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**Competitive Advantage in New Markets:
The case of on-line business**

By

Anjali Bakhru

Presented in fulfilment of the requirements of the:
Degree of Doctor of Philosophy
Strategy and International Business

Cass Business School, City of London
Faculty of Management

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ABSTRACT

Understanding how firms gain competitive advantage is perhaps the central question faced by strategy researchers (Rouse and Daellenbach, 1999; Powell, 2001). An examination of competitive advantage within the context of new markets presents an important and interesting dimension of this problem. It offers the opportunity to examine the potential for different types of entrant to establish competitive advantage. While competitive advantage in new markets has been addressed from a number of different theoretical perspectives, the suggestion here is that a resource-based conceptual lens can better explain the nature of the competitive challenge facing firms. A theoretical model of competitive advantage in new markets is developed, which highlights the importance of a firm's resource and capability endowments at the time of market entry, although it is argued that the main challenge faced by firms is the ability to adapt, where this refers to a firm's ability to develop the capabilities that are critical for success in new markets. Empirical research is carried out in respect of two UK-based on-line sectors, the Internet Service Provider sector and the on-line broking sector. The results of the survey research provide further evidence and support for the role of initial endowments of resources and capabilities at the time of new market entry, while the main findings of the case study research develop theory in respect of capability development in both new and established firms, suggesting that the process of capability development is itself an evolutionary one.

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CHAPTER ONE INTRODUCTION

1.1 OVERVIEW OF RESEARCH

How firms gain competitive advantage is perhaps the central question faced by strategy researchers (Rouse and Daellenbach, 1999; Powell, 2001). An examination of competitive advantage within the context of new markets offers the opportunity to examine the potential for different types of entrant to establish competitive advantage. While competitive advantage in new markets has been addressed from a number of different theoretical perspectives (see Chapter Two), the starting-point for this research is the theoretical assumptions underpinning the resource-based view. The theory that I develop in this thesis views competitive advantage in new markets as determined by two main factors: the resource and capability endowments of a firm at the time of market entry, and the firm's capacity to develop the capabilities needed for success in the new market environment. Hypotheses generated by the theory are tested on two UK-based, on-line sectors, the Internet Service Provider sector and the on-line broking sector. In a second phase of the research, in-depth case studies of individual firms are described. On the basis of these case study findings, the thesis develops a theory of capability development in new business ventures.

1.2 RESEARCH AIMS

The main objective of the research is to gain further insight into the determinants of firm

success in new markets and, hence, seek to answer the main research question, which is *'How do firms gain competitive advantage in new markets?'*

As with the emergence of any new market, there are two critical questions that need to be answered: who are the successful entrants and why? The literature in Chapter Two identifies two research streams that analyse competitive advantage in new markets. The first focuses on entry timing; the second on industry evolution. The literature on entry timing explores the advantages of early entry and the relative timing advantages of different types of entrant. The literature on industry evolution highlights the role of innovation in new market success. The starting point for my own research is the resource-based view of the firm that regards competitive advantage as the result of firms' differential capacity to access and develop resources and capabilities. The merit of this approach is that it can encompass both of these streams of theory. Thus, early mover advantage is the result of pre-emption of critical resources and leadership in those resources and capabilities that are acquired through learning. Similarly, the importance of innovation in new market creation relates to whether or not resource and capability endowments of entrants retain value in new markets.

Applying the resource-based approach to competitive advantage in new markets generates three main research questions. The first concerns the issue of whether there is some critical amount of initial resources and capabilities that must be amassed by companies in order to be successful. It is important to assess the significance of the amount and type of different

resources and capabilities at the time of entry, particularly in businesses subject to network externalities and/or where path dependence is assumed. Hence, the first research question is:

1. *What is the role of initial endowments of resources and capabilities in determining competitive advantage in new markets?*

New entrants typically include both new and established companies. Initial endowments of resources and capabilities are likely to vary across these two categories with regard to both types and amounts (although, as we shall see, it is not always the case that established firms are better endowed than new firms). A more significant difference between new and established firms concerns their capacity to accumulate resources and capabilities. Given path dependency in resource accumulation (Dierickx and Cool, 1989) and in the processes through which capabilities are developed (Nelson and Winter, 1982), I argue that the differences between new and established firms from the point of view of resources and capabilities must be considered in relation to the type of innovation through which a new market is created. Hence, the second research question is:

2. *What are the relative advantages of established firms and new firms in new markets?*

The existing literature recognises the differences between new and established firms in relation to the accumulation and development of resources and capabilities within the context of new markets. However, little is known about the actual process of developing new capabilities and routines in organisations, where the aim of the research is to develop theory in this respect. Hence, the third research question is:

3. *What are the processes through which new and established firms develop capabilities to compete in new markets?*

1.3 RESEARCH CONTEXT

The rapid uptake of Internet technology and its application to a broad cross-section of businesses presents a unique opportunity to assess competitive advantage within the context of new on-line markets. Although the origins of the Internet go back to 1969, when the US Defence Department set up ARPAnet (Advanced Research Project Agency Network), which was a proprietary network connecting universities, R&D establishments and military organisations, Netscape's IPO in 1995 is widely observed to mark the onset of the on-line or "dot.com" era with a corresponding period occurring some three years later in the UK. The emergence of new on-line markets has been rapid, with the number of Internet sites doubling every four months and, within five years, Internet penetration had reached the same level that television took thirteen years to achieve (Salomon Smith Barney, 1999). The rapid uptake of the Internet itself owes to its compatibility with an

existing installed base, since it was a complement to virtually the entire installed base of computers in the world (Yoffie, 1996).

The importance of research into new, on-line markets relates not only to their prevalence but more importantly to the fact that they provide an opportunity to examine the strategic challenges faced by both new and established firms. The number of new firms entering on-line markets has been significant; in the US alone, it is estimated that US venture capital investment in new Internet companies rose from \$520 million in 1995 to \$31.9 billion in 1999 (Ethiraj, Guler and Singh, 2000).

The focus of this research is on business-to-consumer companies given that this is where the introduction of on-line technologies has had its greatest impact on business models. The research will be empirically tested on two on-line, business-to-consumer sectors, the Internet Service Provider sector and the on-line broking sector. A combined deductive-inductive approach to the empirical research is adopted, where the first two research questions are tested by way of a survey, and a case study approach is used to address the third research question (see Chapter Five).

1.4 RESEARCH SIGNIFICANCE

A new theoretical model of competitive advantage in new markets is developed in Chapter Four. The starting point for this research is the resource-based view of the firm, where it is argued that the source of competitive advantage in any market, including new markets, is a

firm's resources and capabilities. The advantage of adopting a resource-based approach is that a theory of competitive advantage in new markets is developed that, unlike other theoretical approaches, takes account of (i) different types of firms and (ii) different types of market, where it will be shown that new markets are created out of different types of innovation (see Section 2.3.1). The theoretical model outlines the determinants of competitive advantage in new markets, where I argue that competitive advantage derives from a firm's initial endowments of resources and capabilities at the time of new market entry and, more importantly, from a firm's ability to adapt or create the capabilities critical for success. The significance of this model relates to developing theory in respect of an area of growing strategic importance given that the creation of new product or service markets is increasingly a commonplace business phenomenon in light of rapid changes in technology and shorter product lifecycles (Bettis and Hitt, 1995). From a strategy perspective, much of the work with regard to firm success in new markets is derived from industrial economics, focusing on issues of entry timing, where the implication is that the earlier a firm enters a new market, the better able it is to gain pre-emptive advantages or generate barriers to entry. However, as the frequency of change increases, the key paradox confronting businesses today is how to adapt to environmental change in fast-moving environments while remaining efficient. It is likely that inter-firm entry timing differentials will assume less importance relative to the critical issue of how firms adapt. In other words, a resource-based approach to understanding competitive advantage provides an examination of the strategic challenges confronting firms in the current competitive landscape.

The significance of this research relates further to extending the theoretical application of the resource-based view. The challenge of new markets is essentially the challenge of diversification for established companies and that of entrepreneurship for new companies. While new entry for established companies may take the form of the launch of a new venture (Burgelman, 1983), the challenge of new market entry for new firms is essentially that of new venture creation and entrepreneurship (Lumpkin and Dess, 1996). However, resource-based approaches have tended to be confined to explanations of diversification strategies, where Peteraf (1993) argues that the application of a resource-based approach has important implications for many questions regarding corporate scope, providing a common lens with which to view both related and unrelated diversification. Research is beginning to explore the idea that even new firms have resources, where the prior organisational experience of founders may be a critical resource (see Section 2.4.4). In other words, the significance of this research is that it attempts from a resource-based view to explain the challenges facing both established and new firms in new markets.

Perhaps the most important contribution of this research relates to findings concerning the process of capability development within new markets. The means by which firms create and develop organisational capability are the subject of considerable speculation and ad hoc theorising, but little systematic research. The case studies explore the evolution of organisational capabilities in relation to specific organisational processes and managerial actions. On the basis of the evidence, I develop propositions concerning the factors that

promote and shape the development of capabilities within new markets, where these include:

- managers' prior experience and their understanding of organisational routines as the core knowledge which provides the foundation for developing routines in new business ventures;
- motivation;
- codification which permits efficiency in the transfer of organisational routines and an opportunity for the improvement of organisational routines;
- the organisational architecture within which routines are embedded and which constrain the firm's ability to adapt existing routines and create new routines.

I propose a five-step evolutionary process of capability development which begins with individuals creating and transferring routines and progresses through the codification and review of routines.

1.5 STRUCTURE OF THESIS

The thesis is sub-divided into eight chapters. A review of the literature relating to new market entry in Chapter Two highlights the existence of two research streams most relevant to this research; one relating to the importance of entry timing in new markets and the other relating to the evolution of industries. The implications of this review relates to the importance of organisational capabilities in new market entry, where relevant literature is discussed together with consideration of evolutionary approaches to adaptation. Chapter

Three reviews the existing strategy literature relating specifically to on-line business, where it is shown that, while prior research has evolved to consider the impact of the Internet on competitive advantage, this research aims to fill a gap by explicitly discussing how firms gain competitive advantage in on-line markets. Chapter Four develops a theoretical model of competitive advantage in new markets, developing research propositions in respect of the role of initial resource and capability endowments at the time of new market entry and developing research questions in respect of the capability development process underlying a firm's ability to adapt. Chapter Five focuses on the reasons for the methodological approach taken and explains the research design for the survey and case studies undertaken. Chapters Six and Seven present the results and analysis for the survey and case studies respectively. Finally, Chapter Eight presents a discussion of the research and its conclusions. The structure of the thesis is as follows:

Chapter Two	Literature Review
Chapter Three	On-line Markets
Chapter Four	A Theoretical Model of Competitive Advantage in New Markets
Chapter Five	Methodology
Chapter Six	Survey: Results and Analysis
Chapter Seven	Case Studies: Results and Analysis
Chapter Eight	Discussion and Conclusions

CHAPTER TWO LITERATURE REVIEW

2.1 INTRODUCTION

Strategy research seeks to explain the determinants of firm performance. Attempts to explain competitive advantage is central to the debate amongst strategy scholars; since the mid-1980's, a group of scholars has developed the "resource-based view" a theoretical approach which argues that heterogeneity in firm performance is linked to inter-firm differentials in resource and capability endowments (Wernerfelt, 1984; Dierickx and Cool, 1989; Barney 1986a, 1991; Grant, 1991; Peteraf, 1993). The aim of this research is to examine competitive advantage within the context of new markets, where it is argued that a combined resource-based and evolutionary approach provides a useful conceptual lens with which to explain the main challenges confronting different types of firms. The literature review aims to assess existing literature relating to how firms gain competitive advantage in new markets, where it is shown that the two main research streams relevant to this research are that of entry timing and industry evolution.

2.1.1 Chapter Contribution

This chapter aims to assess the existing literature on competitive advantage in new markets and re-interpret it through a resource-based conceptual lens which better explains how firms, including different types of firms, achieve competitive advantage. While a resource-based approach may help to differentiate between resources which might support a

competitive advantage from other less valuable resources (Barney, 1991; Peteraf, 1993), its relevance in the context of new markets relates to the fact that (i) resource and capability endowments of firms at the time of new market entry may better explain research relating to the relative timing advantages of new and established entrants and (ii) the innovation implicit in new market creation needs to be considered in terms of whether resources and capabilities retain value in new markets. New markets present specific strategic challenges to firms, where the assumption is that firm adaptation in the form of capability development is the main challenge confronting both new and established firms. The importance of this approach is that it further considers resources and capabilities in a dynamic context, where it is argued that a combined resource-based and evolutionary approach is necessary to determine how resources and capabilities are developed in order to confer success in new markets.

2.1.2 Chapter Structure

The chapter will first discuss the assumptions underlying a resource-based interpretation of competitive advantage and how this approach can be applied within the context of new markets. The chapter assesses the literature relating to entry timing in new markets, examining the importance of entry timing in relation to first or early mover advantage, first mover disadvantages, late mover advantages and whether there is an optimal time of entry for different types of firms. The literature on industry evolution is discussed and, in particular, the importance of innovation with its implications for entry timing and for the relative advantages of different types of entrant at the time of market entry. The suggestion

is that a firm's capabilities at the time of new market entry is an important factor in new market success, where existing literature on this issue and related research on diversification is examined. Finally, I argue that capability development underlies the challenge of organisational adaptation, where the literature on organisational adaptation and how it relates to competitive advantage in new markets is discussed.

2.2 COMPETITIVE ADVANTAGE – A RESOURCE-BASED APPROACH

In agreement with Powell (2001), the search for competitive advantage relies for its epistemological justification on an instrumentalist theory of truth. In other words, the approach taken by researchers addressing competitive advantage is a pragmatic one that attempts to solve the problems faced by managers even if it brings us no closer to ultimate truth. It can be construed as a legitimate attempt to solve the central problem facing strategy researchers, i.e. explaining superior performance as well as the central problem facing managers – creating sustained superior performance. I will argue that competitive advantage in any market, including new markets, may be analysed in terms of two primary dimensions: cost advantage and differentiation advantage (Porter, 1980). However, in a departure from Porter's industry structure view, it is competitive advantage rather than the external environment that is assumed to be the source of inter-firm profit differentials (Grant, 1991). The primary task for businesses is to identify the sources of cost and differentiation advantage in relation to new and existing markets and to identify the resources and capabilities that these sources of advantage depend upon. In other words, this research assumes that superior performance is a product of firm-based competitive

advantage. The magnitude of competitive advantage of a resource depends on the extent to which it reduces the cost structure of a firm or to which it differentiates the firm's offering in relation to a firm's competitors (Godfrey and Hill, 1995).

2.2.1 Resource-Based View (RBV)

Porter's (1980) industry structure perspective views the source of profitability to be based on industry characteristics and the firm's market position within the industry. However, empirical studies show that an industry structure approach can not fully explain intra-industry performance differentials which are typically far greater than inter-industry profit differentials (Schmalensee, 1985; Cool and Schendel, 1988; Wernerfelt and Montgomery, 1988; Hansen and Wernerfelt, 1989; Rumelt, 1991). Hence, competitive advantage rather than industry attractiveness is the primary source of firm profitability, where the RBV states that a firm's resources and capabilities contribute to the firm gaining advantage in product and market activities (Grant, 1991). If resources are to have value, Barney (1991) shows that two assumptions are fundamental to the RBV: (1) resources are distributed heterogeneously across firms, and (2) these productive resources cannot be transferred from firm to firm without cost, i.e. resources are "sticky". As such, sustainability of competitive advantage is increasingly associated with the less transparent intangible resources and more causally ambiguous capabilities.

The origins of the RBV are widely attributed to the work of Penrose (1959) and later Wernerfelt (1984) who develops the theory, while Richardson (1972) is attributed with

coining the term “capabilities”. Penrose (1959) views the firm as a “collection of productive resources”, supporting the idea that the firm is more than an administrative unit, as well as highlighting the role of managers in co-ordinating these resources. Later, Wernerfelt (1984) develops the idea of firm-specific tangible and intangible resources, stating that a resource is essentially a strength or a weakness of the firm where firm-specific resources determine a firm’s product-market activities. Finally, Richardson (1972), writing on the organisation of industry, conceptualises industry as carrying out activities which, in turn, are carried out by organisations with appropriate capabilities. The implication is that organisations will tend to specialise in activities for which their capabilities offer some comparative advantage. A central assumption of the RBV is that not all firms are equally good at producing goods and services, where there are differences in their respective resources, including both tangible assets as well as intangible assets such as the firm’s reputation and its patents, and their ability to co-ordinate them (“capabilities”). A survey of the literature shows that there is a variety of definitions with respect to capabilities (Collis, 1994), although Grant’s (1991) definition will be adopted here, where organisational capabilities are defined as a firm’s capacity for undertaking a particular productive activity, consisting of one or more sets of interacting routines.

Resources and Capabilities as a Source of Value Creation

The importance of resources in terms of their contribution to competitive advantage ultimately lies in their ability to confer value (on a sustainable basis) and whether the firm is able to appropriate the rents generated (Grant, 1991). Barney (1991) explores the

concept that a resource must be valuable if it is to contribute to competitive advantage, where he argues that valuable resources must be rare, imperfectly imitable, and non-substitutable. Hence, the notion of value in relation to resources relates not only to the uniqueness of the resources but also to the notion of factor immobility (Dierickx and Cool, 1989) and uncertain imitability (Lippman and Rumelt, 1982). Barney (1986a) asserts the need for firms to look inwardly to exploit resources in their control rather than to gain any temporary advantage in an environmental analysis, available to competitors. He developed the idea that imperfections in strategic factor markets (i.e. those markets in which resources are acquired) reflect differences in firms' expectations about the future value of a strategy, which, in turn, are a product of uncertainty in the external environment. The more accurate are firm expectations, the less of a role luck will play. However, Dierickx and Cool (1989) criticise Barney (1986a) for assuming that all assets are tradable, particularly those firm-specific resources that are most likely to confer value, citing customer loyalty as a case in point. The fact that factor markets are incomplete suggests importantly that stocks of assets have to be built over time ("asset mass efficiencies") and cannot be adjusted instantaneously like flows and are subject to "time compression diseconomies". Factor immobility is also a product of "uncertain imitability" where, given the existence of uncertainty, there is likely to be ambiguity as to which factors are responsible for superior performance ("causal ambiguity") and thereby acting as a barrier to imitation.

The implication is that superior resources are inherently limited in supply and have the potential to earn Ricardian rents (Grant, 1991; Peteraf, 1993). Peteraf (1993) summarises

the conditions that underlie competitive advantage according to the RBV in her “cornerstones of competitive advantage” (see Figure 2.1). She argues that sustained competitive advantage requires that heterogeneity be preserved, where this will be the case where there are *ex post* limits to competition, such as imperfect imitability and imperfect substitutability (leading to greater inelasticity of demand). A further condition is that resources be subject to imperfect mobility, where it is difficult to trade them, with a final condition dependent on the existence of *ex ante* limits to competition to ensure that the costs of acquiring a resource do not offset the subsequent rents generated.

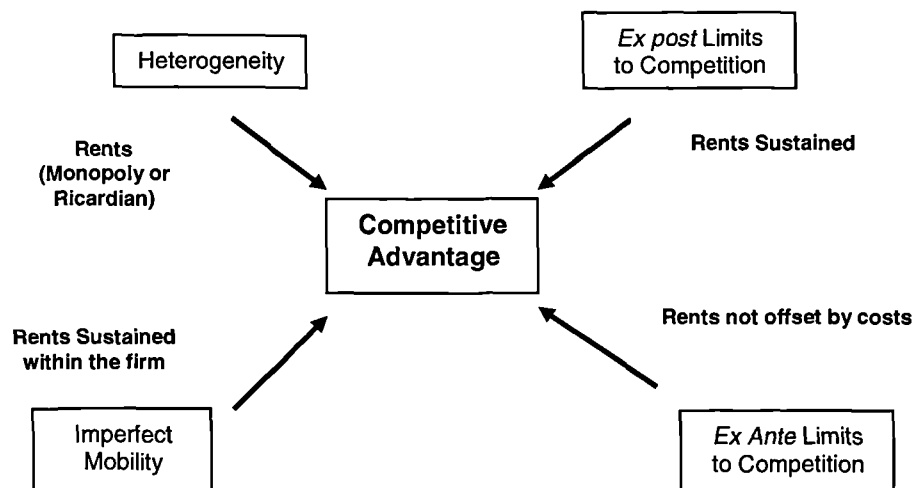


Figure 2.1 The cornerstones of competitive advantage (Peteraf, 1993)

Sustainable Competitive Advantage

The notion of gaining a sustainable competitive advantage is increasingly a misnomer given the fast-paced level of change faced by most firms in today’s business environment.

Sustainability of competitive advantage is possible only if a firm's valuable resources and capabilities are not imitated by other firms and if a firm is subsequently able to re-invest its profits to develop or acquire new resources and skills more rapidly than its competitors. Sustainable advantage is, hence, increasingly associated with the less transparent and more causally ambiguous intangible resources and organisational capabilities, given the greater difficulties with imitating these firm-specific assets. Socially complex resources, including organisational reputation, trust and culture, are difficult to imitate despite not being patentable (Itami and Roehl, 1987; Aaker, 1989; Hall, 1992, 1993; Barney, 1986b, 1995). Equally, it is hard for firms to imitate the complex processes of co-ordination that underlie capability development, particularly given the causal ambiguity surrounding their development and the path-dependent nature of learning (Nelson and Winter, 1974). A lack of transparency can itself lead to a lack of clarity inside the firm as to how more complex capabilities have been developed and, hence, lead to issues of imitability and, hence, replicability inside the firm. This is the paradox of causal ambiguity (Dierickx and Cool, 1989; Reed and DeFillipi, 1990).

In summary, a resource-based approach assumes that resources and capabilities are the source of firm-based cost or differentiation advantage. While factor immobility may be less of an issue with respect to resources rather than capabilities, key resources, namely intangible resources, are more likely to be subject to asset mass efficiencies and time compression diseconomies. The implication is that initial endowments of resources and

capabilities at the time of market entry are potentially critical factors in new market success.

2.3 NEW MARKETS

As with the definition of “industry”, which has become increasingly vague as industry boundaries have become increasingly blurred (Bettis and Hitt, 1995), the definition of “market” is open to interpretation and requires explicit definition. Central to this research is the role of innovation in creating new markets and its implications for the capability-based determinants of new market entry.

Helfat and Lieberman (2001) define “market” narrowly in terms of a specific type of product or service, at a particular level of technological development or state of the art in business practice. The assumptions here are that (i) new markets are created out of demand for a new product or service, either replacement or substitution, and (ii) new markets are ultimately a product of innovation, where innovation is generally considered with respect to changes in the underlying product or service (“product innovation”) or with respect to changes in the business model through which the product or service is delivered (“process innovation”).

From a resource-based perspective, a firm’s ability to enter a new market is subject to whether existing resources and capabilities at the time of new market entry are those required for success. While resources and capabilities may have added value in the past,

they may be rendered less valuable by changes in customer tastes, industry structure and technology (Barney, 1995). More specifically, organisational capabilities and not served markets are increasingly considered to be the primary basis upon which firms establish long-term strategies (Grant, 1996). Prahalad and Hamel's (1990) work on the core competence of the firm essentially pointed to the importance of competitive advantage focusing on a firm's ability to establish an interrelated set of processes around a core skill or set of skills, such as Sony's capacity to miniaturise or Philips' optical-media expertise. As Grant (1991) states, the concept of "core competencies" is *"less an identification of a company's current capabilities than a commitment to a path of future development"*.

If the key issue is to assess whether resources and capabilities retain value in new markets, then it is important to categorise new markets in terms of how innovation impacts the value of existing resources and capabilities. While the development of Internet technologies can be considered to be continuous (related to progress along a technological trajectory) (Dosi, 1992), the application of Internet technologies to business has created new markets alongside existing markets, such as on-line broking, as well as new markets unrelated to existing markets, such as ISP's and portals. However, the focus of the work on technological innovation is limited to the impact of new technologies on existing technologies. Tushman and Anderson (1986), in their work on technological change, demonstrate that technology evolves through periods of incremental change punctuated by radical or discontinuous technological breakthroughs that enhance or destroy existing technological competencies. Christensen (1997) defines "disruptive" technologies as those

technologies that are not valued by existing customers. More specifically, the definition of innovation used within the literature on technological change does not capture the challenge of adaptation facing firms entering new markets.

In terms of addressing the capability-based challenge of new market entry, a reference is made to Henderson and Cockburn's (1994) notion of "architectural" and "component" competence, where the former refers to the firm's ability to integrate knowledge and the latter as the possession of skills or assets specific to particular local activities. In other words, the innovation implicit in new market creation needs to be considered at the level of architectural and component competencies, where an analogy will be made to Teece's (2000) work on autonomous and systemic innovation.

2.3.1 Categorising New Markets: Systemic vs. Autonomous Innovation

In his work on technological innovation, Teece (2000) defines the terms "autonomous" and "systemic" innovation. He defines an autonomous innovation (or "stand-alone") as one which can be introduced *without modifying other* components or items of equipment, while "systemic" innovation requires significant readjustment to other parts of the system. Adapting these concepts to describing the innovation implicit in new market creation, autonomous innovation can be considered to occur where existing resources and capabilities retain value, while the opposite would be the case with systemic innovation. Given that capabilities are considered to comprise one or more sets of interacting routines (Grant, 1996), then autonomous innovation can be considered to occur when entry into a

new market does not affect existing routines significantly, either with respect to the knowledge underlying component routines or to the architecture of routines (Henderson and Cockburn, 1994), while the opposite would be the case with systemic innovation.

From a resource-based perspective, the assumption is that new markets emerge as a result of systemic or autonomous innovation, where this has significant implications for the value of resource and capability endowments at the time of new market entry. An examination of the literature on competitive advantage in new markets focuses primarily on issues of entry timing and industry evolution. The research on entry timing points to the importance of entry timing advantage, although the discussion of the comparative advantage of new vs. established firms in terms of entry timing suggests that a resource-based conceptual lens is a useful one, while the research on industry evolution highlights the importance of innovation in new market creation.

2.4 COMPETITIVE ADVANTAGE IN NEW MARKETS

With respect to the existing literature on competitive advantage in new markets, the two main research streams stem from the work on (1) entry timing and (2) industry evolution. In all new markets, there are two critical strategic issues influencing strategic choice and the comparative success of different companies: who are the successful entrants and why? While research on entry timing is theoretically diverse, the focus is on determining the importance of entry timing in gaining first or early mover advantage as well as on establishing whether there are differences in entry timing between established and new

entrants. The importance of the work on industry evolution relates primarily to its assessment of the role of innovation and the implications for the success of new and established entrants. In respect of this research, new firms are those firms which are new at the time of market entry and have been set up for the purpose of new market entry, including both start-up firms and corporate ventures. Established firms are those firms already in existence prior to the creation of the new market, where this definition is broader than that of incumbent firms, which relates to established firms within an existing market or industry.

2.4.1 Entry Timing

The aim is to review the literature to assess whether there are advantages with respect to the timing of entry in new markets. Within the strategy and marketing fields, a broad stream of literature cites the importance of order of market entry as an important determinant of market share for a broad cross-section of consumer businesses (Robinson and Fornell, 1985; Lambkin, 1988; Lilien and Yoon, 1990; Makadok, 1998). While there is support for early mover advantages, research further cites the disadvantages of being a first mover (Boulding and Christen, 2001; Glazer, 1985) as well as the advantages of late entry for established companies (Tellis and Golder, 1986; Lieberman and Montgomery, 1988; Lilien and Yoon, 1990). While established firms may find the adaptation necessary for new market entry difficult, there may be differences in the optimal entry timing for different types of firms given the importance of complementary assets. The suggestion is that a

firm's resource and capability endowments at the time of market entry may retain value subject to the type of innovation implicit in new market creation.

Early Mover Advantage

At the firm level, the importance of entry timing for firms entering new markets relates to the ability of firms to pre-empt resources and create barriers to entry, where the theoretical rationale derives from industrial organisation economics (Bain, 1956). A seminal piece within the entry timing literature is the work by Lieberman and Montgomery (1988). They suggest that first mover advantage ("FMA") be defined in terms of the ability of the pioneering firms to earn positive economic profits, i.e. those profits in excess of the cost of capital. They argue that FMA arises from three main sources: (1) technological leadership, (2) pre-emption of assets and (3) buyer switching costs. With regard to technological leadership, there are two basic mechanisms which can generate FMA: advances derived from learning or experience effects or success in patent or research and development (R&D) races. Early movers have an advantage where they are able to resolve uncertainty and determine the setting of industry standards. Alternatively, firms may gain advantage over other firms through the pre-emption of scarce assets such as physical resources, such as through the domination of distribution channels (Porter, 1974; White, 1983), or even perceptual assets such as product space (Schmalensee, 1982). The implication of switching costs is that later entrants must invest extra resources to attract customers away from the first-mover firm, where switching costs can arise out of the initial transaction costs that the buyer makes in adapting to the seller's product, supplier-specific learning over time or

through contractual switching costs created through loyalty programmes. FMA gained from any of these three sources can, in turn, act as barriers to entry to later entrants, similar to the advantages of quality and cost gained from economies of scale and economies of experience (Scherer and Ross, 1990).

Within the marketing literature, the literature stream points to the market share gains by pioneering consumer brands: it has been empirically shown that the order of entry of a brand into a consumer product category is inversely related to its market share (Kalynaram and Urban, 1992; Urban et al, 1986; Kalynaram and Wittink, 1994). Using PIMS data on mature businesses, similar findings are reported by Robinson and Fornell (1985) and Robinson (1988)¹. Theoretically, the basis for these findings relate to risk aversion on the part of consumers (Schmalensee, 1982), pre-emption of customer perceptual space (Carpenter and Nakamoto, 1989) and consumer learning. Schmalensee (1982) found that pioneering brands have an advantage over later brands, given that consumer preference lies with the first brand that performs adequately. Pre-emption of customer perceptual space could favour the initial pioneer (Carpenter and Nakamoto, 1989), while it is also difficult for later entrants to create the same level of awareness for the same cost (Comanor and Wilson, 1974).

¹ A criticism of the empirical research on early mover advantage has been put forward by Schnaars (1994), who attacks the methodology used, particularly the fact that studies using PIMS data is based on companies that are successful, i.e. surviving pioneers, and is, hence, biased.

The Importance of Entry Timing Given Network Externalities

In markets subject to network externalities or increasing returns to scale, early mover advantage may be key to a firm gaining competitive advantage vis a vis its competitors. Network externalities exist for many products (and services) for which the utility that a user derives from consumption of a good increases with the number of other agents consuming the good (Katz and Shapiro, 1985). Katz and Shapiro (1985) state that consumption externalities can be generated either (i) directly, as in physical networks such as the telephone and the railways, or (ii) indirectly, such as where the buyer of a personal computer is concerned with the amount of compatible software available or where the quality and availability of post-purchase service for a good depends on the experience and size of the service network, which may, in turn, vary with the number of units sold. In all cases, the utility of a given user will depend upon the number of other users in the network. Katz and Shapiro's basic findings are that consumption externalities give rise to demand-side economies of scale, which vary with consumer expectations: if consumers expect a seller to be dominant, then they are willing to pay more for the firm's product and it will, in fact, be dominant. Thus, the concept of network externalities is particularly relevant to sectors where "information feedback" plays a role.

Arthur (1994) states that new purchasers are more likely to learn about a commonly-purchased product than one with few previous users, particularly when consumers are risk-averse and/or discrimination between the product/service alternatives is difficult. Thus, information feedback favours early movers who have gained an early market share lead,

where Arthur states that products that come to dominate by this factor alone gain from “information contagion”. Thus, the customer perceived value of the good/service increases with an increase in the size of the installed or customer base. Not only does this support the notion of the importance of early mover advantage, but it also suggests that an advantage can arise from setting industry standards. The notion of an industry standard is primarily considered with regard to the setting of a technological standard, although it is suggested here that the notion of an industry standard can be extended, where it can be considered in relation to new ways of conducting business such as with the emergence of a new business model. In fact, given non-technological standards, Katz and Shapiro (1985) point to the importance of corporate reputation and, hence, of history, which leads on to the issue of path dependency. Arthur (1994) states that “historical small events” are not averaged away and forgotten, but rather history may decide the outcome, indicating the importance of path dependence or “non-ergodicity”. Within network markets, it is not the current level of sales or, as with learning-by-doing the cumulative level of sales that determine the winner – rather, it is expectations about the ultimate network size that are crucial (Besen and Farrell, 1994). Thus, history matters. Consequently, network markets are “tippy”, where the co-existence of incompatible products may be unstable, with a single winning standard dominating the market. Similarly, tipping can also characterise markets with important economies of scale or learning effects. Path dependence potentially erodes flexibility through the implied “irreversibility” of outcomes. Arthur (1994) argues that, where learning effects and specialised fixed costs are the source of reinforcement, advantages are rarely reversible and not transferable to an alternative outcome.

le research on entry timing suggests the importance of early entry in new markets, particularly those subject to network externalities, research has also supported (i) the advantages of being a first or early mover, albeit assuming a longer-term perspective focusing on firm survival rates, and (ii) the advantages of being a late mover, essentially assessing the relative advantage of new and established firms with respect to market entry.

First Mover Disadvantages

Research on the disadvantages of being a first mover assert that over the long term, the revenue advantages of being a first mover are outweighed by the costs associated with entering and developing the new market. In a study of both consumer and industrial sectors during the period 1930 to 1985, Boulding and Christen (2001) argue that in the long term, the first mover advantage is not borne out, where any benefit to pioneers from sustained revenue advantages must be set against the persistently high costs incurred which eventually overwhelm any revenue gains. On average, the profit advantage turns to a disadvantage after approximately ten years for consumer businesses and twelve years for industrial businesses. With regard to survival rates within newspaper publishing, Glazer (1985) finds that in successful markets, first entrants survived longer than second entrants. However, he finds that, across all markets twenty-five years after founding, first entrants have a survival rate of thirty-two per cent and second entrants a survival rate of thirty-nine per cent, where later entrants enter successful markets only after they have reached an appreciable size.

Late Mover Advantage

While competitive advantage may accrue to early movers, the advantage of late movers has been also been recognised within the literature (Lieberman and Montgomery, 1988; Tellis and Golder, 1996; Lilien and Yoon, 1990). Proponents of late mover advantage cite the cost disadvantages of first movers whilst also advocating the ability of late movers to exploit changes in consumer needs or tastes.

The “free-rider” effect occurs when late movers are able to take advantage of the investment made by first or early movers (Lieberman and Montgomery, 1988). In effect, the costs of imitation are lower than the costs of innovation in most industries, particularly when late movers are able to exploit existing complementary assets (Teece, 1986; Mitchell, 1989). The main advantage of being a late mover relates to their ability to innovate and offer a better product or service than the early movers or, in other words, a relative product advantage (Robinson, 1990). Shankar et al (1998) state that late movers can outsell pioneers in at least two ways. By understanding buyer preferences, a late mover can identify a superior but overlooked product position, undercut the pioneer on prices, out-advertise the pioneer or gain distribution advantages. Second, a late mover can overtake a pioneer through innovation. They show in their analysis of thirteen brands across two ethical drug categories that innovative late entry can produce an advantage relative to pioneering by affecting the diffusion and marketing spending effectiveness of pioneers.

Given the recognition that complementary assets may provide late movers with an advantage, a related issue is whether there is an optimal time of entry for different types of firms and, in particular, whether there is a difference between the optimal timing of entry for new and established firms.

Optimal Entry Timing

The suggestion of the research on optimal entry timing is that there are differences in optimal entry timing for different types of firms. The importance of this research is the notion that the timing of entry is secondary to the issue of whether the entrant is a new or established company, where later entrants tend to be established companies. While the decision to enter new markets later may be a consequence of dealing with uncertainty, it is argued that established companies are subject to inertial forces that make responding to change difficult. In other words, the implication is that established companies relative to new firms have greater difficulties with the challenge of organisational adaptation implicit in new market entry.

For any firm, there is a trade-off between acting early or acting later given the existence of uncertainty (Wernerfelt and Karnani, 1987). Reluctance to enter a market early can also occur where there is a risk of product cannibalisation, which is almost always accompanied by uncertainty over the potential future rent stream of the new product (Conner, 1988)². In

² Cannibalisation may be partial, where firms further face the complexity of running two businesses at once at the time of entry. In his study of the vacuum tube industry, Foster (1986) showed that one of the reasons only two out of ten companies survived over the period 1955 to 1975 was the inability on the part of the companies to play two games at once.

fact, this is in line with the rationale that, absent a rival, an incumbent's first choice is not to invest in new product development. However, Conner (1988) shows that late entry is not necessarily a less successful strategy in terms of performance or in terms of innovation with respect to R&D spending. Given the presence of uncertainty, established companies diversifying into new product markets can often imitate the actions of other organisations, including the timing of entry. In her study of savings and loans firms, Haveman (1993) finds evidence of "mimetic isomorphism" or the achievement of conformity, where large organisations serve as role models for other large organisations, although it is acknowledged that highly profitable organisations tend to serve as role models for all organisations.

It is also argued that the late entry of established firms is a consequence of inertial forces emanating from structural and cognitive sources. Established companies are considered to exhibit "structural inertia" according to the population ecology perspective (Hannan and Freeman, 1977), which comes from both age and success. Although this approach assumes a long-term perspective, focusing on organisational survival, the suggestion is that companies become more resistant to change and less able to adapt. Past success may reduce a firm's incentive to respond to change and result in competitive inertia (Miller and Chen, 1996). Similarly, size can breed inertia, where the availability of slack resources can buffer firms from competition (March, 1991) as well as being potentially detrimental to innovation (Nohria and Gulati, 1996). There is also potential for incumbent inertia arising out of investment in firm-specific assets (Lieberman and Montgomery, 1988). Lambkin

and Day (1989) show that new markets tend to be populated by organisations that enter a new resource space at an early stage when the population is small and which also tend to be organisations that are both new and small, without access to substantial capital resources. Later entrants, however, tend to be large, established organisations with access to extensive skills and resources. The latter compensate for their late entry (a consequence of structural inertia) by investing heavily in production and distribution to gain cost efficiencies.

With regard to “cultural inertia”, established companies are, according to institutional theory, captives of their own history, where sunk costs can be cognitive rather than economic, leading to sub-optimal resource choices (Oliver, 1997). In particular, these cognitive sunk costs will be especially prevalent in resource decisions when the abandonment of familiar routines is disruptive or inconvenient. Managers rely on cognitive models to make sense of reality (Kiesler and Sproull, 1986), which is consistent with the concept of “bounded rationality”, which is borne out of managers’ limited ability to form comprehensive models of reality and to process information (Cyert and March, 1963). However, the problem is that mental models may become outdated and resistant to change when confronted with the challenge of entering new markets. Barr, Stimpert and Huff (1992) show in their study of rail companies that the mental models of managers are a good predictor of changes in strategy. Similarly, it is argued that by restricting and directing search activities related to technology development, managerial cognition influences the development of new capabilities (Tripsas and Gavetti, 2000). In the example

of Polaroid, they showed that the firm was able, with relative ease, to develop new technological capabilities in the area of digital imaging, although managers were unable to abandon their traditional business model which became a powerful source of inertia. However, as Christensen (1997) shows in his research on companies' responses to disruptive technologies, the criteria managers use to keep a present business on course could actually make it impossible to do the right thing in the future resulting in the "innovator's dilemma".

Research on entry timing suggests that a firm's timing of entry within new markets is a key factor in gaining competitive advantage, where a greater competitive advantage is conferred, the earlier the firm's entry into a new market relative to other entrants. At the same time, the advantage of being an early mover may be heightened in industries subject to network externalities. The evidence from the research relating to late mover advantage and optimal entry timing is, however, that there are entry timing differences across firm types. Established companies are more likely to suffer from inertial constraints and consequently have greater general difficulty relative to new firms with respect to adaptation. The research on late mover advantage nevertheless relates primarily to established companies, where they are able to take advantage of reduced uncertainty and use their potentially greater resource endowments, relative to pioneers, to overcome barriers to entry and gain advantages from spending on innovation and from complementary assets such as existing distribution channels. In their later work, Lieberman and Montgomery (1998) propose a more direct link with the RBV, where they suggest that

the “*first-mover literature offers empirical knowledge to fill major gaps in the resource-based view.*” They state that the FMA literature essentially focuses on the potential of early movers to acquire superior resources and capabilities and the ability to establish the pioneer’s product as the industry standard. The suggestion is that resource and capability endowments at the time of entry may be complementary to those required for new market success. In common with an industry evolution perspective, account must be taken of the type of innovation implicit in new market creation.

2.4.2 Industry Evolution

There is a primary focus from an industry evolution perspective on both the number of and type of firms entering and exiting an industry over time and, by implication, on the probability of firm survival. Its importance in relation to this research is the finding that innovation plays a central role in firm survival, where the relative innovative advantage of one type of firm over another is ultimately bound up with the nature of the underlying technological regime (Winter, 1984; Gort and Klepper, 1982; Audretsch, 1991). The change in the type of innovation over time further suggests that entry before or after the creation of a dominant design can affect a firm’s chances of survival and has implications for the timing of entry of different types of firms (Abernathy and Utterback, 1978; Utterback and Suarez, 1993, 1995).

The history of an industry can be viewed as a series of technology cycles in line with Foster’s (1986) notion of a series of S-curves. The idea is that technology progresses in a

series of cycles, where each cycle is a product of technological discontinuities and the emergence of dominant designs (Anderson and Tushman, 1991). Industry evolution is concerned with the patterns of entry and exit of firms within industries over time, where these patterns differ across industries. The generalised pattern of industry evolution is depicted within the product lifecycle curve (PLC) (see Figure 2.2), where one of the most researched aspects of the lifecycle is the number of firms within the market (Klepper, 1996).

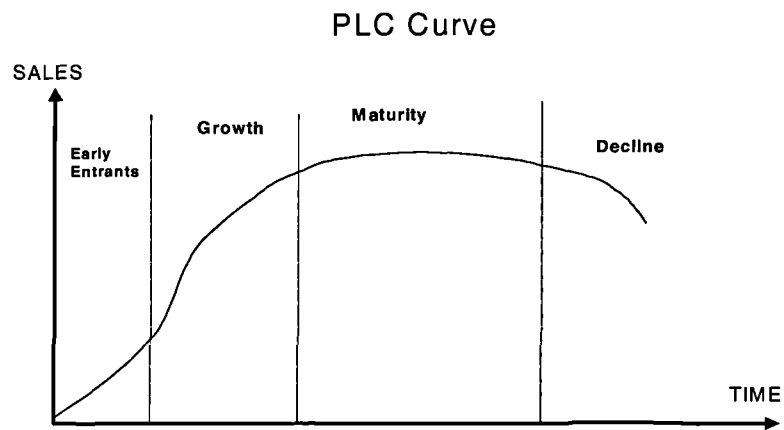


Figure 2.2 Product Life Cycle

At each stage in the PLC, there are both differences in the number and types of producers in an industry, where it is argued that the dynamic process through which industries evolve is shaped to some extent by three factors – technology, scale economies and demand (Audretsch, 1995b). While it has been found that new firms are not deterred from entering capital-intensive industries subject to economies of scale, their survival is linked to firm

growth in order to attain the Minimum Efficient Scale (MES) and, hence, gain process efficiencies (Acs and Audretsch, 1990; Audretsch, 1991, 1995a; Jovanovich, 1982). New firms account for a greater share of exiting businesses in industries characterised by high scale economies and a correspondingly lower share in industries where only negligible economies of scale exist (Audretsch, 1995b). While the stylised fact that the probability of firm survival increases with the amount of time that the firm has already survived has been supported (Evans, 1987a, 1987b), a key finding is that it is a firm's ability to innovate that determines its probability of survival. Innovative activity is considered to be the vehicle through which a firm can grow and attain the MES (Audretsch, 1991).

In their study of the diffusion of forty-six product innovations, where diffusion is measured as the number of producers engaged in manufacturing a new product, Gort and Klepper (1982) estimate that there are five stages in the PLC. While all five stages need not necessarily be present, they represent a general pattern:

- Stage 1: Commercial introduction of a new product by its first producer
- Stage 2: Period of sharp increase in the number of producers
- Stage 3: No. of producers is broadly equal to no. of exiting firms, leaving net entry at approximately zero
- Stage 4: Period of negative net entry
- Stage 5: Second period of zero net entry until eventual shrinkage of market or until fundamental changes in technology launch a new PLC.

They argue that in the second stage of the PLC, most innovations stem from technological information emanating from sources outside the current set of producers, i.e. new firms as opposed to established firms within the industry. Later in the PLC, most innovations shift to new information emanating from experience in production by existing firms, where the non-transferable component of this is “learning-by-doing” and where the cumulative stock of such innovations begins to operate as a barrier to entry. The switch in the types of innovation suggests a retardation in the rate of technical advance. Hence, they argue that in the period preceding shakeout there will be a rise in innovation that not only reinforces the barriers to entry and, in addition, compresses the profit margins of the less efficient producers who are unable to imitate the leaders from among the existing firms. Consequently, the exit rate rises sharply until the less efficient firms are forced out of the market.

The implication of this cross-industry research is that product innovation at the time of new market entry tends not to build on existing knowledge within the industry where new firms tend to be the pioneers of the new market, although innovation over time assumes a more incremental development trajectory. The emergence of a “dominant design” (Abernathy and Utterback, 1978; Utterback and Suarez, 1995) at the time of shake-out signifies a change in the type of innovation with important implications for the timing of market entry.

