell him that ROI was in 9 months...for other types of people I invite them to come and have a look”. Managers communicated with government funding bodies, council’s senior board level, council’s elected members, other departmental managers and trade unions for consultation.

### **Theme 4- tools and strategies to get management approval**

knowledge about systems thinking and awareness about its benefits to the business were discussed. Managers found that knowledge and awareness is a key step in this process, they indicated that top management involvement in a fundamentals course about systems thinking is very vital to change the way they think about their current systems. They also indicated that quantitative measures of the new working model would play a major role in the process of securing top management support. Quantitative measures should indicate improvements in efficiency and demonstrate VFM, for example they used measures like:

- 85% of demand now is met and dealt with one stop against 17% demand that met before.
- It takes less than a day now to fix a call against 11 days for the same type of call.
- Fewer people are required to do more job, an opportunity has aroused to remove some agency workers and save money.

### **Theme 5- capacity building**

All managers indicated that as a part of the development of ‘expert’ internal capacity, an educational element for interventionists was employed. This was called core curriculum, it gave underpinning knowledge to colleagues who are being developed to be potential lead interventionists in the future. The first programme has been completed with the intention of running future educational elements to give this cohort the opportunity to develop their competence as lead interventionists. To build curiosity among other departmental managers around 100 internal managers were invited to take the fundamental educational element course on systems thinking to spread the word, this is followed by some follow-up visits to their departments to capture any opportunity in the system to make intervention where that manager operates.

## **7.3 Results: affective commitment:**

The *affective commitment* of employees was measured using the nine-item OCQ. Responses are sought from statements such as “I talk up this council to my friends as a great organizations to work for” and “this council really inspires the best in me in the way of job performance”. A total of 18 employees working at the help desk were

available at the time of the questionnaire, all employees responded targeting a 100% response rate. The data collected from this questionnaire was analysed to examine how *affectively committed* the help desk employees were. Responses to the nine-items are averaged to obtain a single score for each item; the standard deviation for each item was also calculated – see Table 2. An overall mean for the nine items of 3.77 was achieved. This provided a clear indication of fairly a high *affective commitment level among* employees in the help desk, where a return of 3.0 would indicate a neutral level of *affective commitment* and where values of 3.5 are typical in many organisations. This value shows that on average all the respondents agreed on the questionnaire items. A summary of the results is shown in Fig 1.

<b>Item</b>	<b>No.</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>S.D.</b>
<i>Q1: I am willing to put great deal of effort beyond that normally expected to this council be successful.</i>	18	3.00	5.00	4.0588	0.8726
<i>Q2: I talk up Stockport council to my friends as a great organization to work for.</i>	18	2.00	5.00	3.8125	1.0740
<i>Q3: I would accept almost any type of job assignment in order to keep working for Stockport Council.</i>	18	1.00	4.00	2.9375	1.0289
<i>Q4: I find that my values and Stockport council's Values are very similar.</i>	18	2.00	5.00	3.8125	1.0178
<i>Q5: I am proud to tell others that I am part of this council.</i>	18	2.00	5.00	3.8750	1.1143
<i>Q6: This council really inspires the best in me in the way of job Performance.</i>	18	1.00	4.00	3.6250	1.0416
<i>Q7: I am extremely glad I chose Stockport Council to work for over others I was considering at the time I joined.</i>	18	2.00	5.00	4.0000	1.0226
<i>Q8: I really care about the fate of this council.</i>	18	3.00	5.00	4.2500	0.7859
<i>Q9: For me, this is the best of all councils for which to work</i>	18	2.00	5.00	3.5625	1.0431
<b>Overall mean</b>				<b>3.77</b>	
<b>Internal consistency (coefficient <math>\alpha</math>)</b>				<b>0.94</b>	

Table 2: Mean and standard deviation for affective commitment questionnaire

## 8. Analysis and discussion:

### *Value for employees:*

The results reported above show a dramatic change in the philosophy of work as compared to the traditional office values found in majority of service departments in the government sector. The management style usually found in service departments, including help desks, is focused on achieving job targets and minimising costs, the internal work is designed around the “Principles of Taylorism” (Bain et al., 2002, Batt and Moynihan, 2002, Cartwright, 2003). This approach is based on standardising work

procedures in which the employees need to handle demand in a repetitive manner with detailed descriptions of procedures and work standards. The standardisation of procedures is perceived to increase the mechanisation of the customer-employee contact and decrease service flexibility. Help desk employees following this kind of model will lose large measure of control over their self-presentation to customers. This will leave them with little autonomy in negotiating their interactions with customers (Deery et al., 2002).