Dominant Design

A firm's chances of survival and, hence, long-term success may be affected by whether the firm enters a new market before or after the creation of a dominant design. A dominant design can be considered to reflect the emergence of product-class standards, where alternative designs are effectively crowded out of the market (Tushman and Anderson, 1986), or it can be considered to have the effect of enforcing or encouraging standardisation (Utterback and Suarez, 1993). Whether the emergence of standards results in a shakeout or whether the advantage of size leads to a decrease in the diversity of products remains a contested point (Klepper, 1996). The idea behind this approach is that the emergence of a dominant design changes the pattern of competition within an industry, where a dominant design *"is a specific path, along an industry's design hierarchy, which establishes dominance along competing design paths"* (Utterback and Suarez, 1993). In effect, the population of entrants in any new market reaches a peak at the time of the dominant design occurring and then falls post the emergence of the dominant design, which has the effect of enforcing standardisation and production economies. Essentially, those producers who are unable to produce efficiently the dominant design exit, contributing to a shakeout in the number of producers. In other words, the emergence of a dominant design marks a shift in emphasis from entrepreneurial product innovation towards process development and scale of production, and so on favouring larger firms (Utterback and Suarez, 1993), although it has been argued by Clark (1985), with respect to auto manufacturing, that there is significant interaction between product and process innovation.

The assumption of a dominant design is critical to the popular notion of the PLC (Klepper, 1996), although this assumption is not always a reflection of reality, as Nelson (1987) showed in his study of the US tyre industry. Klepper (1996) further argues that the notion of a dominant design presumes that firms will not attend to the production process until product innovation has slowed. Developing a model, Klepper (1996) shows to the contrary that firms have different capabilities which lead them to pursue different types of product innovation, while increasing firm size provides an incentive to engage in process innovation. In fact, he argues that the advantage of size leads to a decrease in the diversity of products, where this can be interpreted as the emergence of a dominant design being the result rather than the cause of the shakeout in the number of producers. Similarly, competing explanations as to the cause of industry shakeout emphasise the fact that process innovation can occur prior to the emergence of a dominant design. With regard to the US tyre industry, Carree and Thurik (2000) suggest an alternative explanation for shakeout, where they argue that in the later stages of an industry, declining unit costs, accumulated through learning-by-doing, and increasing competition result in lower profit margins culminating in lower entry and making exit more likely. Using Gort and Klepper's (1982) data on the US tyre industry from 1906 to 1973, Carree and Thurik (2000) show that the key property of whatever innovation preceded the shakeout is that it increased the optimal scale of any firm that implemented it. Similarly, Jovanovich (1982) posited that selection is based on efficiency, where efficient firms grow and survive, while inefficient firms decline and fail.

The relevance to this research of the notion of a dominant design relates to the fact that it essentially marks a change in the type of innovation in an industry's evolution and, hence, serves further to explain some of the findings in the preceding discussion of entry timing. The notion of a dominant design helps to explain the concept of late mover advantage, where established companies enter new markets later at a time of reduced uncertainty and are able to overcome any short-term disadvantages with respect to efficiency. However, where volume sales are important, entry prior to the emergence of a dominant design could be important for businesses subject to network externalities. Similarly, entry prior to the emergence of a dominant design could be important with respect to developing experiential economies in both product and process innovation. Utterback and Suarez (1995) find that the probability of survival will tend to be greater for firms entering the industry before the emergence of a dominant design and the subsequent rise of barriers to entry, where the reasoning is founded on the basis that a dominant design acts as a catalyst for the accumulation of collateral assets and the creation of barriers to entry.

Technological Regime

An important finding of the work on industry evolution is the implication that different types of entrant are suited to specific types of innovation. According to Audretsch (1991), the ability of a firm to innovate after a period of time within the industry is related to the nature of the underlying technological regime, where Winter (1984) states that: "*An entrepreneurial regime is one that is favourable to innovative entry and unfavourable to innovative activity by established firms; a routinised regime is one in which the conditions*

are the other way around.” Similarly, Gort and Klepper (1982) find that the relative innovative advantage between new and established firms depends on the source of the information relating to the innovative activity. Where information is related to non-transferable market experience, then established firms have the relative innovative advantage over new firms, consistent with the notion of a routinised regime. Similarly, where information outside of the industry is an important input in innovative activity, new firms will tend to have the innovative advantage over incumbent firms.

Audretsch (1991) is arguing that industries are characterised by specific types of innovation, to which different types of company are more or less suited, while Gort and Klepper (1982) are arguing essentially that different types of company are suited to different types of innovation, depending on the source of information underlying the innovation. In both cases, the suggestion is that new firms are suited to innovation which is competence-destroying while established firms are better suited to innovation which is competence-enhancing. The importance of these findings is that established firms relative to new firms are likely to have an advantage where innovation is autonomous, while new firms relative to established firms are likely to have an advantage where innovation is systemic (see Section 2.3.1). The implication is that it is the capability-based determinants of innovation that underlie firm success in new markets.

2.4.3 The Role of Capability Development in New Market Entry

The preceding work on innovation (Audretsch, 1991; Gort and Klepper, 1982) suggests the importance of two issues relevant to this research: (1) the capability-based determinants of new market success, and (2) the relative strengths of different types of entrant with respect to capability development. With regard to the first issue, the innovation implicit in new market creation is either competence-enhancing or competence-destroying (Tushman and Anderson, 1986), where the importance of existing capabilities is cited in relation to work on diversification (Markides and Williamson, 1994) and market entry (Klepper and Simons, 2000). In some cases, the value of existing capabilities is further dependent upon the services of complementary assets (Mitchell, 1989, Tripsas, 1997). With regard to the second issue, capability development appears to pose different issues for different types of firms, which suggests that established firms relative to new firms might have greater difficulties with respect to adaptation.

Capability-based Determinants of New Market Success

New market entry is essentially the challenge of diversification for established companies. While the link between existing firm resources and diversification is well-known (Penrose, 1959; Teece, 1986; Chatterjee and Wernerfelt, 1988, 1991), the importance of existing capabilities for new market entry is only more recently being explored (Chandler, 1992; Markides and Williamson, 1994; Klepper and Simons, 2000).

The role of resources in diversification strategies has been widely substantiated (Helfat and Liebermann, 2001), ranging from the role of excess resources in providing the incentive for firm diversification into related markets (Penrose, 1959; Teece, 1982) to the fact that firm performance is not simply a function of the type of diversification strategy but rather the appropriateness of the strategy given the resource profile of the firm (Chatterjee and Wernerfelt, 1991; Silverman, 1999). The link between firm performance and type of diversification strategy is not, however, a clear one, where the superior advantage of related diversification, as advocated by Rumelt (1974), is not consistently borne out in practice (Markides and Williamson, 1994). The reason for this apparent anomaly is attributed to the fact that the definitions of related and unrelated diversification focus on industry or market similarity and, hence, the degree of operational relatedness (Grant, 1988; Markides and Williamson, 1994). It is argued that definitions of relatedness need to focus at the level of firm-based competences, where relatedness is better understood with respect to similarities in the processes by which strategic assets are created rather than with respect to the actual strategic assets which are the outcome of those processes (Markides and Williamson, 1994). In other words, organisational capabilities rather than served markets are the basis on which firms should base their diversification strategies (Grant, 1996).

The importance of capabilities in firm diversification is borne out by Chandler (1992), where he states that, before the 1960s, industrial enterprises in the US and Europe rarely moved into markets where their learned capabilities did not give them a distinct

competitive advantage. Similarly, in their study of the US television receiver industry, Klepper and Simons (2000) show the importance of prior related experience, where it was found that those radio producers with the most relevant experience entered the television industry. On average, these firms entered earlier, survived longer and had larger market shares than non-radio producers. These firms also dominated with respect to product and process innovation given the high rate of innovation encouraged by the semiconductor developments which correspondingly placed pressure on smaller firms.

Even in cases where existing capabilities retain value in new markets, firm success may ultimately depend on the existence of complementary assets. Teece (1986) states that technological innovation often requires the services of complementary assets either inside or outside the firm, while Mitchell (1989) finds a tendency for firms with industry-specialised resources, such as distribution networks to enter earlier, although his study is limited to incumbents entering new industry sub-fields. Anderson and Tushman (1991) find that firms that existed in the industry prior to a discontinuity tend to pioneer breakthrough innovations, where this is the case even with regard to competence-destroying process innovations given that these firms are able to exploit their upstream and downstream strengths in the value chain. Similar findings were reported by Tripsas (1997) in her study of the typesetter industry, where she argues that commercial performance is driven by the interaction between three factors: investment, technical capabilities and appropriability through specialised complementary assets. While the industry had experienced three waves of “creative destruction”, incumbents were displaced by new

entrants in only one of these three shifts, where specialised complementary assets were critical in protecting incumbents from competence-destroying change.

The innovation implicit in the creation of new markets may build on existing capabilities and complementary resources. However, the finding that different types of entrant are suited to different types of innovation suggests that the critical factor is whether or not innovation is related to the underlying technological regime (Audretsch, 1991; Gort and Klepper, 1992). The significance of the role of the technological regime in innovation relates to whether innovation builds on existing resources and capabilities at the time of market entry. Given the sunk costs invested in a firm's complementary assets, established firms may be reluctant to innovate along a technological trajectory that does not utilise a firm's complementary assets (Dosi, 1992). Similarly, a firm's knowledge of its customers rather than technological constraints are likely to impose a constraint on firms (Christensen, 1997).

Implicit in an understanding of the challenge of innovation are the path dependent constraints of resource accumulation and capability development. New firms are likely to be more innovative than established firms given that the latter are likely to be more wedded to specific production systems, marketing approaches and historical ways of doing business (Abernathy and Utterback, 1978). This relates to Leonard-Barton's (1992) argument that "core capabilities" come to act as "core rigidities", where capability development becomes constrained by the technical and managerial systems over time. As

Henderson and Clark (1990) state, a key factor is the impact of innovation not only on a firm's component competence but also on its architectural competence, i.e. its ability to integrate the knowledge underlying capability development. With reference to our distinction between systemic innovation and autonomous innovation (see Section 2.3.1), the implication is that established firms relative to new firms have an advantage with respect to autonomous innovation, while new firms relative to established firms are likely to have an advantage with respect to systemic innovation. In other words, the challenge of new markets is essentially the challenge of organisational adaptation.

2.4.4 New Market Entry : The Challenge of Organisational Adaptation

Underlying the challenge of new market entry is, in effect, the challenge of firm adaptation, where it is proposed that underlying an organisation's ability to adapt is its ability to develop new capabilities. At any point in time, a firm's resources and capabilities within a particular business sector comprise its initial endowments at the time of entry together with those it was able to acquire since entry. Although tangible resources, such as physical buildings and off-the-shelf software, can be relatively easily acquired, the opposite is true of intangible resources, such as the brand or the technology base, and capabilities. Given that underlying a firm's capabilities are routines or patterns of routines, then the skills to develop these routines have to be acquired and learned over time. The concept of path dependence or "non-ergodicity" assumes importance. At the same time, the development of strategic flexibility and the creation of dynamic capabilities are

increasingly posited as the panacea to the strategic challenge of responding to change within dynamic environments. It will be shown, however, that these terms are not compatible with the assumptions underlying an evolutionary view of adaptation, where the source of dynamic processes ultimately lie in routinised activities.

Strategic Flexibility

Developing organisational flexibility is increasingly considered to be a desirable and even a necessary response to dealing with environmental uncertainty (Aaker and Mascarenhas, 1984; Bettis and Hitt, 1995). The main assumption is that flexible organisations are better able to deal with change, such as that presented by the challenge of new markets. A discussion of organisational flexibility is furthermore a useful one in the current business environment marked by uncertainty and frequent change. However, while notions of organisational flexibility assume an ability to adapt, the challenge of adaptation is often not fully explained. In effect, the assumption here is that the terms “flexible” and “adaptive” are not interchangeable; while adaptive firms are likely also to be flexible, an ability to adapt is not a pre-condition of flexibility.

Strategic flexibility has been defined as “*the ability of an organisation to adapt to substantial, uncertain and fast-occurring environmental changes that have a meaningful impact on performance*” (Aaker and Mascarenhas, 1984). They argue that organisational flexibility can be promoted through one of three strategies; product diversification, investment in underused resources and reduced commitment in specialised resources. This

relates to the notion of focus vs. flexibility, where the latter is a strategy of spreading resources over several scenarios (Wernerfelt and Karnani, 1987). The intention is to reduce firm dependence by diversifying in terms of both inputs (resources) and outputs (products). While the logic of this approach is understandable, it highlights the vagueness of the term “flexibility” used in the literature. Product diversification is recommended as a strategy to enhance organisational flexibility, although it is the view of this thesis that product diversification is the challenge facing firms, flexible or otherwise.

Another area of discussion has focused on how some resources can enhance the flexibility of the organisation given different strategic scenarios. While the advantage of the specificity of resources is central to explaining rent-earning potential within the RBV, the advantage of non-specific or “flexible” resources is to their broader range of uses (Ghemawat and del Sol, 1998). The more firm-specific, durable and scarce are resources and capabilities, the more valuable they are to the firm in terms of their ability to earn rent. It is the firm-specific characteristic of intangible assets that essentially explains their low imitability and, hence, value (Itami and Roehl, 1987; Barney, 1986b). However, the price firms pay for developing specialised assets is reduced flexibility in the face of Schumpeterian shocks (Amit and Schoemaker, 1993). The best case scenario is, hence, for a firm to invest in resources that are both firm-specific and usage-flexible, such as with the Disney brand name, where resources are either specific or flexible and where specificity is defined in respect of the firm or of a particular use (Ghemawat and del Sol, 1998; Wernerfelt and Montgomery, 1988). This is similar to Itami and Roehl’s (1987) discussion

of invisible assets; unlike physical and financial resources, they can be used in more than one area simultaneously without reducing their value in other areas.

While flexibility has been considered in terms of the flexibility of strategy or the flexibility of resources, it has not so far addressed the capability-based challenge of adaptation implicit in that faced by firms entering new markets. Volberda (1998), however, confronts the issue in his “paradox of flexibility” or the need of organisations to adapt while remaining stable enough to exploit the changes made. He suggests that organisational flexibility can be achieved by (1) the managerial task of developing flexible or dynamic capabilities and (2) the organisational design task. While there has been substantial work on the importance of enhancing flexibility through organisational structure and processes, with particular reference to the work on modularity (Sanchez, 1995, 1996; Sanchez and Mahoney, 1996; Schilling, 2000), it is difficult to reconcile Volberda’s (1998) notion that (static) routines are different from flexible or dynamic capabilities. From an evolutionary stance, it is suggested that the nature of the adaptive challenge is to create new capabilities and, in so doing, the routines of which capabilities are comprised. Organisations are here considered to face the challenge of developing capabilities in a flexible manner rather than of developing flexible or dynamic capabilities.

Dynamic Capabilities

The dynamic capabilities approach presents a framework that is conceptually similar to the one adopted here, being based on insights from the RBV and evolutionary theory. Its

strength is that it provides a conceptually concise solution to the challenge of adaptation, where the framework is used to assess how firms gain competitive advantage in environments of rapid technological change (Teece, Pisano and Shuen, 1997). However, its weakness is that, in definitional terms, the term “dynamic capability” points to a notional ability of the firm, although it has been widely interpreted to refer to specific, higher-order capabilities that can be developed by firms to meet the challenge of adaptation (Eisenhardt and Martin, 2000).

Teece, Pisano and Shuen (1997) define “dynamic capabilities” as:

“...the firm’s ability to integrate, build and reconfigure internal and external competences to address rapidly changing environments. Dynamic capabilities thus reflect an organisation’s ability to achieve new and innovative forms of competitive advantage given path dependencies and market positions.”

They advance the argument that firm-based competitive advantage lies with a firm’s managerial and organisational processes which, in turn, are shaped by its asset position and the paths available to it. The firm’s routines and patterns of practice and learning are emphasised within managerial and organisational processes; the term asset positions refers to firm-specific resources including its external relationships with suppliers and complementors, while paths signifies the strategic alternatives available to firms, taking into account path dependencies and the potential existence of increasing returns.

The concept of flexible or dynamic capabilities has been adopted within the literature as specific capabilities that can be developed by firms (Fawcett et al, 1996; Deeds et al, 1999, Eisenhardt and Martin, 2000). It is argued that dynamic capabilities are a set of specific and identifiable processes such as product development, strategic decision-making and alliancing (Eisenhardt and Martin, 2000). Although idiosyncratic in detail, dynamic capabilities have significant commonalities across firms, i.e. “best practice”. Eisenhardt and Martin (2000) state that when change occurs in the context of a stable industry structure, dynamic capabilities resemble the traditional conception of routines, whereas they resemble simple, experiential and unstable processes in high-velocity environments. The concern is that dynamic capabilities are elsewhere considered to be higher-order capabilities (Grant, 1996) or even meta-capabilities (Collis, 1994), whose underlying components are organisational routines. In accordance with Zollo and Winter (2002)³, the concept of dynamic capabilities is interpreted here as a routinised approach to change:

“routinised activities directed to the development and adaptation of operating routines” and where “dynamic capability is exemplified by an organisation that adapts its operating processes through a relatively stable activity dedicated to process improvements”

While the dynamic capabilities framework identifies factors critical to firm adaptation, the suggestion here is that it lacks an ability to explain the actual processes underlying

³ The original article used for this research is: Zollo, M. and S.G. Winter, 2001. ‘Deliberate learning and the evolution of dynamic capabilities’, *Working Paper*.

adaptation, where critically reference must be made to the organisational routines and capabilities that enable firms to meet the challenge of adaptation.

An Evolutionary Approach to Adaptation

In the long term, selection or firm survival can be considered to be dependent on economic efficiency and the firm's ability to make profits. Although a firm may be buffered from selection pressures as a result of institutional factors, such as the availability of financial capital within the firm, government support through tariff barriers or favourable tax regimes, or other forms of social capital (Levinthal, 1992), it is argued that in the short term, selection pressures are dependent on a firm's ability to adapt.

Capabilities and Routines

The assumption here is that capability development within firms underlies the challenge of firm adaptation. Capabilities have been variously defined within the literature (Collis, 1994); capabilities have been described as distinctive competences (Snow and Hrebiniak, 1980; Hitt and Ireland, 1985), core competences (Prahalad and Hamel, 1990), competences (Henderson and Cockburn, 1994), and invisible assets (Itami and Roehl, 1987). The assumption here is that capabilities are considered to underlie the transformation of firm inputs (resources) into outputs (products or services), where Grant (1991) uses the term "organisational capabilities" to refer to a firm's capacity for undertaking a particular productive activity. Given that firms undertake many and various productive activities, a clearer conceptualisation of capabilities is provided by Grant's (1996) assertion that

capabilities are hierarchically organised. Higher order capabilities, such as new product development, tend to be cross-functional in design and may comprise one or more lower order capabilities, such as functional capabilities. Similarly, lower order capabilities ultimately consist of the tasks that take place within a functional activity. At the base of this hierarchy is the specialised knowledge of individuals, where the organisational challenge is to efficiently integrate knowledge at each level of the hierarchy or, more specifically, to integrate the knowledge of individuals at each level (Grant, 1996). The implication is that some form of co-ordinating mechanism is required to act as the interface for transferring individuals' specialised knowledge, where organisational routines are considered to provide this co-ordinating mechanism. Given that the knowledge an individual possesses involves not only that which can be codified but much that is tacit, the advantage of an organisational routine is that it is a mechanism not dependent on the communication of knowledge in explicit form (Grant, 1996). Once a routine is switched on in an individual's mind, it goes on without further consultation of the higher faculties (Stinchcombe, 1990). In other words, routines are created through established practices of repetitive interactions among individuals and are a source of process efficiency for organisations.

The concept of routines owes much to the work of Nelson and Winter (1982) who distinguished between three types of routines: the first type are akin to standard operating procedures, which embody the technologies of the firm, the second type are routines that determine the investment behaviour of firms and the third type are the deliberative

processes of the firm, involving searching for better ways of doing things. The notion of routines as developed by Nelson and Winter (1982) derives from the behavioural theory of the firm. They explain that firms engage in *satisficing behaviour rather than profit maximising behaviour*, incorporating Herbert Simon's (1965) notion of "bounded rationality", which is based on the idea that, since reality is too complex to comprehend, firms cannot maximise over the complete set of alternatives. Hence, firm behaviour tends to become governed by routines which, in turn, act as the organisation's memory. Routines become a repository of the organisation's specific operational knowledge, much of which consists of the memories of individual members which are required for the performance of organisational routines.

Adaptation

Given that routines embody much of the operational knowledge of the firm, then firm adaptation must be considered at the level of organisational routines, where the concept of routines is *analogous to that of genes in biology (Nelson and Winter, 1982)*. If firms need to adapt existing capabilities or create new capabilities, then they need to adapt existing routines or create new routines that underlie firm-specific capabilities. A firm's ability to adapt is, hence, defined as a firm's ability to adapt existing routines or to create new routines. The implication is that adaptation and selection are not mutually exclusive alternatives, but rather are fundamentally interdependent processes (Levinthal, 1991). Hence, the significance of routines is that they can act as both a source of change as well as of inertia and, hence, routines can act both as a source of adaptation as well as of selection.

Given the tacit component of many routines, it is assumed that firms can become more efficient at performing tasks the more routines are practised. Routines can therefore act as a source of process efficiency within the organisation. Increasing skill at current routines can make experimentation with alternatives progressively less attractive. As Levinthal (1992) states, in contrast to Cyert and March's (1963) definition of organisational learning as the adaptive behaviour of firms over time, a distinction between adaptation and the process of learning needs to be made. The inability of an established firm to respond to changes in its environment need not reflect a lack of adaptation but may be interpreted as having adapted too well to the previous environment. Organisational learning contributes, in part, to organisational inertia, which, in turn, is the basis of selection processes. At the level of the individual, inertia may arise out of cognitive constraints given that the tacit component of routines is likely to be stored as procedural memory rather than declarative or factual memory, which tends to decay less rapidly (Singley and Anderson, 1989).

Search, a source of adaptation, can also act as a constraint on adaptation. Search can be considered to be an analogy for learning, where search is the process of rule change or adaptation. In practice, search is assumed to be oriented towards discovering new production techniques or improving existing ones, where firm search processes provide the source of differential firm fitness (Nelson, 1995). However, the knowledge a firm possesses is local, so search becomes less effective as the firm moves away from its established operation (Nelson and Winter, 1982). Implicit in the notion of local search is the assumption that capabilities have to be built and not bought. However, as resources can

be accessed or developed in conjunction with alliance partners (Eisenhardt and Schoonhoven, 1996), so too may capabilities be accessed through alliances given the presence of high uncertainty.

The Creation and Development of Organisational Routines

If adaptation is considered to be central to firm survival, at least in the short term, where the development of new routines underlies an organisation's ability to adapt, then an important question becomes "how are capabilities born?" (Helfat and Lieberman, 2001). With respect to new ventures, the role of individuals' prior organisational experience assumes importance for the development of new organisational routines (Helfat and Lieberman, 2001, Grant and Romanelli, 2001). However, while there has been consideration of factors affecting the creation of routines such as the role of intent and the importance of aspirations (Winter, 2000), less is known about the actual process of creating organisational routines.

The origin of capabilities is a topic that is of increasing concern to researchers (Helfat and Lieberman, 2001; Grant and Romanelli, 2001). Grant's (1996) hierarchy of capabilities shows that the knowledge of individuals lies at the base of the hierarchy. The assumption is therefore that the source of knowledge underlying organisational routines ultimately derives from the knowledge that individuals possess. In fact, it is the tacit component of that knowledge that is difficult to transfer and, in part, justifies the need for the creation of organisational routines as an efficient method of knowledge transfer between individuals in

an organisation. While the creation of new markets provides an opportunity to assess the capability development process, the case of new firms is particularly relevant to understanding the creation of organisational routines and the development of capabilities, given that these firms are confronted with the task of creating all the functional and cross-functional capabilities to ensure that a firm is operational.

The starting point is, therefore, that even new firms have repositories of knowledge (Kogut and Zander, 1992), where the knowledge critical to the development of new routines and capabilities must ultimately be derived from the individuals within the new venture. In other words, the organisational memory for new firms is essentially a construct that exists at the individual level (Walsh and Ungson, 1991). It has been recognised that people who form new firms themselves have histories (Helfat and Lieberman, 2001) and that current business opportunities are likely to have been identified and formalised based on an individual's previous work experience (Shane, 2000). A critical component of this history is the prior organisational experience of the management team, where the fundamental building block of capabilities in new organisations is the prior experience of individuals through working in established organisations (Grant and Romanelli, 2001). However, the value of prior organisational experience is limited to the extent that organisational routines are often context-dependent in various ways (Nelson and Winter, 1982; Galunic and Rodan, 1998).

In the case of new firms, the importance of the prior organisational experience of the founding management team suggests a central role for management in the capability development process and is consistent with upper echelons theory, which emphasises the link between managerial backgrounds and organisational outcomes (Hambrick and Mason, 1984), as well as with the systems-based view of the firm, where the managerial role is emphasised with respect to strategic adaptation (Sanchez and Heene, 1996). The senior management team are likely to be responsible for creating the overall “blueprint” of the organisation, where past research on technology start-ups shows the importance of the role of founders in determining an organisation’s blueprint and the enduring effect thereof (Baron and Hannan, 2002). The creation of new organisational routines are likely to be closely-based on rules and procedures with which senior management have had experience with in other organisations.

Research on the importance of intent and the level of aspirations with regard to the capability development process further suggests the importance of the managerial role. The role of intent with regard to capability development is an important one, where to create a significant capability, the organisation must typically make a set of specific and highly complementary investments in tangible assets, in process development and in the establishment of relationships that cross the boundaries of the organisational unit in which the process resides (Winter, 2000). Similarly, the importance of managerial intent is implied given the costs associated with knowledge codification, where direct costs include the time, resources and managerial attention invested, while indirect costs include a

possible increase in the rate of “misfire” or inappropriate application of the routine (Zollo and Winter, 2002). Winter (2000) further shows the importance of firm-level aspirations with regard to the capability development process. He explores the idea that possessing a capability is a matter of degree. The concept of capability is not a finite one; in describing a firm capability, it is also usually necessary to describe what we mean by that given that capabilities develop all the time. Firms are likely to pursue a satisficing option with regard to capability development, where it is changes in firm aspirations that modify the satisficing criteria and that account for heterogeneity in capabilities that exist independently of differences in initial positions and learning ability. Changes in aspirations are likely to be determined by managerial perceptions of changes in the competitive context and learning responses, which he argues are likely to be key drivers of long-term change in capabilities.

While the importance of organisational routines in the creation of efficient organisational processes is known (Nelson and Winter, 1982), less is known about how routines evolve over time. Key factors central to a discussion of how routines evolve are the nature of the learning processes underlying their improvement as well as the potential for and benefits from codification, where it is shown that these two factors are inter-linked. While the importance of prior organisational experience is shown with respect to new firms, the trajectory of improvement of organisational routines is considered to be incremental, in line with conceptions of experiential learning (Gavetti and Levinthal, 2000) and local search (Nelson and Winter, 1982). Gavetti and Levinthal (2000) refer to “experience

accumulation” as the central learning process by which operating routines have traditionally been thought to develop, where routines are developed over time through trial-and-error learning and the selection and retention of past behaviours. However, while the benefits of the codification of routines is generally considered with respect to the greater ease of knowledge transfer between individuals, Zollo and Winter (2002) advance the argument that codification is a critical component in the process of developing and improving organisational routines. They argue that a theory of development of organisational routines must invoke mechanisms that go beyond semi-automatic stimulus-response processes and tacit accumulation of experience. They consider knowledge codification as a step beyond knowledge articulation. Although knowledge articulation processes potentially require significant efforts and commitment on the part of members of the organisation, an even higher level of cognitive effort is required when individuals codify their understandings of the performance implications of internal routines in written tools such as manuals, blueprints, spreadsheet, and project management software. The importance of codification is its role in the internal selection process; it can facilitate the identification of the strengths and weaknesses in the proposed variations to the current set of routines. In other words, codification of organisational routines is a pre-condition for their improvement. This is similar to the argument presented by Galunic and Rodan (1998): codification improves the detection probability of routines which can, in turn, form the basis of novel resource combinations.

Zollo and Winter (2002) develop their argument, stating that the benefits of codification may further be context-specific, relating to the nature of the task, where they consider three characteristics of tasks: the frequency, the degree of heterogeneity and the degree of causal ambiguity in the action-performance links. The benefits of codification are greatest in situations where codification might prove difficult or less important, i.e. in respect of tasks that exhibit lower frequency levels, greater task heterogeneity and greater levels of causal ambiguity. At the same time, some types of knowledge may be relatively more difficult to codify than others, such as with the fact that service knowledge tends to be embedded within individuals (Argote and Darr, 2000).

Research has tended to focus on factors affecting the development of capabilities, such as the role of intent and the level of aspirations, as well as assessing the relevance of codification with respect to organisational routines. The role of individual knowledge and, specifically, the importance of prior organisational experience, is cited in respect of the creation of organisational routines within new firms, although there is no corresponding research in relation to established firms. In other words, the suggestion here is there is a need to explore the underlying process of creating organisational routines and capability development within firms as well as across different types of firms.

2.5 CHAPTER SUMMARY

The main aim of this chapter has been to examine the existing literature in relation to competitive advantage in new markets and to show how a resource-based view may

provide a better interpretation of the challenges facing both new and established firms with respect to new markets. The implication is that initial endowments of resources and capabilities at the time of market entry are critical factors in new market success given the assumption that new markets are created out of systemic or autonomous innovation, where the type of innovation has implications for the value of existing resources and capabilities. While the research on entry timing provides evidence of early mover advantage, the discussion of optimal entry timing suggests that differences in entry timing between new and established firms may relate to comparative differences in resource and capability endowments at the time of entry. The importance of innovation is addressed within the literature on industry evolution. While there is a change from product to process innovation during the evolution of an industry, with implications for entry timing before or after the creation of a dominant design, the suggestion is that a key factor in determining whether entrants are new or established firms relates to the source of knowledge underlying innovation at the time of entry or the type of underlying technological regime. In other words, established firms relative to new firms are likely to have an advantage where innovation is autonomous, where *resources and capabilities retain importance in the new market* and vice versa for systemic innovation. The implication is that it is the capability-based determinants of innovation that underlie firm success in new markets. Essentially, the challenge of new markets for firms is the challenge of adaptation. While the concept of flexibility has been discussed in relation to the need of firms to respond to change, it is the view of this research that adaptation is better explained from an evolutionary perspective. While a dynamic capabilities view highlights factors critical to

firm adaptation, the assumption here is that organisational routines are central to adaptive processes in line with Zollo and Winter (2002). Research has tended to focus on key factors affecting the capability development process, including the role of managerial intent, the level of aspirations, and the benefits of codification of routines. However, implicit in an understanding of adaptation is the need to understand how organisational routines are created and developed over time, which is a central aim of this research.

3.1 INTRODUCTION

The ubiquity of the Internet and the speed with which its business applications (especially in business-to-consumer markets) have diffused both globally and across products creates a unique opportunity within strategy research to explore the determinants of competitive advantage in new on-line markets. Within a short span of time, on-line consumer markets have emerged for a vast range of existing products and services while new “web-specific” markets have also been created with the development of ISP and portal services. Moreover, these markets have emerged with short lags across all developed economies and increasingly across the developing economies of the world. A survey of the existing literature in relation to on-line markets shows that, while the literature most relevant to this research has focused on the characteristics of electronic markets together with describing the value potential of specific on-line business models and sectors, there has been no unifying attempt to assess the challenge faced by firms in gaining competitive advantage in new, on-line markets. It is the aim here to address this gap in the literature by adopting a resource-based view and specifically focusing on the importance of linking network externalities to competitive advantage.

3.2 PRIOR RESEARCH IN ON-LINE BUSINESS

Given the ubiquity of on-line businesses, there has been a concomitant need for research to

understand the impact of on-line technology on business. While practitioners have been at the forefront of commenting on and making predictions about the impact of the Internet on business (Davis and Meyer, 1998; Downes and Mui, 1998; Schwartz, 1999; Tapscott, Lowy and Ticoll, 1998; Tapscott, Ticoll and Lowy, 2000), there has been a growing academic literature. On-line research exists across a range of business disciplines, including marketing, supply chain management and operations as well as information systems/information technology, although the primary aim here is to focus on that research which has emerged within the strategy literature which is most relevant to the discussion of competitive advantage. The unit of analysis within research has evolved over time; from an initial focus on the characteristics of electronic or virtual markets, research has since considered the importance of the business model and, more recently, the role of resources and capabilities for firms entering new, on-line markets.

Within the strategy field, prior research into on-line business can essentially be considered to fall into three main categories: (1) the impact of on-line technology on pricing and its potential to create new governance mechanisms, (2) the potential for on-line technology to create new business models, and (3) the competence-enhancing or destroying impact of the Internet:

Internet technology is conducive to the creation of electronic marketplaces, where these are inter-organisational information systems that allow participating buyers and sellers to exchange information about prices and product offerings (Bakos, 1991). Early research has

focused on “electronic marketplaces” and the potential of the Internet to encourage co-ordination through market-based rather than hierarchical or firm-based governance mechanisms (Malone et al, 1987; Bakos, 1991). The argument is based on the potential for “frictionless commerce” or for on-line markets to be more efficient than conventional markets.

The greater efficiency of electronic markets is attributable to lower co-ordination costs stemming from lower search costs, lower menu costs and lower price dispersion (Bakos, 1997; Smith, Bailey and Brynjolfsson, 1999; Smith and Brynjolfsson, 1999). Search costs, those costs confronting buyers in search of information about prices and products, are lower in on-line markets thereby reducing information asymmetries between buyers and sellers and resulting in greater efficiency. The implication is that lower search costs lead to lower prices for both homogeneous and differentiated goods, where even modest search costs are shown to lead to prices above marginal cost (Bakos, 1991; Bakos, 1997). At the same time, lower prices may result when retailers pass on some of the cost advantage gained from transacting on-line, such as from more advantageous cost structures and lower menu costs, i.e. the lower cost and faster speed of making a price adjustment (Smith, Bailey and Brynjolfsson, 1999). Similarly, Bailey (1998) found that Internet retailers make significantly more price changes than conventional retailers and, comparing pricing across Internet and conventional retailers, Smith and Brynjolfsson (1999) find that Internet prices are lower, with Internet price adjustments up to one hundred times smaller reflecting lower menu costs. Given lower search costs and the fact that consumers have greater access to price information, price dispersion on the Internet should be lower than in

conventional markets, although empirical evidence is to the contrary. In a study of travel agents, it is found that prices for airline tickets can differ by as much as twenty per cent across on-line travel agents even after controlling for observable product heterogeneity (Clemons, Hann and Hitt, 1998). Smith, Bailey and Brynjolfsson (1999) state that price dispersion is no lower in Internet markets as compared to conventional markets, where this is deemed attributable to several factors including market immaturity, heterogeneity in retailer attributes, such as trust and awareness, shopping convenience, and the superior product information contained in a web site.

Another stream of research has focused on the potential of the Internet to alter existing business models and create new ones (Timmers, 1998; Amit and Zott, 2001; Mahdevan, 2000). It is argued that the creation of virtual markets challenges traditional strategy concepts and units of analysis such as the industry and the firm (Amit and Zott, 2001; Garbi et al, 2000). As a consequence, the defining unit of analysis is deemed to be the business model, defined as "*the architectural configuration of the components of transactions designed to exploit business opportunities*" (Amit and Zott, 2001), where they argue that a firm's business model is a critical source of value creation for all stakeholders, going beyond the notion of market positioning (Porter, 1980) and exploitation of firm-specific core competencies (Barney, 1991).

From a transactions costs perspective, the impact of lower co-ordination costs affects the firm's relationships with other key stakeholders including suppliers, where the emphasis is on developing collaborative relationships (Afuah and Tucci, 2001a).

Information technology can reduce the costs of co-ordination while also reducing the transaction risks associated with increased co-ordination, which suggests a move toward tightly coupled, co-operative relationships or “a move to the middle” (Clemons and Row, 1992) or what has earlier been called the “electronic integration effect” (Malone et al, 1987). Research tends to either classify different types of business models (Mahdevan, 2000) or to assess the sources of value creation within successful business models (Amit and Zott, 2001; Hawawini et al, 2001). Mahdevan (2000) identifies three types of company in the Internet economy: portals, market makers and product/service providers and three components of business models: value streams, revenue streams and logistical streams. Amit and Zott (2001) highlight four value drivers: novelty, lock-in, complementarities, and efficiency, where they argue that many unsuccessful business models have been built around one dominant factor (see Table 3.1). Hawawini et al (2001) similarly identify five major types of value creation including novelty, customisation, prices, bundling and global reach, although they state that company strategies often fail to take account of either market fit or capability fit.

Novelty:	Innovative business models capture value through capturing latent customer needs and by creating new market space, where there are substantial first mover advantages.
Lock-in:	Firms should aim to increase the switching costs of customers who consider using alternative businesses.
Efficiency:	The greater the transaction efficiency gains that are enabled by a business model, the more valuable that business model will be.
Complementarities:	These are present whenever having a bundle of goods together provides more value than the total value of having each of the goods separately.

Table 3.1 Value Drivers of On-line Business Models (Amit and Zott, 2001)

Finally, there has been increasing interest in assessing the impact of the Internet on competitive advantage. Research has aimed to assess the relative advantage of established firms over new firms in on-line markets, particularly within the retail sector. The issues explored include business opportunities presented by the Internet in relation to established companies (Ghosh, 1998), an examination of the advantages and disadvantages of traditional store-based and on-line retailers (Enders and Jelassi, 2000), the need for retailers to combine both “real” and “virtual” operations (Chen and Leteney, 2000), and the advantages of integration or separation in the on-line retail sector (Gulati and Garino, 2000). The inference is that an increasingly successful business model is a hybrid one that combines the advantages of traditional (or off-line) and on-line business models overcoming some of the disadvantages of “pure play” companies such as developing a brand and a customer base from scratch and the complexity of logistics and developing a distribution infrastructure faced by sellers of physical goods. In other words, the implication is the development of new on-line markets can be competence-enhancing, building on existing resources and capabilities or competence-destroying for established businesses (Tushman and Anderson, 1986). This echoes Yoffie’s (1996) work on digital convergence, where he states that success is most likely to be gained by companies that exploit “creative combinations”, i.e. creative combinations of old and new technologies, old and new channels of distribution and old and new corporate capabilities.

Those businesses most likely to be affected by the Internet are those businesses whose product or service can be digitised, i.e. information-based businesses, for whom the twelve properties of the Internet are most relevant (Afuah and Tucci, 2001b) and where

“rich” information can “reach” a large number of potential buyers (Evans and Wurster, 2000). Affuah and Tucci (2001a) assess the extent to which the Internet is a creative destroyer, where they argue that it causes the most creative destruction in industries with mediating technologies where network externalities are exploited, and the least destruction in industries with long-linked technologies, such as manufacturing firms. The main assumption is that the greater the value added by each function consists of information, the more likely existing functional or architectural capabilities will be rendered obsolete.

It is clear that on-line research itself has evolved in parallel with the evolution of on-line markets, where some of the early expectations as to the revolutionary impact of the Internet on business have since been qualified. Firms, as a form of governance, have not been usurped and replaced by more efficient on-line markets. *The Internet has come to be viewed as an enabling technology that can be used by almost any business and as part of almost any strategy (Porter, 2001).* Successful companies have also tended to be those where a viable revenue model exists alongside a business model meeting the requirements outlined. The discussion of the advantages of hybrid or “bricks-and-clicks” business models is essentially a discussion of the relative advantages of new and established firms, suggesting that the impact of the Internet on existing businesses is not always revolutionary in nature, but rather that it might build on existing resources and capabilities. Research to-date has moved away from focusing on the generalised properties of the Internet and the value creation potential of specific business models or sectors, with particular reference to the information component of tasks. It has begun to address the

source of value or competitive advantage at the firm level by identifying the importance of resources and capabilities, although it is argued here that research needs to explore further the links to existing strategy theory.

3.3 COMPETITIVE ADVANTAGE WITHIN ON-LINE MARKETS

Unlike many approaches to Internet business that have emphasized the novel features of the “new economy”, the approach here takes the view that Internet businesses can be analysed with the same tools of strategic analysis that were developed in a pre-Internet world. As in other businesses, competitive advantage in on-line businesses may be analysed in terms of two primary dimensions: cost advantage and differentiation advantage. The task here is to identify the sources of cost and differentiation advantage in relation to on-line businesses and to identify the resources and capabilities that these sources of advantage depend upon. The argument presented here is based on ideas presented in an earlier paper (Grant and Bakhru, 2000).

Despite Ghemawat’s (1991) assertion that to focus on success factors is to ignore the effect of history, it is conjectured that, across the diversity of firms and different on-line businesses, the sector as a whole possesses common features that provide an important context for understanding competitive advantage. Fundamental to the speed with which on-line transactions have penetrated traditional retail sectors are the cost advantages offered through the lower costs of search, communication, payment, and logistics. In addition, the convenience advantages of on-line business can also be expressed in terms of

cost savings to the customer (especially savings in time). These lower transaction costs have also stimulated the unbundling of complex consumer offerings into their component goods and services. The overall result of cost-based competition, increased transparency of pricing, and the unbundling of products and services is increased “commoditisation” within on-line businesses (Martin, 1999).

Given this tendency toward commoditisation in on-line businesses, does this imply that cost efficiency is the sole basis for competitive advantage in the new on-line world? Certainly, differentiation advantage is more likely to be achieved through reputation and service differentiation rather than through product differentiation and recombinations of products and services within differentiated ‘bundles’. Indeed, “disintermediation” has provided opportunities for differentiation, such as Amazon’s customised web pages, offering tailored book recommendations. Further, if cost efficiency is a generic feature of on-line business, what determines cost advantage between companies within the same on-line market? A fundamental feature of cost conditions in information and software-based industries is the high cost of creating the initial product and system and low cost of subsequent replication (Arthur, 1994; Shapiro and Varian, 1998). Hence, information-based, on-line businesses tend to be subject to substantial and continuing scale economies. Of course, market share is a performance outcome rather than a resource, however, it is possible to identify those resources that constitute a firm’s “installed base” and link a firm to customers. Though not exogenous, predetermined resources include the number of subscriptions, the number of customers with prior experience of using a particular

producer, as well as more conventional and tangible resources such as the size and extensiveness of a company's network. In addition, differences in technical and logistical capabilities might also lead to cost differences between firms independent of scale factors.

However, while all on-line businesses are not subject to increasing returns to scale, the importance of developing on-line communities suggests the existence of network effects. The impact of the web's unique ability to form "communities" extends the notion of customer loyalty (Armstrong and Hagel, 1996), where on-line businesses engender customer loyalty in a different and more powerful form than that of 'traditional' brands. The suggestion is that many on-line businesses are subject to increasing returns from positive information feedback or "*the tendency for that which is ahead to get further ahead*", where the customer perceived value of the good/service increases with an increase in the size of the installed or customer base (Arthur, 1994, 1996). The fundamental determinant of the differences between firms in the value that their products offer consumers are not the "uniqueness" characteristics emphasized in Porter's (1985) analysis of differentiation advantage, but the opposite—the network externalities that derive from ubiquity. Thus, the key factor that determined the value (V_x) of product X to consumer I ($i = 1, \dots, n-1$) is the number of other consumers of X, thus as

$$V_{xi} = f(N), \text{ where } dV/dN > 0.$$

As previously stated, network externalities exist for many products (and services) for which the utility that a user derives from consumption of a good increases with the number

of other agents consuming the good (Katz and Shapiro, 1985). Network externalities lead to demand-side economies of scale, although they also give rise to important supply-side effects, which have the effect of reinforcing any early mover advantage gained. Early movers are able to gain critical mass in terms of the size of the customer base, a process which becomes self-reinforcing, which is relevant to web-specific businesses, such as Internet Service Providers and portals, as well as to businesses which benefit from the development of complementary goods and services. Hence the magnitude of a firm's market presence ("installed base") has a dual impact on its competitive advantage, not only does it lower unit costs of supplying customers, it also increases the value of the product or service to the customer. Thus, it is argued here that the centrally important resource - the installed customer base - is fed by the other resources and capabilities of the business, including financial resources, reputation, technical and logistical capabilities, customer responsiveness and marketing.

3.4 CHAPTER SUMMARY

The unit of analysis has changed with the evolution of research into on-line business and, implicit in this development, is a growing appreciation of the fact that the same strategic tools that are used to analyse traditional businesses can be used to analyse on-line businesses. At the same time, linking network externalities to competitive advantage characterises a feature of on-line markets that distinguishes them from most of their traditional counterparts. While the importance of network externalities has potential implications for the advantages of early entry, early mover advantage is not deemed here to

be a critical determinant of success in new markets, as will be discussed in the theoretical framework of competitive advantage of new markets developed in Chapter Four. It is the view of this research that the Internet has not changed the rules of business and is essentially an enabling technology that can be used in almost any industry and as part of almost any strategy (Porter, 2001). New on-line markets are characterised by generic phenomenon in a more extreme form; the diffusion of Internet technology and its applications has been rapid and transaction costs have been lowered. Many on-line markets have further exhibited a compressed life cycle (PLC), where industry shakeout has occurred in a relatively short period of time for a number of reasons including the financial viability of new business models and the fact that consumer demand has not keep pace with the fast rate of development of new on-line markets. In other words, new on-line markets serve as a useful empirical site for developing and testing more general theory on competitive advantage in new markets which will be discussed in the next chapter.