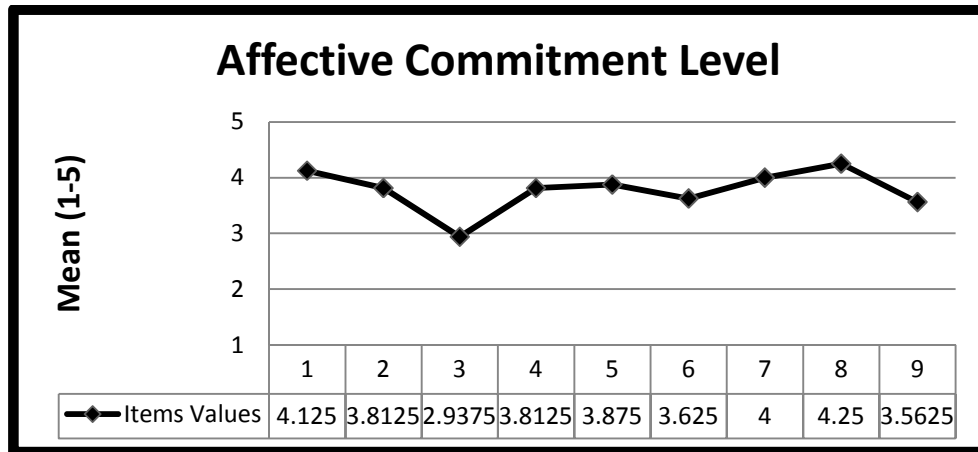


Figure 1: Affective commitment of help desk staff.

The traditional help desk environment represents the latest form of Taylorist principle as it is a common trend in help desks globally to practice high levels of monitoring over their employees (Armistead et al., 2002). However, the results of interviews conducted with front-line employees at the help desk have shown that the implementation of systems thinking approach has delivered numerous improvements. Employees under the new system are no longer restricted to repetitive job handling procedures or target achieving dilemma, they are empowered to do the job in the best way they see is vital to satisfy customer needs. Hence, employees have opportunities to develop their working skills by handling a wide range of challenging demands on daily basis. Their performance is evaluated on their ability to help the customer solve his problem from the first interaction without the need for the customer to call again. Further, employees operate as a team that shares the work responsibility; an employee can seek support from a more skilled colleague to solve a customer problem while on phone. Obviously, employees working in this environment have a feeling of belonging and ownership of the workplace, they have the freedom to make decisions to provide a high quality service at relatively shorter time, and they enjoy the open channels of communication between themselves as well as other departments. Employees are, thus, have a sense of freedom to act and excel in the job roles. When linking these job characteristics and environment offerings for employees with the antecedents of *affective commitment* discussed earlier, an expectation of high *affective commitment* level among employees can be concluded. The 9-item OCQ provided a value of 3.77 for the *affective commitment* level among employees that indeed proved the value-added to front-line employees life in the help desk in terms of work experience and job-related characteristics.

***Value for Managers:***

Help desks represent an organizational structure with relatively few layers of management where managers comprise 12% of the employees (Holman et al., 2007). They are top-down flat organizations (T-Form organizations) operating in a functional specialized parent organization (Holman et al., 2007, Adria and Chowdhury, 1999) with a rigid management model that controls employees behaviour to match the requirements of management, monitors their activities and intensively focus on achieving work targets and reduce operational costs (Seddon, 2008). However, these management practices does not provide clarity on the system operations, they also can not indicate whether the demand received was resolved by providing a reasonable solution that satisfy a customer. The results achieved from interviewing middle and senior managers in the ICT department have indicated that systems thinking has provided clarity on the system due to the continuous demand analysis performed, this helped managers to identify potential problems in the services offered and thus the immediate corrective measures to be taken. In addition, system clarity and continuous improvement have allowed managers to focus on the main purpose of the help desk (i.e. supporting customers) rather than maintaining the system against failures. Systems thinking was found to eliminate the waste in operations that helped managers to achieve automatic productivity and capacity improvements, customers do not need to call again which allowed employees to handle more demands in an efficient way without cut in service, and eventually reduce resources consumption and overall costs. Significantly, the employment of an economical way to improve the work was another contribution given to managers by systems thinking, managers indicated that systems thinking deals with human side to change the nature of work without the need of any tools or technologies to be brought in. Further, the creation of a committed front-line employees in the help desk has significantly resulted in reducing the burden of managing people behaviour in the help desk as the general moral system of the workplace controls the human resources behaviour and not the traditional top-down hierarchy.

***Value for customers:***

Many organizations have realized that the relationship with the customers should not end at the moment they receive their demand (Feinberg et al., 2000). It is believed that organizations should provide communication channels that can add value to the customers experience with the organization (Marisco, 1996). As a result call centres have emerged as an important port for customer relationship management activities (Kotorov, 2002) and the call centre employees are seen as the main link between organizations and customers (Burgers et al., 2000). However, although the “caller behaviour is difficult to objectively measure” (Betts et al., 2000), they evaluate the quality of the service on the basis of the service encounter itself and the expected benefits they can achieve from that encounter. Therefore, it is important for organizations to pay attention to the structures and quality of their services to achieve the value added and satisfaction in their customer interactions. The results of interviews at both levels (i.e. front-line employees and managers) reinforced the strong association of systems thinking and customer satisfaction. This came as a result of the rapport initiated between customers and employees, customers are not transferred from pillar to post anymore, only one employee handle the customer demand, they are now enjoying a solution delivery service in less than a day as compared to 11 days before the systems thinking. Apparently, the *affective commitment* of employees accompanied with system waste elimination created a difference for the customer experience and added-value to the service encounter, no unproductive processes are used anymore and employees are willing to exert more effort on behalf of their organization to deliver excellent service.