CHAPTER FOUR

A THEORETICAL MODEL OF COMPETITIVE ADVANTAGE IN NEW MARKETS

4.1 INTRODUCTION

While the existing literature identifies some of the critical issues relating to firm success in new markets from a variety of different theoretical perspectives (see Chapter Two), a combined resource-based and evolutionary approach to understanding how firms gain competitive advantage in new markets potentially provides a clearer interpretation of the challenges faced by firms. A new theoretical model of competitive advantage in new markets is developed, where I will argue that competitive advantage in new markets depends on two factors: (i) initial resource and capability endowments at the time of entry and (ii) a firm's ability to adapt to meet the requirements of success in new markets, where capability development is considered here to underlie the challenge of firm adaptation. The importance of initial endowments of resources and capabilities will be explained with specific reference to the central role of initial funding, prior managerial experience and related market experience. However, it is the contention here that the challenge of new markets for firms is primarily the challenge of adaptation. A review of the existing literature on adaptation in Chapter Two suggests there is a need to better understand the process of adaptation through which firms are able to develop the required resource configurations and, hence, develop a theory of capability development. In analysing the

determinants of competitive advantage in new markets, both in relation to the role of initial resources and capabilities (research question 1) and the relative advantage of different types of entrant (research question 2), existing theory is quite well developed. Hence, in developing propositions relating to competitive advantage in new markets, a deductive approach is adopted. In relation to the process of capability development (research question 3), existing theory is less developed. While the literature suggests some promising lines of enquiry, there is limited theory on where organisational capabilities come from, the organisational processes through which they operate, or how they develop and adapt. Hence, in relation to the third research question, an inductive approach is adopted, using the literature to generate more specific research questions that can be answered using the evidence from the case studies in order to extend existing theory on capability development.

4.2 CHAPTER CONTRIBUTION

The main theoretical contribution of this chapter is to develop a theory of competitive advantage relating to new markets in general. The suggestion is that the existing literature relating to competitive advantage in new markets, as discussed in Chapter Two, can be interpreted from a resource-based view, where the key starting point is the assumption that competitive advantage in new markets is linked to the resources and capabilities critical for success. The determinants of competitive advantage in the theoretical model are inductively derived; it is argued that a firm's resource and capability endowments at the

time of market entry are an important factor in new market success, although a firm's ability to adapt is central to meeting the strategic challenge of new markets.

In line with an evolutionary approach to adaptation, this research stresses the importance of the path dependent nature of learning and of developing organisational routines and capabilities. A critical issue to be addressed is the comparative adaptability of different types of entrant, i.e. new vs. established firms. While new firms are likely to have advantages over established firms with respect to adaptation, it is argued that the comparative adaptability of different types of entrants is dependent on the type of innovation implicit in new market creation. However, all firms are faced with the challenge of creating new routines and capabilities upon entering new markets. While existing resources and capabilities may retain value in new markets, such as in the case of related diversification, it is the view here that even related diversification is likely to involve some form of adaptation or creation of new routines.

4.3 LINKING EXISTING THEORY TO A NEW THEORY OF COMPETITIVE ADVANTAGE

The existing literature identifies two factors critical to an examination of competitive advantage in new markets: the timing of entry and the role of innovation in new market creation (see Chapter Two). The timing of entry is important. Early entry is associated with market share advantages. However, the optimal timing of entry will be different for different types of firm. The literature on industry evolution identifies innovation as central to a firm's ability to enter new markets, where the nature of innovation may change with market maturity.

New markets pose different challenges for different types of entrant. Research on entry timing shows that established firms enter later than new firms. Such late entry may be (a) an unintended consequence of organisational inertia, or (b) an intentional plan by established companies to benefit from reduced uncertainty and leverage their superior and complementary resource and capability endowments. Research on industry evolution highlights the importance of innovation in the creation of new markets, introducing the idea that different types of entrant may be better suited to certain types of innovation.

However, from a resource-based perspective, the critical issue is whether a firm's resources and capabilities are those required for success in new markets. In other words, the key issue is whether a firm's initial endowment of resources and capabilities retains value in new markets, which depends on whether the innovation implicit in new market creation is autonomous or systemic (see Section 2.3.1) and, if not, whether the firm is able to acquire the resources and develop the capabilities needed for success.

4.4 THEORETICAL MODEL

A resource-based view of competitive advantage is assumed, where the source of firm-based competitive advantage is linked to the underlying resources and capabilities critical for success. It will be shown that, while the initial endowment of resources and capabilities is a potentially important factor with respect to gaining competitive advantage in new markets, it is secondary to the challenge of adaptation faced by firms entering new markets, where capability development is considered here to underlie a firm's ability to

adapt. In relation to new markets, adaptation is the challenge of developing the routines and capabilities to (i) re-configure initial resources and capabilities and (ii) create new configurations of resources and capabilities. Put simply, the relationships proposed in the theoretical model can be depicted as follows (see Figure 4.1):

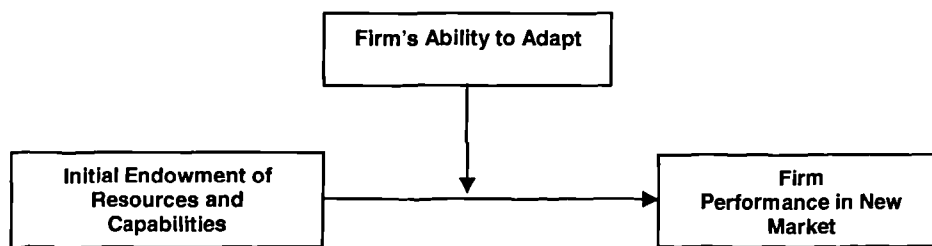


Figure 4.1 Theoretical Model of Competitive Advantage in New Markets

4.4.1 Initial Resources

Given the path dependent nature of resource accumulation (Dierickx and Cool, 1989) and capability development (Nelson and Winter, 1982), it is argued that a firm's initial endowment of resources and capabilities ("initial resources") at the time of new market entry are significant factors in determining firm success. Taking into account the strategic challenge of diversification faced by established firms and that of new venture creation faced by new firms, important resources and capabilities at the time of new entry are likely to include financial resources as well as related or relevant market and managerial experience. The importance of initial resources relative to entry timing advantages is further discussed, where it is shown that entry timing advantages are secondary to the role of initial resource and capability endowments as a predictor of competitive success in new

markets. Early mover advantage is linked to a firm's capacity for resource pre-emption and, hence, it potentially provides firms with a timing advantage in respect of the challenge of adaptation.

Defining Initial Resources

A key difference between new and established firms at the time of new market entry is their respective endowments of resources and capabilities. The ability of new firms, despite the "liability of newness" (Stinchcombe, 1965), to enter new markets and be operational and the ability of established firms to diversify into new markets indicates that firms must possess some critical level of initial resources permitting them to do so. It will be shown that, with respect to new market entry, this combination of initial resources is likely to comprise the initial level of funding, the prior experience of managers and the related business experience of the firm. Funding is critical to developing any new business initiative, while managerial experience aims to take account of the individual's prior organisational experience and relates to a key assumption within the RBV of the role of managers with respect to resource co-ordination and capability development. Finally, market experience acknowledges the fact that related business experience could be a factor in new market success given the path dependent nature of resource accumulation and capability development, where new market entry is essentially the challenge of diversification for established firms.

Initial Funding

The importance of initial funding relates primarily to the fungibility of financial resources as well as to the role of customer expectations in firm success. Financial resources are fungible, thereby providing them with a commanding position in relation to the firm's other resources. Financial resources can be used to acquire or develop new resources as well as make changes to existing resource configurations or develop entirely new resource configurations. A review of the research on new venture funding shows that businesses which start undercapitalised have a greater chance of failure than those with adequate capital (Lussier, 1995). Although new companies are generally confronted with the issue of limited resources, entry into a new market is costly regardless of when it is attempted. This is consistent with the findings of Schoenecker and Cooper's (1998) study of the minicomputer industry, where they were unable to establish a link between the level of financial resources and the timing of entry.

At the same time, the amount of initial funding has implications for the credibility of the firm's strategy, where the greater the amount of funding is likely to be linked with enhanced customer expectations of the firm's success in a new market. In markets subject to network externalities, consumption externalities give rise to demand-side economies of scale, which vary with consumer expectations: if consumers expect a seller to be dominant, then they are willing to pay more for the firm's product and it will, in fact, be dominant (Katz and Shapiro, 1985). The importance of the level of initial funding in new on-line markets is borne out in a report by Morgan Stanley, which states that the most successful

US Internet companies are all backed by significant amounts of venture capital (Morgan Stanley Dean Witter, 1999). Research has shown that a successful pan-European web site is likely to cost US\$11.3 million in the first year, with half of these going to marketing costs (Salomon Smith Barney, 1999).

Managerial Experience

Managerial experience relates to the prior organisational experience of managers. In line with the role of individuals' knowledge in the creation of new routines, the importance of managerial experience relates to the prior experience of managers with regard to the co-ordination of resources and, hence, their experience of creating and developing routines and capabilities that is relevant to the challenge of new markets.

The importance of the managerial role in co-ordinating resources is a key assumption of the resource-based view (Penrose, 1959; Barney, 1991; Castanias and Helfat, 1991, Lado, Boyd and Wright, 1992; Mahoney, 1995). Prior research highlights the importance of the top management team's influence on the evolution of the firm's capability set (Levinthal, 1995; Kazanjian and Rao, 1999), where managerial input in the selection and development of resources and capabilities can differ greatly across firms (Amit and Schoemaker, 1993) and is likely to be central to the creation of capabilities within new firms (Grant and Romanelli, 2001; Helfat and Liebermann, 2001). The prior experience of the management is a theme reflected within the entrepreneurship literature such as the benefits of prior new venture experience (Sykes, 1986; Stuart and Abetti, 1990; Robert and

Abetti, 1990), the importance of prior managerial experience (McEnrue, 1988), and where the lower rate of failure of start-ups is associated with more experienced management (Lussier, 1995). Managerial experience may also take the form of the managerial impact of venture capitalist involvement given that a large proportion of the venture capitalists' returns are linked to the performance of the firm invested in (Fried, Bruton and Hisrich, 1998) and the importance of venture capitalists' experience (Ehrlich et al, 1994).

As stated, the notion of managerial experience used here aims to capture the value of individuals' prior work experience and encompasses recent research linking resource-based theory to entrepreneurship. As Alvarez and Busenitz (2001) argue, key entrepreneurial resources include not only the recognition of business opportunities but also the process of combining and organising resources.

Market Experience

Market experience refers to the prior related business experience of the firm. In line with the assumption that path dependence is a characteristic of resource accumulation (Dierickx and Cool, 1989) and capability development (Nelson and Winter, 1982), the prior market experience of a firm is potentially a critical factor in new market success, and account needs to be taken of the fact that companies may benefit from having spent time trading in a related business area or where a parent company has traded in a related business. The importance of prior market experience relates to the potential benefits from complementary capabilities (Markides and Williamson, 1994; Grant, 1996; Klepper and Simons, 2000)

which may be enhanced by the existence of complementary resources (Mitchell, 1989; Teece, 1986). In other words, market experience aims to take account of the past organisational learning of firms. Implicit in the value of this prior experience is the notion that firms are able to transfer the organisational learning embodied in existing routines and capabilities that are relevant to the new market.

The Relative Importance of Entry Timing

The rapid emergence and development of many new markets, including new on-line markets, suggest that lead times are themselves becoming shorter over time (Huff and Robinson, 1994). The implication is that lead time advantages are increasingly less likely to confer a significant advantage to pioneers, although the presence of network externalities in many new on-line markets suggests that entry timing advantages could assume importance in respect of the empirical base in this research (see Section 3.3). Many on-line markets are subject to network externalities, where growing the installed base is likely to be positively affected by early entry and where entry timing advantages related to demand-side factors are also shown to be more enduring than those relating to supply-side factors (Mueller, 1997)⁴. However, the critical issue in relation to the installed base is the existence of customer-switching costs, which are a product of customer investment in supplier-specific assets. However, given the tendency towards greater commoditisation of on-line offerings combined with the lower costs of search (Bakos, 1991; Bakos, 1997), on-line markets are also likely to be characterised by lower customer switching costs. In his

⁴ Established firms may also have the advantage of an existing customer base which acts as a complementary resource.

study of the money market mutual funds industry, Makadok (1998) showed that first-mover advantages were sustainable only because of high customer switching costs. In other words, low switching costs may negate any advantage gained from early entry into on-line markets.

However, the fundamental idea behind early mover advantage is that the earlier a firm enters an emerging industry, the better able it is to pre-empt and acquire the resources critical to success in that industry and create barriers to entry subject to raising buyer switching costs (Lieberman and Montgomery, 1988). In other words, the advantage of early entry relates to the potential for resource pre-emption and, hence, in respect of the timing advantages in relation to the challenge of adaptation.

Research Propositions

From a resource-based perspective, it is argued that success in new markets is ultimately dependent on whether a firm has the resources and capabilities to meet the requirements for success in the new market. I argue that a *critical determinant of competitive advantage* in new markets is a firm's initial endowment of resources and capabilities at the time of market entry. Since new entrants include both new and established firms, an important issue in this research concerns the comparative advantage of different types of entrant.

Hence, in order to develop the research propositions, I refer to the first two research questions outlined in Chapter One:

1. *What is the role of initial endowments of resources and capabilities in determining competitive advantage in new markets?*

2. *What are the relative advantages of established firms and new firms in new markets?*

Initial Resources

The aim is to develop propositions with respect to the first research question concerning the importance of initial endowments of resources and capabilities:

- i) Within the context of new markets, both the type and amount of initial resources are important for success. The type of resources is important, where the amount of initial funding, managerial experience and market experience are likely to be positively associated with firm success. Hence,

Proposition One

Competitive advantage in new markets is determined by the level of initial resources, which comprises initial funding, managerial experience and market experience.

- ii) A key distinction between managerial and market experience is that the former measures prior experience at the level of the individual or manager, whereas the

latter measures prior experience at the level of the organisation itself. Market experience builds organisational routines and capabilities that can be readily and productively deployed within new markets arising from autonomous innovation. However, these routines and capabilities cannot be deployed in markets arising from systemic innovation. In such markets, the key to success is the ability to reconfigure existing resources to create new capabilities, where the ability to create new capabilities is achieved by managers using their own managerial experience. Hence,

Proposition Two

Related market experience is likely to be a critical determinant of success in new markets which emerge as a result of autonomous innovation, while the prior managerial experience of the founding management team is likely to be a critical determinant of success in new markets which emerge as a result of systemic innovation.

- iii) The initial level of funding is likely to be a critical determinant of success in any new market, where the level of initial funding may assume particular importance within an on-line context, given the potential for network externalities. The importance of initial funding relates to the fungibility of financial resources, where they can be used to acquire or develop other resources as well as to adapt existing or develop new resource configurations. Where new markets are subject to network

externalities, the importance of information feedback suggests that customer expectations are important in firm success, where a primary determinant of expectations is the level of initial funding. Thus,

Proposition Three

The initial amount of funding is likely to be more important for success than either market experience or managerial experience, particularly in new markets subject to network externalities.

Relative Advantage of New vs. Established Firms

Given that new entrants include both new and established firms, a key issue becomes the comparative advantage of different types of entrant. While established firms relative to new firms are likely to have greater endowments of initial resources at the time of entry, the literature states that established firms relative to new firms are likely to have greater difficulties with adaptation given that they are constrained by organisational inertia. However, the critical issue is to assess whether the innovation implicit in new market creation renders existing resources and capabilities worthless. Hence in relation to the second research question:

Proposition Four

Where new markets emerge as a result of systemic innovation, new firms are likely to have an advantage over established firms.

Proposition Five

Where new markets emerge as a result of autonomous innovation, established firms are likely to have an advantage over new firms.

4.4.2 The Challenge of Adaptation

I argue that, with respect to new markets, the role of initial resource and capability endowments are secondary to the challenge of organisational adaptation in gaining competitive advantage. Initial resources take account of resources and capabilities in the present as well as learning that may have accrued from previous experience. However, initial resources and capabilities at the time of market entry might not meet the success requirements of new markets, where competitive advantage depends ultimately on a firm's ability to adapt. Adaptation is here considered to be the key challenge confronting firms entering new markets, where adaptation refers to the firm's ability to develop the routines and capabilities required to adapt existing configurations of resources and capabilities and create new configurations of resources and capabilities. The aim here is two-fold: (i) to explain why adaptation is considered to be the central challenge of firms in new markets and (ii) to develop our understanding of the actual process of adaptation.

Capability-based Challenge of Adaptation

The importance of initial endowments of resources and capabilities at the time of market entry is considered here to be a determinant of competitive advantage in new markets, where existing resources and capabilities may retain value in new markets. However, while

existing resources and capabilities may be complementary to those required, the critical determinant of competitive advantage in new markets is a firm's ability to adapt.

With respect to the literature review in Chapter Two, it is shown that established firms relative to new firms may have greater difficulties with regard to adaptation, which from a resource-based view relates to the path dependent nature of resource accumulation (Dierickx and Cool, 1989) and capability development (Nelson and Winter, 1982; Leonard-Barton, 1992). However, the ability of established firms to adapt is cited in relation to new markets where resource and capability endowments retain value. The importance of complementary assets has been shown with respect to technological innovation (Teece, 1986); entering new segments of existing markets (Mitchell, 1989); and also with respect to the customer or installed base which can acquire the features of a complementary resource over time (Makadok, 1998). The literature has shown the importance of capability-based diversification (Chandler, 1992); the advantages of co-evolution of organisational knowledge, capabilities and products over long time spans (Helfat and Raubitschek, 2000) and the capability-based determinants of new product development (Thomas and Weigelt, 2000). The suggestion here is that a firm's ability to adapt is not related to whether a firm is an established firm or a new firm at the time of market entry but rather account must be taken of the innovation implicit in new market creation. Established firms are likely to have an advantage relative to new firms given autonomous innovation, while new firms are likely to have the relative advantage given systemic innovation. In other words, one determinant of a firm's ability to adapt is

dependent on initial endowments of resources and capabilities relative to the type of innovation implicit in new market creation.

However, even in new markets where complementary resources and capabilities retain value, established firms are likely to face the challenge of developing new routines and capabilities. Similarly, the challenge of new firms is the creation of new routines and capabilities. At the same time, new entrants in many new markets, including on-line markets, include both new and established firms, where it argued that the ability to create new routines and capabilities is common to all entrants. In other words, the central tenet of the theoretical model is that success in new markets requires the ability of firms to adapt in order to create the routines and capabilities critical for success.

The Adaptation Process

If capability development underlies the challenge of adaptation, then it is necessary to assess the process of adaptation to understand how organisational capabilities are developed. Moreover, if capabilities are considered to consist of organisational routines (Grant, 1996), then the unit of analysis for developing an understanding of the process of firm adaptation must be considered at the level of routines, which can be considered to act as both a source of adaptation and selection (Levinthal, 1991). The review of the literature in Section 2.4.4 shows that research to-date has focused on developing the concept and role of routines (Nelson and Winter, 1982; Levinthal, 1991, 1992; Grant, 1996), the consideration of factors affecting the creation of routines such as the role of intent and the

importance of aspirations (Winter, 2000), and the importance of codifying routines (Zollo and Winter, 2002). However, there has been no unifying attempt to develop a theory of how routines are created and developed over time, which is central to an understanding of capability development. Further, it is important to assess whether and how capability development differs across new and established firms, where the empirical setting of this research provides an opportunity to assess the process of adaptation of both new and established firms entering new markets. In relation to the third research question, '*What are the processes through which new and established firms develop capabilities to compete in new markets?*', my aim here is to develop further research questions that can be tested empirically through case studies as part of an inductive approach to developing theory on capability development (Eisenhardt, 1989).

A main assumption of this research is that to understand how firms develop capabilities, it is necessary to understand how firms develop organisational routines, where capabilities are considered to consist of one or more interacting sets of routines (Grant, 1996). Adaptation is assumed to involve the adaptation of existing routines as well as the creation of new routines. In other words, the starting point for this research is to determine the origins of new organisational routines. According to Grant's (1996) hierarchy of capabilities, the knowledge of individuals lies at the base of the hierarchy, where the assumption is that the source of knowledge underlying organisational routines ultimately derives from the knowledge that individuals possess. Research has further shown the importance of the prior organisational experience of founders in respect of new venture

creation (Grant and Romanelli, 2001; Helfat and Liebermann, 2001; Shane, 2000). However, it is important to consider to what extent prior organisational experience is context-specific (Nelson and Winter, 1982; Galunic and Rodan, 1998) as well as the role of the prior organisational experience of different managerial levels within the firm. Furthermore, it is important to assess the extent to which individuals' knowledge is used to create new organisational routines across different types of firms given the potential for complementary resources and capabilities to play a role in new market success.

Hence, the first research question is:

3. (a) *What is the role of individuals' knowledge in the creation of new organisational routines?*

While research has focused on the role and importance of organisational routines (see Section 2.4.4), less is known about how organisational routines evolve over time. In the first instance, a key issue is to examine the role of motivation in the capability development process. Given the costs of developing a significant capability, both direct and indirect with regard to the investment in complementary assets, the importance of managerial intent is implied (Winter, 2000). At the same time, the concept of capability is not a finite one, where Winter (2000) argues that firm aspirations determine the satisficing criteria by which capabilities are developed.

Hence, the second research question is:

3. (b) *What is the role of motivation in the capability development process?*

With respect to the evolution of organisational routines, a further issue is to explore the role of codification in the capability development process. The importance of codification is generally cited in respect of the ease of transfer of routines through making tacit knowledge more explicit. However, some types of knowledge may be difficult to codify, where Argote and Darr (2000) show that service knowledge tends to be embedded within individuals. Similarly, codification may be more beneficial in relation to tasks which are considered to be more difficult or less important to codify, i.e. in respect of tasks that exhibit lower frequency levels, greater task heterogeneity and greater levels of causal ambiguity (Zollo and Winter, 2002). The importance of codification is further cited in relation to its role in the development and improvement of organisational routines. Zollo and Winter (2002) argue that, since codification can be considered to involve a higher level of cognitive effort than knowledge articulation, it can facilitate the identification of strengths and weaknesses in proposed variations to existing routines.

Hence, the third research question is:

3. (c) *What is the role of codification in the capability development process?*

Finally, there is need to assess constraints in the capability development process. The suggestion within the literature is that established firms find it relatively more difficult to adapt than new firms, where existing capabilities increasingly come to act as a constraint on capability development as they become increasingly embedded in the organisation's systems and bound by its structure, i.e. the core capabilities as core rigidities argument (Leonard-Barton, 1992). As stated in Propositions Four and Five, the advantage of new

firms over established firms is with respect to new markets created out of systemic innovation, where there is likely to be greater change with respect to the knowledge underlying component routines as well as to the architecture of routines (Henderson and Cockburn, 1994). In other words, the ability of firms to adapt centres on its ability to make changes to the existing architecture of routines. The key issue is, hence, to examine the “architectural strength” of firms at the time of new market entry and subsequently.

Hence, the fourth research question is:

3. (d) *What are the constraints in the capability development process?*

A survey will be used to test the propositions developed in respect of the role of initial resources and a case study approach will be used to answer the research questions in respect of the process of adaptation, as will be explained in the next chapter on Methodology.

CHAPTER FIVE METHODOLOGY

5.1 INTRODUCTION

The aim of this chapter is to outline the methodological approach used in testing the theoretical model of competitive advantage developed in Chapter Four. A combination of quantitative and qualitative methods are used to reflect the research aims; a survey is used to examine the role of initial resources and is consistent with the explanatory nature of the research, while company case studies (“case studies”) are used to explore the capability development process. It will be shown that the methodological approach further addresses current concerns about empirical application of a resource-based approach. New on-line markets provide the empirical setting for the research, where the choice of empirical site is discussed. Hypotheses are developed in respect of the research propositions in Chapter Four, and the research design is explained including considerations of operationalisation of variables and constructs in respect of both the survey and case study research.

5.2 PRINCIPLES BEHIND THE EMPIRICAL METHOD

The aim is to adopt a multi-method approach to the empirical work using both survey and case study methodology, where this is deemed appropriate given the research aims and given the combination of resource-based and evolutionary theoretical approaches used. At the same time, the methodological approach aims to address criticisms of empirical research relating to strategy research in general and the resource-based view in particular.

5.2.1 Multi-Method Approach

The use of multiple research methods can be advantageous since they are often complementary and even synergistic given that the aim is to combine quantitative and qualitative data (Eisenhardt, 1989). The main advantage of using a multi-method approach in relation to this research ultimately relates to the research questions and, hence, the aims of this research.

The use of more than one research strategy in any given study, such as the use of a case study within a survey or the use of a survey within a case study, is acknowledged by Yin (1994). A combination of data types has the potential for synergy, where Eisenhardt (1989) states that, "*Quantitative evidence can indicate relationships which may not be salient to the researcher. It also can keep researchers from being carried away by vivid, but false, impressions in qualitative data.*" The main reason for combining a survey with case studies relates to the nature of the research questions. The survey potentially provides a relatively larger sample with which to test hypotheses relating to the role of initial resources in the theoretical model as well as providing some insight into the relative advantage of different types of entrant. The case study approach has the *potential to* provide richer detail in respect of the theoretical model, i.e. with regard to the capability development processes underlying organisational adaptation. While the survey follows a deductive approach, the case study approach is inductive, aiming to gather data in respect of the research questions and to developing theory in respect of capability building, given that the latter is not well developed either theoretically or empirically.

Use of Survey

The survey is used here to provide quantitative data to test the relevant hypotheses against a sample of the population of ISPs and on-line brokers respectively. However, as the survey adopts a static, cross-sectional approach in respect of two individual sectors, it is argued that only association rather than causality can be proved (Powell and Dent-Micallef, 1997). The advantage of the relatively low cost of collecting data must, however, be weighed against the potential for low response and, hence, bias in the results which is an increasing issue with this method (Moser and Kalton, 1971).

Use of Case Studies

Case studies are considered to be an appropriate method for this research in accordance with the exploratory nature of the research relating to the capability development process (Yin, 1994). In respect of each of the firms studied, the retrospective approach to the research seeks to develop our understanding of the dynamic creation and development of capabilities. At the same time, the case study method is increasingly advocated in respect of research relating to the RBV (Rouse and Daellenbach, 1999; Barney, 2001; Priem and Butler, 2001), where Rouse and Daellenbach (1999) argue for methods that allow the researcher “...to gain an in-depth knowledge and understanding of the organisation and its processes.”

5.2.2 Empirical Work Relating to the RBV

Although studies have attempted to test the RBV empirically (Henderson and Cockburn, 1994; Iansiti and Clark, 1994; Powell, 1992; Powell and Dent-Micallef, 1997; Yeoh and Roth, 1999), empirical research relating to the RBV remains at a preliminary stage (Henderson and Cockburn, 1994; Miller and Shamsie, 1995). The adoption of a multi-method approach to this research aims to address some of the criticism aimed at methodological approaches used in strategy research as well as in resource-based approaches to strategy (Bowen and Wiersema, 1999; Priem and Butler, 2001).

A general criticism aimed at resource-based approaches is the problem of unobservables (Godfrey and Hill, 1995), where most empirical studies infer the existence of competitive advantages from ex post performance observations, but then draw the converse conclusion – that creating competitive advantages ex ante produces sustained superior performance (Powell, 2001). Priem and Butler (2001) argue that simply advising practitioners to obtain rare and valuable resources in order to achieve competitive advantage does not meet Thomas and Tymon's (1982) definition of 'operational validity'. In relation to assessing the importance of initial resources in firm success, the *survey component of the empirical research* aims to assess the contribution of specific resources to firm success similar to the approach taken by Powell and Dent-Micallef in their study of the role of information technology in competitive advantage (Powell and Dent-Micallef, 1997).

Cross-sectional approaches are criticised further in relation to strategy research (Bowen and Wiersema, 1999). The research here examines competitive advantage in respect of two on-line sectors, where the two sectors are chosen for the purpose of comparing entry in respect of new markets characterised by systemic innovation and autonomous innovation respectively (see Section 2.3.1). In relation to the survey, the hypotheses will be tested in respect of individual sectors and comparisons then made between sectors given that coefficients may not be comparable across sectors and across time, where new on-line markets exhibit different levels of maturity. However, it is acknowledged that cross-sectional analysis fails to account for coefficient variation across firms and is a limitation of the methodology (Bowen and Wiersema, 1999).

Cross-sectional approaches are criticised as restraining causal “hows” and “whys” in the *RBV* (Rouse and Daellenbach, 1999; Priem and Butler, 2001), where cross-sectional approaches are static and do not take account of time-related change (Bowen and Wiersema, 1999; Lubatkin and Chatterjee, 1991). More specifically, the importance of introducing a temporal component is cited in relation to studies based on the RBV (Barney, 2001; Priem and Butler, 2001). With relevance to this research, Priem and Butler (2001) acknowledge that an evolutionary approach could be important in illuminating some of the complexity associated with capability development given that a firm’s history is an important antecedent to the development of current capabilities. This research adopts an evolutionary approach in relation to the development of organisational capabilities, where the case study method aims to address the limitations of static approaches. The use of four

case studies here (see Section 5.4.2) aims to compare capability development across different types of entrant and across different sectors with the implicit aim of accounting for firm-specific effects (Bowen and Wiersema, 1999). This approach assumes further importance in light of the choice of empirical site where, given their ubiquity, new on-line markets share few commonalities with respect to the products and services offered.

5.3 CHOICE OF EMPIRICAL SITE

The rapid creation and diffusion of new on-line, consumer markets provides an interesting opportunity to assess competitive advantage in new markets. The growing amount of academic research on various aspects of on-line business is further testimony to the importance of on-line markets as an area for further examination (see Chapter Three). The Internet Service Provider sector and the on-line broking sector are selected for the empirical research on the basis that the innovation implicit in the creation of these new on-line markets provides examples of systemic and autonomous innovation respectively, where it is argued that the role of innovation is central to examining the nature of the challenge of adaptation faced by different types of entrants.

This research captures a period of time in which many new on-line markets have been created, where business-to-consumer (“B2C”) markets are chosen as the empirical site. Given the potential for transformation of existing business models and the creation of new business models (Amit and Zott, 2001), the importance of B2C markets is that they have attracted new entrants in the form of both new and established firms, which enables us to

examine competitive advantage across different types of entrant. Two UK-based on-line sectors are examined to provide examples of different types of innovation: the Internet Service Provider (“ISP”) sector and the on-line broking sector. Additional information regarding the development to-date of these two on-line sectors is provided at the end of this chapter in Sections 5.7.1. and 5.7.2 respectively.

The ISP sector is an entirely new business sector which could not have existed prior to the introduction of on-line technologies. The assumption is that it provides an example of “systemic innovation” (see Section 2.3.1), where an entirely new configuration of resources is required for entry into the ISP market. With the number of Internet users growing rapidly and changing patterns of Internet usage, the ISP sector is central to enabling growth in consumer demand for on-line products and services. With low entry costs and de-regulation occurring in the telecommunications sector, the ISP sector has evolved with respect to both its business model, and the number and types of entrants thereby providing a good example of a sector in which to assess the challenge of firm adaptation. The focus of this research is on dial-up services offered by UK-based ISPs. Although high-speed access will ultimately prevail over present dial-up services, the latter technology is still the main business for consumer ISPs in Europe (Clavreuil and Afrough, 2001), where dial-up remains the most widely-used narrowband technology used by individuals.

Conversely, the on-line broking sector is an example of a new market that has developed alongside a traditional business sector, attracting both new and established entrants. A new business model has been created, with the onus no longer on the broker to

provide advice to the client, but rather with the consumer making the investment decision on the basis of research and other information services provided (Tapscott, Ticoll and Lowy, 2000). However, on-line broking can be considered to be a channel innovation, where existing resources and capabilities along with their configuration are likely to retain value. The assumption is that on-line broking provides an example of “autonomous innovation” (see Section 2.3.1), where the development of on-line broking is unlikely to change the architecture of existing routines.

5.4 SAMPLE DESIGN

Given that new markets are created out of innovation, where innovation is categorised in terms of being either systemic or autonomous, the empirical research is conducted in respect of two on-line sectors, on-line broking and ISPs. A similar approach was adopted by Powell (1992) in his study of competitive advantage, focusing on two industries representing opposite characteristics in his examination of the planning-performance relationship from a resource perspective. Given also that the empirical research needs to assess the comparative adaptability of different types of entrant, the survey research is cross-sectional, while the case studies are selected on the basis of providing representation of new and established firms.

5.4.1 Survey Sample

“Europe does not yet have an established universe of public Internet companies comparable to the US” (Morgan Stanley Dean Witter, 1999).

Within the UK, there is not a sufficiently large population of publicly-traded Internet companies from which to construct a sample of companies within a particular sector or even across sectors. At the same time, most on-line companies, including those who have transformed themselves into on-line companies, are not distinguishable under the limited scope of the SIC classification system (Garbi *et al*, 2000). A solution is found through developing an on-line sampling method, where sampled organisations are selected on the basis of relevant web-based lists or directories of on-line companies (Couper, 2000). Given that an effective sampling frame should accurately represent the elements of the population being studied, an on-line approach to sampling is thought to be representative of the respective on-line populations given that (i) on-line sectors are dynamic and their composition is constantly changing, (ii) there is no single industry classification for firms in any one on-line sector⁵, and (iii) many on-line firms are registered with domain names that are different to the registered name of the parent company where this exists.

Internet Service Providers

For inclusion in the sample, ISPs are defined as those companies providing dial-up Internet access to individual consumers, irrespective of other additional services provided. While

⁵ ‘7375’ is a new SIC classification for “information retrieval companies”, which included the ISP ‘Freeserve’ before it was acquired by French company, Wanadoo. However, many ISPs are classified, if at all, under ‘7220’ software consultancy and supply or ‘7260’ other computer-related activities.

there is no source available regarding the finite population of UK-based ISPs, the aim was to develop a representative sample of the population, where the sample is drawn from three comprehensive, on-line directories: internet-magazine.com, ukdirectory.co.uk and ispa.org.uk. Internet industry magazine 'Internet-magazine.com' provides a comprehensive list of ISPs in the UK, while 'ukdirectory.co.uk' is a leading on-line provider of directories, launching the first directory of web sites in 1997. The ISPA or "Internet Service Providers Association" is an industry organisation which exists to essentially maintain a guarantee of quality for ISPs by ensuring their conformity to a code of conduct. The sample was based on the lists compiled for a related study at the end of August 2000⁶ given that the final eligible sample could provide further information with respect to how the population had changed over time given expectations of industry consolidation.

Combining the three lists, the original sample totalled 525 different ISPs. From this initial sample, a list of eligible ISPs was compiled, totalling 132 ISPs. The major reason for non-eligibility is that the ISP deals only with business customers, although those ISPs whose web sites could not be found were also excluded on the basis that they are considered to no longer exist. Of these 132 ISPs, 23 could not be contacted by telephone and were presumed to no longer exist and a further 3 had been acquired, leaving a final sample of 106 eligible ISPs.

⁶ R.M. Grant and A. Bakhru, 2000. 'Competitive Advantage in On-line Business: Early-mover Advantage and the Relative Performance of Start-up and Established Firms', *Paper presented at the Strategic Management Society 20th Annual Conference, Vancouver.*

On-Line Brokers

On-line brokers are simply a subset of the broker population. APCIMS (Association of Private Client and Investment Managers), an organisation representing the interests of its retail broker membership, provides a web-based directory of the UK on-line broker population. Although membership of APCIMS is voluntary, it claims to represent more than 90% of private client stockbrokers in the UK as well as representing all of the UK's on-line broking firms. APCIMS' list as at the end of August 2001 was used to create the sample of twenty-eight on-line, retail brokers for the research given that the population of on-line brokers had grown significantly since the sample of sixteen brokers was compiled for the earlier study⁷.

Although Deming (1960) noted that the sample size should be increased if there is variability in the sample units, this is not possible in this research. The relatively small population of the on-line broking sector meant that this sample size was necessarily restricted, while the population of UK ISPs appears to have decreased substantially since the sample was collated in August 2000.

5.4.2 Case Study Sample

The aim of the case study research is to build theory in respect of the capability development process. The research design needs to account for different types of firms and different types of innovation and, consequently, a multiple case approach is adopted and

the organisations chosen for the case studies are selected as an intentional sample for theoretical reasons (Glaser and Strauss, 1967; Eisenhardt, 1989).

Deciding how many cases to select is a difficult one; research is necessarily limited by the constraints of both time and cost as well as by the increasing difficulty of gaining research access, particularly in relation to new markets, where issues of confidentiality can arise in competitive, emerging on-line markets and where new companies are more likely to be subject to resource constraints such as the time available for participant involvement. Given that the research aims to assess competitive advantage in respect of different types of entrant and across new markets created out of different types of innovation, four cases are selected. While there is no ideal number of cases, four is the minimum number of cases suggested for theory development (Eisenhardt, 1989). *Four firms are selected: where the aim is to select one new firm and one established firm from each of the two sectors, on-line broking and ISPs. The definition of “new” and “established” firm relates to whether the firm existed prior to entering the on-line market (see Section 5.5.2). The four firms selected are: NatWest Stockbrokers (on-line broking), SELFTrade (on-line broking), Freeserve (ISP) and Aviators Network (ISP). Freeserve is not a pure example of an established firm giving that it represents the corporate venture subsidiary of Dixons that was founded to diversify into the ISP sector. Gaining research access to the ISPs proved more difficult than gaining access to the on-line brokers, where research access was*

⁷ Ibid.

negotiated via APCIMS in return for producing a report relating to some of the research findings⁸.

5.5 RESEARCH DESIGN: SURVEY

With respect to the survey research, the aim is to explain the research design, including the development of hypotheses, operationalisation of variables, data collection as well as the assessment of reliability and validity.

5.5.1 Hypothesis Development

The aim is to develop hypotheses from the propositions developed in Chapter Four (see Section 4.4.1) which can be tested in relation to the survey data :

Hypothesis One (H1)

Those on-line companies with access to the greatest amount of initial resources, including the amount of initial funding, managerial experience and market experience, are the most successful.

⁸ Research access to two on-line brokers was provided via APCIMS in return for sharing the results of the research through a report produced for APCIMS entitled “Developing new organisational capabilities: A comparison of the development of on-line broking at NatWest Stockbrokers and SelfTrade”.

Hypothesis Two (H2)

Market experience relative to managerial experience is a greater determinant of success given autonomous innovation and vice versa given systemic innovation.

Hypothesis Three (H3)

The initial level of funding is a greater determinant of success for on-line companies than either market or managerial experience.

Hypothesis Four (H4)

Given systemic innovation, new firms are more successful than established firms.

Hypothesis Five (H5)

Given autonomous innovation, established firms are more successful than new firms.

5.5.2 Operationalisation of Variables

The aim of the survey is to produce a quantitative data set that can be tested in relation to the first five hypotheses, where the variables are operationalised at the business unit level.

The aim is to test the following regression equation, where a similar approach is adopted by Powell and Dent-Micallef (1997) in testing the role of information technology in competitive advantage from a resource-based approach:

$$\text{CUS}_{it} = a_0 + a_1 \text{IR}_{it} + a_2 \text{ALLI}_{it} + a_3 \text{TYP}_{it} + e_{it}$$

where *i* refers to the firm and *t* to time

Dependent Variable:

CUS Number of on-line customers active in the last 6 months

Independent Variables:

Using factor analysis, “IR” (or Initial Resources) comprises the following three independent variables:

INITIAL Initial amount of funding for on-line venture
MAN Managerial experience
MARKET Market Experience

Other Independent variables:

ALLI Quality of inter-firm relationships⁹
TYP Type of business

Control variables:

TIM Time since trading on-line

CUS

CUS or the no. of active on-line customers acts as the dependent variable, acting as a proxy for firm-level performance in the new market, in line with performance measurement recommendations made by Venkatraman and Ramanujam (1986). CUS is further likely to be correlated with firm performance in markets subject to network externalities and in

⁹ The original aim was to test the affect of inter-firm partnerships and alliances on firm success, although ALLI was removed from the final analysis given the low response rates.

markets where economies of scale exist (see Section 3.3). CUS is defined as the number of on-line customers who have been active in the last six months, given that the definition of an 'active' user may differ across the broking and ISP sectors. Since many of the on-line business units in the sample are either sub-units of larger units or are not publicly-traded companies, performance data is difficult to obtain (Powell, 1992). Similarly, given the relative immaturity of many of these businesses, it is not possible to use measures such as revenue or share prices and even these are considered to be unreliable measures in respect of on-line businesses (Porter, 2001). The size of the customer base is considered to provide a better proxy than other on-line measures such as "reach" (the percentage of Internet users that access the web content of a specific site or property) where reach is more useful in terms of measuring audience rather than customers.

INITIAL

The level of initial funding is measured as the amount invested in the business during the first two years of on-line transacting. While there appears to be no real precedent in the literature with regard to specifying a period over which funding is received, it is argued here that funding should be considered over a period rather than a point in time since firms do not always gain external funding at the time of market entry. A period of two years is selected on the basis that most new businesses fail or exit in the first few years (Stuart and Abetti, 1987), where the probability of firm survival increases with the age of the firm, where Evans (1987a, 1987b) finds that firms that were two years old in 1978 had an 81.45% chance of surviving until 1980.

MANAG

Managerial experience is measured at the level of the individual and focuses on the managerial experience of the top management team, taking into account the following factors: (i) prior general managerial experience measured in years (ii) prior managerial experience in related industry measured in years, and (iii) prior new venture experience.

MARKET

Market experience is measured at the firm level and will comprise of: (i) the time in years since the company has traded in a related field, (ii) the time in years since the parent (if any) has traded in a related field, and (iii) advice from external advisors, i.e. venture capitalists.

TIM

This acts as a control to check for the effect of entry timing or any early mover advantage gained¹⁰.

TYP

This is a dummy variable, where established firms (ETB) =1 and new firms (NEW) =0, where new firms include both start-ups and corporate ventures. ETB are firms which existed prior to the launch of on-line operations and whose on-line operations are operated without the establishment of a separate subsidiary. NEW are firms that didn't exist prior to

¹⁰ Similarly, given the initial inclusion of ALLI, TIM is likely to be highly correlated with the number of alliances/partnerships entered into.

the launch of on-line operations, where these include new firms without parents, which are set up for the purpose of the on-line service or a highly-related activity, where this definition avoids temporal restrictions. While a start-up business venture has been defined by the Strategic Planning Institute as a new business that is viewed as a new source of supply by its customers and a new entrant by its competitors (Robinson, 1990), it is argued here that traditional definitions of start-ups are of less use since the issue here is whether the firm is new at the time of on-line entry. NEW also includes corporate venture units or “spin-off” units of established companies, which have been set up for the purpose of on-line trading or a highly-related activity.

In summary, H1, H2 and H3 will be tested on all firms (both data sets)

H4 will be tested on the ISP sector (systemic innovation)

H5 will be tested on the on-line broking sector (autonomous innovation)

5.5.3 Data Collection

The approach taken for designing and conducting the survey research is primarily informed by Dillman (1978) as part of a systematic approach to ensure maximisation of response rates. A multi-method approach in relation to conducting the survey was adopted to ensure convenience for the respondents, where postal questionnaires were sent out to all companies in the first instance with e-mail and telephone follow-ups. The survey

questionnaire is discussed, focusing on its design along with considerations of reliability and validity.

A multi-mode survey strategy (involving a series of mailings to the respondent – some by mail, some by e-mail) is adopted in this research and is found to be more effective in terms of response rates than contact only by e-mail (Schaefer and Dillman, 1998) with insignificant measurement error effects (Couper, 2000). The decision to send the first mailing of the survey by post is an attempt to confer legitimacy on the survey research and builds further on prior experience gained from a related study¹¹, where it was found that e-mail surveys on their own can be easily dismissed or ignored by the respondent. A few companies were, however, sent a first mailing by e-mail, where a contact address and/or telephone number was not available. This was a problem specific to the ISP sector, where postal addresses were often unobtainable while many telephone numbers were purely customer support numbers, where the customer support operation was often even outsourced to third parties.

Since the research focuses on on-line businesses, it was thought that the use of e-mail for follow-up mailings would be feasible. A contingent approach to the format of the e-mail follow-up was adopted to ensure that respondent preferences were met as well as to encourage as high a response rate as possible, where respondents could return an attached

¹¹ R.M. Grant and A. Bakhru, 2000. 'Competitive Advantage in On-line Business: Early-mover Advantage and the Relative Performance of Start-up and Established Firms', *Paper presented at the Strategic Management Society 20th Annual Conference, Vancouver.*

survey by post or by fax, or they could simply reply to an embedded survey. The earlier related study further showed the importance of telephone follow-up, which was used intermittently to follow-up both postal and e-mail mailings. Telephone follow-up was important in stimulating response rates, where it is recognised that letters often fail to get through to the respondent, having already been filtered out by secretaries or assistants, and where e-mail contact addresses could be inundated. It was pointed out by one respondent from a relatively small company that its one contact e-mail address received over one thousand emails per day. However, pre-notification by telephone was not pursued given the mixed results of this approach (Mitchell and Nugent, 1991) and given that it was considered difficult to establish legitimacy through a short telephone call.

Postal Mailing Process

In order to increase the credibility and legitimacy of the initial postal mailing, questionnaires were commercially printed, accompanied by a covering letter on the business school's notepaper and co-signed by this researcher's supervisor. Similarly, all follow-up e-mails were sent through the business school's e-mail system to enhance legitimacy. The survey was further designed to ensure that its length was kept to a minimum whilst ensuring that the survey objectives were met. All postal questionnaires were addressed to the Chief Executive Officer (CEO) or to the known head of the on-line operation. Prior to sending out the postal questionnaires, any companies for which secondary data could not provide a contact name were contacted personally by telephone.

E-mail Process

Dommeyer and Moriarty (2000) compare sending a survey as an embedded e-mail or as an e-mail attachment, where they show that e-mail surveys which are embedded rather than being attached, yield a higher response rate than those with attached surveys, although they found no differences between the two methods in terms of response speed, number of item omissions, or response bias. With this research, convenience for the respondent was considered to be a priority and, hence, respondents were given the chance to complete an embedded questionnaire or one attached as a PDF file, which could be printed out and faxed or posted back. The advantage of the PDF file was that the format could be controlled in terms of design, while accidental respondent interference with the question layout could be prevented. In fact, most respondents decided to return the embedded survey, although all methods were selected by respondents.

A problem faced by this research is the increased tendency of corporate websites to enable e-mail contact only by entering information through a web-based email system posted on the corporate website. This prevents the sender from attaching files and from sending formatted text, such as that required for a questionnaire. The outcome was that, rather than survey queries being responded to, they appeared to be ignored with the e-mail system acting as a corporate gatekeeper.

Survey Timetable

In line with the use of follow-up mailings (Dillman,1978), the survey mailings were sent as follows (see Table 5.1):

	1 st Mailing	2 nd Mailing	3 rd Mailing	4 th Mailing
On-line Brokers	1/10/01 by post	Telephone follow-up and second post on 1/11/01	E-mail and telephone follow-up on 30/11/01	17/12/01 post by APCIMS with all responses back by Feb 2002
ISPs	16/10/01 by post	Telephone follow-up and email posting on 19/11/01.	Telephone follow-up and email posting on 26/11/01	Final email posting on 8/1/02.

Table 5.1 Survey Timetable

5.5.4 Questionnaire Design

The aim of the questionnaire is to permit the testing of hypotheses outlined in Section 5.5.1. The questions are designed to be generic to on-line businesses, given that respondents include firms from more than one on-line sector. The questionnaire comprises six sections with a total of twenty-two questions (see Appendix 1.0):

Market Experience

The first section of the questionnaire comprises five questions that aim to establish the origins and market experience of the firm. The first question concerns the start of on-line trading and, hence, the timing of new market entry. The second and third questions aim to establish the type of firm, i.e. whether it is a new or established firm, while the fourth question focuses on whether a parent, if it exists, works in a related area. Finally, the fifth

question regarding the number of employees is included as a proxy for size and could be used to help validate whether firm responses are in relation to the on-line unit.

Customers

The section on customers aims to establish the type and size of the customer base, where this section is purposefully placed second given the sensitive nature of the information required. Given that the focus of this research is B2C markets, the sixth question aims to establish the primary customer focus of firms, providing evidence of all customer segments served. Similarly, question seven aims to assess the geographic scope of the firm, where inter-firm differences in respect of the geographic markets served may account for some variation in the size of the customer base across firms. The eighth question seeks to establish the size of the active on-line customer base, which provides the measure of firm performance or dependent variable used in this research. Question nine aims to establish the size of the customer base one year previously, where any trends in the growth of the customer base could be used for explanation-building.

Management

This section aims to measure the level of prior experience of the top management team. In relation to the Chief Executive Officer, the Chief Finance Officer and the Chief Operating Officer respectively, question ten aims to assess their prior senior managerial experience, while question eleven aims to assess their prior related business experience. Finally,

question twelve aims to assess the existence of prior new venture experience in relation to those firms who have set up a new venture to trade on-line.

Business Transformation

This section aims to provide information on how on-line trading has been set up in firms that are either established firms or corporate ventures and serve indirectly as a check on the information providing in the first section. Given that the aim of the research is to assess the impact of initial resources, then the aim of this section was to provide further information on the role of parental resources. In particular, the aim of question thirteen is to assess the level of integration of on-line operations with existing operations, while the aim of question fourteen is to assess the importance of and type of parental resources.

Funding

The three questions in this section aim to establish the amount and type of initial funding, i.e. funding within the first two years of online operation. With regard to question fifteen, the amount of funding is presented as a choice of funding categories given the potential reluctance of respondents to divulge confidential information. Question sixteen aims to establish the source of funding, where the importance of venture capital funding has implications for the development of the MARKET construct (see Appendix 3.0). Finally, question seventeen is included to assess the actual timing of receipt of external funding, if any, relative to the start of on-line operations.

Alliances/Partnerships

As stated in Section 5.5.2, the original aim of the survey was to account for the effect on inter-firm alliances and partnerships on the ability of firms to gain access to resources and capabilities since the start of on-line trading. Questions eighteen to twenty-two were aimed to assess the number of types of alliances held by firms together with an assessment of the quality and perceived benefit of these alliances. However, given the low response rate of the final survey (see Chapter Six), this section was removed from the final analysis.

Reliability and Validity

It is important to assess issues of reliability and validity in relation to the survey questionnaire. The essence of reliability is to ensure that repeat measurements of the same item are consistent, where four methods are identified for assessing the reliability of a measurement scale (Carmines and Zeller, 1979). The *test-retest* method requires that the test is repeated on the same subjects at a later date. The ability to use this method of reliability is rarely feasible in reality, and its use in this research is necessarily constrained by the difficulty of asking busy respondents to repeat the survey a second time. The *alternative-form* method requires that two tests are conducted with the same subjects, where the second test is an alternative version of the first test. Given the bias here towards collecting factual or objective information concerning a firm's entry in new markets, this approach is not applicable in this research. A third test of reliability is the *split-halves method*, which avoids the need to repeat the test on a second occasion by dividing the data collected on one occasion into two halves. A key issue with this approach is to decide the

method of dividing the responses into two data sets. However, given that the respondents in this research include both new and established firms, it is unlikely that any method of dividing the responses would result in a meaningful measure of reliability given that the focus of the research is to compare the responses of different types of entrant within any one sector. Finally, *Cronbach's Alpha* is a test is one of the most widely used measures of internal consistency, where the aim is to measure a concept at a single point in time by several equivalent items (Wright, 1979). However, the use of this measure of inter-item correlation is not applicable in this case. The questionnaire comprises only twenty-two questions, and the relatively short length of the questionnaire is intentional in design to encourage high response rates. Further, given the factual or objective bias of the questions, there is an implicit limitation to the use of multiple measures of the same item. While there are apparent limitations to traditional measures of reliability in respect of the survey, a main consideration in respect of this research is in regard of the use of "scaling" within questions to ensure that repeat measurements can be made if the survey were to be repeated (Moser and Kalton, 1978).

A measure is valid when it measures what it intended to measure (Carmines and Zeller, 1979). A key factor to consider in assessing validity is the extent to which a variable is concrete or abstract (Nunnally, 1978), where the emphasis on this research is on using concrete variables which are well-established and require little further validation. The questionnaire was pre-tested on colleagues within the Department of Management at Cass Business School as well as on contacts employed in on-line businesses to ensure both comprehension of the questions as well as content or face validity.

5.6 RESEARCH DESIGN: CASE STUDIES

The research design of the case study is outlined, where Yin (1994) states that there are five major components of a research design: a study's questions; its propositions, if any; its unit(s) of analysis; the logic linking the data to the propositions and the criteria for interpreting the findings. The study's research questions are presented together with the methods of data collection used and the development of constructs. Finally, considerations of reliability and validity are discussed.

5.6.1 Research Questions

The focus of the case study research is the capability development process in firms, where the case study research aims to develop theory in respect of capability development, accounting for any differences in the capability development process in both new and established firms. Given that the aim of this research is to build theory inductively from the case studies, the aim is to focus on the research questions and develop constructs where necessary (Eisenhardt, 1989). The research question to be addressed is: "*What are the processes through which new and established firms develop capabilities to compete in new markets?*" In order to answer this question, it is further sub-divided into four further research questions as explained in Chapter Four:

3. (a) *What is the role of individuals' knowledge in the creation of new organisational routines?*
- (b) *What is the role of motivation in the capability development process?*

(c) What is the role of codification in the capability development process?

(d) What are the constraints in the capability development process?

The inductive approach adopted in respect of the case study research is in line with Eisenhardt (1989), who recommends the definition of research questions and the development of *a priori* research constructs to create a well-defined focus for the research. While there is always a risk that the development of *a priori* research questions could result in the research being too focused, it is argued that the approach taken here is appropriate given the aims of the research. The research questions focus on the role of individuals' prior knowledge, motivation and codification in the capability development process as well as consideration of any constraints. While these are factors that have been identified in prior research, they would be key factors in any attempt to examine the underlying process of capability development given that they are an attempt to answer the following: what are the origins of capabilities, what motivates firms to develop certain types of capabilities and to the extent that they do, how is the knowledge embodied in routines and capabilities shared and transferred across the organisation and, finally, what constraints do firms face with respect to capability development? The research is exploratory and, in respect of the data analysis, the aim is to understand whether and to what extent these factors alongside any other factors contribute to the overall process of capability development.

5.6.2 Data Collection

This research is concerned with the creation of organisational capabilities and routines, where the appropriate unit of analysis is, hence, the capability development process within the firm or business unit which is developing the on-line product or service. Data was obtained through the conduct of semi-structured interviews with senior management, where Rouse and Daellenbach (1999) advance support for semi-structured interviews in respect of research adopting a resource-based approach. Data was further obtained from archival sources in the form of both internal documents, including press releases, and external documents, such as published articles.

Interviews were conducted throughout the period from April, 2002 to June, 2002 inclusive. Heads of key functional areas were selected for interview given their role in overseeing the development of these functions prior to and since the start of on-line trading. Interviews were each between one and two hours in duration and held at the offices of the interviewee, where interviews were semi-structured, although initial interviews tended to be more open-ended to aid authenticity (Silverman, 2001). All interviews were tape recorded. Archival data included internal documents, such as organ grams as well as annual reports and corporate press releases, as well as external documents such as newspaper articles and reports in the business press as found on the Lexis-Nexus on-line database. Archival data can be usefully juxtaposed to the interview data to check for *“potential systemic biases in retrospective accounts of past strategy”* (Burgelman, 1983; Golden, 1992).

In respect of *NatWest Stockbrokers*, six interviews were held in total with:

Richard Hunter	Head of Dealing Services
David Brown	Head of Information Technology
Michael Poote	Internet Team
Roy Robinson	Head of Operations
Richard Cox	Senior Manager in Operations
Paul Williams	Head of Marketing and Business Development.

In respect of *SELF Trade*, three interviews were held in total with:

Peter Boucher	Director of Communications
Martin Braund	Director of Operations and IT
Colm Long	Head of Customer Relations

In respect of *Freeserve*, five interviews were held in total with:

Deborah Sherry	Director of Channels within the Portal division
Caroline Taylor	Director of Portal Strategy
Kate Wilson	Director of Customer Relations
Imran Ali	Technology Research
Kevin Whitworth	Technology Infrastructure

In respect of *Aviators Network*, four interviews in total were held with:

Monu Ogbe	Owner and Founder of Aviators Network
Andy Nash	former Business Development Manager.

Yin (1994) presents an outline of a typical case study protocol (see Figure 5.1), where an abbreviated form of a case study protocol was developed in relation to developing the procedures for the case study and outlines the semi-structured interview questions used (see Appendix 2.0). The importance of a case study protocol relates to its potential to

increase the reliability of case study research, essential with a multiple case design (Yin, 1994).

<u>Case Study Protocol</u>	
I.	<i>Procedures</i>
A.	Initial Scheduling of the Field Visit Review of Preliminary Information Verification of Access Procedures Special Documents
B.	Determination of Persons to be Interviewed and Other Sources of Information Summary
C.	The Case Study Database
II.	<i>Case Study Protocol and Questions</i>
A.	Definition of ... Topics Summary of Questions for Section A
III	<i>Analysis Plan and Case Study Reports</i>
A.	Individual Case Studies Descriptive Information Explanatory Information Outline of Individual Case Study Reports
B.	Cross-Case Analysis Descriptive Information Explanatory Information Cross-Case Report References for Case Study Protocol
<i>Source: Adapted from Yin (1994:64)</i>	

Figure 5.1 Example of Case Study Protocol

5.6.3 Construct Development

Since there are effectively only four data points with respect to the case study research, it is useful to develop constructs where appropriate to aid the development of a chain of evidence in the final analysis (Eisenhardt, 1989; Yin, 1994). While the focus of prior empirical work on capability development has tended to be restricted to an examination of

the knowledge integration processes underlying capability development (Henderson and Cockburn, 1994; Iansiti and Clark, 1994), it is helpful in informing the development of a construct in relation to a firm's architectural competence.

Prior Empirical Research on Capability Development

With regard to the empirical research focusing specifically on the measurement of organisational capabilities, the most relevant research includes that of Henderson and Cockburn (1994), Iansiti and Clark (1994) and Yeoh and Roth (1999). A key element of this work is the examination of knowledge integration processes that are considered to underlie capability development using a combination of both qualitative and quantitative methods.

Henderson and Cockburn (1994) undertake research on ten pharmaceutical firms in the USA and Europe, using a combination of both qualitative and quantitative methods. They argue that the ability to integrate knowledge across and within the boundaries of the firm is an important determinant of heterogeneous competence at the firm level. They develop constructs to measure the variables "architectural competence" which allows a firm to make use of its component competencies and to develop new architectural and component competencies as they are required, and "component competence" which is defined as the possession of skills or assets specific to particular local activities within the group. With respect to operationalising architectural competence, they refer to the importance of cross-functional teams to exchange rich, detailed information, which is supported by Clark and

Fujimoto (1991), as well as to the allocation of resources, where a decentralised system of resource allocation such as through a governing committee (although slower than where resources are allocated by a single individual) would encourage information flows across internal boundaries. Yeoh and Roth (1999) conduct a similar study into twenty companies within the pharmaceutical industry, where interviews were conducted to identify important resources and capabilities while firm data is collected from publicly-available sources. They use Henderson and Cockburn's (1994) definitions of architectural and component competence, although they operationalise them with respect to firm-specific capabilities such as the measurement of component capabilities with respect to a firm's internal R&D efforts and its therapeutic market focus.

Iansiti and Clark (1994) assess the importance of knowledge integration in respect of the dynamic creation of capabilities across nearly thirty product development projects in two manufacturing sectors, automobiles and computing, where the rate of environmental change differs across sector. They define problem-solving as the basic unit of knowledge creation. Problem-solving activity consists of two stages: concept development and implementation, where the focus of the former is on external knowledge integration while that of the latter is on internal knowledge integration. Dynamic capability may be measured by (i) its consistent performance across projects executed in a broad variety of environments and (ii) its consistent improvement in performance over time. They state that a firm's ability to perform positively on a consistent basis is based on its capacity to respond to contingencies, which is ultimately centred on a firm's capacity for integration.

Developing Constructs

Constructs are developed to support the analysis of the case data (see Table 5.2), aiming to increase the content validity of the data within cases and to increase reliability across cases. Measures for constructs are derived from the theoretical discussion in Section 4.4.2.

Organisational Routines

The concept of “organisational routines” is central to understanding the process of capability development. Routines or a number of interacting routines can be considered to form the constituent parts or “building blocks” of capabilities (Grant, 1991), where routines perform a co-ordinating role within the organisation, acting as an interface for the transfer of individuals’ specialised knowledge, embodying both codified and tacit knowledge. However, while there is a common understanding as to the role of routines, there is little agreement on what routines actually are (Cohen et al, 1996). Cohen et al (1996) provide the following definition: *“a routine is an executable capability for repeated performance in some context that has been learned by an organisation in response to selective pressures”*, where capability here refers simply to the capacity to generate action. While this research does not have the benefit of prior empirical precedent, the aim is to assess how routines are created within the development of key organisational processes. While a process can be considered to be a method of operation with an emphasis on outcomes, such as Amazon’s “one-click ordering” process, routines can be considered to comprise one or more (often repetitive) tasks, such as answering a phone call or responding to a client enquiry. In practice, it is likely that the distinction between process

and routine is a notional one, where processes arguably may consist of one or more routines and where the terms are likely to be used interchangeably.

Individuals' Knowledge

In relation to the first research question (3a), the prior organisational experience of respondents will act as the measure of individuals' knowledge.

Motivation

In relation to the second research question (3b), a firm's motivation with respect to capability development will be measured with respect to the firm's aspirations as expressed by the firm's senior management.

Codification

In relation to the third research question (3c), the documentation of organisational routines (in written format) will act as the measure of codification.

Architectural and Component Strengths

In relation to the fourth research question (3d), a critical issue is to examine the extent to which existing organisational routines act as a constraint on the capability development process and, hence, the extent to which firms are able to develop an architectural competence. Following the example of Henderson and Cockburn (1994), architectural competence is considered in relation to cross-functional task co-ordination.

Construct/ Variable	Measure	Source of Data	Level
Organisational Routines	One or more sets of (repetitive) tasks	Semi-structured Interviews	Firm
Individuals' knowledge	Prior Organisational Experience	Semi-structured Interviews	Individual
Codification of Organisational Routines	Documentation of Organisational Routines	Semi-structured Interviews	Firm
Motivation	Aspirations	Semi-structured Interviews	Firm
Architectural Competence	Cross-Functional Task Co-ordination	Semi-structured Interviews	Firm

Table 5.2 Case Study Constructs

Validity and Reliability

It is important to ensure that the case study research is designed to meet the requirements of construct, internal and external validity as well as reliability (Yin, 1994). The use of correct operational measures for the concepts being studied is recommended for the improvement of construct validity. A central aim of the case studies is to develop theory in respect of the process of capability development, and the choice of constructs is informed by existing theory and by empirical precedent. To ensure multiple sources of evidence, archival data and organisational documents have been accessed where possible, while the interview process focuses on multiple respondents within each firm. All interviews were subsequently written-up in note form and validated by respondents to ensure corroboration

of factual data as well as to receive feedback comments on subjective interpretation (Jobber and Lucas, 2000; Silverman, 2001).

The importance of internal validity is with respect to determining causal relationships within the research. This research is exploratory with regard to developing our understanding of capability development and research questions are based on prior, related research. The importance of developing a chain of evidence is important to explanation-building necessary to enhance the internal validity of the research.

The ability to generalise from case studies is one of the most widely cited criticisms of case study research. The replication of case studies is considered to be important for increasing the external validity of the research, where the logic underlying the use of multiple case studies can be considered in relation to the ability to a) produce similar results (“literal replication”) or b) produce contrasting results but for predictable reasons (“theoretical replication”) (Yin, 1994). In this research, the logic underlying replication can be considered to be theoretical, where the aim is to assess the process of capability development across different types of firms in different sectors. The four cases have been selected to maximise the differences between the cases studied. The importance of replication is further cited in relation to resource-based studies where it is argued that only with repetition can the argument of coincidence be countered (Godfrey and Hill, 1995).

The development of a case study protocol and the use of semi-structured interviews go some way to increasing the reliability of the case studies (Yin, 1994; Jobber and Lucas, 2000). As Brenner (1981) states, there is a need to serve the “*equivalence of the stimulus*”

conditions in the interviews". At the same time, assessing whether there is overlap between interpretations of the firm's evolution between respondents adds further to the reliability of the study and is an example of data source triangulation (Patton, 1987). Although methodological triangulation is not applicable here, given the research focus on internal processes, it is possible to compare respondent accounts of the firm's historical development against archival evidence (Silverman, 2001).

The results of the survey and the case study research is presented in Chapters Six and Seven respectively.

5.7 INDUSTRY BACKGROUND

Further information relating to the development to-date of the UK-based on-line broking and ISP sectors is presented.

5.7.1 On-Line Broking

There has been a large scale migration of financial services to the Internet, where the UK retail broking sector, dealing with end-user investors, provides an example of a sector which has embraced on-line technologies. On-line broking has grown rapidly since its inception with growth in both the number of on-line clients and the number of on-line transactions. Despite regulatory barriers to entry for new firms, the sector has witnessed

the entry of both new and established firms seeking to take advantage of new market opportunities, where the on-line business model has attracted a new retail segment.

Growth in On-line Broking

In October 1999, the UK on-line market was estimated to comprise around 50,000 investors against a level of approximately 400,000 investors in early 2002¹². Similarly, in early 2000, it was reported that almost 10% of all trades on the LSE (“London Stock Exchange”) were executed on-line while, at the end of 2001, APCIMS (“Association of Private Client Investment Managers and Stockbrokers”) reported that on-line trades account for approximately one-third of all execution-only trades, where the number of on-line accounts continued to rise with the average on-line trade size at £3,835 compared to £5,603 for telephone trades. The rise of dot.com and technology stocks served to drive the expansion in retail trading, where investor sentiment was fuelled by expectations that delays in investing would lead to missed market opportunities. However, with the downturn in tech stocks and the end of the dot.com era, trading volumes have since come under pressure in the UK. This downturn in volumes was further compounded in the aftermath of the attack on the US World Trade Centre in September 2001. APCIMS reported that daily retail volumes fell from a level of 60,000 bargains during 2000 and the first half of 2001 to 47,000 per day in the second half of 2001. In fact, they reported that the number of bargains or trades were down 16.1% in the third quarter of 2001 on the preceding quarter, while execution-only firms cut staffing levels by 12%. However, the market recovered in the fourth quarter of 2001, with APCIMS reporting a rise of 34% in

trading volumes in the fourth quarter of 2001 from third quarter levels (see Figure 5.2), with Angela Knight, Chief Executive of APCIMS, stating that overall activity has now returned to 1999 levels. In spite of persistent downward stock market pressure, there has continued to be growth in the number of on-line accounts in the UK market; APCIMS reported an increase in the number of on-line accounts from 346,000 in the fourth quarter of 2001 to 370,000 in the second quarter of 2002.

(Source: www.apcims.co.uk)

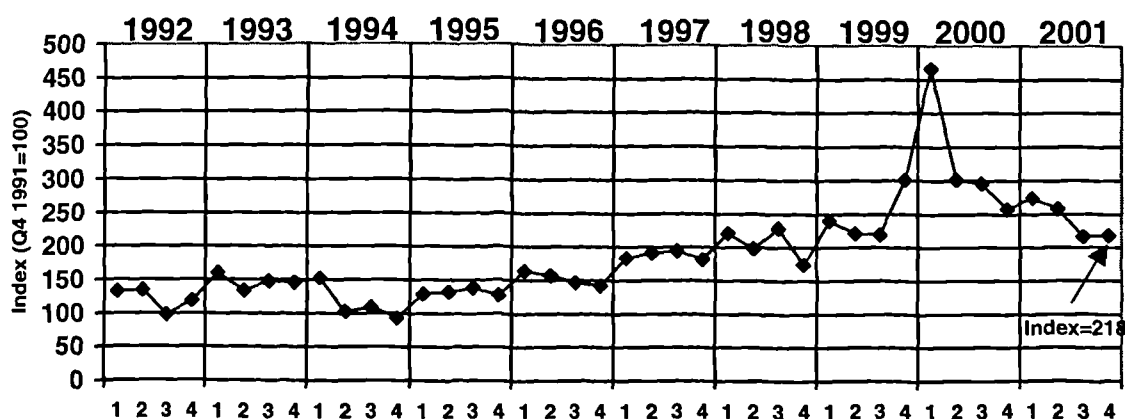


Figure 5.2 APCIMS/ComPeer Index (Trading Volumes)

The UK retail market is still relatively small in comparison to other European markets. There are approximately 400,000 on-line accounts in the UK amongst 12.9 million private shareholders, where fifty-two per cent of the latter hold shares in only one company as a result of share privatisations and corporate de-mutualisations. However, the proportion of adults trading on-line across Europe is expected to rise from 2.35% at March 2001 to

¹² 'European Online Brokers', Report by Salmon Smith Barney, March 2001.

7.17% by the end of 2003 (against a US level of 16% at March 2001).¹³ Two main reasons are cited for the restriction in growth of the UK on-line broking market: stamp duty and paper share certificates. Stamp duty is a tax payable on all share purchases and is charged at 0.5% of the value of the shares, a rate higher than comparable taxes in most other major European markets and the US. Paperless trading is more suited to on-line trading. It is possible via nominee accounts, although shareholders do not appear on the company's register and, hence, are sometimes not eligible for certain company benefits. Nominee accounts are the most common type of account in the UK. The advantage is that shareholders are not issued with share certificates, so that investors do not have to wait for a certificate before they are allowed to trade. Buying or selling of shares is completed electronically through the CREST system which links banks, stockbrokers and company registrars. The newest type of account is the CREST-sponsored member account. It is the fastest way to trade shares as well as being the most expensive since holders have to pay the stock exchange as well as the broker. Investors gain the benefit of effectively being registered as a broker as well as being registered as a shareholder and, hence, being entitled to the benefits thereof.

On-line Broking: Creating a New Business Model

The share dealing or broking industry can be considered to consist of three main market segments: execution-only, advisory and discretionary. Although brokers tend to specialise in one of these three segments, some are full-service brokers offering all the main types of service. Execution-only services are essentially "no frills" services; in return for lower

¹³ *Ibid.*

costs, investors do not receive investment advice and a broker will simply act upon the investor's trading instructions. Commissions are charged per trade, either as a flat fee or, more generally, as a percentage of the amount traded, subject to a minimum or a maximum amount of shares or value of shares traded. Advisory services are aimed at investors who require advice as part of their broking service, although investors are responsible for making the final decision as to any investment. Given the level of personal contact and advice, advisory services tend to be more expensive than execution-only services. In addition to commission charged, investors are charged an annual fee for the advisory service, currently anything from approximately £40 up to £250. Finally, discretionary services are the most comprehensive services offered by the broking industry; investment portfolios are managed by the broker, where investment decisions are made by the broker on behalf of a client. Clients are usually required to invest a *minimum initial* amount of £20,000 but more usually on investment amounts of £50,000 and upwards.

On-line broking can be considered to be a sub-segment of the execution-only segment of broking where, since the abolition of fixed commissions in October 1986, execution-only services have grown in terms of popularity and market share. A new business model has emerged with the on-line broking model arguably seeking to enhance the *customer* experience as well as the service offered by utilising the properties of the Internet.

On-line brokers at their most basic level of service, offer support for their customers to manage their own investments (a "DIY" model of investing) and execute trades as specified by the client (see Figure 5.3). The two primary sources of revenue are

transaction fees and net interest income from margin lending. Contact with the company is mainly on-line, where customers can transact on-line and gain customer support on a twenty-four basis, although trades are executed only in market hours. Central to this business model is the ability of investors to access investment research and information on-line combined with access to software tools for investment and portfolio management. Key to this business model is the level of customer confidence in the reliability and security of the IT systems that execute trades and in the quality of customer support.

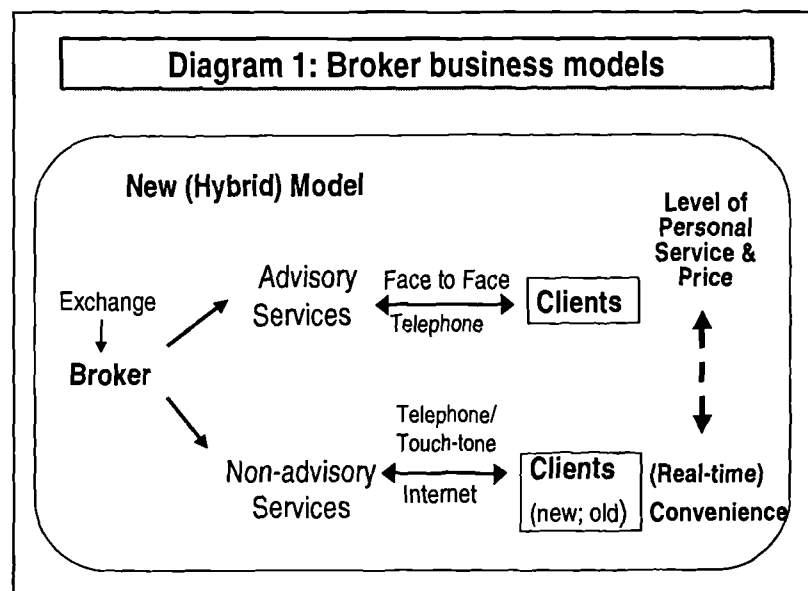


Figure 5.3 Broker Business Models (adapted from Bakhru and Brown, 2002)

Complementary Nature of On-line Broking

The development of Internet technologies can be considered to be continuous (related to progress along a technological trajectory), although the impact of the Internet on businesses can be considered to be continuous or discontinuous (related to the emergence

of a new technological paradigm), depending on the industry or sector under consideration (Dosi, 1992).

On-line broking is arguably a process innovation, where clients transact with brokers via the new on-line channel, although it could also be considered a product/service innovation in that the nature of the product/service itself has fundamentally changed, since the key success factor has shifted from providing “quality of advice” to “quality of information”. It is suggested here that, although on-line broking has changed the traditional business model for brokers, the level of innovation necessary to enter on-line broking is autonomous, where the nature of change is essentially complementary to the existing business model given the information-based nature of the broking. Not only can prices, news and information be displayed on-line, but information can be displayed in real-time in a searchable format. The complementary nature of on-line broking to traditional broking suggests that existing resources and capabilities are likely to retain value with the majority of new on-line entrants likely to be established companies for the most part, as borne out by APCIMS on-line directory of brokers.¹⁴

Market Entry

Given the complementary nature of the on-line business model to the existing execution-only business model, the majority of new on-line entrants tend to be those companies already established in the UK broking market. However, there are significant barriers to entry within the financial services sector, where brokers are regulated in the UK by the

Financial Services Authority Given that on-line broking is a sub-segment of traditional broking, the burden of additional regulation is less severe for established brokers relative to new firms. Broking is an industry where economies of scale are important in light of the high fixed costs of the business. Firm size can therefore act as a barrier to entry in an industry, where distribution and growing the customer base are central to gaining the trading volumes and, hence, critical mass necessary for survival.

The potential for further entry by new firms in the UK market looks weak. Market concentration is likely to increase further as trading volumes come under pressure in the subdued market environment experienced since the tech stock decline. UK-based on-line start-up, Sharepeople, was the first casualty of 2001, when it was taken over by American Express. Founded by Neil Stapley, a former Managing Director of NatWest Stockbrokers, and backed by a group of financial investors including Goldman Sachs and GE Capital, it was bought by American Express for GBP30mn in December 2000 with around 18,000 accounts. DLJDirect has since also been taken over by TD Waterhouse and will be integrated in to the latter's service. Torrie (which runs FasTrade) has been taken over by Charles Stanley, which runs Xest, where Xest and FasTrade will be merged under the FasTrade brand¹⁵. At the same time, the UK on-line broker market is becoming more competitive. With twenty-eight on-line brokers at the start of 2002, there is continued downward pressure on trading commissions. Several brokers charge flat rates of less than

¹⁴ www.apcims.co.uk

¹⁵ *Investors Chronicle*, 20/12/01

£10 per deal. Although this is more than the £6 per deal witnessed in the US, it is significantly less than telephone deal rates of £30 or more.

Demand-side factors are likely to gain in importance, where the retail investor segment, particularly the execution-only segment, is the most vulnerable in terms of volatility of volumes. The experience of the 1987 stock market crash showed that market downturns tend to be accompanied by a decline in retail investor confidence leading to a fall in retail trading volumes. The market downturn saw execution-only trading volumes fall by twenty-five per cent between 2000 and 2001, while advice-based trading rose by 11 per cent, according to APCIMS/ComPeer.

5.7.2 ISP's

The ISP sector is part of the new “web-specific” sector which could not have existed prior to the existence of the Internet. ISPs form part of the Internet infrastructure layer of the World Wide Web and are the gateway through which end users gain access to the web, where increased Internet usage is dependent on users and potential users gaining Internet access. The ISP sector has evolved rapidly as would be expected prior to the emergence of a “dominant design” (Abernathy and Utterback, 1978), where a primary influence on the evolution of the B2C sector has been the response of companies to find sustainable revenue models in a changing market environment and where the sector has been subject to de-regulation of the telecommunications sector.

Growth in the UK ISP sector

The ISP sector has witnessed rapid growth given the increasing number of Internet users and the decreasing costs of gaining Internet access. The number of on-line users continues to grow, where the number of UK households using the Internet has grown from twenty-eight per cent in 2000 to thirty-two per cent in 2001¹⁶. At the same time, the average cost to European users to access the Internet, for 20 hours per month at peak times, fell by 24 per cent, between October 1999 and September 2000, and 21 per cent at off-peak times, according to the OECD¹⁷.

Evolution of the Business Model

Internet access has become increasingly commoditised as the market matures and the cost of on-line access reduces. The subscription-based ISP model has given way to alternative business models as companies seek new ways to generate revenues; there have been three main periods of development with respect to the ISP business model, where 1995 onwards is widely considered to mark the onset of the Internet era, following Netscape's IPO:

1995- 1998 Subscription Model

(Users are charged for dial-up access as well as the cost of phone calls)

1998- 2000 Free Model

(Emergence of the free ISP, where users pay for call usage and not for access)

2000- Flat Rate Model

(Launch of unmetered dial-up services in return for fee to telecoms supplier)

¹⁶ '2001 UK Residential Internet Service Provider (ISP) Customer Satisfaction Study', A report by J.D. Power and Associates, 2001.

¹⁷ www.oecd.org/dsti/sti/it/stats/isp-price99.htm

The dominant business model at the time of the emergence of the ISP sector was the subscription model, where users paid an ISP for Internet access while also paying their telecoms supplier for call usage while on-line. Demon Internet, set up in 1992, is widely considered to be the first mover in the UK, offering end users Internet access and establishing a subscription fee of ten pounds per month as a benchmark (see Figure 5.4). With the subscription model, the call would be delivered into the public telecommunications operator's (PTO's) switch. The PTO would determine that the call was for the ISP and hand it over to the telecom operator that the ISP had contracted to deliver the inbound call. A direct wholesale model of the above would be similar, although there would be no in-bound operator, with the ISP receiving a share of the call charge directly from the PTO.

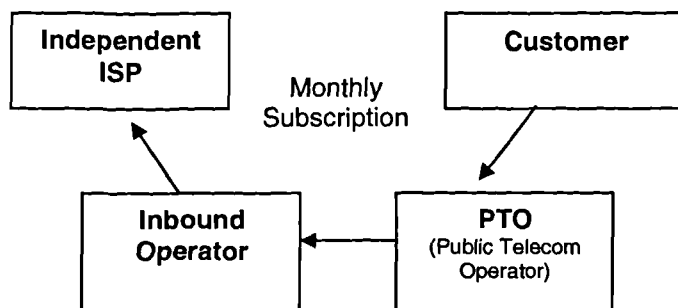


Figure 5.4 Subscription Model of Retail Dial-up Internet Access (Morgan Stanley Dean Witter, 1999)

The first significant challenge to the subscription model, however, was the “free ISP” model introduced by Freeserve, an ISP set up by UK electrical retailer Dixon in late 1998. The period of rapid growth in the UK ISP sector and the corresponding growth in

subscribers is largely attributable to the “free” business model, where subscribers were not charged by providers for use of the ISP with users paying only for the cost of their telephone calls. Providers were able to subsidise their free service on two accounts: by earning advertising and e-commerce revenues and by receiving some of the call charge back from the telecoms provider (sometimes called “interconnection fees”). However, ISPs receive only a small proportion of the call revenues generated by users when they dial into the network at local call rates. Under the initial deal struck with Energis, a UK telephone company, Freeserve received forty per cent of the revenues from these calls. The majority of this revenue was handed over to Planet Online, the Energis-owned company that provides the infrastructure for Freeserve with Freeserve ultimately retaining just four per cent of the call revenues its users generate¹⁸. The main assumption underlying the development of the free business model is that one revenue stream (subscriptions) can be sacrificed for potentially larger revenue streams from advertising and e-commerce. It was at this stage that the ISP business model transformed itself from one focused on providing access to one focusing more on content. The changes appeared to favour a portal-based approach, encouraging ISPs to increase their advertising and e-commerce revenues

The promise of the “free ISP” model was short-lived, less than two years in total. It has proved unsustainable primarily as a result of three factors. First, given the downturn in advertising revenues, the interconnection revenues shared with telecoms companies no longer proved viable to sustain the lack of subscription revenues. At the same time increasing pressure towards de-regulation of the local loop in the UK has led to few

¹⁸ *Financial Times*, 8/10/99

opportunities for ISPs to participate in revenue-sharing opportunities with telecommunications companies¹⁹. And finally, it became apparent that consumers increasingly preferred the reassurance of flat rate or unmetered access. US experience had shown that the average time spent on the Internet rose four-fold from fifteen minutes a day to more than one hour following the introduction of unmetered charges (Clavreuil and Afrough, 2001). Portal, Alta Vista, was the first to announce in March 2000 that it wanted to launch an ISP service, where users are charged a fee instead of being charged per telephone call, although unmetered access or FRIACO (Flat Rate Internet Access Call Origination) was not approved by OFTEL, the telecoms regulator, until June 2000 and was finally rolled out from February, 2001. Under FRIACO, the ISP is charged for the number of lines taken from BT rather than the amount of traffic flowing over them.

The ISP Value Chain

A full internet service comprises IP network services, Internet access services, service-related functions and portal services (see Figure 5.5). The term “virtual” is apposite for many ISPs given that the business is suited to a virtual organisational structure, where different components of the value chain tend to be outsourced. “Virtual ISPs” (or VISPs) outsource their operation centre management as well as their network services to a wholesaler. Although VISPs are common where the company’s main business or the

¹⁹ European Union legislation approved a regulation forcing incumbent operators to open up local loops from January 1 2001. “Local loop unbundling” is opening up the “last mile”. The Internet backbone is a number of linked high-speed networks through which data are transmitted (routed) using the Internet Protocol (IP). The local loop is the link for the end user to a central switch, which in turn is connected to the backbone, either directly or through further network connections.

parent's main activity isn't Internet access, even an ISP such as AOL is a VISP, dealing only with the provision of content and the supply of its portal site to its customers.

ISPs can either build and maintain their own Internet Protocol ("IP") infrastructure or outsource the network services to a Network Service Provider. Where IP capacity is ubiquitous and cheap, ISPs tend to buy capacity rather than invest. For those owning their own infrastructure, they are able to diversify their sources of revenue by offering wholesale IP services. However, consumer ISPs relative to business-to-business ISPs tend not to develop their own infrastructure not only because of the difficulties in gaining financing for such an investment but also because of the potential to earn a quicker return on investment by offering value-added services.

Full Internet Service			
Network	Access	Services	Portal
Backbone, IP Traffic, peering, POPs	Dial/Broadband Subscription/Free/Unmetered	CRM, Web Space, pricing/billing, marketing and distribution	Gaming, content, e- commerce

Figure 5.5 The ISP Value Chain (Adapted from Clavreuil and Afrough, 2001)

In contrast, the advantages for the consumer ISPs of incumbent telecom operators are great in terms of access to the parent's extensive network and the availability of large number of POPs ("Points of Presence" or access points to the Internet with unique Internet Protocol

(IP) addresses) and where a truly virtual ISP needs to give around 50% of its call generated revenues to its backbone provider (Clavreuil and Afrough, 2001).

With the commoditisation of the access business, there is increased focus on providing value-added services in content and applications, from the well-established areas of web design and web site hosting to the more advanced application hosting or voice over IP telephony. However, in a US survey it was shown that residential customers are generally unwilling to pay for additional services, even for more Web spaces and email addresses, and most consumer ISPs will find it difficult to increase these revenues unless they persuade customers to adopt new access technologies like high-speed access, or pay for value-added services like training, e-mail filtering and anti-virus protection²⁰. In other words, while marketing a wider range of services to existing customers is likely to be more cost-effective than recruiting new subscribers as well as raising the level of customer switching costs, the target audience of value-added services tend to be businesses rather than consumers. Instead, many consumer ISPs have tended to expand their portals, making them the second pillar of their business, where the strategy is to inform, advertise, sell and implicitly to entertain customers.

Customer service is a key criteria for customers in choosing an ISP and is usually offered online and via telephone support. The service or support function is not simply a cost centre and can generate revenue where customers are charged a fee by the minute,

²⁰ *The ISP market: Challenges and strategies for the future*, A report by Internet.com, 2001.

although smaller ISPs tend to outsource this activity, given that the high fixed cost nature of developing a customer support function may be prohibitive with small subscriber bases. Billing software can often also allow the integration of customer support which allows customer relationship management. However, with most subscription-free and unmetered services, the billing relationship is not handled by the ISP, where this important relationship is increasingly being handled by the telecoms operator.

Market Entry

Growth in the population of the ISP sector has been rapid, given the low barriers to entry and the rise in consumer demand for dial-up services. However, evolution of the business model combined with de-regulation of the “local loop” have provided opportunities for late entrant incumbents as well as to those ISPs which have established market share advantages.

New firms rather than incumbent telecommunication operators are the early movers in the ISP sector and account for the majority of new entrants given that there are few barriers to entry. *There are few government or regulatory barriers to entry and start-up costs for an ISP are low. “Entry costs are low in all but the most technical of frontier activities. It is cheap to put up a web page. It is cheap to open an ISP”* (Greenstein, 2000: 157). The cost of setting up an ISP is relatively small, particularly given the “Virtual ISP” model adopted by many companies, while the revenue model (based on subscription charges and interconnection fees) was sustainable. Within the UK, independent local or regional ISPs

were able to attract customers, focusing on customer service and providing local or community-based content (Armstrong and Hagel, 1996). Unlike the rest of Europe, the fastest-growing ISP in the UK market is Freeserve, an offshoot of retailer Dixon, not an ISP owned and operated by a major incumbent PTO such as Wanadoo in France, T-Online in Germany or Videotex Nederland in the Netherlands (Morgan Stanley Dean Witter, 1999).

The move to a “free ISP” business model, and later unmetered dial-up services, combined with the slowdown in the advertising market brought about a shakeout of smaller ISPs in 2000. Although the growth in unmetered dial-up services was largely driven by the potential for advertising revenues and was thought to ultimately favour ISPs (Clavreuil and Afrough, 2001), many of the smaller ISPs were not able to enhance their revenues through e-commerce or advertising given the importance of network externalities and the size of the customer base. Advertising revenues became increasingly concentrated amongst a few leading web sites, where the on-line advertising market in Europe is small relative to the US, worth around one billion Euros at the end of 2000²¹.

Following the Internet slowdown in 2000, many consumer ISPs became casualties and consolidation changed the shape of the ISP landscape. Four main types of ISP dominated the UK market from 2001 onwards in terms of market share: unrelated entrants, telecom companies, cable companies and media companies. Entrants gaining market share include ISPs run by incumbent telecoms operators, such as BT, and cable companies, who appear

to have been significant beneficiaries of the move to unmetered dial-up access. Moreover, since the emergence of subscription-free ISPs and unmetered access, incumbent telecom operators ISPs have been able to leverage their billing relationships with their customers, a powerful tool in terms of gaining customer lock-in as well as acting as a source of customer information.

²¹ *Financial Times*, 6/12/00

CHAPTER SIX SURVEY: RESULTS AND ANALYSIS

6.1 INTRODUCTION

The survey is designed to test the theoretical model presented in Chapter Four with respect to the role of initial resources and capabilities at the time of new market entry and the relative advantage of different types of entrant, where the hypotheses are tested in respect of two on-line sectors in the UK: ISPs and on-line brokers. The aim is to assess the importance of specific resources and capabilities for firm success in new markets as well as to assess the importance of initial resources relative to other factors such as entry timing and type of entrant. A key limitation of this research is the low nominal level of responses in respect of the survey, although the actual response rates are in line with previous research when account is taken of the small size of the two sample populations (Jobber, Allen and Oakland, 1985). Given the small number of data points, analysis of the survey results includes an emphasis on the individual responses of firms. It is argued that the survey is a useful exercise in this research, providing empirical support for the relationship between initial resources and firm success in new markets and thereby providing additional evidence for the role of initial resources and capabilities in new market entry.

6.2 ON-LINE BROKING SURVEY RESULTS

Of the twenty-eight brokers sampled for the survey, sixteen responses were received or a response rate of fifty-seven per cent. Of these sixteen firms, eleven are established firms

with five new firms, four of which are corporate ventures and one is a start-up. The majority of new entrants are established firms already trading as brokers, which is expected given that the innovation in creating the new on-line market is considered to be autonomous. As at February 2002, all respondent firms had been operating on-line for a minimum of 12 months and a maximum of 53 months, with a mean time spent of 30.4 *months*.

Of the sixteen responses received, twelve complete responses are used for the data analysis. However, given the low nominal level of responses, the hypotheses can not be tested, but the data can be used to investigate correlation²². Factor analysis cannot be used to develop the construct Initial Resources (IR) or the constructs for its three components: the initial level of funding (INITIAL), the level of prior management experience (MAN), and the level of prior market experience (MARKET) (see Section 5.5.2). Instead, indices are created for the measurement of constructs (see Appendix 3.0), where IR and its constituent constructs are correlated against CUS or the number of active on-line customers (see Table 6.1). In order to examine the various correlations, including the relationship between the IR resources index and its component indices, Pearson's one-tailed test of significance was used. From the correlation matrix (see Table 6.1), it can be seen that there is no positive correlation between the three measures of resources used to develop the initial resources index (IR), which demonstrates that each of the initial resources are independent of each other.