### ***Value for business:***

One may argue that managers may know from targets and statistics whether people are doing according to requirements or not. However, employees may rush to achieve their target for answering their customers' demands with low abandonment rates, but the question remains is that, are they doing the right work whilst having customers on the phone? Are they communicating in the manner that reflects the company's values and are they achieving the contact benefits? Employees may learn how to cheat their numbers to avoid management attention (Seddon, 2008), they can provide a fast service even though the customers may be misunderstood and their information incorrectly entered (Cleveland, 2006). Thus, business resources can be lost due to poor service delivery. Interviews with managers have identified that systems thinking have provided workplace with a relaxed environment where service encounter can be done without the need to stick to a pre-specified time allowance, this inevitably helped improve solution delivery processes, prevented calls repetition, and eventually allowed for resources savings. Another significant dimension of interest is the departmental integration, open channels of communication between the ICT help desk and other departments affected by its work were established. Formal and informal communication at managers level allowed for significant information sharing. Interestingly, this created consistency in the services offered by other departments through streamlining service operations. Further, systems thinking made it possible for management to identify the opportunities for making cost savings and performance improvements in the short and medium term, both from a corporate and service perspective. The waste elimination element of the system was viewed as a resources saving activity that used to be a major cause for capacity reduction. In addition, systems thinking allowed the ICT help desk to do more with less, fewer people are required to do more job, an opportunity has aroused to remove some agency workers and save money.

### ***Implementation roadmap: initial model***

Interviews with senior and middle managers allowed the presentation of all the activities carried out to implement the project in the ICT help desk. An implementation roadmap that maybe used by managers in other public service departments were generated as a result (see Figure 2). A small-scale pilot study of the initial roadmap was shared with the senior and middle managers, who were the core intervention team members, at the research site.

Managers have emphasised that the project was of a highly sensitive nature as communication were required at different levels throughout the project. The communication plan included justification of systems thinking project and the problems discovered in the current system due to the initial demand analysis. As a convincing tool, quantitative measures such as service delivery times, percentage of one stop calls and customer surveys were also used in the communication process. Government funding bodies, senior board level, elected members, trade unions and other department managers were targeted in this process. Lack of knowledge about systems thinking and the hidden problems of the current system, in addition to the ignorance of customer voice when designing service systems were identified by interviewees as the main barriers against systems thinking implementation. Therefore, interviewees have indicated that knowledge and creating awareness about systems thinking among managers and other bodies in charge were of great importance, educational presentations and courses were organized were top managers and peers were invited,

this has helped building curiosity among people and thus capacity building in the council to support the project.

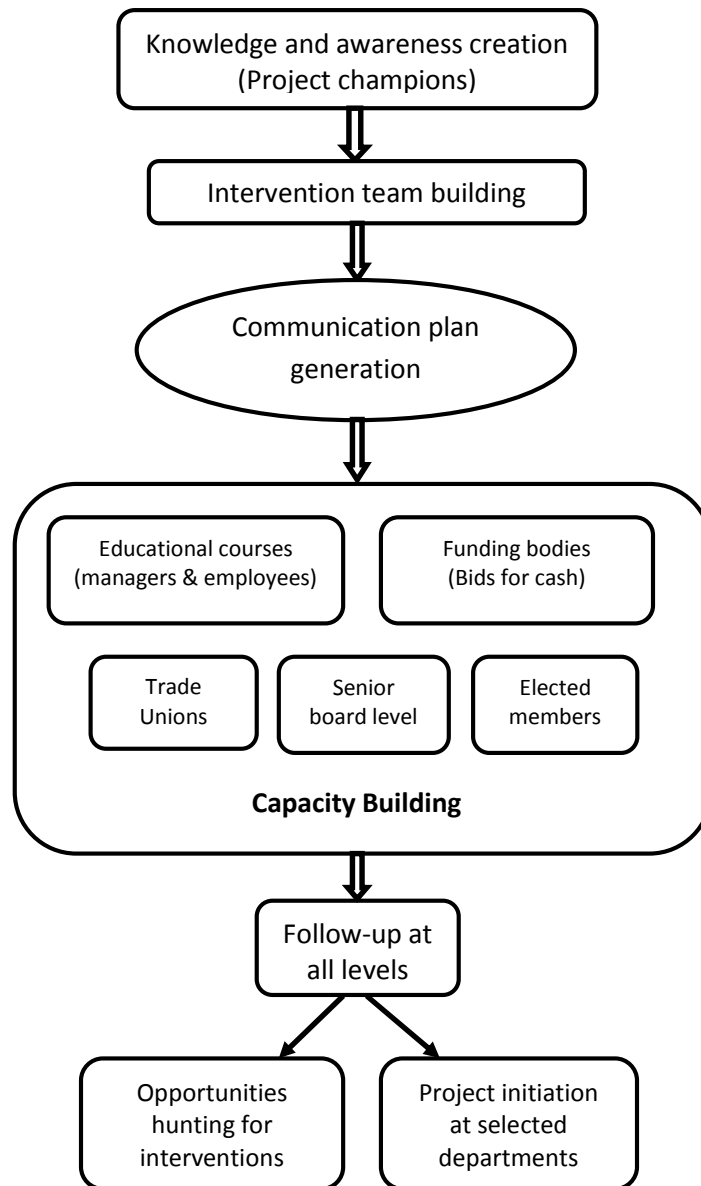


Figure 2: Systems thinking implementation roadmap: initial model

## 9. Conclusion:

The fundamental objective of this research has been to investigate the utilization of lean manufacturing principles in public sector service department. In this context, the words “systems thinking” were employed to describe lean manufacturing principles for service departments. It is based on designing service operation systems around customer demand instead of in functional hierarchies. Managers in public services are

realizing the need to employ more innovative interventions to achieve financial savings and better performance. As a result a shift has been noticed recently in management thinking in public services to adopt systems engineering models utilized in manufacturing sector, this has occurred due to the economical and governmental pressures exerted on councils and public services to generate substantial cost reductions and efficiency savings, accompanied by performance improvement and increased customer satisfaction. The evidence from this research indicates that the utilization of the systems thinking approach to design services in the public departments has significantly contributed to the achievement of added value to the business, managers, employees, and eventually customers.

It cannot be considered easy to establish lean manufacturing principles (i.e. systems thinking) in public service departments, as the benefits that could be created are often counter-intuitive. The challenge against the establishment of such counter-intuitive initiative, within the highly controlled environment of government departments, is to convince decision-makers that this is the way forward for their organization. This research takes some initial steps towards the creation of a roadmap that could secure top management support.

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# Appendix – 5: Achieving affective commitment : Vanguard's professional article

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# Achieving Affective Commitment

## The value added to organisations of using a systems thinking approach in contact centre design and operation

by Ayham Jaaron, PhD RS Loughborough University  
November 2009

### Note:

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## Background

In 2008 Ayham Jaaron, an academic from Loughborough University, carried out independent research in the VELUX Company Ltd. VELUX was a Vanguard Scotland client and Ayham wanted to study the impact on the company of using the Vanguard model of systems thinking organisation design in its contact centre. This article summarises his research and findings.

Ayham would like to thank Ron Skea (Operations Director) and Laurence Barrett (Executive Director) for allowing him free access to the VELUX contact centre and its employees.

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# Abstract

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The purpose of this paper is to report on a case study researching the value added to an organisation using a 'Systems Thinking' approach in its contact centre operations. It explains the relationship between using this approach in the contact centre and the 'Affective Commitment' of frontline staff.

Three distinct findings emerged from the research:

1. The contact centre has positively impacted performance, productivity and quality across the whole organisation and the contact centre has become to be seen as a strategic entity that the rest of the organisation relies on to do their work effectively
2. The contact centre uses a wide range of organic structure characteristics, which are a feature of the systems thinking approach
3. There is a strong relationship between the Affective Commitment of frontline employees in the contact centre and the systems thinking organisation design used

The study has many implications for organisations designing or currently using contact centres. By using a systems thinking approach to design contact centre operations, organisations can:

- leverage the strategic support and contribution of the contact centre,
- achieve higher levels of Affective Commitment among frontline employees (which in turn reduces costs through lower absenteeism and turnover), and
- increase the quality of customer service (which in turn increases customer satisfaction and loyalty).



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## Introduction

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Contact centres have frequently been designed using industrial engineering models in a customer services setting. They have been designed, based on an 'inside out' management perspective, as highly controlled environments with rigid 'mechanistic' structures. This mechanistic view has often resulted in inflexibility, sluggish response procedures, stifling of employee qualities and skills, and increased stress for employees. It is in this context that the management of contact centres has attracted much attention and comment about the perceived impact on job performance and job related stress. As a consequence there has been considerable academic and business research on these aspects of contact centre management but very little on the importance of contact centre design and its role in performance and quality.

Increasingly organisations are stressing that contact centres should add significant value to both the organisation and its customers. Unfortunately for many customers that is not currently the reality. A new generation of contact centres needs to be developed that adapts them for the new challenges of the current global economy.

The objective of the research, therefore, was to answer the questions:

1. Does a Systems Thinking approach to contact centre design add value to the organisation?
2. Does a Systems Thinking design help build Affective Commitment among contact centre frontline employees and improve their working experiences?

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## Contact centre contributions to organisational effectiveness

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Organisations need to recognise that the involvement of contact centres in the work of other business units is vital. However, Brad Cleveland (2006) in his book 'Contact centre management on fast forward' suggests that there are three levels at which a contact centre can create value in an organisation. These levels are:

1. **Efficiency** – where the frontline employee is equipped with the right information and the latest technology to provide a service for callers
2. **Customer Satisfaction** – defined as a more customer oriented response to customer service
3. **Business Unit (Strategic Value)** – at this level contact centre systems have intensive interaction with customers and the information gathered is used by other units throughout the business. The contact centre is seen as an important first stage of strategic process design.

The majority of organisations using contact centres in their operations currently focus on the first level of creating value (i.e. Efficiency). However the other levels, particularly the strategic value approach hold significant opportunities for the development of strategic advantage. It is at the third level that organisations can truly begin to leverage the contact centre's potential to deliver strategic value to the organisation.