N=12	INITIAL (1)	MAN (2)	MARKET (3)	IR (4)	CUS (5)	TIM (6)
1	-					
2	-0.257 (0.210)	-				
3	-0.274 (0.194)	-0.324 (0.152)	-			
4	0.806** (0.001)	0.043 (0.448)	0.136 (0.337)	-		
5	0.482 (0.056)	-0.190 (0.277)	0.158 (0.312)	0.531* (0.038)	-	
6	0.277 (0.192)	0.235 (0.231)	-0.167 (0.302)	0.329 (0.148)	0.638* (0.013)	-

* $\rho < 0.05$ ** $\rho < 0.01$

Table 6.1 Correlation Matrix using Pearson's 1-tailed significance (Brokers)

With regard to the correlation matrix, there are three significant correlations: the relationship between IR and CUS, the relationship between INITIAL and IR and the relationship between CUS and TIM. With respect to H1, the aim is to test the relationship between the level of initial resources and firm success. There is a correlation of 0.531 between IR and CUS, which is statistically significant at the 0.05 level (1-tailed), suggesting that there is empirical support for our theoretical model in terms of there being a positive relationship between initial resources and firm success, where CUS is used as the measure of firm performance or success. However, taking account of time, it is shown

²² As Wright (1979) explains, the Pearson correlation coefficient is a widely used measure of the goodness of fit of the regression line to the data, where it indicates the strength or magnitude of the relationship between the two variables as well as the direction of the relationship.

that the correlation between time since on-line entry (TIM) and CUS is 0.638, where $p < 0.05$. In other words, there is a relationship between order of entry and firm success in the on-line broking sector.

With respect to H3, the aim is to test whether the initial level of funding is a greater determinant of success for companies entering new markets than either market or managerial experience. While there is a statistically significant correlation of 0.806 between INITIAL and IR, there is not a significant correlation between INITIAL and CUS. In other words, while initial funding appears to be an important component of IR, there is no empirical support for H3.

While there is no empirical support for H2 and H3, it is further shown that H5 is not supported, where the aim of H5 is to test the success of established firms relative to new firms given autonomous innovation. The mean size of the customer base of the different types of firms are compared (see Table 6.2); while there appears to be little difference in the mean size of established firms and corporate ventures, the original data shows that the three largest firms by on-line customer base are established firms with customer bases substantially larger than the mean size.

Type of Firm	n	Mean Size of CUS
Start Up	1	2000
Corporate Venture	3	27,333
New	4	21,000
Established	8	27,789

Table 6 2 Comparison of Mean Size of CUS Brokers)

A one sample t-test procedure can be used to test whether the mean of a single variable differs from a specified constant. A one sample t-test is used to test the null hypothesis that there is no difference between the mean size of the customer base for established firms and 21,000, where this figure represents the mean size of the customer base of new firms, both start-up firms and corporate ventures. The null hypothesis is accepted, given that $t(7) = 0.535$; $p > 0.05$. In other words, there is no support for the hypothesis that established firms are likely to be more successful than new firms.

6.3 ISP SURVEY RESULTS

Of the ISPs sampled for the survey, 106 are considered to be eligible with thirteen responses received or a response rate of 12.3 per cent, where twelve complete responses are used for the data analysis. However, given the nominally low level of responses, the hypotheses can not be tested, but the data is used to investigate correlation. Factor analysis can not be used to develop the construct Initial Resources (IR) or the constructs for its three components: the initial level of funding (INITIAL), the level of prior management experience (MAN), and the level of prior market experience (MARKET) (see Section 5.5.2). Instead, indices are created for the measurement of constructs (see Appendix 3.0), where IR and its constituent constructs are correlated against CUS or the number of active on-line customers (see Table 6.3).

The average time spent on-line by firms is a minimum of 26 months with a maximum of 80 months with a mean time spent on-line trading of 59 months. Five out of the twelve

complete responses are established firms already trading in a related area, with the remainder being new firms, either start-ups or corporate ventures. In order to test the various correlations, including the relationship between the IR resources index and its component indices, Pearson's one-tailed test of significance is used. From the correlation matrix (see Table 6.3), it can be seen that there is no significant correlation between the three measures of resources used to develop the initial resources index (IR).

N=12	INITIAL (1)	MAN (2)	MARKET (3)	IR (4)	CUS (5)	TIM (6)
1	-					
2	0.230 (0.236)	-				
3	0.175 (0.293)	-0.030 (0.463)	-			
4	0.700** (0.006)	0.769** (0.002)	0.418 (0.088)	-		
5	0.913** (0.000)	0.295 (0.176)	0.228 (0.238)	0.718** (0.004)	-	
6	0.234 (0.221)	-0.290 (0.168)	-0.088 (0.387)	-0.125 (0.342)	0.039 (0.452)	-

** $p < 0.01$

Table 6.3 Correlation using Pearson's 1-tailed significance (ISPs)

With respect to the correlation matrix (see Table 6.3), there are a number of significant correlations: INITIAL and IR; INITIAL and CUS; MAN and IR; and IR and CUS. With respect to H1, the aim is to test the relationship between the level of initial resources and firm success. There is support for the hypothesis where the correlation between IR and

CUS is 0.718, statistically significant at the 0.01 level (1-tailed). Similar to the broking sector, however, account must be taken of timing factors. The correlation between time since on-line entry (TIM) and CUS is 0.039 ($\rho > 0.05$), and there is no relationship between order of entry and firm success in the ISP sector.

With respect to H3, the aim is to test whether the initial level of funding is a greater determinant of success for companies entering new markets than either market or managerial experience. While the correlations between MAN and CUS and between MARKET and CUS are not significant, there is support for the hypothesis where the correlation between INITIAL and CUS is 0.913 and significant at the 0.01 level. The suggestion is that there is a strong relationship between the initial level of funding and firm success in the ISP sector.

While the aim of H2 is to establish that market experience is a greater determinant of success than managerial experience for firms entering new markets subject to autonomous innovation and vice versa for new markets subject to systemic innovation, there is no empirical support for the hypothesis. However, there is support for H4, where the aim is to test whether new firms are more successful than established firms given systemic innovation. The mean size of the customer base of the different types of firms are compared, where the data shows that the mean size of the customer base of either start-ups or corporate ventures is larger than that of established companies, although there is

variation in the size of corporate ventures and established firms as shown by the median size of CUS by firm type (see Table 6.4).

<u>Type of Firm</u>	<u>n</u>	<u>Mean Size of CUS</u>	<u>Median Size of CUS</u>
<i>Start-Up</i>	2	18,875	18,875
<i>Corporate Venture</i>	5	431,460	5,000
New	7	313,578.6	7,750
Established	5	10,616	650

Table 6.4 Comparison of Mean Size of CUS (ISP's)

A one sample t-test is used to test the null hypothesis that there is no difference between the mean size of the customer base for established firms and 313,578.6, where this figure represents the mean size of the customer base of new firms, both start-up firms and corporate ventures. The null hypothesis is rejected, given that $t(4) = -30.752$; $\rho < 0.05$, and it is shown that there is a significant difference at the 0.05 level between the mean size of the customer base of established and new firms respectively and there is support for the hypothesis.

6.4 ANALYSIS AND CONCLUSIONS OF COMBINED SURVEY RESULTS

The main finding of the survey is that, in both sectors, the level of initial resources is significantly positively correlated with the size of the on-line customer base, providing empirical support for the theoretical model developed in Chapter Four. However, it is necessary to take account of temporal effects given that (i) the size of the customer base is likely to increase with time and (ii) on-line sectors are more likely to be subject to entry timing advantages given the potential for network externalities. In fact, it is found that

order of entry effects are significant in the broking sector but not in the ISP sector. One reason for this difference may be attributable to the relative maturity of the sectors. Although research has shown that order of entry effects are not necessarily sustained over relatively long periods of time (Boulding and Christen, 2001), order of entry effects are likely to be more evident the less mature the market, where the on-line broking sector is less mature than the ISP sector. Another reason for this difference may relate to the fact that early entry is likely to be advantageous in sectors subject to economies of scale. Given the high fixed costs of on-line broking, the advantages of entry timing may relate to the imperative to gain a critical mass of customers, where this is likely to be reflected in the geographic scope of the targeted customer base. From the original survey data, it is shown that no on-line broker considers itself to be targeting a local customer base with only one of the twelve firms targeting a regional customer base. Conversely, of the twelve respondents in the ISP sector, five firms consider themselves to be regionally-focused with one ISP considering itself to be locally-focused.

A key finding of this research is that, with the exception of the role of initial funding in the ISP sector, it has not been possible to empirically support the role of specific resources in firm success and, in particular, the relative importance of resources in markets created out of different types of innovation. Financial resources are fungible and, hence, their usefulness relates to the notion of resource flexibility where they can be used to acquire or develop other resources. The assumption is that the importance of the initial level of funding can assume particular importance in sectors subject to network externalities, such

as many on-line sectors, where the emphasis is on growing the customer base as quickly as possible. However, the correlation between initial funding and success is statistically significant in the ISP sector, where this could be attributable either to the nature of the innovation implicit or to the type of new entrant or even to both factors. There is likely to be a greater emphasis on the role of initial funding given systemic innovation, where firms are more likely to be faced with the challenge of developing operations from scratch and where existing resources and capabilities are unlikely to retain value for established firms. At the same time, the majority of new entrants in sectors subject to systemic innovation are likely to be new firms, as with the ISP sector, given the nature of the capability-based challenge and given that the survival of new firms has been linked to the initial level of funding (Lussier, 1995).

However, the issue is not simply to explain why there is a relationship between initial funding and firm performance, but rather to explain why the relationship between initial funding and performance is apparently superior to that of either market experience and performance or managerial experience and performance. One suggestion is that there are greater inter-firm differentials with respect to initial funding than with respect to either market or managerial experience respectively. This does not negate the strength of the relationship between initial funding and firm performance but rather points to the greater homogeneity across firms with respect to levels of prior market or managerial experience. With respect to the broking sector, there is less uniformity of initial funding levels, where these assume the full range of possible funding levels, while this pattern is not repeated in

the ISP sector, where there is greater homogeneity across firms with respect to initial funding levels than to either market or managerial experience. Hence, another explanation is sought, where this might relate more directly to the essence of a resource-based approach.

The variables used to measure MAN and MARKET respectively are temporally focused and do not attempt to gather the richness of detail behind the qualitative nature of prior experience given its complexity. With respect to prior market experience, the role of complementary resources and capabilities are assumed to be implicitly bound up with notions of related or relevant market experience. Similarly, with regard to the measurement of prior managerial experience, the categories aim to capture the totality of experience within a specified time period. However, it is the richness of this prior experience and how it is applied in the context of new market entry that is the essence of the theoretical model developed. The model assumes that initial resources and capabilities are important for firm success, although it further assumes that competitive advantage in new markets is ultimately dependent on a firm's ability to adapt. While the survey aims to provide insight into the relative importance of resources and capabilities gained through prior experience, it is limited in the extent to which it can assess directly how firms are able to channel this experience. What is interesting is that the survey is able to highlight the importance of a firm's bundle of resources at the time of market entry, although this methodological approach is necessarily unable to show the process of resource co-ordination that is

considered central to firm success and that is likely to account for the greatest inter-firm *performance differentials*.

With regard to the comparative success of different types of entrant, the samples show that established companies outnumber new firms in markets created by autonomous innovation and vice versa for markets created by systemic innovation. With respect to the ISP sector, there is a significant difference between the mean size of the customer base of new vs. established firms, where the success of new firms in markets subject to systemic innovation is supported. However, the broking sector shows that established firms are not *relatively more successful than new firms given autonomous innovation*. The reason for this anomaly is most likely accounted for by the fact that the majority of new firms are corporate ventures rather than start-ups, and hence are able to leverage the resources and capabilities of the parent, including its human resources as well as important complementary assets such as the existing customer base.

Although the survey is based on small samples, the main conclusion of the survey is that there is *empirical support for the role of initial resources and capabilities at the time of new market entry*, where there is a significant correlation between initial resources and firm performance in respect of both the ISP sector and the on-line broking sector. Given that this finding is consistent across sectors, it increases the reliability of the findings and, hence, the likelihood that the relationship between initial resources and firm performance

is not a spurious one²³. The results point to the importance of considering initial resources and capabilities as a bundle of assets rather than considering them in isolation of each other. As such, the usefulness of this finding is that it captures the physical reality of how resources and capabilities are combined in operation, where arguably combinations of assets can be considered to be worth more than the sum of the parts. The survey serves further to reinforce the theoretical model developed in Chapter Four in terms of supporting the argument that it is the process of resource combination and, hence, resource co-ordination that is likely to be a source of inter-firm performance differentials. However, any repetition of the survey approach used here is unlikely to develop this research further, where the results of the survey serve to conclude that there is an imperative to examine the dynamic processes underlying resource *co-ordination or capability development*.

6.5 LIMITATIONS OF THE SURVEY

The main limitations of the survey relate to the small number of survey responses and, in particular, the low response rate in the ISP sector; and finally to the methodological approach adopted.

6.5.1 Low Response Rates

Organisational surveys are subject to increasingly low response rates (Tomaskovic-Devey et al, 1994), where response rates are often below twenty per cent and can be in single

²³ Pigano (1998) states that there are four possible explanations for correlation between two variables X and Y: (1) the correlation between X and Y is spurious, (2) X is the cause of Y, (3) Y is the cause of X or (4) a

figures where samples are drawn from industrial populations (Jobber, Allen and Oakland, 1985). The low response rates are disappointing and the deterioration in e-mail survey response rates are thought to have contributed to a low response rate in addition to context-specific factors.

Economic and Political Factors

The importance of contextual factors in assessing response rates is a factor in this research. The timing of the survey coincided with significant political and economic events taking place in autumn 2001. Concern over economic recession in the US and the rest of the world were exacerbated by the economic and political consequences of the terrorist bombing of the World Trade Centre buildings in New York on September 11th, 2001. At a time of economic and political uncertainty, companies are likely to be less predisposed to answering a survey which seeks to analyse corporate success. In fact, the impact of the respondents' level of interest in the topic on response rates can be significant, where respondents are shown to be twice as likely to respond to a survey if they are interested in the topic than if they aren't interested in the topic (Martin, 1994).

Sector-Specific Considerations

By using telephone follow-ups to increase survey response, it is found that there may be sector-specific considerations which need to be taken into account in explaining lower than anticipated response rates. Many respondents cited that they are inundated on a daily or weekly basis with survey requests, where the on-line broking and ISP sectors both appear

third variable is the cause of the correlation between X and Y.

to be subject to substantial survey interest from both management researchers and market research consultancies. Within the ISP sector, ten of the firms called specifically stated that they were too busy or not sufficiently interested to answer the survey. Some respondents expressed a preference for answering academic surveys over commercially-inspired surveys, a finding supported by Schneider and Johnson (1995), although it was admitted that a cursory inspection of new e-mails didn't always enable them to distinguish between the different sources of surveys.

Organisation-Specific Factors

Tomaskovic et al (1994) discuss reasons of motive, authority and capacity for non-response within organisations. Organisations have different motives for replying to surveys; organisations that are dependent on the environment for their resources may be more inclined to answer external requests for information. As this research has found, publicly-traded firms are more likely to disclose firm-specific information including performance figures. Promises of academic confidentiality may provoke scepticism in managers, whose individual motivations may be affected by their authority to respond to questions as well as by their personal motivation to respond. The size of the respondent organisation may also be a factor in non-response, where large organisations may have a better developed and more routinised organisational capacity to respond to requests for information, although dispersal of information may prove a barrier to survey response. In fact, Tomaskovic et al (1994) found that motivation to respond is very important in

explaining non-response, which explains the significant impact that the economic and political environment is thought to have had on non-response in this survey.

Limitations of E-Mail Surveys

Sproull (1986) advocates that the use of e-mail might produce higher response rates at a lower cost than either questionnaires or interview, with the medium being a convenient one where messages can be sent in a matter of seconds and can be read at the convenience of recipients. However, the anticipation of high response rates have not matched the cost advantages that have been realised (Weible and Wallace, 1998). Research shows that e-mail response rates are generally lower than with postal surveys (Oppermann, 1995; Dommeyer and Moriarty, 2000). Similarly, Schuldt and Tottten (1994) found that the response rate for their e-mail survey was 19.3% vs. 56.5% for the postal survey. Despite Sproull's (1986) early optimism with regard to the use of electronic mail for data collection, it is the view here that e-mail provides a useful follow-up method but is less adequate as a stand-alone survey method. One of the main drawbacks of e-mail as a medium for survey research is that e-mails can be easily ignored or deleted, especially when e-mail saturation has become a real issue for many corporate employees. Oppermann (1995) states that it is easy to delete a survey on e-mail, which does not lie around on the desk for completion at a later date. Incorrect e-mail addresses can further be an issue, where the recipient has a low incentive to forward the e-mail on to the most appropriate individual. The experience of this research is that the deterioration in e-mail response rates is likely to be a response to e-mail saturation, especially survey e-mail saturation.

6.5.2 Non-Response Bias

One of the potential hazards from a low-response rate is non-response bias, where there is a potential difference in the responses of respondents and non-respondents (Martin, 1994). Within the broking sector, it is considered that the non-responses and incomplete responses do not affect the research in terms of non-response bias. Given that the majority of firms in the sector are established firms, as confirmed by APCIMS' record of the on-line broking population, the four incomplete responses consisted of three established companies and one corporate venture, still leaving a representative sample for the data analysis of eight established companies, three corporate ventures and one start-up. While it is not possible to establish non-respondent bias with respect to the ISP sample, the fact that only 106 ISPs were eligible for the survey following an initial sample of 525 ISPs suggests that many firms were new, where they have not survived, have since been acquired or even have re-focused on the B2B sector in order to survive. The initial expectation that the sample would be biased towards new firms is met in the sample of respondents.

6.5.3 Limitation of Methodological Approach

The survey is useful as a first attempt to test the role of firm endowments of resources and capabilities at the time of new market entry. The implication of the findings, however, suggest that there are limits to the methodological approach used. In so far as the usefulness of resources and capabilities at the time of new market entry relates ultimately to how these assets are used in meeting the challenge of adaptation, then any attempt to assess how initial resources impact firm performance ultimately requires an assessment of

the processes through which firms are able to utilise these resources or apply the relevant prior experience gained. In other words, it is unlikely that a survey approach can be used to gain a better understanding of the dynamic processes through which firms are able to adapt. The next chapter aims to better explain the underlying processes of adaptation, where the results of the four case studies are presented.

CHAPTER SEVEN CASE STUDIES: RESULTS AND ANALYSIS

7.1 INTRODUCTION

The aim of this chapter is to present and analyse the data in respect of the four cases. Given the complex nature of capability development, a focus on organisational structure and processes provides the empirical lens through which the data is presented in respect of each of the cases. The suggestion is that capability development can be viewed in terms of the organisational structures and managerial processes which support productive activity (Teece, Pisano and Shuen, 1997; Miller et al, 2002), and where the development of capabilities within established firms is considered to become increasingly bound by the organisational structure and the technical and managerial systems (Leonard-Barton, 1992). Data is presented chronologically given the assumption of path dependence in capability development. Further, given that there are only four data points in respect of the case study research, assessing events in the firm's history can prove useful given that these are often critical in the firm's historical development (March et al, 1991) and where Henderson and Cockburn (1994) advocate the use of a narrative history as a structuring device to increase the probability of tracing changes in organisational structure or processes over time. The data is then analysed across cases with respect to answering the research questions (see Sections 4.4.2 and 5.6.1) and to account for similarities and differences (Eisenhardt, 1989).

7.2 CASE ONE: NATWEST STOCKBROKERS

This case follows the development of on-line broking operations at NatWest Stockbrokers (“NWS”). NWS was incorporated on the 14th November, 1985, setting up its on-line broking operations at the end of 1999. With over 350 employees, NWS is the third largest broker in the UK, ranked alongside Barclays Stockbrokers and Charles Schwab, and it executes around one million deals per year or around thirteen per cent of all retail trades in the UK on an average day. It is a wholly-owned subsidiary of NatWest Bank which, in turn, was acquired in March 2000 by the global banking and financial services group, Royal Bank of Scotland (“RBS”)²⁴. At the beginning of 2002, RBS ranked as the second largest banking group in the UK and the fifth largest in the world by market capitalisation. NatWest Bank is part of the Wealth Management Division at RBS, operating alongside RBS’s private banking and investment management operations, such as Coutts. Following the sale of its private client business to Collins Stewart at the end of May 2001, NWS is now purely an execution-only broker.

7.2.1 BrokerLine Service

BrokerLine (“BL”) is NWS’s low cost, execution-only Internet and telephone share dealing service. The on-line dealing service was launched at the peak of on-line dealing in January 2000, shortly before the technology stocks collapse in spring 2000. BL has approximately 55,000 active customer accounts, i.e. those customers dealing or who retain

²⁴ In March 2000, RBS acquired the National Westminster Group in a £21 billion deal.

their active status by paying an annual fee, where approximately half of these accounts trade on-line.

The share dealing service offered by BL is a low cost, “no frills” dealing service, charging commission from £15 per trade or 1% on deals worth up to £4000 or less. BL differentiates its price according to trading channel, although the maximum commission that can be charged for an on-line trade is capped at £40. Dealing is offered up to 24 hours a day, 7 days a week in over 1400 UK stocks, where clients can trade up to £15,000 in value on any one stock. (Currently, international shares can only be traded via the phone, where trades are executed through the International Retail Service and are priced in sterling. Each trade costs the investor £65 on a £1000 share investment, although the investor is exposed to currency risk if sterling appreciates). A “straight-through” execution system is operated, which means that when investors contact a broker or order a buy or sell online, the price quoted is the one at which they trade, provided they trade within one minute, the period during which the price is held. Although BL is primarily an execution-only service, it offers an optional advisory service as part of its telephone service for an extra £100 plus Value Added Tax per annum.

The firm accepts on-line trades for certificate-based trades as well as “paperless” trades, where the shares are held in electronic form, although clients are charged an extra five pounds per trade for the former. Paperless trading is enabled where the client holds a nominee account or a CREST account. A nominee account is where shares are held on the clients’ behalf, thereby enabling prompt settlement within three business days of trading (“T+3”), while a CREST account enables clients to hold shares in electronic form.

7.2.2 Aspirations

Integration of on-line operations within existing operations was one of the company's original objectives. From the customer's perspective, the aim was to create a system where there was no real difference in terms of the trading experience following the customer phoning or clicking a button on the web site. The realisation of an on-line broking operation was essentially determined by its parent's motivation in early 1999 to offer an Internet proposition for both its banking and its share dealing operations. For NWS itself, the motivation for developing on-line trading was largely for defensive reasons, recognising that an on-line offering was necessary in light of competitors' offerings. Its original aspirations were to create a simple, efficient on-line broking service, focused on offering a competitive price as well as ensuring reliability through offering an effective settlement service. NWS's web interface is simple in design and is not functionally rich, being designed to offer a service that is "user-friendly" in line with its aspirations to set up a simple, efficient broking service. Although a daily on-line research report is provided, the emphasis has been on providing stock-specific information relevant to transacting rather than to educate new clients. New accounts cannot be set up on-line for credit reasons although clients can request application forms on-line. Richard Hunter, Head of Dealing Services, states:

"You will find that our site, certainly in comparison to some of the others, is not that exciting, but it is very functional. And when you've got things like price improvement kicking in and the fact that you know you are going to get your money on settlement day – you know, they are as important as the look and feel of a site..."

A similar emphasis on the system's simplicity and efficiency is made by David Brown, Head of IT:

"To be fair, the system now...perhaps it's not market-leading in terms of the number of services it provides, but it is a good service...and behind the scenes, it is quite efficient."

7.2.3 Organisational Structure

NWS has essentially three main business activities: acting as the share dealing hub for the RBS Group, providing corporate and employee services, and providing an execution-only broking service through its BL service (see Figure 7.1).

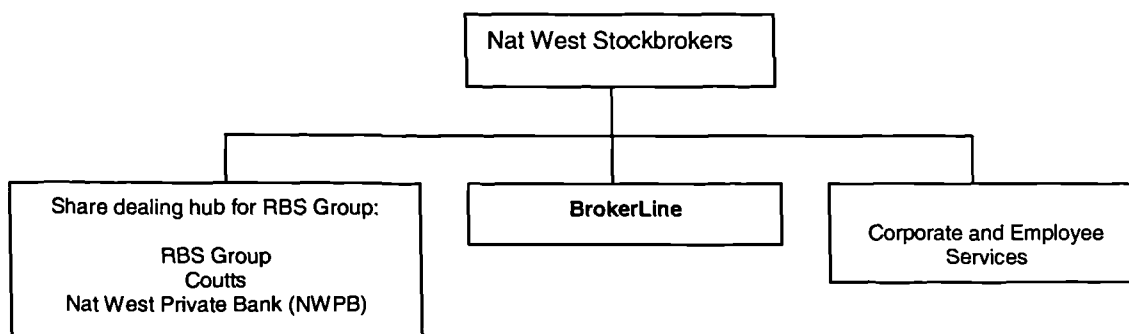


Figure 7.1 Core Activities of NWS Stockbrokers

Although it is primarily a retail broker, NWS offers share dealing services to corporates through its 'Corporate and Employee Services' group. Dealing on behalf of a third of the FTSE 100 companies, NWS's corporate services provide dealing services for executive and employee shareholder schemes and executive stock option schemes. Finally, there is

BrokerLine (“BL”), the direct (or “execution-only”) share dealing service for retail clients, which is operated by NWS’s dealing services division, itself employing approximately 100 employees. This research is to focus on the development of on-line operations which have been set up as part of BL, which offers an integrated dealing service, where customers have the choice of dealing by the Internet or by phone.

The organisational structure of the BL operations and that of the NWS group were largely unchanged by the introduction of on-line broking. According to Richard Hunter, the organisational structure of BL subsequent to the introduction of on-line dealing was essentially unchanged:

“It mirrors exactly the business that was there, i.e. there is a dealing function, there’s a help desk function, then there’s operations who settle the trade and, alongside that, you know, you’ve got the compliance function overseeing – they’ve had a little bit more work to do because it was a slightly different set of terms and conditions that we’ve had to introduce.”

The core functional areas were unchanged, consisting of dealing, customer support (help desk), operations (trade settlement), and compliance. However, there have been some changes with regard to functional responsibilities, where there has been an attempt to focus on client needs. Prior to the development of on-line dealing, the dealing services were organised along client lines, i.e. a BL team, a Coutts team, a branch team and so on. Now dealing personnel deal across client types, and a new “client relationship” team has been attached to the dealing desk, responsible both for taking client orders as well as for gaining client feedback. The dealing services group is now divided into the following areas: customer support and operations, client relations, dealers, and research and publications

(see Figure 7.2). Given the nature of the on-line service, the customer support or help desk is now operated on a twenty-four hour basis, outside of normal trading hours (8.30am-4.30pm).

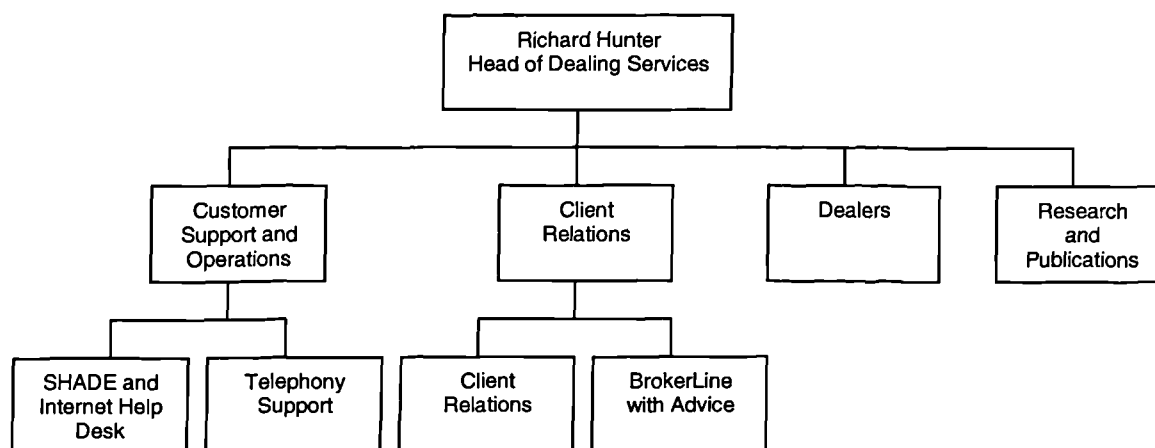


Figure 7.2 NWS Dealing Services Division, March 2002

7.2.4 Development of Functional Capabilities

The development of an on-line dealing service at NWS is an addition to the existing execution-only broking service or essentially a channel extension. Both the development and the operation of the on-line service has been carried out within the existing organisational structure, with the on-line operation operating as part of BL, the existing execution-only broking service. Development of the on-line service has had little impact on the dealing services division, of which the BL service is part. Similarly, with the exception of the IT or technology function, other core functional areas within NWS, such as operations and marketing, were largely unaffected by the development of an on-line

dealing service. The key challenge for NWS was to develop the requisite technical capabilities.

Prior On-line Development

The development of an on-line trading capability was managed by the IT group as a large-scale IT project, similar to any other major technological development. However, the on-line service officially launched in January 2000 was not NWS's first attempt at developing an on-line dealing capability.

The SHADE System

NWS could be considered to be one of the true pioneers of electronic trading given the existence of its branch-based automated trading system ("SHADE"). SHADE can be considered to be the precursor to the current on-line share dealing service, where it was launched in 1986 at the time of the share privatisations in the UK, a period of growth in the mass retail customer segment. SHADE still operates and is currently available through around 400 NatWest bank branches in the UK, providing clients with the opportunity to deal shares at "live" prices, while all administration and payment is conducted immediately at the time of trade. In spite of its prior experience with SHADE, NWS still faced the key challenge of developing an Internet-based trading system.

First Pilot

Prior to the completion of the Internet-based system launched at the end of 1999, NWS had developed two pilot systems. Over a few months between 1997 and 1998, a project called “Goblin” was a relatively successful pilot. The aim was to develop an Internet-based application for the front end interface, the “Goblin Front End”, which would be integrated into the existing SHADE system of dealing. Further development of the project was curtailed primarily as a result of a change in the strategic priorities of the parent, the NWS banking group, which was refocusing on its retail banking strategy at the time.

Second Pilot

In the second half of 1998, NWS began independently to develop an on-line broking service. Following the experience of the Goblin pilot, NWS realised that its existing legacy skills would not enable it to develop the Internet-based front end application it needed. It worked with on-line financial information provider ICB Primark (now owned by financial publishing conglomerate, Thomson) to develop a pilot on-line capability. Following an internal review, ICB Primark decided that the on-line broking market was not mature enough to justify going ahead with the project. Instead, the company recommended a third party software applications developer, MBA Systems in Hampshire, which is a specialist in developing financial trading systems.

It was agreed that the software code developed by Primark could be retained by NWS and used in conjunction with MBA Systems. It was not long before NWS went “live” with the

second pilot system in the second quarter of 1999. Internet-based dealing orders were received and placed on a server which then inputted the order into front and back office trading systems²⁵. It was an interactive system, not simply an email-based system, where an electronic message was created and not simply a text message via email. The pilot ran successfully for several months with around one hundred existing clients, allowing NWS to learn from the experience.

It was not until March 1999 that NWS's on-line ambitions were fully realised when the NWS group decided that it wanted to offer an Internet proposition to both its banking and its broking clients, with the timing of the intended launch anticipated to take place in November, 1999.

Front End Technological Development

NWS was simply given two key criteria by its parent with regard to the development of the Internet-based system:

- (1) Orders should be subject to straight-through processing
- (2) A guaranteed pricing feature should be built into the service

Both of these criteria were features of the existing trading system. In other words, development of an entirely new trading system was not required. Instead, the aim was to develop new component applications that would integrate into the existing trading system.

²⁵ The terms "front office" and "back office" are notional terms used to describe the dealing and the non-dealing (support and operations) activities of a brokerage.

NWS required a front end web interface to be developed that would integrate with its existing trading (Order Routing System) and back office systems. The on-line system that was developed in the second pilot would also be used as the basis for the development of the final Internet-based trading system.

From a technological point of view, the challenge was considerable, according to David Brown, Head of Information Technology, both in terms of the applications development and the infrastructure development. Existing legacy skills were not relevant and NWS would require the services of a third party provider (“MBA Systems”) to develop the software applications. While some of the business logic could be re-used, the underlying technologies and the system infrastructure had changed.

Applications Development

With respect to applications development, there was a need to design the web pages to interact with customers in a secure environment as well as to develop the business logic that linked the various interactions, such as interpretation of customer requests made on the web page and then retrieving information from databases and back office systems. With respect to the business logic, the emphasis was on re-usability, with the aim being to use the business logic within the SHADE system, such as that used to guarantee trading prices. Since SHADE is operated via a network of 400 NWS Bank branches across the UK, this was achieved through assuming that the Internet was simply a further branch in the SHADE network (see Figure 7.3). New business logic was required for the interactive

nature of the web-based system; the Order Routing System (“ORS”) needed to send messages back to the Internet system with details of the transaction as well as an email back to the customer with the trade details while a “History” component creates a unique historic trading record for each customer which can be retrieved on-line by the latter. Internet orders received out of market hours further need to be stored sequentially and are sent via a Batch Sender to be transacted when the market re-opens.

With an on-line trade, there is the potential for the complete transaction process to be totally automated, taking less than a second in time to transact, given the client has a “paperless account” such as a nominee account or a CREST account. Client orders are routed through to the Order Routing System (“ORS”), which receives live price quotes from the London Stock Exchange (“LSE”) via a ‘Sequence’ feed, which shows the best buying and selling price, i.e. bid-offer spread. Orders are received in a variety of ways: (i) via telephone (with orders for NWPB placed through a direct link) and (ii) through the SHADE system, where Internet-based orders are transacted through SHADE. At the same time, trades are executed through the RSP’s (‘Retail Service Providers’ and formerly known as market-makers). The ORS has further pre-arranged with several RSP’s a system whereby the order is simultaneously routed to them via a set of hard-coded algorithms within the ORS to see if a price better than that shown through Sequence can be dealt for clients. Clients, which see the LSE price only, automatically deal at the second price via the RSP’s if it is better. Only if the stock is not automated, such as a fixed income security such as a gilt, is it then passed to in-house dealers.

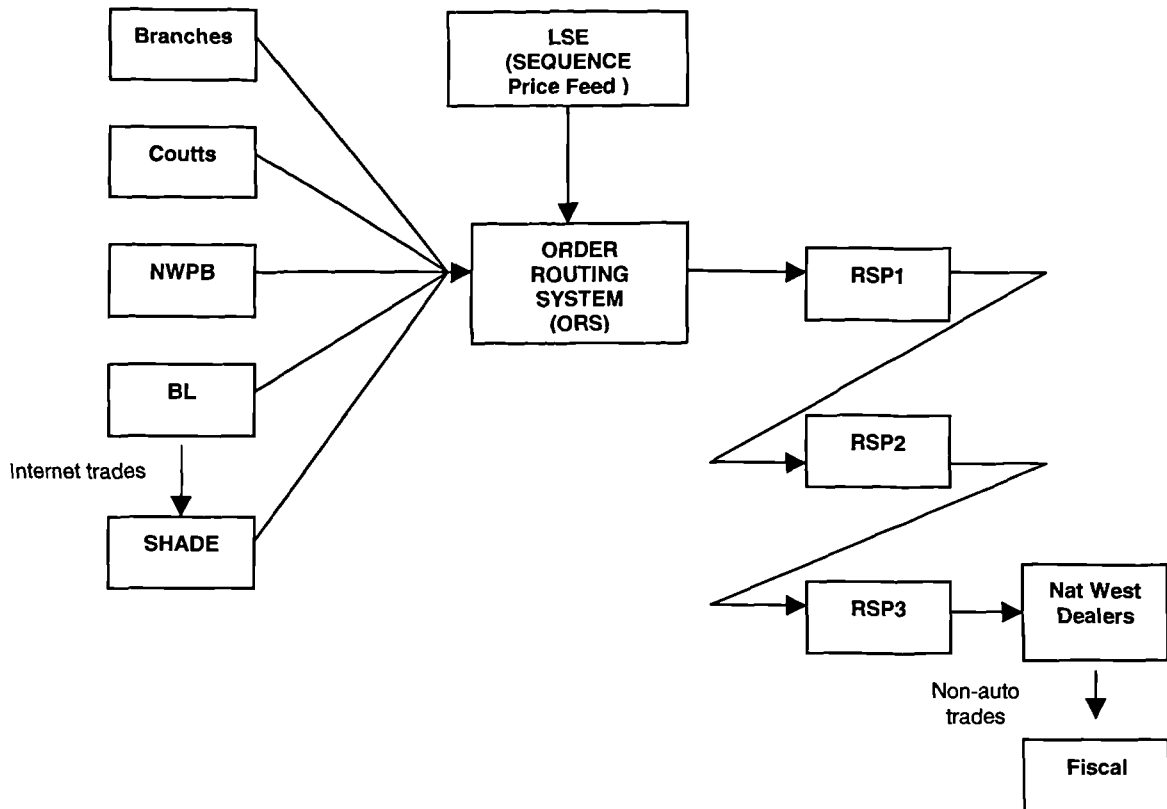


Figure 7.3 Transactions Process at NWS

Infrastructure Development

The challenge of creating a new infrastructure was essentially the challenge of creating a secure environment for the trading system including all of the applications together with managing system capacity. The infrastructure included the servers, the firewalls, the firewall software as well as the data lines based on IP (“Internet Protocol”). Trading effectively takes place in the “Dematerialised Zone” (DMZ), accessed by registered clients via a password, which is protected by security firewalls on either side (see Figure 7.4). The firewalls are encrypted to 128-bit, the highest level of security currently possible.

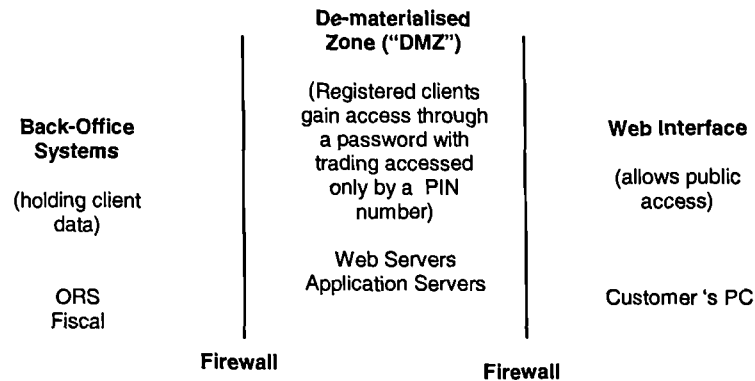


Figure 7.4 Internet Trading System Infrastructure

The central concern with regard to system capacity relates to ensuring that there are sufficient servers to service customers. Given the information-based nature of on-line trading, customers' on-line sessions can be of a relatively long duration. The aim is to ensure efficient "load-balancing", a process ensuring that the server capacity is scaleable, managing overall capacity as well as managing the customer experience at times of peak demand.

By assessing the technical requirements of developing an Internet-based system, it becomes apparent that the development of on-line trading is essentially a technological innovation within the confines of the IT division and with little impact on other functional areas, such as marketing or operations/settlements. The new service was marketed to existing clients only while, with regard to operations, the development of on-line trading has required the development of an interface between the Internet and the existing ORS and not between the Internet and the back office settlements system. From an operational standpoint, trades are identified by the business unit from which they originate (NWS

channel) and not by trading channel. In other words, trades are identified as originating from BL, irrespective of whether they were transacted by phone or by Internet. The operations group handles both certificates and dematerialised (“paperless”) trades, where both types of trade can be dealt on-line with the only difference being the time taken to settle trades. The settlements system is highly scalable; the operations function is already highly routinised in light of the repetitive nature of tasks and the volume of trades handled, and the concomitant need to comply with regulatory requirements. Given the existing routinised nature of the operations function and the nature of the systems integration, the introduction of on-line broking has required almost no changes to existing routines within the operations function.

7.2.5 Process Development

At NWS, both the development and implementation of on-line broking required little in the way of development of new organisational routines. Technology development assumed the path of a typical IT project within the existing functional structure and the project structure configured was that assumed for any major IT development within NWS. Cross-functional liaison has essentially taken place at senior manager level at the design stage of the project, where members of the Programme Board for the project included senior management such as the Managing Director of NWS, the Head of IT, the Head of IT Architecture as well as two key project managers, in charge of the IT and the business units respectively. At the same time, the normal staffing of IT projects was followed with external consultants

employed where necessary, such as with the appointment of specialists in messaging and security respectively. As David Brown summarises:

“From a support perspective or operationally, we’ve changed. From a project perspective, we haven’t changed. What we have on the support, though, is we have a dedicated IT Internet support team.”

While some of the business logic within the on-line system was re-used, the deployment of new technologies necessitated training of some staff with regard to helping support the applications as well as the underlying hardware. Three IT personnel have now been trained and are dedicated to Internet-related support with more staff working on infrastructure-related issues. Given that the nature of development was primarily technological in focus, there was little need for the creation of new routines in other parts of the organisation. Both the development and the operation of the on-line service has been carried out within the existing organisational structure, requiring few organisational changes apart from the addition of a client relationship team within dealing services, which is responsible not only for taking orders but also for gaining client feedback.

7.3 CASE TWO: SELFTRADE

This case follows the development of SELFTrade’s on-line broking operations in the UK. SELF Trade, originally a French start-up, provides an example of a corporate venture new to the UK broking market. It is now majority-owned by German financial services group, DAB, although it was originally established in France in December 1998 by Antoine de Rochefort and Charles Beigbeder and launched in the UK in May 2000. With

approximately 65,000 on-line customer accounts at the end of 2001, the broker captured 49% of all new UK on-line accounts in that year.

7.3.1 Aspirations

SELF Trade's initial motivation to launch an on-line operation in the UK was part of the group's focus on European expansion, with its aspirations focused on offering a comprehensive on-line dealing service with the aim of growing the customer base as quickly as possible to gain market share. The cost of the UK launch, developing the initial operations and marketing a new brand not familiar to a UK investor base, was significant and was financed from the proceeds of its French IPO ("Initial Public Offering") in March 2000. Although the company's UK launch in May 2000 coincided with market weakness, it is thought that this was ultimately beneficial, where the business model assumed that the average UK investor trades around ten to fifteen times per year in contrast to competitors like Schwab and E*Trade who had built their businesses on the assumption that UK investors trade up to fifty times per year. As Peter Boucher, Director of Communications, states with regard to the opportunity missed by the stock market weakness:

"It would have given our business a really fast start...the good news about missing that deadline, which sounds really bizarre, is when you are under that much pressure, I think you lose organisational control. You just hire, because it's impossible to build computers fast enough."

7.3.2 On-line Broking Service

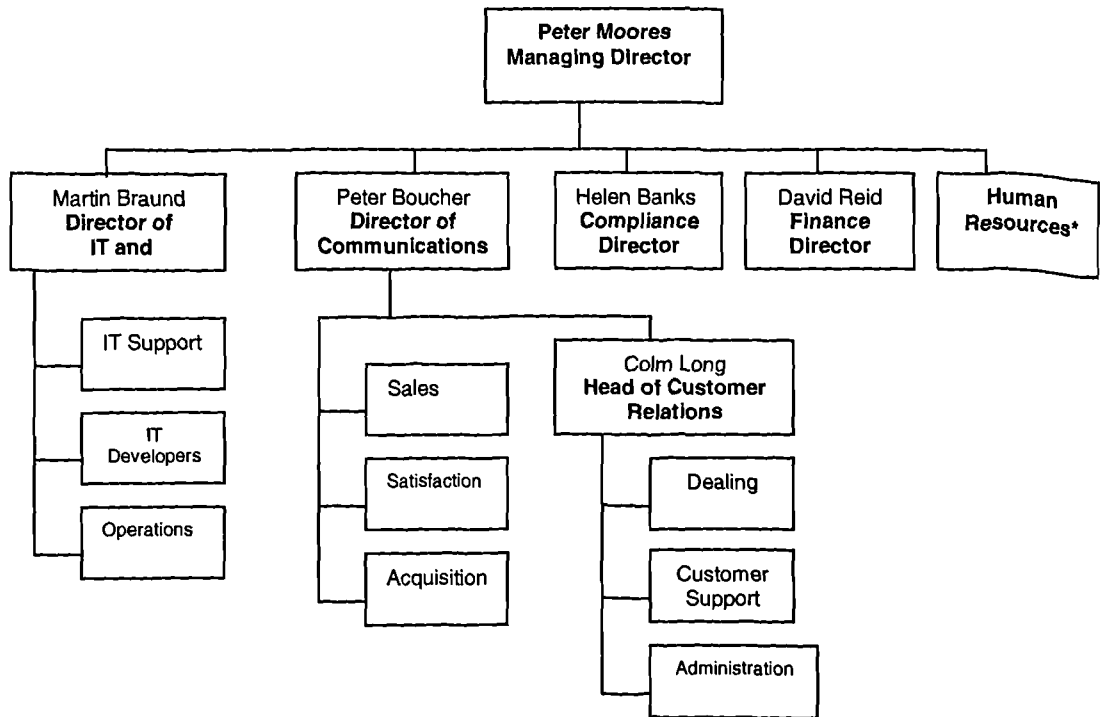
SELF Trade has developed a comprehensive, integrated, on-line offering. Equity products offered include equity trading, ISA's and a fund supermarket, all of which can be accessed from one account. Clients can trade equities either by phone or by Internet, where all Internet-based trades are charged at a flat rate of £12.50 irrespective of trade size for more than 2,500 shares traded on the London Stock Exchange and the Alternative Investment Market. Clients can trade "at best" (the best price is selected from up to five RSP's), "at quote" (clients have 15 seconds to decide whether to deal on the quote shown) or "at limit" (the trade is automatically executed if the trade price matches the client's chosen price). Clients can also be alerted to share price moves by email or by SMS alert on their mobile phones. However, clients can only trade shares electronically, i.e. there is no facility to trade shares that are currently held in certificate form, although certificates can initially be converted into electronic form. The company has diversified into other equity-related investment products. A self select ISA ("Individual Savings Account") allows clients to choose the shares to be held in a tax-efficient savings product, where portfolios can be valued on-line as well as be changed at any time. A funds supermarket offers clients the opportunity to buy from a range of over 350 investment funds. It is a totally paperless operation, allowing clients to value their funds portfolio on-line as well as providing on-line research tools to compare funds against a number of different criteria. SELF Trade also offers a number of educational tools aimed at new investors, allowing investors to track a "virtual" portfolio as well as providing on-line investment advice through its "Self

Invest” section. Equity information and research as well as news provided by Reuters is further available on-line.