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## Systems thinking approach to contact centre design

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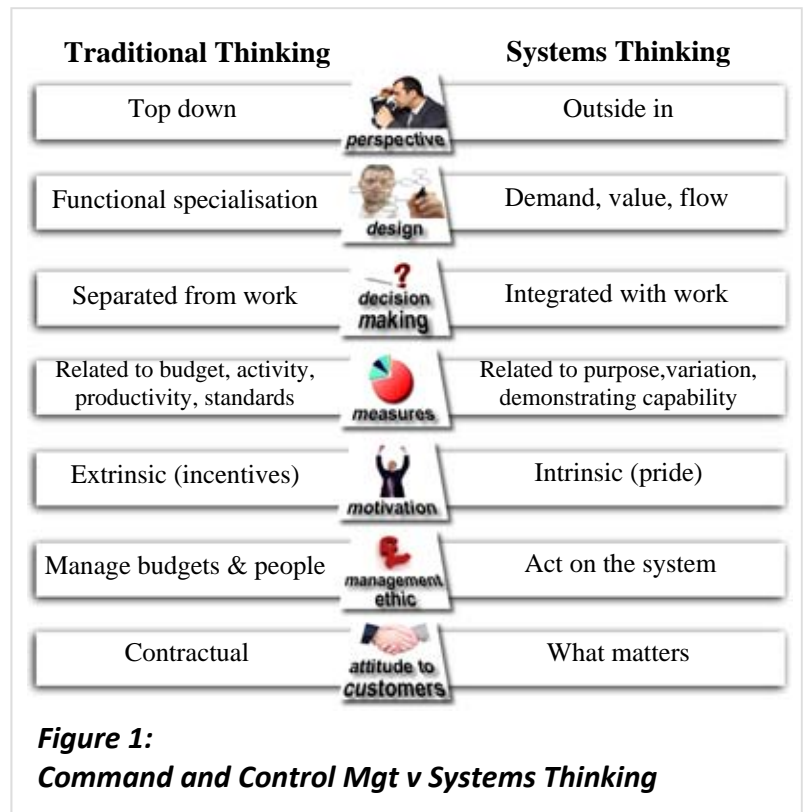
The Vanguard model of Systems Thinking researched in this case study is an approach to the design and management of work that adapted the Toyota Production System for manufacturing into a methodology for service organisations. It is based on designing the organisational systems around customer demand instead of in functional hierarchies. Customer demand is analysed to determine exactly what customers want of the organisation and what matters to them (i.e. the way they want the service delivered).

# Systems thinking approach to contact centre design (continued)

Demand is categorised into 'value' and 'failure' demand, value demand being what the customers want and which is of value to them and failure demand being calls from customers that they shouldn't have to make and which the contact centre should need to take if the service had been delivered correctly to the customer the first time.

Systems Thinking integrates decision making processes with the work itself and by designing work systems against customer demand the systems become more responsive to those customer demands. Removing waste requires the redesign of service processes to match customer demand flow by focusing only on value demand activities. A 'virtuous cycle' is created in which by concentrating on value demand and removing failure demand, customer satisfaction rises, organisational efficiency increases and operating costs fall.

Figure 1 highlights some of the differences between what is often called 'traditional' management and Systems Thinking management (adapted from Seddon 2003).



**Systems Thinking integrates decision making process with the work itself and by designing work systems against customer demand the systems become more responsive to those customer demands.**

Another important aspect of Systems Thinking is the deep understanding of variation in customer demand. Variation in customer demand and their expectations in the service sector is a key differentiator from the manufacturing sector in which standardisation is the goal of 'lean'. The Systems Thinking approach in service recognises that manufacturing lean tools, which emphasise standardisation and the elimination of variation, are not appropriate for service organisations, which need to absorb variations in customer demand. In order for service organisations to absorb this variation in demand they need to become adaptive organisations, often referred to as 'organic structures', in the same way that living organisms can adapt to the surrounding environment in order to function and thrive. Such 'organic' organisations are typified by devolved decision making processes and research has shown that when employees are given the ability to make work decisions organisations are more able to absorb variety. In addition staff who are working under such standards, and who are entrusted with working on a variety of tasks and building relationships with customers, have a sense of freedom and responsibility.

The characteristics of the Systems approach are that frontline jobs are wide in scope and not governed by rigid rules and procedures. Hierarchy of control is usually absent thus allowing teams to identify the right person to solve a particular problem. It creates what Robey and Sales (1994) describe as a capacity to interpret novel situations and adopt appropriate coping responses. This is particularly important for contact centres, which typically face different demands and conditions than those departments that are shielded from the environment (e.g. production, marketing, finance etc). This adaptability and ability to cope with varying demands is best achieved by organic rather than mechanistic structures.



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# The concept of 'Affective Commitment' in contact centres

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Organisational commitment is defined as 'the employee's psychological attachment to the organisation' (Meyer and Allen, 1991). It reflects a psychological state that has three different levels:

1. **Affective Commitment** – a measure of the employee's emotional attachment to the organisation. At this level the employee strongly identifies with the goals of the organisation and wishes to contribute to its success and continuous improvement. The employee remains a part of the organisation because s/he wants to do so.
2. **Continuance Commitment** – the employee only commits to the organisation because of the high cost associated with leaving it (for example monetary losses such as pension accruals, lower salary elsewhere, transport costs to other locations, social costs such as loss of friendships etc.). The employee remains a part of the organisation because s/he feels it is too much trouble or cost at present to move.
3. **Normative Commitment** – the employee feels 'obliged' to work for the organisation. This may be because of a feeling of being locked in (e.g. the organisation has some form of golden handcuff arrangement or contractual binding of the employee) or because there is no perceived alternative employment opportunities.