7.3.3 Organisational Structure

The current organisational structure has been in place since the operational launch of SELF Trade in the UK in May 2000 (see Figure 7.5). At the senior management level, there have been a number of changes with Peter Boucher, Director of Communications, and Martin Braund, Director of Operations, the only two remaining members of the original management team.

The firm is located in both London and Peterborough. There are approximately ninety employees in total with around sixty employees based in Peterborough. Head office functions, such as marketing and finance, as well as a web development team are located in London, while the main customer support, IT and operations functions are located in Peterborough. The Peterborough location was chosen not only on the basis of lower cost but also because it provided a skilled labour pool for the company’s back office operations as well as for its customer support function. Two of the company’s founding directors were already based there, having previously worked for Barclays Stockbrokers, and they were able to recruit locally-based individuals who already had prior experience in back office and call centre operations, critical to making the new venture operational.



* currently there is no Human Resources director given the departure of the latest incumbent

Figure 7.5 Organisational Structure of SELF Trade UK (April 2002)

The organisational structure of SELF Trade was essentially flat and non-hierarchical during the start-up phase of the company (and still largely remains so), reflecting both the size of the company in terms of the number of employees and the internal corporate emphasis on this being the way to develop the flexibility needed to develop functional coordination. The original structure of the group was functional in design, focused on developing each of the core functions: dealing, operations, IT, compliance and marketing. The early challenge for the company was to create the dealing systems, to develop the

operations to process trades and, not least, to gain the critical mass of customers necessary for success in a business subject to economies of scale.

7.3.4 Development of Functional Capabilities

One of the primary tasks facing the original senior management team at SELF Trade was to evaluate what was needed in terms of people, systems and processes to make the UK arm fully operational within a short period of time. In particular, a key issue was to determine what could be leveraged from the SELF Trade group, where it was shown that the main complementary resource lay in IT and the existing trading system already created within the SELF Trade group.

Role of Individuals

The prior organisational experience of individuals has been key to developing the capabilities required for operational success within the new venture. According to senior management, the main advantage of creating a venture from scratch was the opportunity to implement the learning key individuals had gained from previous experience. SELF Trade's UK origins date back to October 1999, at which time the company consisted of four key individuals with a diversity of skills and experience relevant to setting up the new venture: Hawkin Overli (Managing Director), Peter Boucher (Marketing), Ian Glew (IT) and Martin Braund (Operations and IT). Working from a small office in central London until the move to Peterborough and London in November and December 1999 respectively, the original task of the senior management team was to establish what tasks

needed to be accomplished, with an initial focus on hiring further individuals with the necessary experience to develop the systems and processes necessary to be fully functional.

A major constraint on SELF Trade's development was time. "Speed to market" was a critical issue for SELF Trade, particularly given the buoyant retail broking market environment at the start of the business. Since starting the operation in October 1999, SELF Trade aimed to launch in the UK within five months by March 2000. The two month delay in launching was caused by regulatory and not by operational complications. As Martin Braund, Director of IT and Operations, states:

"We were about two months behind our initial schedule, which was pretty aggressive to get a business from nowhere to launch in about five months. In the end, we managed it in about seven months."

A project plan was implemented, although a key issue during implementation was ensuring that time scales were met as different projects were co-ordinated, which was made all the more difficult given the reliance on external parties for some of the development. By the firm's own admission, the time scales were "fairly ridiculous". The choice of which external parties to work with was also affected more by the constraint of time than of cost, despite the fact that significant amounts of money were being invested. As Martin Braund states,

"Where you are given a choice of five vendors, literally just knocking three of them out – on sometimes quite an irrational basis. You know, like they didn't pitch up to a meeting."

IT Function

The development of the IT function was the one area that could potentially benefit from complementary assets residing within the SELF Trade group and was also the one functional area requiring integration with the wider group. SELF Trade was able to adopt the existing group front end web interface, developed by the French operation, requiring only the development of a new back office system given the regulatory and market differences between the UK and France. A key focus within the IT group was, hence, on integrating any new technological development with the Paris-based system. However, there has been little actual IT development within SELF Trade, where technology development is limited to supporting the web site developed by the French arm and to developing electronic links with external parties such as CREST and the London Stock Exchange necessary to the settlements process. However, a major development has involved re-designing the web site three times since the UK launch to ensure that the desired brand emphasis was met and to portray the element of trust considered essential for an on-line broker.

Given the emphasis on time and “speed-to-market”, the IT group is essentially focused less on technology development than on buying and integrating “off-the-shelf” software. At the same time, outsourcing was the preferred strategy given that cost was a constraint, where large-scale IT development projects would have necessitated the hiring of significant numbers of developers. The development of a new efficient back office system is critical to the firm’s low cost business model. A third party financial systems developer based in Leicestershire, Consort, was contracted to develop the new back office system, where the

aim was to automate as many operational processes as possible in order to keep costs low, where the cost of running accounts is low relative to the costs of processing transactions. Despite the existence of straight-through-processing, other tasks such as transferring cash, moving assets or dealing with corporate actions on shares remained manually-intensive. Labour savings have been significant, where one person now effectively replaces ten people. According to Peter Boucher, Director of Communications, the aim is to automate as many processes as possible, effectively removing humans from the process:

“If you are going to compete at (£) 12.50, you’ve got to have a terribly efficient process.”

Operations Function

The operations function was the one function that was structured “traditionally” from inception given the nature of the tasks concerned. Settlements are carried out in conjunction with external bodies such as CREST and are subject to industry-wide standards. As Martin Braund, Head of IT and Operations, states:

“You can’t cut back offices too many ways. You have to have certain functions”.

Four key operations staff were initially hired from other established brokers in order to set up the operations side of the broker, with three hired from locally-based Barclays Stockbrokers and one from NWS Stockbrokers. Hiring individuals with prior experience was considered critical given the constraints on cost and time and the need to comply with industry standards to commence trading. The firm could not have afforded the time or expense of training operations personnel and was looking for individuals who knew how to

create the operations functions, who were able to learn how the new systems worked and who understood the relationships with external bodies such as with banks, CREST and the London Stock Exchange.

Call Centre Operations

Call centre operations are divided into three main teams: dealing (accounting for around thirty per cent of staff within the call centre), customer support (accounting for around sixty per cent of staff within the call centre), and administration (accounting for around ten per cent of staff within the call centre). Dealing staff ensure that both telephone and on-line trades are executed directly through the order management system or directly via an RSP, while customer support staff handle customer queries as well as deal with brochure requests. Given the specialised nature of dealing operations, individuals with prior experience were hired while, with regard to the customer support function, it was considered more important to recruit individuals with call centre experience, where the requisite financial knowledge could be learned. In order to develop the initial call centre function, four key individuals were hired with call centre experience from Peterborough-based travel agent, Thomas Cook.

Given that customer support is provided on a twenty-four hour basis, the company found that it was difficult to manage and communicate with the team working the night shift, which had implications for the consistency of service quality. With most customer requests focusing on the need for basic information and brochure requests, the company

decided to outsource the night shift to a third party provider, subject to the provision of training.

Over the last twelve months, there has been a move to “multi-tasking”, ensuring that all staff are trained in the various tasks handled by the call centre, on the basis that clients prefer to speak to one individual for all their requests.

Marketing Function

Marketing is a core function within SELF Trade, taking into account the company’s origins and its lack of a customer base in the UK. At the same time, marketing is integral to SELF Trade’s initial aspirations of growing the business rapidly and developing a pan-European presence. The UK launch was accompanied by a multi-million, multi-media campaign aimed at raising brand awareness and ultimately gaining new customers. At the same time, the launch was accompanied by a differentiated service offering, where SELF Trade was the first on-line broker to offer 24-hour call centre support and the only broker to offer a “no quibble” refund of trading commission on disputed trades as well as offering educational tools such as within its “Self Invest” section, which allows investors to analyse investment opportunities by sector and by theme. Given its need to generate critical mass, SELF Trade initially partnered with on-line bank, Cahoot, to manage all of the latter’s share trading business, where the service is co-branded and can be accessed via Cahoot’s web site. SELF Trade manages all key parts of the value chain on Cahoot’s behalf and, by offering such a business-to-business service, SELF Trade has been able to grow its

customer base rapidly. Other types of partnership, such as with Tesco Personal Finance, are further attempts to develop distribution and grow the customer base.

The marketing group is divided into three business areas: sales, satisfaction and acquisition. Sales consists of two individuals working on developing new products and enhancing revenues from existing customers, where they work on one or two sales initiatives per month. A further two individuals work within the satisfaction team, focusing on items like web site design and customer surveys. They have created a “customer lifecycle” model, which has fourteen different “moments” during that process, each moment being ranked in terms of importance, where the aim is for Self Trade to constantly improve and enhance the processes around each of the fourteen stages. The aim of the acquisition team is to acquire new customers, develop partnership and affiliate schemes and banner advertising, where they are working on response-driven acquisition models. Peter Boucher, Director of Communications, believes that the next major challenge is to re-design the organisational structure of the marketing group as the company grows and product range and complexity increases, where there will be a need for a matrix reporting structure, combining both product and functional responsibilities.

7.3.5 Cross-Functional Development

SELF Trade encourages cross-functional transparency across the group and uses a cross-functional project approach to managing business and product development, where this has evolved through a trial-and-error approach to learning.

A culture of openness and transparency has been encouraged in the company. The UK business is managed according to a balanced scorecard approach where each month all staff receive a copy of around fifteen key performance indicators which measure the performance of the firm across four business areas: Sales (marketing and call centre), Service and Operations (IT, operations and call centre), Human Resources and Finance. Individuals are further encouraged to put forward new business ideas via an Idea Awards scheme which is run on a monthly basis.

Cross-functional co-ordination is an integral part of business and personal development. Employees are given opportunities to transfer to different internal functions, where it is believed that learning develops by “corporate osmosis”. One of the current members of the marketing team working within product development was formerly the head dealer, while the former Director of Human Resources was previously the personal assistant to the managing director.

With regard to any new business or product development, a project management approach is adopted. A project manager from IT is appointed to manage the project, although during the initial analysis stage of each project prior to technological development, the project team is multi-disciplinary in composition, including members from the different functional areas, such as marketing, IT, compliance, as well as business (call centre and operations). The structure of the project management team has evolved through trial-and-error learning according to Peter Boucher:

“We’ve tried it all ways. We’ve tried to get marketers to be good project managers which didn’t work very well. We’ve tried project managers to be kind of good project managers and it slowed everything down. And our best projects are ones where we get a little mini team together.”

7.3.6 Process Development

The subdued market environment since the launch of SELF Trade has allowed the company to grow pragmatically; the development of each of its core functions has been incremental in nature. Subsequent to the start-up phase, where the focus within the firm was to develop each of the core functions adequately so as to be fully operational, there was a realisation within SELF Trade that “getting the product right” was only one part of the challenge faced. It was at this time that the firm began to move away from operating in what it terms a “project mode”, recognising that the importance of attention to detail in process development is an important factor in terms of gaining efficiency improvements. Peter Boucher, Director of Communication, comments on the disparity of time taken to launch operations and to refine operational processes:

“Launching, getting the business to the first seventy (per cent of operations), is perhaps thirty per cent of the time, and the closing off that last thirty per cent, frankly where the money is, and where the profit is, is a lot of time.”

Since 2001, the firm has expanded its range of equity-products, where it is thought that a diversified product range is necessary to retain its existing client base as well as attract new clients, where the target client base is the sophisticated “day trader”. Along with an expansion of dealing types, the firm has developed an on-line stocks and shares ISA (“Individuals Savings Account”) service in early 2001 which was followed by a funds

supermarket created in July 2001, where the parent, DAB Bank, was able to offer its experience with regard to the latter. However, capability development has been driven not by product improvement but rather by gaining process efficiencies.

Development of a customer relationship management (“CRM”) tool within the call centre has been a focal point for the automation of processes developed around cash management and complaint handling amongst other tasks. Its primary function is to manage all customer contact, where a detailed history is recorded of all contact with each client including information such as the time of contact and the nature of the request. The aim is to automate as many tasks as possible to benefit from efficiency gains in terms of labour cost savings as well as minimising the risk of human error.

The potential to create routinised operations is subject to the nature of the tasks involved, where there are limits to the creation of organisational routines within some functional areas of the firm. Within the operations or settlements area of the firm, the repetitive and standardised nature of tasks suggest the possibility and suitability of creating routines. Similarly, it has been relatively straightforward to develop documentation around routine processes, such as employee appraisals, where templates have been built around organisational documents used by former employers. With regard to using ideas and procedures gained in previous employment, Peter Boucher, Director of Communications, adds:

“I’ve left 900 pages of Unilever’s “how to run a project” behind, but there’s that one or two ideas, we’ve chucked into the mix”.

Even where tasks are repetitive and can be thought of as relatively standardised, they can be difficult to codify, which can pose a barrier to developing organisational routines. It can be much more difficult to develop routines around client-facing processes, as there is usually more than one way of completing many tasks and where flexibility is needed as customer needs change. As Colm Long, Head of Customer Relations, states:

“Whereas from a front office perspective, how do you document for someone saying how do I open my account, or how do I do this, how do I do that? There are so many different types of things that come into that.”

However, by the end of 2001, the call centre team had identified and documented twenty-five key call centre procedures in its attempt to further understand and routinise their operations. However, with regard to the marketing function, the head of the group drives the idea generation process and provides a directive role, although individuals are ultimately responsible for the creation of their own routines.

7.4 CASE THREE: FREESERVE

This case deals with the development of the ISP, Freeserve. It was launched on the 22nd September, 1998 by Dixons, a UK-based consumer electronics retailer. It is the leading consumer ISP in the UK by market share, with over 2.4 million customer accounts reported in January 2002, and it is also the pioneer of the “free ISP” business model in the UK. Subsequent to the company’s IPO (“Initial Public Offering”) at the end of July, 1999,

the company is now wholly-owned by leading French ISP, Wanadoo²⁶, itself set up in 1996 by the French national telecommunications company, France Telecom.

7.4.1 Overview of Freeserve

An overview of the company's development since its inception until the time of the case study interviews allows us to appraise the rapidity with which the company has developed its operations in the three-and-a-half years since its launch, during which the company has grown in size from around 70 employees to approximately 350 employees.

Original members of the founding senior management team were recruited from Dixons. John Pluthero, formerly the managing director of Dixon subsidiary, Mastercare, joined Freeserve as Chief Executive Officer in April 1999, where he was the key individual involved in developing the Dixons Group Internet strategy in 1998. Changes in key senior appointments within Freeserve coincide with periods of organisational change and restructuring. At the time of the announcement to launch an IPO in April 1999, Freeserve announced two key management appointments: Nicholas Backhouse as the Chief Financial Officer and David Melville as Company Secretary and General Counsel. Mark Danby, formerly general manager, was appointed the Chief Operating Officer, while the Chairman was John Clare, the CEO of Dixons. Despite having an established parent, the managerial style of the company at launch was considered by respondents to be entrepreneurial in nature, and the company is still perceived to have retained elements of this entrepreneurial

²⁶ Wanadoo currently employs over 5,000 people in Internet-related jobs.

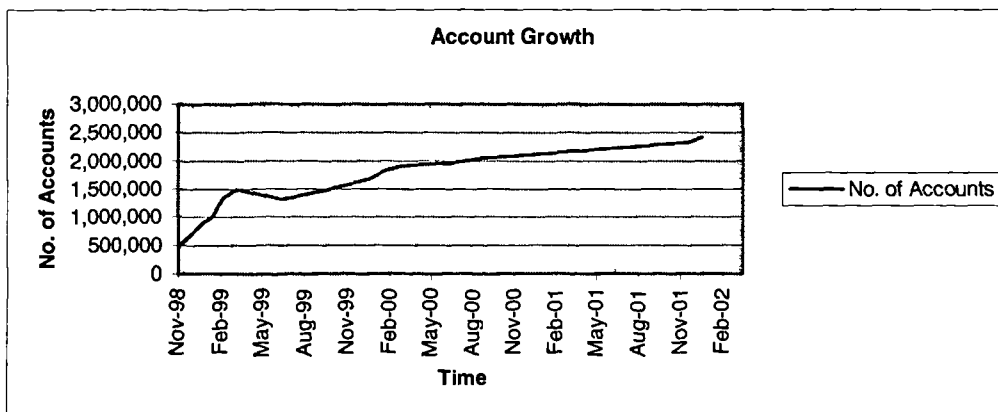
culture in its business approach. However, as the organisation grew in size, a different managerial style was needed. Senior management hires are increasingly recruited from related ISP or media backgrounds in line with the company's self identity as being a "new media" business. Board changes were announced in December 1999, where Frank Keeling was to join Freeserve as COO from his former position as a Senior VP and board director of AOL (Europe) to replace Mark Danby, who was to become a non-executive director of Freeserve and join a new Internet investment vehicle in which Freeserve invested. May 2000 saw the appointment for the first time of a Chief Technology Officer (CTO), Stratis Scleparis, who was formerly Director of Technology and a board director at AOL UK, and between 1987 and 1998 held various positions at the BBC including Head of Internet Services and Technical Strategy, and R&D. Jon Gisby, Managing Director of Portals since March 2001, joined Freeserve in 1999 from the BBC's Corporate Strategy Team, advising on content production and the evolution of digital services. Keith Hawkins, managing director of marketing, joined Freeserve in May 2001 after two years as Group Marketing Director for AOL UK.

Freeserve was the first ISP in the UK market to launch a "free" business model, where no subscription fee was charged with customers paying only for the cost of a local rate telephone call. The success of its revenue model is contingent on developing alternative revenue streams such as advertising and a share of the call revenues from the telecoms operator. The idea behind this business model reversed the premise on which the ISP business model had to-date been built, i.e. that customers are charged for access. Freeserve

recognised that Internet access was essentially becoming a commoditised service and that ISPs should seek alternative forms of revenue. By the end of 1999, Freeserve had adopted the “portal” business model with the focus on providing content to customers to gain revenue from both e-commerce and advertising. It was initially targeted at existing customers, where the aim was to leverage the ISP subscriber base by finding ways of “monetising” the traffic through the provision of content and e-commerce. It is currently estimated that sixty per cent of Freeserve’s portal users are ISP subscribers. In parallel to growing the subscriber base, the aim was to build a TV channel style model for aggregating content focused on “best of breed” brands.

Central to the success of indirect revenues from e-commerce and advertising was gaining “footfall” or user traffic on the web site. Growing the customer or installed base was central to raising the value of the site from the point of view of advertisers and e-commerce companies. The company’s user base grew rapidly and within only eight weeks of launch, Freeserve attracted more than 475,000 accounts making it the fastest growing UK ISP and attracting an average of 8,500 new users every day (see Figure 7.6). By May 1999, Freeserve had captured twenty-three per cent of the UK home Internet market share with this figure rising to thirty-seven per cent within a further year. In order to grow its customer base, Freeserve needed to develop its distribution as well as to develop its website in terms of new content, tools, commerce and functionality. The group is currently estimated to have ninety-six per cent brand awareness and the Freeserve name has not been changed subsequent to the takeover by Wanadoo.

Since the development of FRIACO, Freeserve is able to offer subscription packages which include the cost of call usage and provide an additional source of revenue. Customers can subscribe for unlimited Internet usage at off-peak times for £10.99 per month (“Freeserve HomeTime”), unlimited Internet usage at any time for £12.99 per month (“Freeserve AnyTime”), while customers can still obtain access via a pay-as-you-go formula, with clients paying only for the costs of phone calls. Freeserve Plus is the broadband access service. Technical support is offered at an additional charge of fifty pence per minute. Customers receive an unlimited number of email addresses along with 15Mb of web space as well as free software to enable music and video files. By the end of 2001, nearly one-third of all accounts were on an unmetered subscription package.



Source: Freeserve Press Releases (From June 1999 onwards, no. of customer accounts measured as “active accounts”)

Figure 7.6 Growth of Customer Base at Freeserve

In mid-April 1999, Freeserve first announced that it was exploring the strategic alternatives to realise its full potential and to optimise the value of Freeserve for Dixons shareholders,

including a potential IPO of a minority interest in Freeserve. In early June 1999, Freeserve announced its intention to launch an IPO of a minority interest in the ISP with eighty per cent of the shares to be retained by Dixons. At the end of June, the IPO was formally announced, with Dixons aiming to sell 18.25% of Freeserve. The flotation went live at the end of July 1999 with the shares prices at 150 pence per share, at the top end of the expected range.

Relationship with Wanadoo

Freeserve operates relatively independently of Wanadoo and is not considered the UK arm of the French-based ISP since the acquisition in February 2001. Its ability to operate independently is considered by respondents to be attributable to Wanadoo's experience in managing international acquisitions. Prior to the acquisition of Freeserve and in the period between October 1999 and May 2000, it made four major acquisitions (alapgae.com, Kompass, marcopoly.com and Librissimo). All the interviewees considered Freeserve's acquisition by Wanadoo a positive outcome for the loss-making company, providing it with the financial backing and investment to allow it to grow until the revenue model becomes sustainable as well as the potential for business synergies. Freeserve is in charge of its daily operational control with financial and budgetary control determined by the French parent. As Deborah Sherry states:

"They let us run pretty autonomously. Obviously, our CFO comes from there so they are watching us in that sense. He makes sure that we stick to the right ways of managing, i.e. their way of managing."

Technology sharing provides cost benefits, where the main synergies lie in product development with Freeserve's SmartGroups product being rolled out across Wanadoo's French customer base and Wanadoo's Instant Messenger and Calendar product rolled out across Freeserve's UK customer base. Freeserve offers Wanadoo a potential source of market experience, given that the UK ISP market is deemed to be twelve to eighteen months ahead of the corresponding French market.

7.4.2 Aspirations

While senior managers cited the aim of widening the Internet audience in the UK by launching a subscription-free ISP, Freeserve's initial aspirations were essentially focused on developing the customer base as quickly as possible, realising the potential of the customer base as a resource to attract advertising and e-commerce revenues.

"Not only is Freeserve attracting a huge number of users, but we are also growing the UK Internet market." (Mark Danby, General Manager of Freeserve²⁷)

Its aspirations in terms of continuing to grow its customer base has not really changed, although given that the business is now more mature, the company continues to develop its content on its portal to attract as well as to retain customers, while the access business now provides a revenue model given the introduction of FRIACO and the ability to earn a fixed margin on each customer account.

²⁷ Freeserve Press Release, 16/11/98

7.4.3 Organisational Structure

Freeserve consists of three core operational areas: Technology (including production, infrastructure and technology research), Portal and Access (managing customer access and the portal) and Customer Operations (managing customer service and support for access customers). The production team is based in Clerkenwell, London with programme managers, designers and application developers, while the access and customer service teams are based at the head office in Hemel Hempstead, north of London. The technology division is spread across the three locations, although its main location is in Leeds, with the Chief Technology Officer (“CTO”) based in Hemel Hempstead.

Freeserve’s organisational structure has evolved over time; while the firm’s operations remain in three core areas, a functional organisational structure was developed two years after the start of operations. Initially, the company was organised along brand lines with separate business units reporting to the Chief Operating Officer. A divisional or functional structure was the product of an organisational restructuring at the end of 2000, with the company currently focusing on developing greater integration through a multi-brand structure. The hiring of external consultants to aid the development of an effective organisational structure is testimony to the importance of structure for Freeserve. As Deborah Sherry states:

“And we’ve paid external consultants to help us even though we’ve only been around for a few years. Obviously we don’t have the money to buy a McKinsey or somebody but we did pay external consultants to help out on a number of occasions to do all sorts of projects to look at how we should be structured and why this wasn’t working. The challenges were real for us, because in our industry, the product isn’t very clear – let’s put it that way”.

Phase 1 – Separate Business Units

The original organisational structure of Freeserve was designed around separate business units, where the managing director of each business unit reported directly to the COO (see Figure 7.7). New business units, acquired or developed in conjunction with third parties, were operated as separate entities with dedicated designers, producers, developers, marketers, and business development, although they were operated through a common infrastructure.

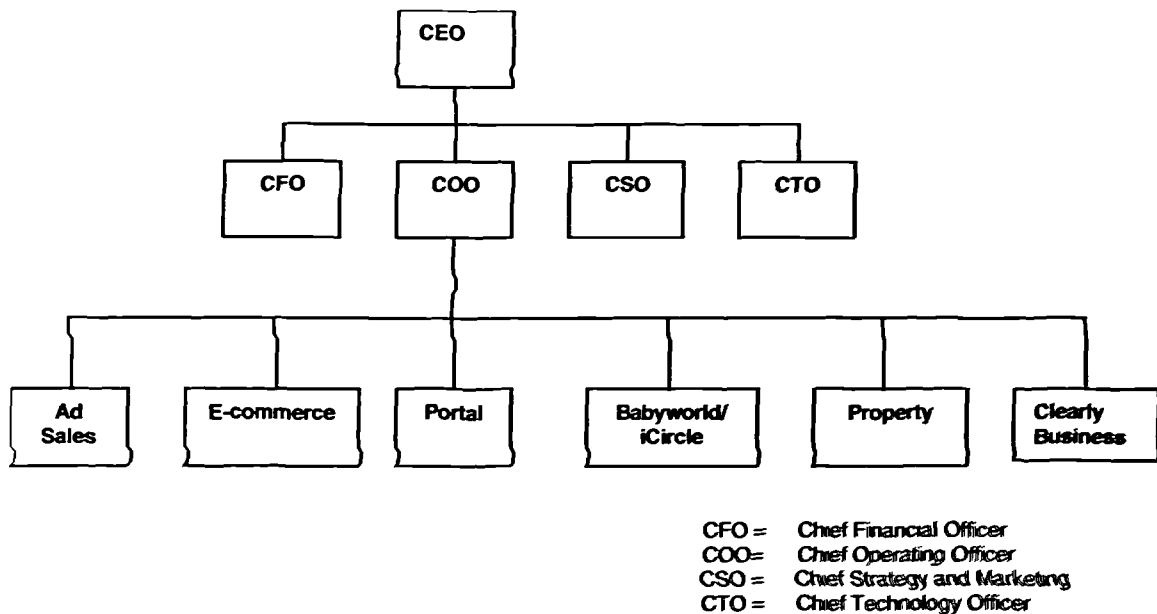


Figure 7.7 Original Organisational Structure, Freeserve

Phase 2 – Functional Structure

From the end of 2000, a functional structure was developed with each functional area operating as a division (see Figure 7.8). The Managing Director of each division reports to the CEO and the COO position now no longer exists. As part of the restructuring, the strategy group was downsized with some individuals transferred to other operational areas

and the marketing team was made responsible for distribution, which used to be part of Access. All the separate portal business units have been integrated into the portal function with Clearly Business, a financial portal developed jointly with Barclays Bank, the one remaining unit to operate separately. iCircle, a website dedicated to women's issues, is now integrated into the portal operations, although it used to operate separately, where there were dedicated designers, producers, developers, marketers, business development, although operated through a common infrastructure. Similarly, the property joint venture with Charcol has since been dissolved as a consequence of the evolution of the on-line property market although there is a property channel as part of the main portal.

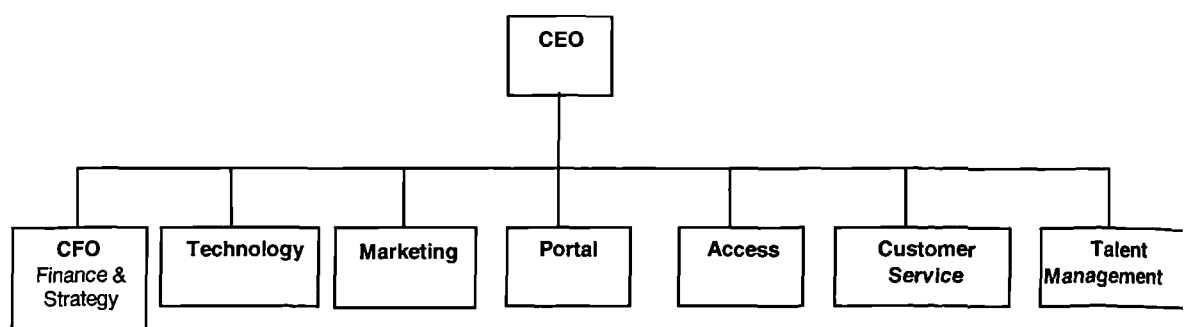


Figure 7.8 Current Organisational Structure at Freeserve

7.4.4 Development of Functional Capabilities

Dixons, an established electrical retailer, created and operated Freeserve, its ISP business, as a separately-run business unit. While Freeserve was able to leverage some of the complementary resources and capabilities of its parent at the time of launch, it outsourced

some of the technical capabilities and infrastructure required to operate the ISP. Freeserve was able to leverage Dixons' distribution capabilities where free software in CD-Rom format was distributed through the Dixons' network of over 1,000 Dixons, Currys, PC World and The Link stores. Similarly, while the initial source code used to develop the access business was freely available, Freeserve was able to outsource its network activities to Energis with web hosting provided by Planet Online (the ISP subsidiary of Energis). Since launch, all the core functional operations have grown organically with the exception of the technology division which has benefited from synergies following the acquisition by Wanadoo.

Portal and Access Function

The only two profit centres within Freeserve are the Portal and Access teams, where the portal business has been the main business model for driving revenues since early 2000. While the access service is essentially a commoditised service that Freeserve has been able to create with the use of Energis and Planet Online for their network and web hosting capacity respectively, the development of the portal service has been internal to the company. In other words, the access business is essentially viewed as a telecommunications business that resells services from existing suppliers, such as British Telecom, whereas the portal is essentially a "new media" business where the business model is evolving continuously.

The development of content is central to the "portal" business model developed to encourage both subscribers and non-subscribers to visit the Freeserve website and to generate "stickiness"; i.e. raising customer switching costs. Developing content for the web site appears to have been a primary objective of the company during its first eighteen months of existence. The portal currently has five channels of content, titles with over 300 merchants across its sites, has two dedicated shopping channels within the main portal as well as running auctions through FS auctions. Given the importance of its portal in attracting advertising revenues, Freeserve has operated its advertising sales function internally since June 2000, running campaigns for over 1000 advertisers within the subsequent six months. With regard to advertising opportunities, clients are offered banner advertising, sponsorship and branded micro-sites across the group's platforms, although external media companies are appointed to devise the campaigns themselves. Given the ISP's dependence on advertising revenues, Freeserve emphasised the development of its advertising sales optimisation capability in January 2001 for the benefit to clients advertising through the web site and providing comprehensive reporting and fine-tuning of creative ad placement throughout a campaign. A new role was created, Head of Planning, for Advertising Sales and an appointment made from outside the company to run a bid sales house. An experienced campaign manager was recruited internally while the new post of Advertising Systems Manager, with the responsibility for managing all the advertising systems across the company, was appointed internally. The ability to target and segment audiences is critical to raising the value of the website. Advertising and sponsorship deals signed with leading UK-based mutual fund companies following the introduction of a new

on-line ISA centre was considered to be testimony to the potential. A finance manager was appointed to the advertising sales team from Deloitte and Touche in February 2001 along with two recruits to the advertising sales team to a total of five. In May 2001, they announced the launch of the first non-banner advertising on its Internet TV platform in association with Tangozebra, the UK on-line marketing specialists. This was the first part of the development of an integrated, cross platform advertising campaigns across Freeserve.

The initial portal model was fixed on creating a variety of channels, and this model has since changed only superficially. The portal model is essentially based on a “tenancy” model, where a content provider will pay Freeserve to be within a location on the website. The aim is to deliver an audience to affiliates, where there are currently around 150 to 200 affiliates²⁸. The challenge for Freeserve is to generate more revenues from each affiliate. It has two main ways of doing this: (1) to increase the value of each location and (2) to offer higher-value added services. With regard to the former, Freeserve’s audience segmentation remains broad, exacted along channel lines, where the company is finding it hard to segment its audience with sufficient precision to increase value to advertisers given the dangers of prescribing what is relevant to its audience. With regard to offering higher value-added services, Freeserve aims to offer content providers not only a location but also a platform, from which Freeserve would take charge of operations such as billing, as well

²⁸ While most of the brands that advertise through Freeserve are less well-known off-line brands, the merchants that deal with Freeserve tend to be very well-known brands.

as being involved in how content is delivered to different types of devices. Freeserve would effectively increase its control of the customer relationship.

The growing number of affiliates combined with the increased tendency for affiliates to work with more than one channel has required a more integrated organisational structure. The structure of the portal division illustrates how an integrated multi-brand structure has emerged (see Figure 7.9). Multiple brands are now covered within the channels group, responsible for selling portal space. The channels, advertising sales and e-commerce groups have been subsumed within the portal division and, given their interdependence, they tend to work closely together across functions.

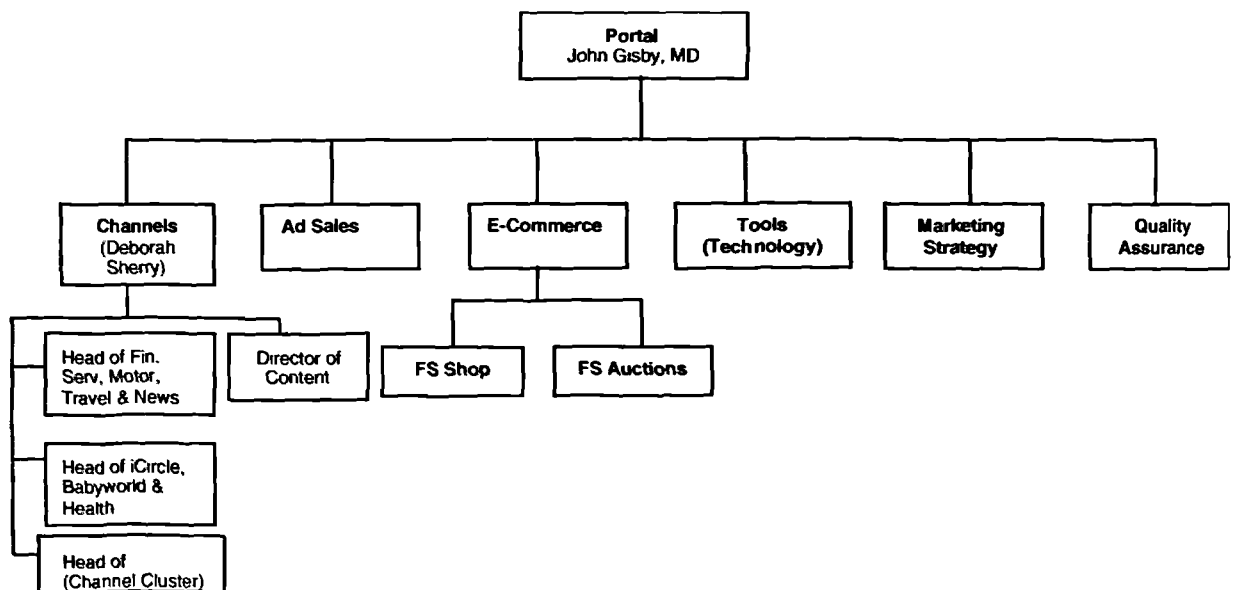


Figure 7.9 Structure of Portal Division, Freeserve

Technology Function

The technology division currently accounts for one-third of the overall headcount in spite of the high use of outsourcing. Its importance was critical in enabling Freeserve to set up the ISP, although its relative importance within the company has diminished given the development of the “new media” business model assumed with the development of the portal business.

The technology division was originally known as “Media Development” with around 30 to 40 employees managed by one of the members of the original senior management team. The non-hierarchical structure of the group and the generalist approach supported the company’s original priority on speed of development. At the same time, Freeserve is a relatively small company and has tended to leverage resources by outsourcing its technology development through seeking out “best of breed” technology solutions from third party providers such as Inktomi, Google and Overture.

The generalist approach was considered untenable in due course as it became apparent that there was an increasing need to develop “specialisms” within the division to support the growing portal and access divisions. The division was restructured in summer 2000 and a CTO was appointed for the first time. The technology division was divided into the following business areas: Project Management, R&D, Production, Infrastructure, IT services and Quality Assurance. An essential element in this restructuring was to create separate Production and Infrastructure groups, where the former concentrate on developing

and designing client-side content and applications with the latter concentrating on the development, maintenance and support of Freeserve's infrastructure.

Prior to the acquisition by Wanadoo, in the period after the offer was made in December 2000, Freeserve organised "synergy teams" to look at the potential for technology rationalisation, particularly in technologies such as instant messaging and email, where a centralised solution could power the different brands. Similarly, Freeserve could benefit from Wanadoo's expertise in search tools and directories. The focus since the acquisition has been on group-wide commonalities that could be managed locally, whilst retaining a high degree of flexibility; where channels require local content, such as a music channel, this is managed locally. The SmartGroups product, used by 8000 digital communities in the UK, has been rolled out across the group although since it was developed by Freeserve, a platform was created and centralised in the UK. Freeserve is now in a position to draw on the resources of the France Telecom Group and this has encouraged more in-house development of technology. Key customer-facing services have increasingly been developed in-house to reduce dependence on third party services, such as with e-mail, chat and personal organiser applications, necessitated in part by the fact that many third-party providers were themselves victims of the dot.com collapse. The R&D function has been subsumed by the R&D unit from France Telecom (with approximately 6,000 employees) while Freeserve developed a technology research group which looks at technological trends up to twelve months in advance. The current organisational structure consists of the following key areas: Technology Research, Technical Operations, Infrastructure, a

(smaller) Production Unit, and Quality Assurance. The current focus within the group is on ensuring the integration of all key systems and a systems integration unit is planned in the near future.

Technology Infrastructure Development

The infrastructure has always been managed by external supplier, Energis, which was necessarily outsourced given the investment and time that would have been needed to build an infrastructure from scratch. However, as Freeserve has grown in size in terms of its customer base, it has attempted to gain more input and control over its infrastructure, particularly in regard of the infrastructure underlying its core services: portals, tools and services.

The company has changed its emphasis away from relying solely on external suppliers to developing its infrastructure via a mixture of in-house and outsourced solutions. Freeserve aims to continue using third party ASP (“Applications Service Provider”) solutions where it is thought the required expertise is external to the company, although the company wants to reduce its dependence on third parties as it grows. A consequence of this change in strategy has been the growth in the size of the infrastructure team as well as the formation of new teams to support specialised disciplines. The growth in the number of solutions managed initially required Freeserve to employ a dedicated database administrator. Further growth has led to the hiring of more database administrators and, in turn, the greater internal reliance on databases has resulted in the recruitment of separate database

developers, thereby also allowing the administrators more time to spend on core administrative functions. Similarly, Energis does not now manage all network components and Freeserve has formed a specific network team, able to provide internal consultancy on network design and management as well as the recent creation of a specialised network engineer.

Customer Operations Function

Initially, the main objective of the customer services group was to support the growing number of access customers. With the UK ISP market reaching saturation, the main objective of the customer services division is now on increasing customer retention. At the beginning of 2002, the division has been restructured from a focus on customer service based operation (see 1 below) to include a focus on communications, marketing and developing operational processes that are considered central to enhancing customer retention (see 2 and 3 below).

1. Effective customer service, achieved primarily through the customer call centres.

There are three customer service operations, employing a few hundred people: a technical support operation in Sheffield (outsourced to Dixons), customer service in Leeds, i.e. accounts management and billing (outsourced to Ventura) and customer action in Leeds (run by Freeserve). [Outsourced operations employ staff which are dedicated to Freeserve's customer service operations].

2. Communications and Marketing

Effective communications ensuring that customers are not inundated with communications from Freeserve as well as briefing staff at contact centres. There is also a focus on member benefits (through a "Members' Centre") and loyalty programmes.

3. Efficient operating processes

The aim being to dissuade customers from churning or cancelling their subscriptions through any way they interact with Freeserve.

The view within Freeserve is that the development of efficient operating processes is key to customer retention at a time when the ISP business has now developed a revenue model with the creation of different billing packages for customer subscriptions. The timing of this development is deemed appropriate given the size of the company as well as the fact that the market won't sustain loss of customers if processes aren't managed efficiently from the user perspective.²⁹ The group develop operating processes has approximately twenty employees with this number expected to increase to around thirty-five employees by the end of 2002.

There are four main areas around which operating processes are being created:

1. Connection

Through CDs and pre-loaded software

²⁹ Current internal themes within the company is on "operational excellence" and "customer focus". "Hammer" was the company's theme in 2001 which focused on growing the customer base.

2. Registration

The process of registration by mode, i.e. on-line, by telephone, through store etc., as well as by subscription product.

3. Customer Care

The process of care in the customer care centres, including "self care" such as the ability to access your account details and make changes on-line.

4. Billing

Developing processes around billing is critical given that billing represents the key point of customer interaction and control.

All operational processes have been mapped out and documented records created of all the screen shots from the customer's point of view. Effectively, this development provides a way of creating routines around repetitive processes as well as embodying the learning gained by the organisation to-date. These processes further provide an audit trail through monitoring Key Performance Indicators ("KPI's"), such as churn (which tends to take place early in week three in the customer's subscription), customer acquisition numbers, save rates (i.e. terms that can be shown to customers who are considering cancelling their subscription). As well as developing operating processes, the group's mandate includes key projects such as managing price increases as well as managing customer migration to new or different products, where a "multidisciplinary cell" approach is adopted for managing projects, where the focus is on prioritisation of projects across the business to ensure efficient resource allocation. It is likely that there will be rationalisation of some of the processes developed as well as the KPI's monitored over time. However, the emphasis

on control is likely to increase and, as sophistication of the customer service operation increases and its importance as a means of service differentiation increases, outsourced call centres may be brought in-house.

7.4.5 Process Development

The development of documented procedures for repetitive tasks has been part of an ongoing emphasis within Freeserve and part of a current organisational theme focusing on “operational excellence”. The origins of standardised procedures within the company lie within the technology function although, during the past two years, the company has developed documented procedures covering business tasks in other parts of the organisation.

The origins of process templates and guidelines lie with the development of the technology function. Many of the technology employees hired arrived with extensive prior experience in other organisations and brought with them project management techniques that are extensively used in IT development. The technology function was the first within the organisation to develop formalised processes from a very early stage in the company’s lifetime. The development of standardised procedures in other parts of the organisation has been more gradual, taking into account that there was no real prior dominant design for the portal business model used by the ISP in the UK market. While most major business tasks within the company were identified two years ago at the beginning of 2000, it was not until

a year ago that documented procedures for these tasks were developed with an additional aim being to fill any “gaps” in the documentation as is necessary.

The approach taken by Freeserve to the development and documentation of business tasks has been part of an intentional and focused effort. During the last six months within the portal division, external consultants have been hired to work with internal employees to assess which processes work and why³⁰. The approach used was a formal one, the result of which has been some re-structuring, the development of cross-functional committees, and the changes to existing documented processes. Throughout the company, changes to existing documentation is periodically reviewed, where it is acknowledged that templates need to assess and take account of changes in response to market changes, technology changes, and client needs. A major review of the procedural templates will next take place in September, 2002.

Developing Routines Within the Channels Group

Within the channels group, part of the portals division, there are two main recurrent business tasks: (1) signing up a new affiliate or partner, or (2) developing a new subsection to a channel. Both tasks are regular events, taking place almost every month, where the latter is more complex given the greater number of interactions required.

³⁰ The approach used is also linked to their human resource (or “talent management”) approach, which has a strong emphasis on personal development including management coaching and a focus on developing a “culture of consensus”.

The process of signing up a new affiliate or partner

With regard to the former, the company has now developed routines around the process of selling a tenancy on a channel. The business development team writes a proposed plan where the feasibility of the proposed tenancy is evaluated in both operational and financial terms. Cross-functional liaison is essential in preparation of the business plan. The AdSales and E-Commerce divisions are consulted, where advertising sales is important in the event that there is banner advertising on tenancies as well as sponsorship of tenancies. The editorial teams are also consulted, while potential partners are also “vetted” by Quality Assurance in terms of the customer experience. With every deal, there is almost always a technology cost associated with implementation and, hence, the total implementation cost is assessed against potential revenues. Pricing needs to be determined and is not a standardised component of the process. Finally, the deal is signed and account management takes over and markets the partner across the site and generally attempts to drive customer traffic to the client.

Implementing Standardised Routines

A project management approach has been taken for almost all new business development within the group and, hence, process standardisation and the development of routines has been a key requirement of efficient process development. The processes for signing up a new affiliate or partner and developing a new sub-section to a channel have been codified. Process templates have been developed and documented and potential partners are also

given a template. The company emphasises the importance of using established templates and trains staff in using them.