Research has shown that the level of organisational commitment has a significant impact on the level of service quality experienced by customers. Affective Commitment was found to be more effective than job satisfaction in influencing the service quality of employees. Employees whose working experiences are rewarding and fulfil their own aspirations are ready to exert more effort on behalf of the organisation to deliver high levels of service quality than those whose working experiences are less rewarding.

There is also evidence from the relationship marketing literature of the importance of Affective Commitment in motivating customers to continue their relationship with an organisation. The customer evaluates the overall image of the organisation solely on the basis of his/her experience with the service encounter and then decides whether to continue with it or not (Brown and Maxwell, 2002).

However, despite the ever-changing business environment creating pressures for new forms of organisational structures and management styles which would encourage Affective Commitment, managerial practices and organisational structures in service industry contact centres typically involve standardised work procedures, monitored dialogue, mechanisation of customer-employee contact and an emphasis on quantity, volume and activity statistics and targets rather than quality of interaction measures. Employees experience reduced empowerment in making decisions and as a result the lack of Affective Commitment impacts on service quality. This also leads to other high cost implications for the organisation such as increased employee turnover, increased absence rates and falling customer satisfaction levels.

**Affective Commitment was found to be more effective than job satisfaction in influencing the service quality of employees.**

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## Research case study

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The research examined the management style and organisational structures and employee Affective Commitment levels in a sales contact centre of the leading roof window manufacturer in Great Britain and Ireland. The company is part of a global group of companies operating in just under 40 countries around the world. It provides a complete range of roof windows, blinds and electronic accessories to trade and consumer customers. At the time of the research the company employed 211 people with almost half of these employed in the Operations Department, the majority of whom worked in the sales contact centre. Employees were an even mixture of young (19-25 years old) and older employees.

## Research case study (continued)

Using a Systems Approach to designing the contact centre has allowed management to cut the training time taken to get newly recruited employees on to the phones handling calls from 4 months to 4 weeks. This was achieved using an '80:20' rule in which by analysing demand managers learned that 80% of incoming calls were for a small number of the most popular products. Employees are trained against these common demands and are able to start taking calls within four weeks. Thereafter, as calls come in that they have not been trained on, they 'pull' on other employees or managers for coaching and training as they handle the call.

In terms of work organisation, the contact centre does not have screens showing the number of incoming calls being processed or waiting in a queue. Employees are not required to follow any 'script' when dealing with customers which allows them to hold a more customer focused and flexible conversation.

Employees are able to approach each other for advice and guidance. Turnover among employees is less than half the average for contact centres reported by the Contact centre Association.

The contact centre also operates a 'first come, first served' strategy for handling incoming calls and uses only one phone number for all customers. The aim is to ensure all calls are dealt with quickly and without the need for queuing or prioritising. At the time of the research average call time was 9 seconds.

Every third call handled produces a pop-up screen for the operator to complete a quick information gathering exercise about the nature of the customer demand. This information is collated daily and used by the frontline employees to identify 'failure' demand and instigate improvement actions to eliminate it.



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# Methodology

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Quantitative and qualitative methods were used to describe and analyse the value added to the organisation as a result of using a Systems Thinking approach for its contact centre design and to explain the relationship between using this approach in contact centres and the Affective Commitment of frontline employees.

The case study used a triangulation design known as multilevel research which ensures the information collected is accurate. The following methods were used:

1. Semi-structured interviews were conducted with company directors, managers and contact centre frontline employees.
2. Organisational commitment questionnaires were issued to frontline employees to measure the Affective Commitment of employees in the contact centre. These were completed anonymously online.
3. Quantitative data on contact centre and company performance was gathered. These consisted of both private and public records.
4. The data was supplemented by the researcher's non-participant observation of employees as they carried out their work in the contact centre.

The case study research lasted three months and was conducted largely on site.

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## Findings

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The findings are broken into five categories – design and management of the contact centre, Affective Commitment levels, observation results, documentary results and finally, and perhaps most importantly, the value added to the organisation.

### Design and management of the contact centre.

#### The Role of Managers.

The role of managers is supportive rather than top-down monitors and they are viewed as part of the frontline employee 'team' (managers would regularly deal with incoming demand, sometimes to cope with peaks but also to ensure they had a deep understanding of customer demand). There were no visible barriers between employees and managers, who were constantly available to be 'pulled on' by frontline employees needing help with any incoming call.

#### Performance Management and Rewards

Frontline employees in the contact centre are encouraged to meet the company's principle of providing one-stop end-to-end customer service. Individual performance is not measured but rather company performance against things such as 'value' and 'failure' demand and one-stop capability. Traditional measures such as call volume, answer time, wrap up time and abandon rates are collected but only used for overall resource planning, not for individual performance measurement. The company offers an annual profit share bonus scheme that is not linked to individual performance.



**Traditional measures such as call volume, answer time, wrap up time and abandon rates are collected but only used for overall resource planning, not for individual performance measurement.**

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## Findings (continued)

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### **Role of Contact centre in Company**

The contact centre has open channels of communication with other departments in the company and other departmental managers commented that it is central to their work. The information gathered and distributed by the contact centre is of strategic importance to the both the local company and the corporate Headquarters in mainland Europe. Other managers in the company plan their processes and future plans based on the information gathered by the contact centre and some commented that 'our departments wouldn't exist without it'.

### **Training**

The systems approach has radically shortened the training programme in the contact centre and performance has noticeably improved. More calls are being handled with less people whilst customer satisfaction has dramatically improved. Turnover and absence rates have fallen to less than half the contact centre average.

### **Employee Experience**

Employees report with some pride that Key Performance Indicators (KPIs) and targets such as on call handling time or call waiting time are not used in the contact centre. No scripts are used and no performance screens are installed in the workplace. Employees can handle a very wide range of complex demands and tasks and, because there are no barriers between them and managers, they can seek help any time it is needed.

### **Continuous Improvement**

All employees (managers and frontline) are committed to the need to continue understanding customer demand and the effectiveness of work processes meeting that demand. Frontline employees organise and run weekly board meetings in the contact centre at which visual measures of performance are reviewed and improvement actions planned. The top failure demands are examined and a problem solving methodology applied to reduce them. The managers' role is to support these initiatives and act on any systems conditions that are beyond the control of frontline employees.

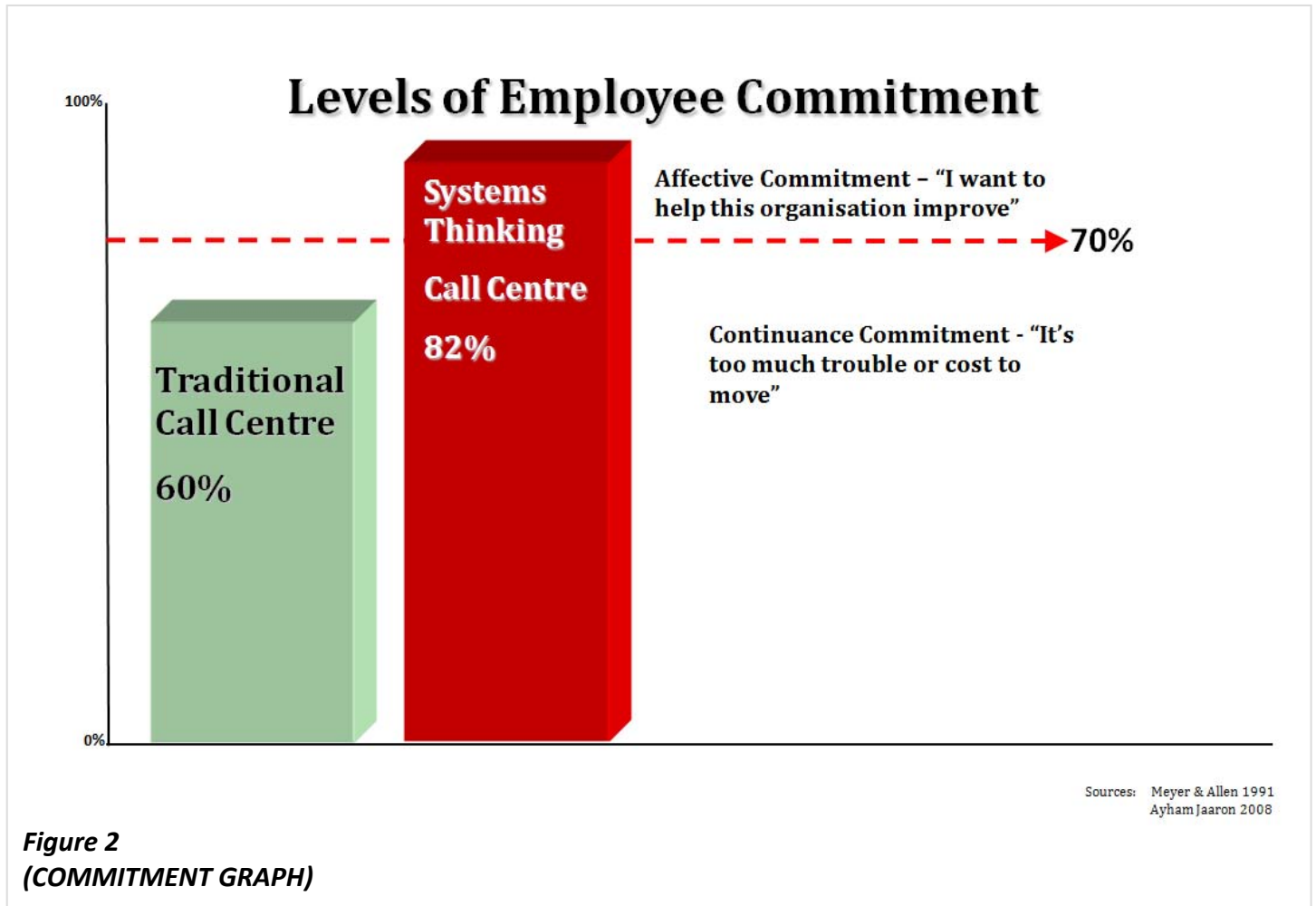


**Employees report with some pride that Key Performance Indicators (KPIs) and targets such as on call handling time or call waiting time are not used in the contact centre. No scripts are used and no performance screens are installed in the workplace.**

## Findings (continued)

### Affective Commitment

Next the research revealed an interesting correlation between a Systems Thinking design of a contact centre and the level of Affective Commitment of frontline employees in the contact centre. All employees were issued with an online questionnaire and there was a 91% response rate, which is very high for this type of survey. The results provided a clear indication of the high level of Affective Commitment among frontline employees in the contact centre (see Figure 2). The levels of commitment are considerably higher than among employees in typical contact centres, who generally only demonstrate continuance commitment.