The potential for developing standardised routines is limited by the nature of the task, necessarily taking into account the nature of the task concerned including its complexity and frequency. As is the case with many service-type industries, offerings tend not to be standardised and are negotiated between the buyer and seller, inevitably restricting the creation of standardised routines. Adding a new affiliate or partner is no exception where this is a bespoke element to the tasks involved. The pricing of tenancies is not suitable for standardisation. The financial terms of any deal tend to be market-driven given that Freeserve is selling an audience; financial terms are likely to differ across partners and even across sectors with the potential for higher margins in sectors such as gambling than, in say, retail electronics. The pricing structure may also differ across partners, although the aim is to pass on as much of the business risk to the partner and hence receive fixed payments. Although customers tend to be charged a fixed payment for the tenancy, terms may be based on a low level of fixed cost plus some variable amount, where the variable amount is determined by the number of customers delivered or by a percentage of sales. Wholly variable payments, although more rare, are also sometimes charged. Similarly, determination of content and functionality may differ across clients and across sectors, where clients in the travel sector may require more written content, whereas gambling or gaming clients may rely more on the functionality needed to play the games.

Two-way negotiation between Freeserve and its clients throughout the partnership process is necessarily a constraint on standardisation. While Freeserve's experience with partnering is increasing all the time, a major constraint on the time taken to complete the process is the lack of partnering experience of the potential partner, where the total process can take approximately two to three months to complete. Technology takes time to implement and is another major constraint on the process. Compatibility has become an issue given the lack of standardisation between systems and, hence, the potential lack of compatibility between the partner's systems and Freeserve's systems.

Given the bespoke element of these processes, these documents simply act as guidelines, where task efficiency is inextricably linked to individual experience with regard to these non-standardised tasks. The only part of the process that is truly standardised is the advertising sales component, given that the industry operates on accepted standards.

7.4.6 Cross-Functional Co-ordination

Technology is integral to business development within an on-line company such as Freeserve. Originally, "producers" were responsible for the project management role, co-ordinating requirements from the relevant business areas, formulating the solution and implementing the solution provided by the designers and developers. As the scale and complexity of projects increased, the role of project manager became more formalised requiring specialist expertise and specialised project managers were employed in place of the producers.

In the past twelve months, Freeserve has moved from a “project management” approach to a “programme management” approach. The focus is on continuity, where the new approach aims to create ongoing responsibility on the part of individuals for new developments following implementation. A methodology was created whereby each programme consists of a “cell” with multi-disciplinary skills; within each cell, technology development and operations form one stream with business development and operations forming another stream. The operation managers in each of these streams are the program managers, where technical operations has been created from the production, infrastructure and project management teams. The new approach is that it further recognises that there are multiple (and sometimes parallel) developments intended for a single system, e.g. the registration process, or function, e.g. the portal. The advantage is that different development needs can now be better co-ordinated.

7.5 CASE FOUR: AVIATORS NETWORK

Aviators Network (“Aviators”) is a full-service ISP offering services to both individuals and businesses. The products and services offered include email, free web space, a connection to the Internet along with the provision of domain names, co-location, high speed “leased lines” or ADSL and other bespoke services. The firm, which was founded in 1994, also used to offer technical Internet consultancy services up until about two years ago.

7.5.1 Company Overview

Monu Ogbe is the original founder of the ISP start-up. Prior to setting up the ISP, Ogbe was working as an IT consultant for major blue chip corporates since the early 1980s. His motivation for starting up the ISP was based on his own sense of frustration with the corporates who didn't believe the Internet had potential at that time, around three or four years ahead of the dot.com revolution. Ogbe, at the same time a part-time pilot, realised that there was an obvious need for meteorological information to be easily available to pilots and he saw the potential of the Internet to fulfil this need. He conducted an on-line survey amongst pilots, finding that most pilots were in favour of receiving information on-line but were unwilling to pay for it. The survey determined, however, that pilots were willing to pay for general Internet access via an ISP, which suggested the idea of setting up an ISP which could also provide information useful to pilots. The ISP service was set up in 1994 at a monthly subscription cost of ten pounds per month.

7.5.2 Aspirations

Aviators' original aspirations focused on using the Internet as a medium to provide information for pilots. However, it soon became clear that the primary focus of the business was the access business or the ISP itself. Taking into account the historic context, at the inception of the public Internet in the mid-1990s, it was unclear as to which business model would prevail; would revenue accrue to the providers of content or to the providers

of access?³¹ An ISP could be set up with minimal technology, although the aim was to take part in the anticipated Internet revolution, developing leading-edge technology.

“From my point of view, the Internet is minimal technology...It's quite astonishingly simple.” (Monu Ogbe)

Tom Dawes-Gamble, a software expert and pilot friend of Monu Ogbe, was instrumental in helping to build the software applications to deliver the information to customers. In one sense, Ogbe believes that his initial aspirations haven't been realised in the sense that it is now recognised that technology doesn't sell itself, where he recognises that the value of public relations, marketing and strategy are integral to business success:

“We've always been very leading edge in what we've been able to do, but it isn't intrinsically recognisable...so the value of PR, the value of marketing have become apparent.”

7.5.3 Organisational Structure

The organisational structure of the company is essentially unchanged since launch (see Figure 7.10), although the company has grown in size from two full-time employees to six full-time employees and one part-time employee, who is currently implementing ISO 9000 quality standards. The company received an additional £100,000 funding by an angel investor, a friend of the founder, which enabled the company to expand at the beginning of

³¹ Note that the development of the business model is the reverse of a later entrant, such as Freeserve, which entered the ISP market in autumn 1998. Freeserve believed it could sustain a basic ISP service through a share of the phone call revenue (“call share revenues”), while adding to its revenues by adding content and value-added services.

2000³². Employees are hired without formal contracts of employment and without specific job descriptions and are primarily generalists with some specialist responsibilities. They are essentially responsible for developing their own roles and helping each other where required.

“If there was any attempt to segregate responsibilities, those attempts would have failed in favour of personalities gravitating towards what they do best.” (Monu Ogbe)

The pursuit of ISO 9000 accreditation may also be a useful credential with regard to their current business-to-business (“B2B”) positioning as well as with regard to a potential IPO in the future. Conformity with ISO 9000 standards primarily signifies a move to a more formal company organisation and they are being pursued for a number of reasons where, most importantly, it should help to manage the organisation of the company more efficiently, particularly with regard to the human resources function, which is currently performed on an ad hoc basis.

“It will also develop into something like an HR capability, whereby when we have a role that needs filling, we can actually formally look and see what that role involves, create job descriptions, recognise what skills we need and don’t need and hire people accordingly.” (Monu Ogbe)

³² The company’s business model was being transformed with its increasing focus on offering value-added B2B services, which provided a more attractive proposition to third party investors.

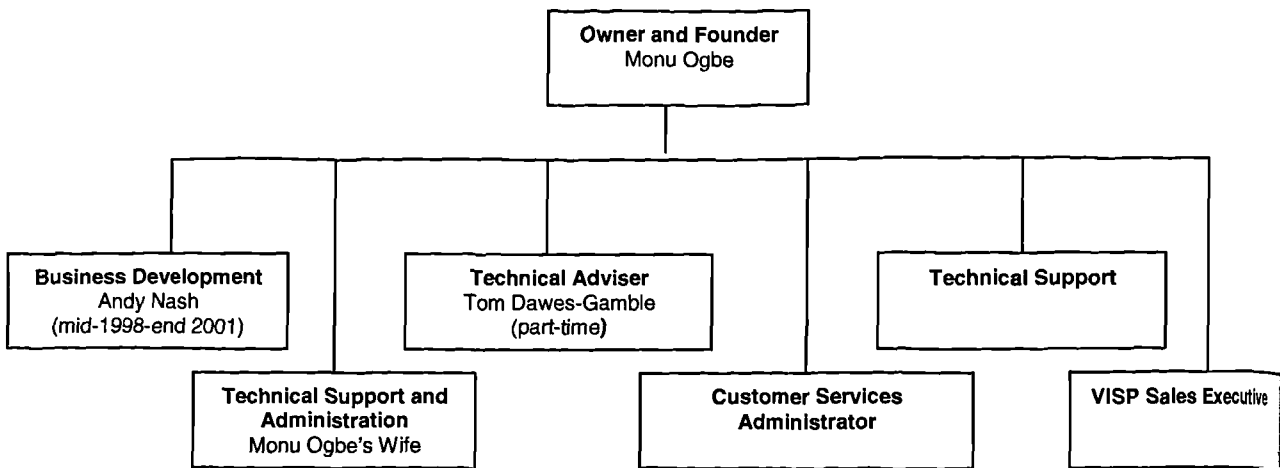


Figure 7.10 Organisational Structure, Aviators (mid-2001)

7.5.4 Development of Functional Capabilities

The development of the company's core functions are assessed in terms of two periods. During the first phase from 1994 to mid-1998, Aviators remained very small in terms of the number of employees, developing its consumer-based business model in an uncertain environment, where consumers were unfamiliar with the Internet. It was not until the second phase of development, from mid-1998 until the present, that the business model came under threat from the emergence of the "free ISP" business model and growth in the Internet access market and the company developed its capability in VISP services.

1st Phase (1994 to mid-1998)

Aviators is a small company and remains so. At the time of launch in 1994, the company effectively had two full-time employees, Ogbe and his wife, together with the part-time

support of Tom Dawes-Gamble. Similar to many start-ups, Aviators had limited human and financial resources, although the initial funding requirements for setting up an ISP are minimal, where the initial requirements include the need for bandwidth, servers, modems and software. The amount of bandwidth required for operations was around 64k, equivalent to one ISDN line. Modems were relatively inexpensive, the cost of the servers amounted to around £3-400 in total, while the software was open source and, hence, free. The business model created is a virtual one, Aviators has focused on in-house technology development with other functions out-sourced.

Bandwidth and Co-Location

Aviators was able to share the bandwidth of NetTec, a company for whom Ogbe was then undertaking some consultancy work. While administration and accounting was conducted at home by Ogbe's wife, the firm's main technical operations were based at NetTec's offices in central London. NetTec provided "co-location" services, i.e. the use of external data centre facilities, given that data centres are expensive to build since provision is required against risks such as data loss, power loss, catastrophe (fire or explosion) and criminal infiltration.

Marketing

In spite of the low start-up costs, Aviators did not have any slack resources. There was no spare capital at the time of launch to cover marketing or advertising expenses. Instead, Ogbe conducted his own public relations by attending air shows in person to promote the

ISP service and to distribute free copies of the software in CD-Rom format. Since this early period, all marketing has continued to predominantly depend on “word-of-mouth” recommendations, where new customers are attracted to the service through existing customers or through ancillary pilot services, such as flight supply shops and flying schools.

Customer Support

The customer support function was initially developed in-house. However, the high fixed costs of maintaining a customer support operation were not offset by corresponding growth in the customer base with Aviators realising that it would be more efficient to outsource this function to specialists given its importance to customer satisfaction and the need to provide customer support on a twenty-four hour basis. In early 1998, customer support was outsourced to London-based ‘iDesk’, a specialist customer support service for large and small ISPs.

Technology

The main competitive strength of the company lies in developing the technological capability of the firm. Aviators develops all products in-house with outsourcing to be used as a strategy of last resort. Development of the company’s technological capabilities was essentially product-led, where product development grew organically, primarily in response to customer demand as customers grew more experienced with basic products. At the same time, product development was pragmatic, with the aim to build on existing

technologies and operations. The development of domain names was the first major product development, where the most common upgrade from a basic e-mail account was where customers were offered their own domain name and website. Aviators was able to offer this product for around one-sixth of the price of competitors like Freeserve .

2nd Phase (mid-1998 onwards)

The appointment of Andy Nash in the summer of 1998, shortly before the launch of Freeserve and the explosive growth in the “free ISP” population, marked Aviators’ first attempt to grow the company and formalise operations. Although Nash was hired for a business development role, there was no formal job description and tasks were assigned on an ad hoc basis. The emergence of the free ISP market at the end of 1998 was a key driver of change for Aviators. Internet access had become a commodity; Aviators lost subscribers as some customers defected to other ISPs with no subscription charge. The company aimed to develop new value-added services while it was also considered necessary to improve operational efficiency.

Product Development

Given the technological strengths of the company, a main focus was with respect to new product development. Given the competitive threat of new entrants offering free ISP services, Aviators sought ways of expanding its revenues by offering higher value-added services as well as launching a Virtual ISP (“VISP”) service.

While Aviators continued to offer the Internet consultancy services of Monu Ogbe in order to cross-subsidise the ISP revenues, it also realised that progress in this area would be limited given that the company lacked the critical mass of developers that would be required for many larger scale consultancy projects. With regard to its ISP service, Aviators aimed to ensure that its product was at least equal in terms of functionality and service to those of its “free” rivals. A key product enhancement at this time included offering clients a dial-up package with multiple e-mail addresses. While this enhancement was not a major technological change, effectively requiring only a minor adjustment to the existing open source software, it was a significant product enhancement in terms of customer perceptions. However, it was recognised that the main customer market for value-added services was the B2B market, serving small and medium-sized enterprises.

“Over time, we developed a portfolio of products organically basically, domain name registration, domain name transfer, web hosting – a few customers had bespoke solutions for them.” (Andy Nash)

At the end of 1998, an existing customer, Flyer Magazine, approached Aviators with the idea of launching a free ISP in their own name. The new Flyer ISP was installed on the same platform as Aviators, thereby leveraging existing resources at little extra cost. At the same time, the ISP would be operated by Aviators allowing it to retain customers who wanted to join a free ISP while content would be provided by the magazine. The launch of the free Flyer ISP service in May 1999 presented an opportunity for the company to develop what was effectively a VISP or Virtual ISP service. Economies of scale were present given that the same platform (servers and domains) could be used for multiple VISPs and revenues could be gained from a share of the call revenues. It further presented

a means of expanding the customer base without the corresponding expenditure on marketing. The VISP was not considered by the company to be a departure from their B2C business but rather a method of replicating their B2C knowledge. As Andy Nash states:

“It sounds like it’s business-to-business, but it’s actually just a method of doing business-to-consumer”.

The development of FRIACO or unmetered access, was a further threat to Aviators’ existing customer base. Continuing its focus on value-added services, the company launched a broadband or ADSL service in October, 2000. The company’s introduction to ADSL was fortuitous in that it was able to take part in a trial run by national carrier, British Telecom, two years’ ahead of the official launch with only two other ISPs taking part. The decision to develop a broadband product was a considerable one, taking into account the investment required of a small company with few slack resources. The minimum investment required was approximately £20,000 for installation and one year’s rental, where Aviators was able to overcome a potential cash flow problem by offering customers a ten per cent discount if they paid upfront for one year’s access.

7.5.5 Process Development

At the same time, the development of new products was itself a driver of developing organisational routines around customer-facing processes. The aim was to grow sales while ensuring that processes were more efficient to allow this.

The first major task of Andy Nash subsequent to joining in 1998 was to develop an efficient on-line sign-up process, where Aviators realised that this was a priority in light of the company's aspirations to grow the customer base. The on-line sign up process was inflexible and basic, being based on Microsoft Access software, which was not scaleable and required a significant amount of development each time a variable was altered or added. The company further needed to ensure that sign-up processes were made as simple as possible given the customer base was not necessarily technically-oriented.

In the view of the respondents, a major competitive advantage of Aviators was its ability to be reactive to customer needs as a consequence of its small size and the personalised nature of the service. As Andy Nash states:

"If a customer called up and said 'I want X' and we'd never done X before in our lives - if we were capable of doing it, then we'd do it. But whereas a large company would not be able to do it, I'd have to go through processes, formalise product documentation, and all that."

It was a result of this reactivity that the product portfolio grew organically to include domain name registration, domain name transfer, and web hosting as well as dealing with bespoke customer requests. However, as the product range grew both nominally and in terms of complexity, the company realised that it needed to be more efficient in dealing with existing and potential customers. Parallel to the development of the sign-up process, the customer database was also developed, providing a record for each customer, showing products bought and payments paid. In Andy Nash's words:

“At that point, we started to behave like a larger company and to formalise our products.”

The company began to focus on standardising its response to customer requests, by not reacting to every customer demand, but by limiting what could be offered to clients. Rules were created effectively around what tasks could be performed around each product, i.e. a standard way of creating a domain name. Product and process standardisation was effected through the product database; there was no documentation with new routines being automated through developing software applications. The database creates automated processes around the workflow associated with each product including the pricing and production of documents for client sign-up:

“We have a formal set of services that we offer...based in a database and that database feeds all of our marketing instruments, so be they letters for websites, contracts and programmes...so if you come along and buy a domain name, it’s an automated process and that automated process will allocate and charge the right price and set up all the necessary bits and pieces.” (Monu Ogbe)

The exception to automation occurs when there are amendments to client requests and also with respect to client-facing routines such as negotiation processes, which cannot be automated.

7.6 ANALYSIS OF CASE STUDY RESULTS

The aim is to address the third research question, *‘What are the processes through which new and established firms develop capabilities to compete in new markets?’* by reference to each of the four subsidiary research questions developed (see Section 4.4.2). With

regard to the latter, the objective is to establish a chain of evidence that links the data to the research questions in order to develop theory in respect of the capability development process. The sample for the case study research is an intentional one, aiming to select different types of companies across two different on-line markets created out of different types of innovation. The logic behind replication is theoretical, where the expectation is to produce different results across cases for predictable reasons, particularly with regard to capability development across different types of firms (Yin, 1994). Consequently, the approach to analysing the data is to focus on similarities and differences across cases, looking for cross-case patterns (Eisenhardt, 1989) rather than to use one case to inform another in an iterative manner. The aim of the analysis is to develop propositions in respect of the research findings.

7.6.1 Chain of Evidence for Research Question 3.(a)

3. (a) *What is the role of individuals' knowledge in the creation of new organisational routines?*

In relation to the first research question (3a), the aim is to examine the role of individuals' knowledge in the creation of new organisational routines, where the importance of individuals' knowledge is shown in Grant's (1996) hierarchy of capabilities. More specifically, the focus is on examining the role of prior organisational experience with respect to the creation of new organisational routines. While a quantitative measure of prior organisational experience is used with respect to the survey, the aim within the case

studies is to allow the respondents an opportunity to identify whether and to what extent prior organisational experience is considered relevant to the development of their on-line operations.

Role of Prior Organisational Experience

There is support for the role of individuals' knowledge in the creation of new organisational routines. The findings suggest that the importance of prior organisational experience is hierarchically determined, where (i) the role of prior organisational experience varies within the managerial hierarchy and (ii) the relevance of prior organisational experience is confined to senior level employees.

Senior Management

In all the cases studied, the importance of the prior organisational experience of the top or senior management team relates to their ability to develop the overall blueprint for the creation of capabilities within on-line operations or "capability blueprint"(see Table 7.1). Capabilities consist of one or more sets of interacting routines and can be further considered to be hierarchically organised (Grant, 1996), where organisational capabilities are considered here to refer to the core functional and cross-functional activities of the firm. As such, the "capability blueprint" refers here to the overall structure or architecture of the firm's capability set, including consideration of the main tasks or processes of which these core functions comprise.

Construct	Measure	Interpretation	Case Examples
Individuals' knowledge	Prior Organisational Experience	Prior organisational experience relates to ability of senior management team to create the overall "blueprint" for the creation of capabilities within on-line operations.	<p><i>NWS:</i> Blueprint for on-line service developed by committee, where heads of key functional areas were represented.</p> <p><i>SELF Trade:</i> Senior management team hired to set up firm and recruit other senior hires.</p> <p><i>Freeserve:</i> CEO as key architect of organisational blueprint.</p> <p><i>Aviators:</i> Monu Ogbe, owner and founder, created overall organisational blueprint.</p>

Table 7.1 Role of Prior Organisational Experience of Senior Management Team

With respect to SELF Trade, the prior organisational experience of the founding management team is considered by respondents to be relevant in respect of creating the overall blueprint of the firm in the first few months prior to launch, both with regard to developing the organisational structure and to assessing the functional, operational and technological needs of the new venture. As Martin Braund states:

"So I spent most of my initial time looking at IT vendors, recruiting staff, selecting partners for things like banking... which took up most of my time during the first couple of months, I guess."

All of the top management team had previously worked at a senior level in either investment banking or retail broking, with the exception of Peter Boucher whose prior experience in marketing is relevant to his role in developing the marketing function. Prior general managerial experience is common to all members of the original founding management team, while prior function-specific experience was also considered critical to determining the path or direction of capability development required for each of the core

functional areas. Within Freeserve, the prior organisational experience of the founding management team was again instrumental in creating the overall blueprint of the firm and the structure of the core operational areas. John Pluthero, the founding CEO of Freeserve, is considered to be the main architect of the company and was responsible for developing the Dixons Group Internet strategy prior to joining.

The impact of prior organisational experience at the senior management level on the development of the organisational blueprint is reinforced by the case of Aviators. Monu Ogbe believes that development of the firm has been hindered by the inadequate development to-date of the firm's marketing and sales capability, where his prior organisational experience is confined to that of a *technical specialist without any general management responsibilities*. The lack of focus on developing a marketing and sales capability is summarised in the following quote:

"I would be delighted not to have a single salesman, not to do a single bit of traditional selling, but for the website or for it all to happen organically and virally to leverage the (technical) phenomenon." (Monu Ogbe).

Managers

The importance of prior organisational experience is shown in respect of other senior hires, although the next layer of management tends to be more directly responsible for the creation of organisational routines (see Table 7.2). The relevance of the prior organisational experience of other senior level managers relates more to their "technical" knowledge considered vital to creating specific functional and operational routines. However, while the on-line broking sector exhibits the importance of hiring managers with

industry-specific knowledge, this was considered desirable though not necessarily possible in the ISP sector.

Construct	Measure	Interpretation
Individuals' knowledge	Prior Organisational Experience	Prior organisational experience of next layer of managers relates to their ability to create operational and technical routines within functional areas.

Table 7.2 Role of Prior Organisational Experience of Next Layer of Managers

With respect to SELF Trade, there was a need to hire individuals with a clear idea of how to set up each of the functional areas without resorting to trial-and-error learning, especially given temporal constraints and the fact that broking is a regulated industry with common standards. Martin Braund explains the reason for hiring experienced individuals:

“You need the experience as well, because we couldn't afford to be training people, because you know there were a million and one things to do. So you needed people who were confident in their own subject matter to come in, to set departments up, to know how functions were going to work, to learn the new systems they had to deal with, you know, to understand all the external relationships, you know, CREST, banking, the Stock Exchange... So those first couple of months were about getting the right people in.”

Given the fact that the ISP sector is a new one that could not have existed prior to the development of the Internet, the initial emphasis was on hiring individuals with entrepreneurial and/or generalist managerial experience given the uncertainty of the new sector and specific operational needs as well as the lack of related market experience. As Deborah Sherry explains:

“One of the things that's an issue when you go into the market is trying to find people and you want people with experience and nobody's had experience with this.”

However, within Freeserve, there has been increasing emphasis on developing specialisms within each of the core functional areas as the company matures and its business model becomes more defined as well as increasing importance assigned to the development of efficient operating processes. This has been accompanied by the recruitment of individuals with prior experience in related media and or customer service sectors.

The creation of the ISP service by Aviators relied heavily on the technical skills of its original founder, Monu Ogbe and his associate Tom Dawes-Gamble, both of whom were experienced software developers and were able to create the technological capabilities necessary to build the ISP service. Other employees were essentially hired for their potential, given that they were new graduates with little prior work experience or specialist technical skills, where they were expected to learn by doing. As Monu Ogbe states:

“We all teach ourselves extensively and one of the benefits of the Net is that if you want to know something you go on-line and find out”

Limitations of Prior Organisational Experience

In order to establish the importance of prior organisational experience, it is further important to establish whether there are limits to its usefulness. While the importance of prior organisational experience for new firms is supported, it seems that it is more important in relation to senior rather than more junior level recruits. As Peter Boucher of SELF Trade states, the firm has a tacit policy of not hiring less senior hires with “blue chip” company experience in the belief that much prior organisational experience is context-specific and therefore not widely applicable:

“We’ve tried not to go out and get everyone blue chip: a) it costs a fortune but b) sometimes when you rent, when you get someone from Unilever, for example, what you think you are hiring you don’t actually get because a lot of them is actually left behind at Unilever.”

In the ISP sector, firms were further confronted with the issue that hiring recruits with prior relevant experience was difficult, although this has not necessarily been a drawback given that business models were uncertain at the time of launch and have evolved over time. However, as Caroline Taylor, Head of Portal Strategy, states, much prior business experience can be considered important and relevant to devising business processes within Freeserve, irrespective of specific organisational background:

“I’ve worked for a number of years now and I think there are lots of things I could bring to the Freeserve party, you know, in terms of experience...there are a finite number of ways of doing something...You bring the experience of how to do things and how not to do things and also you are applying it to a new business environment.”

The importance of prior organisational experience of the senior management team is secondary to the importance of existing organisational routines in the case of established firm, NWS. The development of on-line broking within NWS was viewed internally as a channel innovation that was managed as an IT development project. The original blueprint for the new on-line service was developed by a committee, where the heads of key functional areas were represented. It seems, however, that the aim of the senior management team was to build an on-line broking system that could be integrated with the existing structure of organisational routines, where existing routines acted as the guiding template for the new development. As Richard Hunter states the aim was to integrate the system into existing operations so that there was no change from the client perspective:

“But from a client perspective, after they have pressed the button, they won’t notice any difference, as if they had placed the deal over the phone. There will be no difference at all.”

With the exception of the development of a client relations team and an Internet support desk that would operate on a twenty-four hour basis, the project required few additional organisational routines. Similarly, in the case of SELF Trade, the group’s front end web interface acted as the template for the UK venture’s front end web interface around which new routines would be created.

In respect of research question 3.(a), the aim is to develop propositions in respect of the source of knowledge in the creation of new organisational routines, where there are differences in the origins of capabilities across new and established firms. However, it must be acknowledged that with respect to proposition three, the evidence is in respect of an established firm entering a new market which has emerged as a result of autonomous innovation. Hence,

Proposition One

The prior organisational experience of the senior management team is the primary source of knowledge for the creation of the overall capability blueprint.

Proposition Two

The prior organisational experience of managers is the primary source of knowledge for the creation of new organisational routines in new firms.

Proposition Three

Existing organisational routines rather than the prior organisational experience of managers are the primary source of knowledge for the creation of new routines in established firms.

7.6.2 Chain of Evidence for Research Question 3.(b)

3. (b) *What is the role of motivation in the capability development process?*

The aim is to examine the role of motivation in the capability development process, where there is support for the contention that initial aspirations combined with subsequent changes in aspirations affect not only the extent to capabilities are developed but also affect the type of capabilities developed (see Table 7.3). The role of senior management is implicit in the development of the firm's aspirations which is in line with the findings of the first research question (3a) and the role of the senior management team in determining the overall capability blueprint.

Construct	Measure	Interpretation
Motivation	Firm Aspirations	A firm's initial aspirations and changes in firm aspirations determine the type and extent of capability development.

Table 7.3 Role of Motivation in the Capability Development Process

NWS had very clear aspirations as to what type of on-line broking service it wanted and how it intended to develop the capabilities required. Its original aspirations were focused

on developing a simple, efficient on-line broking service that could be offered as an alternative channel for existing customers. From the onset of the development project, NWS focused on developing the technological capabilities in conjunction with third parties to integrate the on-line trading system within its existing trading system, with almost no change to the existing functional structure in terms of developing new routines with the exception of an Internet support desk and a re-organisation of its client servicing teams to gain feedback from clients. The service was advertised only to existing clients with no impact on the company's marketing function and the system was integrated within the existing back office system for trade settlement and operations. Support for role of aspirations is reinforced by the fact that respondents state there has been no change in the firm's initial aspirations and, since the launch of the on-line service, there has been no major change to either the system's functionality or to the services offered.

In the case of SELF Trade, the original aspirations of the firm were to develop a comprehensive on-line dealing service that would ultimately offer a wide range of equity-based investment products at a competitive price, with the concomitant aim of growing the customer base as quickly as possible. The development of a marketing capability was considered critical to growing the customer base and has assumed an important role within the organisation. Similarly, the hiring of senior individuals with functional experience also suggests that the company's growth aspirations could not be met by a trial-and-error approach to learning, where the aim was to develop efficient operating processes as quickly as possible in line with tight launch deadlines.

The implication of offering a low share dealing price has meant that both front and back office operational processes are necessarily efficient; the ongoing re-design of back office processes suggests that the company is aware of how it needs to ensure that its costs of processing trades is kept as low as possible if low dealing costs are to be maintained. The company's aspirations have altered in part over time as the company responds to a changed market environment. The continued market weakness has not detracted from attempts to growing the customer base, although there is a current emphasis on developing cross-selling marketing initiatives to increase the revenue generated from existing customers. The development of the CRM tool further highlights the internal emphasis on ensuring customer retention.

Freeserve's original aspirations were to create a free ISP service and in so doing to grow its customer base as quickly as possible. The company was able to leverage the distribution capability of Dixon's in order to grow the customer base. Once the firm had established significant market share within the UK ISP market, it realised the potential to leverage its customer base by developing its portal business and focusing on developing content for the purpose of attracting advertisers and providing opportunities for e-commerce. While senior management are assumed to control the development of firm-level aspirations, it is clear that changes in aspirations are largely influenced by environmental factors, such as changes in market demand and technology. The development of FRIACO has, in turn, provided a revenue model for the access business and has provided an important incentive to ensure the retention of existing customers, as witnessed in the recent redesign of the

customer services operation. Similarly, the dot.com collapse highlighted the danger of reliance on external technology partners and has led to greater emphasis on developing technology internally. As Kevin Whitworth states:

“As Freeserve has grown and developed its offerings to customers, we have needed to have more input and more control over the infrastructure supplying these offerings – particularly core services such as the portal... we may enter into partnerships with service providers that allow us to learn from the experts with an aim to take more control of the technology, for example, by starting on an ASP (Application Service Provider) basis, but moving to a licensed model running their software on our infrastructure when Freeserve grows more confident with the technology.”

Monu Ogbe's initial aspirations were focused on developing an ISP that delivered cutting-edge technology to its customers. While this has been realised, the aspirations of Aviators have necessarily changed over time to take account of a changing ISP market, where this has directly affected the capabilities required for success. The original aspiration of Aviators was to use Internet technology to launch an information service for pilots, where the ISP was used as the conduit for this aim given that it further provided a means of generating a revenue stream. It soon became clear that the company would have to develop the services offered by its ISP business if it was to survive and grow. Aviators focused on developing its technological capabilities, aiming to offer the most technically advanced ISP services to its customer base and developing value-added services charged at a premium to its basic access service. However, Monu Ogbe, the founder, underestimated the role of marketing relative to its technological capabilities in growing the customer base sufficiently to attract the additional funding necessary for further expansion. The development of its VISIP service increased the focus on its B2B service developed initially

for Flyer magazine, allowing the company to leverage its clients' marketing and distribution capabilities:

"We need to do deals with clients who have marketing muscle offering them the technology by which to reach their large markets." (Monu Ogbe)

All the cases illustrate the importance of initial aspirations and, with the exception of NWS, changes in aspirations in the capability development process. The case evidence suggests that the motivation for capability development is determined in part by the firm's aspirations, where firm aspirations can be considered to provide a force for exploration in the development of routines (March, 1991). When aspirations are fulfilled, this marks the end of overt learning and the replacement of exploration by exploitation (Winter, 2000). In respect of research question 3.(b), the aim is to develop propositions in respect of the role of motivation in the capability development process. Hence,

Proposition Four

Firm level aspirations determine the type of capabilities developed and the extent to which they are developed.

7.6.3 Chain of Evidence for Research Question 3.(c)

3. (c) *What is the role of codification in the capability development process?*

Through an examination of the process of codification in respect of the case studies, the aim is to develop our understanding of this process and thereby examine the role of

codification in the capability development process. The case studies confirm the importance of codification in the efficient transfer of organisational routines through making tacit knowledge more explicit (Grant, 1996), subject to the ability to standardise tasks. The case studies further illustrate the use of codification as a means of organisational learning and of developing an organisational memory (Nelson and Winter, 1982). Given the time and costs of codifying routines, codification can be further viewed as an opportunity for organisations not only to document existing organisational routines but also to improve them (Zollo and Winter, 2002). While there are differences in the actual timing and process of codification in each of the firms studied, the generalised patterns exhibited permit us to make inferences about the process of codification.

Origins of Codification

In the case of NWS, an established firm, the firm codified new organisational routines as they were developed. However, with respect to new firms, the codification of organisation routines tends to take place later rather than earlier in the development of the firm. In the first instance, codification tends not to have been a priority in new firms, where the emphasis is on developing routines that are operational in a relatively short period of time. The main constraints on codification appear to be the time and costs involved. At the same time, there is a reliance on key individuals for the development and transfer of organisational routines prior to codification (see Table 7.4).

<i>Construct</i>	<i>Measure</i>	<i>Type of Firm</i>	<i>Priority on Codifying New Routines</i>	<i>Constraints on Codification</i>
Codification	Documentation of organisational routines	New	Low: Reliance on key individuals for transfer of routines	Time and Cost
		Established	High: New routines are codified	-

Table 7.4 Origins of Codification within New and Established Firms

SELF Trade’s initial focus was on speed, where the company worked to a tight deadline to ensure that the venture was operational within a few months of its inception. Although SELF Trade has aimed to codify organisational routines from an early stage, documentation of organisational routines during the initial or start-up phase of the company was necessarily constrained by time. Colm Long explains how the initial development of routines relied on the tacit knowledge of individuals:

“Initially everything was manual... I think what we tried to do was try and get at least three or four people who had previous experience in managing this type of department and we took an awful lot of people from Thomas Cook in Peterborough just for their call centre experience not because of their financial services knowledge... So it was very much relying on those three or four people ...It was very, very gradual. It was kind of a very slow process initially where we were very much depending on those, sort of, three or four people to be the experts.”

In the case of Freeserve, the technology function was the first part of the organisation to focus on developing standardised and documented procedures from a very early stage in the company’s life. Initial attempts at codification within Freeserve were driven by the technology function given that many of the technologists hired have experience of working in other organisations, bringing with them project management techniques that are used extensively in IT development. However, the approach to codification has been more “ad

hoc” within other parts of the organisation until the last two years. This is understandable in light of the pace with which the company has developed combined with the fact that there was no prior dominant design for an ISP business model in the UK and where the company’s business model has evolved over time. The view of respondents is that codification naturally tends to occur later rather than sooner:

“Because in the past, it was you know do things, do them very fast, you know. And the environment was very different. A couple of years ago, it was do deals, do this, do that – everything happened really quickly”. (Caroline Thomas)

Initially, the main focus of the company has been on developing operational procedures to ensure that corporate deadlines are met with a later emphasis on codifying them. Deborah Sherry confirms that most key business tasks were formally identified by the company at the beginning of 2000, although it was not until the middle of 2001 that documented procedures for these tasks were developed with an ongoing aim being to fill in any “gaps” in the documentation as necessary. Until the middle of 2001, the approach to codification within Freeserve was determined within the confines of each functional area rather than through a centralised effort. Since that time, there has been a company-wide focus on implementing efficient operational processes and the concomitant need to identify and document operational processes across all functional areas. It is during this period that the company has been more active in developing written templates and procedures, particularly around more complex procedures such as those governing their project methodology.

Aviators in its first stage of development until the middle of 1998 was reactive in terms of the products and services it developed for customers. While automation of products and services was central to its business model, the company had not created routines around these processes, with products being developed on an ad hoc basis for individual customers, and associated documentation did not exist. The one exception to this was the existence of a routinised on-line sign-up process, given the frequency with which this task was performed and its volume nature. As Monu Ogbe explains, although Aviators had the skill with which to develop organisational routines, it did not have the time to do so:

“Business graduates and systems analysts have techniques at our disposal by which to map business processes and to understand them, to translate them into programmes and so on and so forth but corners do get cut and those are the corners that are cut.”

With respect to NWS, the importance of codification is witnessed from the initial stages of the development of new on-line operations. NWS is an established business, where the development of an on-line broking operation followed established, documented procedures in relation to the development of an IT project. The project development approach required written reports at key stages in the development process, while the outcome was essentially the automation of on-line trading procedures through the front end web interface.

Task-specific Nature of Codification

The research suggests that codification will occur in respect of tasks that are more frequent or less complex, although the benefits of codification are likely to occur where tasks are less frequent and more complex and, hence, causally ambiguous (Zollo and Winter, 2002).

However, this research suggests that, in respect of new firms, while initial attempts at codification may focus on tasks that are more frequent and less complex, this is not the case over time. In other words, the benefits of efficient knowledge transfer ultimately outweigh the difficulties of codifying more complex tasks (see Table 7.5).

Construct	Measure	Interpretation	Case Examples
Codification	Documentation of organisational routines.	Initial attempts at codification in respect of tasks which are more frequent and less complex. Codification limited less by task complexity than the degree to which tasks can be standardised.	<i>SELF Trade:</i> More frequent and less complex tasks are codified in the first instance. <i>Freeseve:</i> Increasing emphasis on codifying all routines, although codification is limited in respect of tasks which can be standardised. <i>Aviators:</i> Increasing emphasis on codifying all routines, where codification viewed as opportunity for standardisation.

Table 7.5 Task-Specific Nature of Codification

Within SELF Trade, early attempts at codification have tended to focus on relatively simple tasks such as procedures governing employee appraisals, where templates have been developed incorporating some of the ideas outlined in organisational documents used by former employers of the senior management. Peter Boucher states how many basic routines have been created:

“I’ve got all my original training folders – ditto for Barclays- and what we do is try and invent a more skinny version.”

Early codification attempts have similarly focused on more frequent and standardised tasks such as within the operations or settlements areas of the firm, where such tasks tend to be

repetitive and frequent given the volume nature of transaction processing and are subject to a high degree of uniformity across firms given the need for industry standardisation.

“The back office was always very good at it, because they took - a lot of their employees come from Barclays, so there are already people there who had experience of building procedures and when it’s operations, it’s very black-and-white.” (Colm Long)

However, the firm has further expanded its attempt to codify routines around less standardised and more complex tasks, such as customer-facing tasks. As Colm Long explains:

“What we’ve done is identified between 20 or 25 key processes within that department, which again range from opening an account to closing an account to withdrawing money to making a complaint... and we’ve basically got a whole list of documentation which we’ve built up over time for some of it and for the rest of it, we’ve worked very closely with our compliance department who’ve helped us to identify gaps in processes.”

As stated, Freeserve has adopted an *ad hoc* approach to codification until the firm-wide emphasis on operational efficiency in the last twelve months. However, the firm’s current emphasis is on codifying as many routines as possible, irrespective of functional area, given that even quite complex processes tend to be repeated:

“So there are these projects that happen over and over again and we need a best practice...There are continuous processes and there are projects that begin and end, but we do them over and over again.”. (Kate Wilson)

However, the main constraint on a firm’s ability to codify tasks relates to whether tasks can be standardised, where standardisation acts as a pre-condition for codification. Within the channels group, the two key business processes of signing up a new affiliate or partner and developing a new sub-section to a channel have been documented in the form of

templates for both employees and potential partners. As part of these templates, component tasks and routines are documented, although given the bespoke nature of many of the negotiated aspects of these routines, the potential for standardisation is necessarily limited with the exception of advertising sales given the uniformity of software used in the industry.

“We have a documented way of building a channel and, once we build a channel, we have a documented way of how we’d like to add partners... But also in every channel, it’s a little different because travel needs a bit of content, words and stuff, but gambling, with games, you just need the functionality and to play it. You don’t need many words around it. So it’s a bit different in every channel as a result. It can’t be so standardised.” (Deborah Sherry)

With respect to Aviators, it was not until the second phase of the company’s development, at which time the company was considering how to further grow the customer base, that the firm decided that it would need to increase operational efficiency and develop the routines that it would enable the firm to do so. Existing organisational routines such as the on-line sign-up process came under scrutiny and consideration was given to improve the sign-up process as well as to develop new routines to standardise product and service offerings around a centralised product database as well as standardising responses to customer requests. In relation to the development of its B2B white-labelling service or VISP service, Andy Nash states:

“So we went back to Flyer and looked at what we did and made it more generic and more templated.”

Aviators did not view task complexity as a barrier to codification, but rather viewed codification as an opportunity for standardising its existing product and services through

the development of a centralised product database. The company saw an opportunity to develop further customer-facing routines on-line through improving the functionality of the customer database to ensure that a record of each customer's history was centralised and that communication between Aviators and the company could be exacted primarily on-line. Standardisation of routines was an integral part of this re-development, where standardisation was implemented with respect to the product/service offerings, ensuring that standardised and automated responses were made to customer requests.

Automation of Routines

The assumption within this research is that codification is assumed to be the documentation of routines, primarily in written format. However, a finding of this research is the role of automation in the codification process and its place in the sequential development of codification. While task automation may be a feature more specific to on-line businesses, given the emphasis on ensuring a low cost business model, codification appears to become progressively more automated over time.

While automation should be expected in relation to many trade processing tasks given the volume nature of the on-line broking industry, SELF Trade has explicitly aimed to automate as many of its organisational routines over time as possible. The continued emphasis on process redesign of its back office system is an explicit attempt to automate as many of its back office routines as possible, while the development of its CRM tool suggests the importance attached to codifying customer-facing routines, which are

considered more difficult to codify given the potential for variability in response as there are many different ways to accomplish each client-facing task.

“And what we’ve started doing is making this (CRM) tool work for us a bit more and we’ve kind of automated some of our processes through it”. (Colm Long)

Similarly, the automation of routines is seen as a stage in the development of routines within Freeserve. While many of the processes within the access division are already automated, the aim has been to improve existing automated processes and increase the level of automation in order to ensure efficiency, minimise human error as well as to provide an audit trail with respect to the monitoring of key performance indicators.

Given the technological nature of the ISP business and the technical background and vision of the company’s founder, the provision of access and other related services on-line has meant that automation has been central to Aviators’ business model:

“Every process that can be automated should be automated...and we use automation wherever we can.” (Monu Ogbe)

The first major task of Andy Nash upon joining the firm was to develop a new on-line sign-up process given that the existing Microsoft Access software was not scaleable and required a significant amount of development time each time a variable was altered or added. Aviators has attempted to codify through automation as many of its central organisational routines as possible, where automation has been a function of the nature of the firm’s business model and its limited human resources.

Codification as a Means of Improving Routines

It is important to assess how codification is undertaken within organisations, both with respect to the element of intent and its corresponding frequency. Given the effort required in codification, both in terms of the time taken and the costs involved, codification is an intentional process which occurs periodically. The cases further show that the initial process of codification together with process of reviewing codified routines provides an opportunity for firms to improve upon existing routines.

Within SELF Trade, there are two distinct phases in the firm's evolution; the first or start-up phase of the company lasted approximately eighteen months and coincided with what Martin Braund has termed a "project management" mentality. The priority during this period was to develop organisational routines to ensure that the company was operational. While some less complex routines such as those surrounding the internal appraisal process were documented, there was little in the way of codification of other routines around operational processes given the temporal constraints faced by a company that was growing so quickly. The firm's approach to codification in the start-up period is summarised by Colm Long:

"The documentation of the processes was probably a bit sporadic, if ever. There was an awful lot of Word documents lying around – some of it was documented, some of it wasn't, you know, some if it was word-of-mouth...The main constraint on the whole things was time really. And no-one really had that much time to sit down and, sort of, type out all these processes."

The second phase of the company has witnessed a focus on gaining operational efficiencies where the emphasis has been on codifying new and existing routines, with the ultimate aim

of automating as many routines as possible, including customer-facing routines. The re-development of the back office system and the development of the CRM system, around which new routines are being developed, suggest that the process of codification is an intentional one that is driven by the firm's senior management.

A similar pattern is observed with respect to codification of routines within Freeserve. Initial attempts at codification were predominantly confined within specific functional areas during what could be termed the start-up phase of the company prior to the establishment of the portal business model. However, post the emergence of a dominant design with respect to the business model, there have been explicit attempts at codifying organisational routines across the organisation. Deborah Sherry refers to the fact that while life in the company was very "haphazard" in the first eighteen months, later attempts at codification of routines at Freeserve are part of an intentional process:

"And then we did masses of projects around what should we be doing, how should we be doing it and how should we be structuring it. So it was very intentional after a point."

Even where existing routines have been codified, they are subject to periodic review. In light of the dynamic market environment in which the company operates, Freeserve acknowledges that organisational routines need to be reviewed periodically and senior management has developed an ongoing periodic review of codified routines. Given the repetitive nature of customer facing interactions, there has been a focused attempt to identify and re-design existing customer facing tasks and routines, such as those surrounding connection, registration, customer care and billing. The first stage of this

process has been mapping out all key processes, documenting the screen shots from the customer's perspective and then re-designing the processes.

"We will have a new registration system...that was all documented in terms of screen shots and whatever for different customer services...Anyone can access these within the company." (Kate Wilson)

The practice of codifying routines and periodically reviewing codified routines is further viewed by Freeserve as an opportunity to improve upon existing organisational routines as well as create new ones.

"Documenting and creating organisational memory takes a lot of time... We are not in the one-off game any more...But we are old enough so that we are doing things we've done before...when you launch something you actually have to think about how we do things wrongs so we understand what we have learnt and can do things better next time." (Kate Wilson)

Similarly, in respect of Aviators, it was not until the second phase of the company's development, at which time the company was considering how to further grow the customer base, that existing organisational routines such as the on-line sign-up process came under scrutiny and consideration was given to improve the sign-up process as well as to develop new routines to standardise product and service offerings around a centralised product database. The recent hiring of an individual to develop documented procedures to gain ISO 9000 approval further suggests that codification is an intentional attempt to formalise and record operating procedures. As Monu Ogbe states:

"All the activities that are involved in running our business do need to be formalised and will be...The need for it has been recognised for a very long time."