### Observation Results

Employees work in a large open plan environment and there is much interaction between them as they 'pull' on each other for advice and guidance as required. Employees deal with a wide variety of tasks and customer demands and if a problem arises they call on the person with the best skills to help them resolve it – whether that be a colleague, a team leader or one of the senior managers. Management are seen as being there to give support, and add value to, the frontline employees in their interactions with customers.

There is very little evidence of a hierarchy of authority. In addition, support functions such as Logistics and Technical are located within the contact centre office so that they too can be 'pulled' on by frontline employees if needed. This direct face-to-face negotiations between frontline employees and other departments is an unusual feature but necessary if the customer is to get a one-stop service that delivers the optimum end-to-end timescale.

## Findings (continued)

### Documentary Evidence

The Systems Thinking approach is evidence based (since improvement cannot be demonstrated without it) and there was considerable documentary evidence (private and public) of the organisational benefits of the Systems Thinking design of the contact centre. These included a dramatic increase in customer satisfaction, a 30% increase in contact centre productivity, and a reduction in operating costs of over £1million over three years.

### Value Added to the Organisation, Customers and Employees

The information gathered by the contact centre whilst dealing with customers helps other departments to improve their performance and be more responsive through mutual understanding and on time discussion with the contact centre. This has leveraged the contact centre position in the company and made it a strategic function. This has positively impacted on the whole organisation and other departments now view the contact centre as the strategic entity that they most rely on to carry out their role effectively.

The new management thinking and style has positively impacted on the organisation. Employees in the contact centre are not monitored by technology nor by their managers. Managers do not control the way employees should handle calls and they empower employees to make decisions when on the phone with customers. This inevitably enhances the feeling of responsibility for the company's success among frontline employees in the contact centre.

The characteristics of the Systems Thinking approach have been found to be congruent to those of 'organic' structures discussed earlier that can adapt to their environment (continuous improvement). In addition this approach creates a more pleasant working environment for employees and leads to a much less stressful environment than would normally be expected in a contact centre. Employees enjoy a rewarding job experience that fulfils their own aspirations and in return they emotionally connect with the organisation and want it to succeed.

The low levels of turnover and absence among frontline employees in the contact centre is a consequence of this high level of Affective Commitment. Employees are also more ready to exert additional effort on behalf of the company to deliver high levels of service quality.

There is, therefore, a direct relationship between the Systems Thinking approach and the level of Affective Commitment. This relationship extends to the quality of service provided and an increase in the financial success of the company.

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## Conclusions

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Contact centre management needs to adopt new strategies that ensure that employees enjoy a better and more rewarding working experience whilst delivering improved service quality to customers. These strategies should not be based on performance monitoring practices based in the mass production model. Instead they should be based on the role of managers and supervisors being to support employees 'do what you think is necessary to get the job done' (Robey and Sales, 1994). This kind of management thinking increases the authority of frontline employees in the contact centre and confirms them as the 'experts' in customer service.

As Seddon (2005) points out, management thinking determines the work systems and the work systems determine how employees behave and perform. The paradox is that by changing their thinking about how contact centres are designed and by empowering frontline employees to make decisions, managers actually get more control of organisational performance than they can using technological surveillance and traditional people management practices.

This research study has found that the use of a Systems Thinking approach to the design of contact centre operations is likely to increase the Affective Commitment of frontline employees, decrease turnover rates and absenteeism, and deliver higher levels of service quality to customers.

Very little scientific literature has been written about the contributions and potential value added to other parts of the organisation as a result of a well structured contact centre. In this case study it has been demonstrated that a well chosen contact centre design can provide a wide spectrum of valuable information to achieve an internal integration and cohesion in the organisation that can mitigate workloads and improve productivity and job quality, in turn leading to higher service quality and improved market share.

It is actually the supportive culture emphasised by the managers who champion the Systems Thinking approach that guides employee behaviour in the contact centre toward achieving organisational goals. Both Systems Thinking and its sister organic structures are based on the idea of involving customers in the process of decision making and giving employees more control of the work. The ability of employees to control the work and decide about the way they handle and receive information is a key factor in satisfying employee career needs and building Affective Commitment. This Affective Commitment is essential if a culture of continuous improvement is to be established.

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## Contacts

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**T**hese sorts of results are achievable in any type of contact centre. If you are under pressure to deliver 'more for less' and increase service quality and availability with fewer resources then for a personal discussion about the challenges you face contact Laurence or Ron to explore whether there would be a fit between what we can provide and what you are trying to achieve.

We would be happy to give a no-obligation presentation on how to apply the methodology in your setting. After that it would be for you to decide whether we could help you further.

For a personal discussion or simply to ask questions, please feel free to contact us at:

**[contact\\_centre@vanguardscotland.co.uk](mailto:contact_centre@vanguardscotland.co.uk)**

**Or telephone us on:**

**Laurence - 0788 765 1785**

**Ron - 0750 096 2003**

PS: Alternatively, we run open seminars on how you can use this methodology in your organisation and if you would like to be kept informed about the next event please email us at

**[contact\\_centre@vanguardscotland.co.uk](mailto:contact_centre@vanguardscotland.co.uk)**