Role of Codification

Codification can be viewed as an important and evolutionary step in the development of new organisational routines. The intention of all the firms in the case studies was to codify new organisational routines, if and where possible. The cases suggest that the role of codification can be considered in relation to the benefits thereof; its role in knowledge transfer and its role in the improvement of existing routines.

Knowledge Transfer

In all the case studies, there is an implicit emphasis on the importance of codification for the transfer of organisational routines through making tacit knowledge more explicit. The focus is on the use of codification as an increased source of operational efficiency through the documentation, in written or automated format, of standardised operational procedures. Within new firms, there is an initial reliance on key individuals for both the development and transfer of new routines, given that codification is constrained by the time needed and the costs involved. However, growth in the size of a firm may itself come to act as a constraint on the use of individuals for the efficient transfer of routines. The case of SELF Trade illustrates how the motivation for codifying routines was predominantly generated by growth in the number of employees and, hence, the need to train larger numbers of employees in the routines used. As Colm Long states:

“And, I suppose really where the processes and the documentation of processes really came into play in the first instance was when we were starting to recruit a lot more people. Where there were initially maybe only 10 or 15 people and it was kind of ticking over, then it was ok. But when you have to train 15 or 20 people all at once in the recruitment session – how a trade works and how the financial

markets work, then I guess yeah you really need to have handouts really and that's probably what our embryonic procedures were all about."

The importance of codification in relation to knowledge transfer is reinforced through the discussion of the task-specific nature of codification. While more frequent and less complex tasks tend to be codified in the first instance, task complexity is not a long term barrier to codification. The key issue is whether tasks can be standardised. While Freeserve and SELF Trade support the importance of standardisation as a pre-condition for the codification of routines, codification was used by Aviators as a means to standardise their operating processes and the products and services offered.

Improvement of Organisational Routines

The role of codification can be further viewed in relation to its ability to improve organisational routines (Zollo and Winter, 2002). The cases provide evidence that codification is an intentional process that occurs periodically, given the time taken and costs incurred. As such, initial attempts at codifying routines together with any review of existing codified routines provides an opportunity for firms to improve upon existing routines. Codification is viewed by Freeserve as a means of assessing and embodying the learning of the organisation to-date and represents a method of developing the organisation's memory. The implication is that codification provides a basis for future learning and the improvement of existing routines:

"As a business we can't afford to work unintelligently in terms of, you know, re-doing everything." (Kate Wilson)

Implicit in the role of codification as a means of improving organisational routines is its role in providing a shared knowledge and a common language across the organisation. While the idea that codification is a step beyond knowledge articulation and “*forces the drawing of explicit conclusions about the action implications of experience*” (Zollo and Winter, 2002) is an important one, codification serves further to document the structure and technical operation of organisational routines as well as to develop a standardised language across the organisation which can be used in the adaptation/improvement of existing routines or the creation of new routines. This is especially important given that innovations in organisational routines consist, in large part, of new combinations of existing routines (Nelson and Winter, 1982), where Nelson and Winter (1982) adopt Schumpeter’s (1934) notion of innovation. In other words, codification ensures that there is no ambiguity about which routine is being referred to and what the routine does. With respect to research question 3.(c), the aim is to develop propositions on the role of codification in the capability development process and on the codification process itself.

Hence, with respect to the role of codification:

Proposition Five

Codification increases the efficiency with which organisational routines are transferred.

Proposition Six

Codification is a process for the improvement of organisational routines.

Hence, with respect to the process of codification:

Proposition Seven

Prior to codification, the transfer of organisational routines relies on individuals in new firms.

Proposition Eight

Codification is greater initially in respect of tasks that are more frequent and/or less complex given that task standardisation is a pre-condition for the codification of routines.

Proposition Nine

Codification involves the documentation of routines in either written or automated format, where the automation of routines is the final stage in the codification process.

7.6.4 Chain of Evidence for Research Question 3.(d)

3. (d) *What are the constraints in the capability development process?*

The aim is to assess the constraints in the capability development process. The suggestion is that established firms relative to new firms have greater difficulty with capability development as capabilities become increasingly embedded in the organisation's systems and bound by the organisation's structure (Leonard-Barton, 1992). The evidence from the cases highlights the importance of two issues. First, a critical issue is the extent to which the architecture of routines acts as a constraint on changes to existing routines or the

development of new routines. Second, a key issue is to assess the extent to which the organisational structure inhibits the “architectural competence” of the firm (Henderson and Cockburn, 1994). The cases suggest that while firms are able to develop and maintain architectural competence through the use of cross-functional teams, it becomes increasingly difficult to make changes to the architecture of routines once routines are embedded in an organisation’s systems (see Table 7.6).

Construct	Measure	Interpretation
Constraint on Capability Development	Architecture of Routines	The existing architecture of routines acts as the main constraint on capability development.
Architectural Competence	Cross-functional teams	Use of cross-functional teams for business development.

Table 7.6 Assessing Constraints within the Capability Development Process

NWS and SELF Trade illustrate how the existing architecture of routines acts as a constraint on the development of on-line operations at the time of new market entry. NWS’s on-line broking operations were designed as a channel extension of BL, its execution-only broking service. The launch of on-line broking required little or no change to the company’s existing organisational structure with the exception of an Internet support desk that provides customer support on a twenty-four basis and an addition of a client relations team to assess customer feedback on all broking services. From a systems and operational standpoint, the on-line trading system was designed to be integrated into the existing trading system infrastructure whereby the on-line order system was essentially considered to be another branch of the SHADE dealing service with no impact on the

organisation of trade settlements and operations. In established firm, NWS, it is clear that the key condition for developing the on-line broking service is that it was to be integrated into the existing trading and operations systems architecture such that the latter two were unaffected. As David Brown states, the emphasis was on re-usability of the existing trading infrastructure:

“So we came up with the bright idea of using our SHADE engine, which has all its functionality built into it. And this is where re-usability comes in because it saves time and it saved us money.”

Similarly, a key requirement of the development of on-line operations at SELF Trade was that the design and development of a back office system was compatible with the front end web interface based on the existing front end web interface of the parent company in Paris.

The cases show that once routines are embedded in systems, then any attempt to alter existing routines or develop new routines that involves changes to their existing configuration takes time and is costly. While the re-design of the on-line sign-up process at Aviators was necessary given that the existing system was “inflexible and basic”, it was a major project that took around six months to complete. Similarly, the re-design of the customer registration system at Freeserve is an extensive and ongoing process, requiring assessment of changes to individual or component routines as well as to how these changes affect the architecture of routines.

The constraint that automation imposes is a key one given the central co-ordinating role of systems within organisations. While routines are considered to act as the interface for the

transfer of knowledge, the cases point to the increasing role of systems acting as the interface for the transfer of routines. The automation of routines suggests a high level of integration of routines both within and across functional areas as systems become more inter-dependent and/or where systems act as the integrating force across functional areas. The CRM system at SELF Trade is inter-linked with the firm's other trading and settlements systems, while the central role of the customer database at Aviators is an example of the latter.

It is evident that once routines have been codified, in written form or when they are automated, it is more likely that codified routines act as a template for any changes to existing routines. The implication is that, once routines have been codified, it is likely that only incremental changes will be made to the component knowledge underlying routines. In the case of both SELF Trade and Freeserve, respondents pointed to the fact that codification is itself the act of embodying the organisation's learning or memory at that point. The aim was to codify routines in order to prevent reinventing the same routines in the future:

"It is a competitive space and we have to sort of make sure that we are as efficient as possible instead of re-inventing things several times over. We are putting some processes in place about how we do things so that we don't spend endless time debating something - we actually just go do." (Caroline Thomas, Freeserve)

The process of reviewing codified routines acts as the basis for the incremental improvement of existing routines. As Deborah Sherry of Freeserve points out, there are still a few "gaps" with regard to process development, although the implication is that

while gaps may be filled with regard to developing new routines, existing documented routines serve as the template for the review process. In other words, improvement of existing documented routines is likely to be incremental, all the more so given that the business model is more or less defined and is less likely to alter radically. Similarly, with regard to the re-design of the customer registration system, the importance of taking account of existing routines is implicit in Kate Wilson's explanation of taking existing learning into account:

"We now, we are going to want to roll out a new one (registration system) and so it's all based on what the customer is experiencing... and based on what we've learnt so far and then, if anything, so how does technology deliver against this?"

The process of reviewing codified routines is established at SELFTrade, although Colm Long emphasises the need to be flexible with regard to existing routines:

"I think, especially in terms of dealing with customers, you really need to be flexible, because customer – their habits change and the competition changes, so you need to be really adaptable as to how you do things... Yes, you will have your procedures there, but you need to be flexible on them and review them every now and then – from a regulatory point of view but also from a customer satisfaction point of view."

If operational and managerial systems are increasingly used for the transfer of organisational routines both within and across functional areas, then a firm's ability to adapt existing routines or develop new routines needs to take account of the impact across functional areas. In other words, firms need to develop and maintain an architectural competence (Henderson and Cockburn, 1994). The cases suggest that, with increasing complexity of the organisation, organisations tend to be structured along functional lines. However, it is shown that firms aim to maintain an architectural competence, which

centres on the firm's ability to co-ordinate tasks across functions through the use of cross-functional teams.

NWS is organised along functional lines, and SELF Trade has adopted a functional organisational structure since launch where standardisation of key functional and operational processes is required to meet industry regulations. However, within the ISP sector, Freeserve was set up as a new venture by Dixons, where the organisational structure has seen a number of changes since its launch. The company was originally set up with little structure within and between the different business areas. As new businesses were developed, they were operated separately with the exception of a common technical infrastructure with the head of each business area reporting into the Chief Operating Officer. With increased maturity of the business and the establishment of a defined business and revenue model, Freeserve is now operating along functional lines with greater integration planned across brand lines. Aviators has an informal organisational structure which is essentially flat. While individuals have separate functional responsibilities, albeit without formal job descriptions, they are often required to perform duties outside of the scope of their responsibilities as required. As Monu Ogbe states:

"If there was any attempt to segregate responsibilities, those attempts would have failed in favour of personalities gravitating towards what they do best."

The cases suggest that, while there may be sector-specific reasons for adopting a functional organisational structure such as within the broking sector, there is an increased emphasis on structure with growth in the size and complexity of the firm:

“I think also we got to a certain size, where we just didn’t have enough time as previously to spend that kind of time by the coffee machine... so you have to put in a basic level of structure.” (Peter Boucher, SELF Trade)

“What would have worked with 50 people doesn’t work with 300 people.” (Kate Wilson, Freeserve)

While organisational routines may become bound by the organisation’s structure, the key issue is to retain the organisational flexibility necessary for adaptation. Developing an “architectural competence” is considered to be critical to a firm’s ability to integrate the knowledge underlying capability development, where this can be measured with respect to assessing the mean by which firms engage in cross-functional task co-ordination (Henderson and Cockburn, 1994). In the case of SELF Trade, the firm has emphasised cross-functional co-ordination to retain its structural flexibility. All new developments are project-managed with representation of members from all key functional areas. Similarly, there is a current emphasis within the group on rotating staff where possible to encourage knowledge transfer, where Martin Braund states:

“So we have quite a nice kind of cross-pollination of knowledge around the business, which is important again for us as we are relatively small and you can’t afford to sit in little silos, as it were.”

The emphasis is on physically placing staff with different functional responsibilities next to each other, as well as ensuring that London-based staff visit the Peterborough office once a week to ensure that they are aware of client needs through informal meetings with client-facing staff or as Peter Boucher states to encourage “accidental conversations”. And finally, there is a current emphasis on training staff in multiple tasks within the client services team. Freeserve has continued to employ a cross-functional project approach to all

new business development and retains this approach in an adapted “programme management” approach with a focus on the ongoing needs of development projects given the focus on running a business. With respect to Aviators, evidence of architectural competence is provided by the lack of structure within the company and the multiple responsibilities of employees. However, while there was cross-functional input at a senior management level in the design stage of the new on-line trading system at NWS, the development of the system was managed according to existing IT project procedures within the confines of the IT function.

Hence, with respect to the role of constraints in the capability development process:

Proposition Ten

The architecture of routines acts as a constraint on a firm’s ability to adapt existing routines or create new routines.

7.7 SUMMARY OF CASE RESULTS

Following the case descriptions for each of the four firms selected for the case study research, the aim has been to establish a chain of evidence in respect of the research questions (3a to 3d), analysing the evidence both within and across cases to examine the potential for similarities and differences in the capability development process across firms and across sectors. With respect to the first research question, the importance of prior organisational experience is found in respect of new firms. While the senior management

team is responsible for creating the overall capability blueprint, the prior organisational experience of management in relation to the development of new routines relates more to the role of senior managers hired for their specific functional and technical experience. Further, the ISP sector, an example of a new market created out of systemic innovation, highlights the benefits of prior organisational experience in general terms given that it was not possible to recruit individuals with prior sector-specific experience. With respect to the second research question, initial aspirations towards the type of on-line service offered appear to equate with the type of functional capabilities developed and the extent to which they are developed. With respect to the third research question, codification plays a central role in the evolution of organisational routines, where its benefits relate to the increased efficiency of transfer of organisational routines and the potential for improvement of organisational routines. Less complex tasks that are easier to standardise tend to be codified in the first instance as well as those that are more frequent, although the main barrier to codification is the potential for task standardisation. With respect to the fourth research question, existing routines and the existing architecture of routines act as the main constraint on the capability development process. In particular, where existing routines are codified and where routines are embodied in the design of software applications, there is a greater chance that they will act as a constraint on the future development of new routines given the cost and time of re-development and the potential impact on other routines given the increased connectivity enabled by automation. Finally, while the cases were selected on the basis of maximising differences in respect of firm type and sector, a key finding of the research is that the evidence suggests that differences in the capability development

process across new and established firms account for the main process differences witnessed.

7.8 LIMITATIONS OF THE CASE STUDY RESEARCH

Given the complex nature of capability development, the scope of the case study research is ambitious, seeking to assess the overall pattern of capability development within firms as well as to examine the underlying process of how organisational routines are created and developed over time. A retrospective approach to the case research is adopted given the constraint of time in this research and combined with the fact that new on-line markets are already in existence, if only for a short period of time. As such the major limitation of this research relates to the retrospective approach adopted. Semi-structured interviews were deemed the most efficient method of engaging respondents with respect to historical accounts of how on-line operations were developed given the importance of path dependence in capability development. While there is the possibility of error with respect to retrospective accounts, it is argued that this research has minimised the potential for error in accordance with Golden (1992), who examined the occurrence of retrospective errors in CEO accounts of past strategy. The main focus of this research is on facts and behaviours rather on accounts of individual beliefs or perceptions of success and thereby is more objective rather than subjective in focus. Further, multiple respondents within each firm are interviewed, thereby increasing the validity of the findings. However, the focus on senior manager respondents could be considered to be a further limitation of the research. Senior managers are selected for interview given their role in overseeing the development

of functional areas both prior to and since the start of on-line trading (see Section 5.6.2). While research access to less senior employees would have provided a check on our existing findings and the potential to extend our findings, research access was restricted. However, the findings in relation to the role of prior organisational experience of the top two layers of management are supported across the new firms studied, thereby increasing the validity of the findings.

8.1 DISCUSSION OF THE MAIN FINDINGS OF THE RESEARCH

The main aim of this research is to answer the central research question, "*How do firms gain competitive advantage in new markets?*" The most relevant literature was reviewed in Chapter Two, where it is shown that prior research on competitive advantage in new markets has focused upon the role of entry timing in gaining market share advantages and the relative advantages of different types of entrant. From a resource-based view, both of these issues can be explored in relation to a firm's relative advantages in terms of resources and capabilities. I argue that a firm's resources and capabilities depend upon two factors: its resource and capability endowments at the time of entry and its ability to acquire and develop resources and capabilities after entry. This suggests that the three main research questions to be addressed are:

1. *What is the role of initial endowments of resources and capabilities in determining competitive advantage in new markets?*
2. *What are the relative advantages of established firms and new firms in new markets?*
3. *What are the processes through which new and established firms develop capabilities to compete in new markets?*

The aim of this chapter is to discuss the findings of the empirical research and its conclusions. In relation to the discussion of the research findings, the aim is to relate the findings from the survey results in Chapter Six and the case study results in Chapter Seven to the research questions.

8.1.1 Relating the Findings to the First Research Question

Given the assumptions from a resource-based perspective that a firm's endowment of resources and capabilities at any one time are critical to generating a competitive advantage together with the assumption that these resources and capabilities are path-dependently determined, the first research question aims to address the role of initial endowments of resources and capabilities at the time of new market entry. From the theoretical model developed in Chapter Four, three hypotheses are developed to assess the role of initial resource and capability endowments for firm success which are tested by way of a survey.

In relation to the first research question, the main finding of the survey is that, in both the ISP sector and the on-line broking sector, there is support for the importance of initial resources and capabilities at the time of new market entry. In both sectors, the level of initial resources is significantly and positively correlated with the size of the on-line customer base. In other words, irrespective of whether new markets emerge as a result of systemic or autonomous innovation, a key factor in firm success is the initial endowments of resources and capabilities at the time of new market entry.

The importance of order of entry advantages is shown in respect of the on-line broking sector, where it is argued that this may be a consequence of the relative immaturity of this sector and where early entry is likely to be advantageous in sectors subject to economies of scale

A further finding of the survey research is that there is no empirical support for the role of specific resources in firm success, where the one exception to this is the role of initial funding in firm success in the ISP sector. Where a new market is created out of systemic innovation, the importance of fungible financial resources can be understood given that firms are more likely to be faced with the cost of developing operations from scratch and/or given that the majority of entrants are likely to be new firms as in the ISP sector, where the importance of funding has been linked to the chances of new firm survival (Lussier, 1995). In order to explain the lack of empirical support for the role of specific resources, I refer to (i) the operationalisation of variables and (ii) whether resources can be considered in isolation. First, two of the key resources were identified as being the prior experience of managers (MAN) and the prior related business experience of the firm (MARKET). Both of these variables are operationalised with respect to the duration of prior experience in an attempt to encompass the totality and richness of that experience without any attempt to identify key components of that experience. As such, it is not possible to ascertain which and to what extent key components of that experience is valuable. Second, while the RBV points to the value of individual resources, the survey points to the value of a bundle of initial resources. In other words, the implication of the

survey results is that the primary benefit of the initial resources specified lies in resource co-ordination and, hence, the way in which these initial resources interact with each other, which provides further support the importance of adaptation in firm success.

8.1.2 Relating the Findings to the Second Research Question

The second research question concerns the comparative advantages of different types of entrant. While prior research has focused primarily on the relative advantage of new firms over established firms with respect to adaptation, I argue that it is important to take account of the value of initial resource and capability endowments relative to those required in new markets. In respect of hypotheses four and five (see Chapter Five), the aim is to assess the success of different types of entrant across markets which have emerged as a result of different types of innovation by way of the survey. The expectation is that established firms are more likely to be successful than new firms given autonomous innovation and vice versa given systemic innovation.

In spite of the low number of survey responses, there is support for the finding that new firms are relatively more successful than established firms given systemic innovation. However, the findings are less conclusive in respect of autonomous innovation. There is no significant difference between the mean size of the customer base of new and established firms in the broking sector, although many of the new firms are corporate venture units which are likely to be able to benefit from and leverage the complementary assets of the parent, such as the existing customer base. While the results are not conclusive in respect

of both sectors, it does suggest that firm success in new markets is not dependent upon whether a firm is an established firm or a new firm at the time of entry. Rather, the comparative advantage of one type of entrant over another relates more to whether initial endowments of resources and capabilities at the time of new market entry are those required for success.

8.1.3 Relating the Findings to the Third Research Question

Central to the theoretical model developed in Chapter Four is the challenge of adaptation that underlies firm success in new markets. With regard to the third research question, my aim is to develop a theory of capability development. My focus here is on the creation of routines that alter existing resource configurations and develop new resource configurations. From the case evidence, propositions are developed inductively, where they are presented in Table 8.1. The evidence from the cases supports the development of theory in respect of the process of capability development as well in respect of the process of capability development across new and established firms.

An Evolutionary Process of Capability Development

A key finding of the research is that capability development can be considered to be an evolutionary process of development, where the case of new firms entering new markets arguably provides the best opportunity to assess the origins and development of new organisational routines (Kazanjian and Rao, 1999).

Step 1.	Role of individuals in the creation of organisational routines
Step 2.	Role of individuals in the transfer of organisational routines
Step 3.	Codification of organisational routines in written format
Step 4.	Codification of organisational routines in automated format, where routines are embedded in systems.
Step 5.	Review of codified routines

Table 8.2 An Evolutionary Process of Capability Development

An examination of codification in respect of this research relates to its central role in the development of new organisational routines. Within all the cases studied, there is an explicit aim to codify new organisational routines, although the timing of codification is likely to differ across firms, particularly across new and established firms, where there is a greater priority on codification in established firms. Codification is not limited to tasks that are less complex and more frequent, although these tasks tend to be codified in the first instance. Codification is extended to customer-facing routines, which are arguably more difficult to codify given that there are many ways of accomplishing the same task. The main limitation to codification appeared to be the degree to which tasks can be standardised. The case evidence further shows that routines tend to be codified in written format prior to being automated. However, while on-line businesses are necessarily technology-intensive and aim to maintain low cost business models, the progressive automation of routines is unlikely to be specific to on-line businesses given that

automation is viewed as contributing to efficiency as well as to minimising the potential for human error.

The codification of organisational routines is perhaps the major turning point in the evolution of new routines. The benefits of codification relate to the increased efficiency with which routines can be transferred across the organisation as well as to the opportunity provided for the improvement of existing organisational routines, particularly given the time and cost spent in codifying routines. However, once routines have been codified, it becomes increasingly difficult to adapt existing routines. In accordance with Nelson and Winter's (1982) definition of search as a constraint on adaptation, the evidence from the cases suggests that codification acts as a constraint on search, where codified routines act as the template for any changes to existing routines. Further, the cases suggest that once routines are codified, particularly in automated format, it becomes more difficult to make changes to routines that impact the existing architecture of routines, since systems are increasingly central to the process of transferring routines both within and across functional areas. In other words, while it is considered that routines can act as a source of adaptation as well as of selection (Levinthal, 1991), the evidence from this research suggests that the process of codification marks the key turning point at which time existing routines are selected and codified or where existing codified routines act as a constraint on the adaptation of existing routines or the creation of new routines.

In other words, once routines have been codified, it becomes progressively more difficult for a firm to adapt. Firms are able to maintain an architectural competence through

the use of cross-functional development teams for new product or business development, in line with previous research (Henderson and Cockburn, 1994). However, as the case of NWS shows, the development of new routines and/or changes to existing routines becomes increasingly constrained by the existing architecture of routines.

Capability Development Across New and Established Firms

While the generalised process of capability development refers to capability development in new firms, a main finding of the research is that the process of capability development across new and established firms shares many similarities. While NWS is the only established firm studied, the suggestion is that differences in the capability development process across new and established firms relate to the origins of capabilities and to the priority assigned to codification.

In all the firms studied, the evidence highlights the role of the senior management team in creating the overall capability blueprint for on-line operations, implicit in which is an assessment of the organisation's operational and technological needs. Similarly, the role of the senior management team is in determining the level of aspirations towards capability development, which, in turn, affects both the type and the extent of capability development. In respect of new firms, a finding of this research relates to the role of the senior management team vs. the role of senior managers in the capability development process. This research supports prior research in highlighting the role of individuals in the creation of new organisational routines based on their prior organisational experience

while, with respect to established firms, evidence is shown with respect to the importance of existing routines. However, responsibility for the creation of new organisational routines appears to lie with the next layer of management or senior managers. In their work on capability development, Kazanjian and Rao (1999) highlight the important role of managers of specific functional areas, and research has further shown the tendency of new firms lacking routines to recruit managers with long industry tenures (Rao and Drazin, 2002).

The research further evaluates the relative importance of prior organisational experience in new firms. While the finding here is that prior organisational experience of individuals is important for the creation of new routines in new firms, there are limits to its usefulness. Its relevance is limited to those senior individuals responsible for developing the routines and, hence, is not necessarily applicable to lower level hires. The research further supports the argument that prior organisational experience is not always useful or relevant. The value of prior experience can be, in part, context-specific and therefore bound by the organisation within which it is developed. Similarly, as in the case of the ISP sector, hiring individuals with prior sector-specific experience may not be possible in new markets created out of systemic innovation. In contrast, in the case of established firm, NWS, the development of new routines was informed by the firm's existing routines. The on-line broking service was developed according to the existing project methodology in relation to technological developments, and the firm used the existing routines it had created for SHADE, the on-line precursor to its Internet-based trading system, as its template.

With respect to the priority given to codification, the codification of all new routines developed was an established part of the project methodology used in the development of the on-line broking service at NWS. In other words, the approach to codification could itself be considered to be routinised. However, with respect to new firms, the initial transfer of organisational routines prior to codification relied on key individuals. This can be explained by two factors: (i) the main benefit of codification is with respect to the increased efficiency of transferring routines, where the primary motivation for codification is the increased size of the organisation, and (ii) given the time and costs of codification, the aim of new firms is to ensure that routines are operational, where they are unlikely to have the slack resources required for codification.

8.2 CONCLUSIONS

A new theoretical model of competitive advantage in new markets is created, which develops theory in respect of firm success in new markets and provides an explanation of firm success that addresses the anomalies present in the literature on entry timing. Adopting a resource-based approach, the new theoretical model accounts for entry into new markets, where (i) new markets emerge as a result of different types of innovation, and (ii) new entrants include both new and established firms. There is empirical support for the new theoretical model, in which I argue that the determinants of firm success in new markets are (i) a firm's initial endowment of resources and capabilities at the time of new market entry, and (ii) its ability to adapt, where the latter relates to the differential capacity of firms to develop the routines and capabilities necessary to alter existing or develop new

resource configurations at the time of market entry. The survey provides empirical support for the role of initial resources and, more specifically, the results suggest that initial resources interact as a bundle of resources. The implication of this finding is that it is the interaction or configuration of initial resources that is important, which relates further to the second determinant of competitive advantage in new markets.

The theory of capability development presented is a first attempt at explaining the underlying process of how firms create and develop capabilities and, hence, an attempt to provide a dynamic explanation of their development. The main elements of the theory of capability development in new firms can be summarised as follows:

1. Capabilities comprise a number of inter-linked organisational routines.
2. Capabilities are the product of deliberate managerial actions, where the source of knowledge for the creation of capabilities is based on the prior organisational experience of managers. The overall architecture of capabilities is devised by the senior management team who establish a “capability blueprint”, while it is the next layer of management or senior managers who are responsible for designing and building the individual routines.
3. For organisational routines to develop, two conditions are important:

1. Firm Aspirations

Motivation is important and necessary for individuals to work together to develop routines. Such motivation is an outcome of firm aspirations which are, in turn, determined by the senior management team.

2. Codification

Codification increases the efficiency of knowledge transfer across the organisation, and it permits logical and systematic approaches to improving routines. Codification permits routines to be automated.

Prior research on capability development comprises essentially ad hoc theorising with little empirical testing. Even where recent research has attempted to develop a process model of capability development (Montealegre, 2002), it does not consider the link between routines and capabilities necessary from an evolutionary approach to adaptation. Prior research includes the role of prior organisational experience in the development of routines (Grant and Romaneilli, 2001; Helfat and Liebermann, 2001), as well as discussion of key factors affecting organisational routines, including the role of managerial intent, aspirations, and codification (Winter, 2000; Zollo and Winter, 2002). However, this research aims to develop and extend existing theory by assessing the role of these factors in the creation and development of capabilities.

In agreement with previous research, this research recognises the importance of the prior organisational experience of management in the development of new routines (Grant and Romaneilli, 2001; Helfat and Liebermann, 2001). However, in a departure from existing theory, this research distinguishes the role of prior organisational experience of the senior management team from other senior managers. While the senior management team is responsible for creating the overall architecture or blueprint of capabilities, it is argued that

it is the next layer of management or senior managers who are directly responsible for the creation of organisational routines.

This research provides support for the role of aspirations as a motivating force in the capability development process and, in particular, Winter's (2000) notion of aspirations as providing a force for exploration in the development of capabilities. This research suggests further that aspirations are critical in determining not only the extent to which capabilities are developed but also the type of capabilities that are developed.

Finally, in agreement with prior research, this research acknowledges the benefits of codification in relation to the efficient transfer of routines and the potential for improvement of routines (Zollo and Winter, 2002). However, this research develops existing theory by examining the process of codification within the context of capability development. The case evidence identifies codification as a central step in the evolution of routines: codification is an intentional process that occurs periodically; codification can be considered to be a pre-condition for routines to be automated given the level of standardisation required; and codification promotes the development of a shared knowledge base and a common language necessary for the adaptation and improvement of existing routines. In support of the "core capabilities as core rigidities" argument (Leonard-Barton, 1992), this research further highlights codification as a major constraint on the development of new routines or the adaptation of existing routines.

While a central limitation of case study research is the ability to generalise from the data (Yin, 1994), the case evidence shows that there are many similarities in the capability

development process across the firms selected in spite of the fact that the four cases are selected to maximise the differences between the firms, where the cases include both new and established firms across two sectors representative of new markets created out of different types of innovation.

Finally, the wider implications of this research relates to providing empirical support for an evolutionary approach to adaptation, where it is argued that a firm's ability to adapt must be considered at the level of organisational routines. Central to an understanding of organisational or strategic flexibility (see Section 2.4.4) is an appreciation of the role that (static) routines perform in enabling dynamic change.

8.3 LIMITATIONS OF THE THEORETICAL APPROACH

While the methodological limitations of the research are discussed previously (see Chapters Five, Six and Seven), the aim here is to discuss the limitations of the theoretical approach to this research. The assumptions of the resource-based view underpin the theoretical approach adopted. Although the main limitation of the RBV is its inability to fulfil the requirements of a theory, this does not detract from the fact that it provides a framework that can better explain the differential performance of firms than traditional industry structure approaches.

The growing amount of theoretical interest in the RBV and its empirical application are testimony to the increased importance attached to resource-based explanations of

competitive advantage. In part, the value of the RBV lies in the fact that it is essentially complementary to other theoretical perspectives. While Porter's (1985) industry structure perspective looks to industry structure and market positioning to explain competitive advantage, the RBV argues that a firm's resources and capabilities contribute to the firm gaining advantage in product activities and market positioning. Industry effects are important contributors to performance, although economic and organisational effects are roughly independent (Hansen and Wernerfelt, 1989). Similarly, while the contractual perspective seeks to explain the integration strategies that support competitive advantage, the RBV seeks to explain the sources of competitive advantage.

The RBV is not considered here to be a new theory of the firm unlike some proponents of this view (Conner, 1991), given that it would have to explain why firms exist and challenge transactions cost explanations (Coase, 1937; Williamson 1975, 1985). However, a major criticism levelled at the RBV is that it does not satisfy the conditions of a theory to be classified as such, given that it does not fulfil the ability to make some law-like generalisations (Priem and Butler, 2001). Powell (2001) suggests that resource-based explanations of competitive advantage can be construed as a legitimate attempt to solve the central problem facing strategy researchers, i.e. explaining superior performance. He states that the RBV tends to infer to the best explanation through the ex-post observability of performance outcomes. However, if the theory claims that competitive advantages escaped the researcher's detection by means of attributes inherent in those very advantages – intangibility, invisibility, complexity, causal ambiguity, then the theory is analytic and

refutation-proof. However, the primary justification here for adopting a resource-based approach is that it potentially provides an insightful approach to understanding the sources of competitive advantage, where Grant (1991) formally asserts the case for using the RBV, which is said to rest on two premises: first, internal resources and capabilities provide the basic direction for a firm's strategy and, second, resources and capabilities are the primary source of profit for the firm.

In summary, while criticisms levelled at the RBV focus on its ability to satisfy the conditions of a theory, the justification for its relates to a pragmatic focus on its explanatory power to explain firm-based competitive advantage that is essentially complementary to many other theoretical perspectives. As Rugman and Verbeke (2002) state, the RBV has been instrumental in improving the legitimacy of strategic management as perceived by scholars in more conventional disciplines such as economics and organisation science.

8.4 POTENTIAL FOR FUTURE RESEARCH

A main theoretical contribution of this research relates to an understanding of the capability development process that is central to a firm's ability to adapt in order to be successful in new markets. The case study research has aimed to address the capability development process across different on-line sectors and across different types of firms, where there is a need for research to examine concepts across different types of organisations (Parcel and Kaufman, 1992). However, there is a need to repeat this research

to increase the reliability of the findings relating to the capability development process. Further research is required in respect of sectors other than on-line markets and where the sample includes both new and established firms. At the same time, the sample could be chosen to reflect other differences between firms. Within the case study research here, there has been no attempt to classify firms according to performance differences and, hence, one potential area for further research would be to differentiate firms according to their performance in order to assess relative differences in underlying adaptation processes (Reed and DeFillippi, 1990). This approach is endorsed by Rouse and Daellenbach (1999) where they state:

“Strategy research has reached the point where detailed, comparative data about organizational processes, strategy and implementation are needed for a more integrative and useful understanding of competitive advantage. The purposive sample selection process... would yield a relative small number of performance-differentiated firms, that when compared and researched using proven fieldwork techniques would provide rich, contextualized data.”

Finally, while this research is limited to retrospective accounts of the capability development process (see Section 7.8), the use of alternative methodological approaches such as a longitudinal approach to the case studies would serve to increase the validity of the findings and is directly cited as an approach to understanding the development of routines within organisations over extended periods of time (Cohen et al, 1996).

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APPENDIX 1.0

SURVEY QUESTIONNAIRE

On-line Business: Towards an Understanding of Success in New Markets

Your help in completing this questionnaire is greatly appreciated and a copy of the summary of the results will be sent upon request. If you would like further information on this project, please contact Anjali Bakhru at a.bakhru@city.ac.uk or Tel: +44 (0)20 7040 8777.

Please answer all questions in the survey. In most cases, this simply requires circling the appropriate number or letter that indicates your answer (if you are mailing this survey*). The estimated time of completing the survey is no more than 15 to 20 minutes.

Please fill in the following information or, alternatively, attach your business card.

Name of Respondent: _____

Position / Job Title: _____

Company: _____

Phone: _____

Email: _____

Would you like a copy of the summary report? Yes/ No

If there are further clarifications, may we contact you again? Yes/ No

*Please send mailed surveys to:

Anjali Bakhru,
City University Business School,
1st Floor (Research),
24 Chiswell Street,
London EC1Y 4TY
United Kingdom

Market Experience

1. When did your company first offer an on-line (Internet-based) product or service? _____/_____(mm/yyyy) [1]
2. Was your company purposefully set up to trade on-line? yes / no [2]
3. If the answer is "no" to Q.2,
(a) When was your company founded? _____/_____(mm/yyyy) [3]
- (b) Does your company trade in a sector related to your on-line business? yes / no [4]
4. If you have a parent company, does it trade in a sector related to your on-line business? yes / no [5]
5. How many employees approximately does your organisation as a whole have? _____ employees [6]

Customers

6. The customer mix served by your business could best be described as:
1 Mostly Corporate [7]
2 Corporate and Retail
3 Mostly Retail
7. The market segments served by your business are best described as:
1 Local [8]
2 Regional
3 National
4 International
8. How many domestic, on-line customer accounts do you have (i.e. active in the past 6 months)? _____ customers [9]
9. How many domestic, on-line customer accounts did you have *one year ago*, if trading on-line for more than one year (see Q.7)? _____ customers [10]

Management

10. What is the approximate length of time of senior or board-level managerial experience for each of the following members of the "top management team" (TMT)?
A < 5 years
B 5-10 years
C > 10 years
- I Chief Executive Officer (CEO) I _____ [11]
II Chief Financial Officer (CFO) II _____ [12]
III Chief Operating Officer (COO) III _____ [13]
11. What is the approximate length in years of experience in the current business area or a closely-related business area for each of the members of the "top management team"?
I _____ [14]
II _____ [15]
III _____ [16]
12. If the answer to Q.2. is "yes", does the TMT have prior new venture experience?
I CEO yes / no [17]
II CFO yes / no [18]
III COO yes / no [19]

Business Transformation

Please answer Q.13 & Q.14 if you answered "yes" to either Q.3(b) or Q.4

13. How is your on-line product/service operated relative to existing company operations? Stand-alone 1 2 3 4 5 Integrated [20]

If your on-line operations are run as a separate division or subsidiary, please answer the following question:

14. a) On-line operations have been developed independently of parent company operations Strongly Disagree 1 2 3 4 5 Strongly Agree [21]

b) How would you rate the level of control your parent exercises with regard to your daily operations? Low 1 2 3 4 5 High [22]

c) On a scale of 1 to 5 (1-low, 5-high), how would you rate the importance of the following parent company resources with respect to developing your on-line operations? Brand Name 1 2 3 4 5 [23]
Customer Base 1 2 3 4 5 [24]
Technology 1 2 3 4 5 [25]
Fulfilment/Logistics 1 2 3 4 5 [26]
Financial 1 2 3 4 5 [27]

Funding

15. What was the "initial level of funding" for your on-line business (i.e. the total amount of funds invested in on-line operations over the first two years of on-line operations, or since operating on-line, if this is less than two years) ? A GBP < 1,000,000 [28]
B GBP 1,000,000 – 3,000,000
C GBP 3,000,001 – 5,000,000
D GBP 5,000,001 – 10,000,000
E GBP >10,000,000

16. How was your on-line operation financed? A primarily internal funds [29]
B primarily venture capital
C primarily other external funds (i.e. bank loans)

17. If your answer to Q.16 was B or C, how long had your company been transacting on-line before receiving venture capital or external funding? _____ month(s) / year(s) [30]
(delete as appropriate)

Alliances/Partnerships

18. Does your organisation have any "alliance-type" arrangements? yes / no [31]

Please answer Q.19 to Q.22 if you answered "yes" to Q.18

19. When did you set up your first alliance? _____ / _____ (mm/yyyy) [32]

20. Approximately how many alliance-type arrangements is your on-line business involved with in each of the following alliance categories (selecting one primary category for each alliance)? Content _____ [33]

Technology _____ [34]

Marketing _____ [35]

Distribution _____ [36]

21. On a scale of 1 to 5 (1-low, 5-high), how would you rate the amount of "knowledge transfer" to your company on average for each type of alliance?

Content	1	2	3	4	5	[37]
Technology	1	2	3	4	5	[38]
Marketing	1	2	3	4	5	[39]
Distribution	1	2	3	4	5	[40]

22. On a scale of 1 to 5 (1-low, 5-high), how would you rate the benefits of alliances to your on-line business?

Information assets	1	2	3	4	5	[41]
Technology	1	2	3	4	5	[42]
Reputation benefits	1	2	3	4	5	[43]
Distribution benefits	1	2	3	4	5	[44]
Access to skills/ capabilities	1	2	3	4	5	[45]
Development of new skills/ capabilities	1	2	3	4	5	[46]
Organisational Flexibility	1	2	3	4	5	[47]

APPENDIX 2.0
CASE STUDY PROTOCOL

Purpose:

The purpose of the case study is to determine how companies have created the capabilities necessary for initialising and developing their on-line operations. The study aims to focus on the various forms of evidence that will enable the research questions to be addressed. This protocol documents the process used for replication of the study at different sites if the research is extended.

I. Procedures

A. Company Selection

Selection of potential companies suitable for the sample and review of any preliminary publicly-accessible information for this purpose.

Identify functional areas within the company which are likely to be relevant to the development of the on-line business.

B. Determination of Persons to be Interviewed and Other Sources of Information

Identification of relevant contact within the company, generally the Chief Executive Officer or Managing Director of the business unit concerned. Contact the individual

concerned by letter and/or email, explaining the purpose of the research. If necessary, contact the appropriate industry body to gain research access.

Telephone follow-up to make personal contact and arrange preliminary field visit or initial interview. Verification of access procedures including potential confidentiality concerns.

Company: _____

Position within Company: _____

Date of Interview: _____

Obtaining other sources of information:

Research publicly-accessible information sources to gain further company data prior to the initial interview.

Scheduling of Further Interviews:

Review information obtained from the interview and assess whether further interviews are necessary and, if so, schedule a further interview.

During the first interview, identify other potential contacts to be interviewed and gain research access, repeating the contact and planning procedures outlined above.

C. Data Collection Procedures

Each individual to be interviewed is given a copy of the outline of the research study to allow them an opportunity to consider how their input may be relevant to the topics concerned. At least a week ahead of the interview, individuals are also given a short list of questions that will be raised in the semi-structured interview to allow them to think more specifically about what questions will be raised in the interview as well as to alleviate any individual concerns as to the nature of the interview.

All interviews are taped, subject to the approval of the interviewee. Notes are also handwritten at the time of interview to compare against taped comments; this can further encourage the interviewees to draw explanatory diagrams where necessary.

Interviewees are asked to provide any additional documents that may supplement the interview process, such as organ grams.

D. Data Handling Procedures

Taped interview sessions are transcribed in note form into Microsoft Word format. These notes are then immediately emailed to the interviewee for their comments and factual clarification.

II. Case Study Questions

A. Semi-structured Interview Questions

The following is a list of the key questions asked at the time of interview. Questions need to be tailored according to the functional capacity of the interviewee. They serve as a starting point for the interview and may be changed or added to subject to the content and direction of the interview:

1. How is <functional area> organised and how does it operate?
2. What have been the core developments or changes in <functional area> over time / since on-line launch?

(Aim to ask subsidiary questions on process development which are relevant to Q.3a,3c and3d in Chapter 4.)

3. Have your initial aspirations to developing your on-line operations changed over time and, if so, how have they changed?

APPENDIX 3.0

DEVELOPING CONSTRUCTS FOR INITIAL RESOURCES

According to the theoretical model developed in Chapter Four, initial resources (IR) at the time of new market entry comprise the initial amount of funding for the on-line business (INITIAL), the level of managerial experience (MAN), as well as the level of market experience (MARKET) (see Section 5.5.2) and thus:

$$\text{IR} = \text{INITIAL} + \text{MAN} + \text{MARKET}$$

The aim is to reflect the bundle of initial resources for each of the respondent firms, where initial resources are considered here to be the sum rather than the product of the constituent resources. The decision to add rather than multiply constituent resources to form the construct IR is made on the basis of preference, given that there is no clear theoretical justification for either method and given the lack of prior empirical precedent.

To develop each of the four constructs, an “index” approach was adopted for comparability both within and across sectors. An index number can be considered to be a percentage ratio of prices, quantities or values comparing two time periods or two points in time (Kazmier and Pohl, 1987), where the implicit assumption is that a comparison of value is being made over time. In this case, however, we are creating an index of values for comparison across firms at one point in time, i.e. at the time of new market entry. An “index” is constructed to

measure the level of initial resources and sub-indices are created for the constituent component resources.

The IR index is an aggregate of the three component indices, INITIAL, MAN and MARKET, where each of the component indices are equally weighted. Each of the component resources are equally weighted in the IR index given that one of the aims of the research is to assess the relative contribution of individual resources across different types of firms and across new markets created out of different types of innovation. An index of initial resources is calculated for each firm in each of the two sectors, where the index can take a value of $0 \leq x \leq 1$. Each of the sub-indices is equally weighted in the IR index, where each sub-index can take a value of $0 \leq x \leq 1$:

INITIAL This is the total amount of funds invested in on-line operations over the first two years of on-line operations, or since operating on-line, if this is less than two years. Given that there are five categories for funding, each category was assigned a rank from 1 to 5, with the lowest amount of funding being assigned a value of 1. For each firm, the level of funding is divided by 5 to create an index value.

Amount of Funding:

- 1 = <1,000,000 GBP
- 2 = 1,000,000 – 3,000,000 GBP
- 3 = 3,000,001 – 5,000,000 GBP
- 4 = 5,000,001 – 10,000,000 GBP
- 5 = >10,000,000 GBP

MAN Managerial experience is measured at the level of the individual, focusing on the managerial experience of the top management team, taking into account (i) general managerial experience, (ii) managerial experience in a related industry, and (iii) new venture experience. In the case of (i) and (ii), there are three categories for each type of experience, each category was assigned a rank from 1 to 3, with the lowest level of experience being assigned a value of 1. New venture experience is assigned a value of 1 or 0.

takes account of the capability-based challenge of new market entry (see Section 2.4.3) and, in particular, the importance of prior related market experience in new market success (Klepper and Simons, 2000). The low relative weighting of VC is justified given that it is limited to where new ventures have received venture capital funding.

APPENDIX 4.0

PUBLICATIONS AND CONFERENCES ATTENDED

Bakhru, A. & A. Brown. 'On-line broking strategies: The Response of Merrill Lynch, Charles Schwab, and E*Trade' in Grant, R.M., *Cases in Contemporary Strategy Analysis*, 3rd ed., due publishing date Summer 2003

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Bakhru, A. 2002. 'Organisational Context and Perspectives', *Session Paper for Part 1 Strategy course for Modular and Distance Learning MBA Students, Henley Management College.*

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Bakhru, A., 2000. 'A Contingency Approach to Reward Strategy in the UK Not-for-Profit Sector', *International Journal of Nonprofit and Voluntary Sector Marketing*, vol. 5, no. 4, 303-317.