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**Towards a model of dynamic capabilities in innovation-based competitive strategy: Insights  
from project-oriented service firms**

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### **Research highlights:**

- Insights from project-oriented firms uncover the role of dynamic capabilities in innovation and competitive strategy.
- Using a knowledge-based approach, the paper identifies four key dynamic learning capabilities that service firms rely on.
- Project-oriented service firms *create, extend* and *modify* routines to systematically build and nurture dynamic capabilities.
- The dynamic capabilities that provide firms with competitive advantage are built and nurtured by service entrepreneurship.
- A parsimonious model of service innovation-based competitive strategy comprising nine testable propositions is presented.

## ABSTRACT

With the growing significance of services in most developed economies, there is an increased interest in the role of service innovation in service firm competitive strategy. Despite growing literature on service innovation, it remains fragmented reflecting the need for a model that captures key antecedents driving the service innovation-based competitive advantage process. Building on extant literature and using thirteen in-depth interviews with CEOs of project-oriented service firms, this paper presents a model of service innovation-based competitive advantage. The emergent model suggests that entrepreneurial service firms pursuing innovation build and nurture a set of dynamic capabilities that enable them to achieve greater innovation and sustained competitive advantage. Our findings indicate that firms purposefully use *create*, *extend* and *modify* processes to build and nurture key dynamic capabilities. The paper presents a set of theoretical propositions to guide future research. Implications for theory and practice are discussed. Finally, directions for future research are outlined.

Key words: Dynamic capabilities, Service innovation, Competitive strategy, Project-oriented service firms, Service entrepreneurship.

## 1. Introduction

The growing significance of services in driving productivity, economic growth and employment in countries which have traditionally relied on manufacturing is increasingly evident. Accordingly, the share of revenue derived from services in Fortune 500 companies has grown considerably over the past few decades<sup>1</sup>, forcing organizations to calibrate their existing business models to adopt a service-centric view. For example, IBM, which was once viewed as a manufacturing giant, has reoriented its business to provide solution based service, positioning itself as the ‘largest service business’ in the world (Zeithaml, Bitner, & Gremler, 2009). As services increasingly drive firm value, innovation becomes an effective way to accelerate growth and profitability, contributing to novel ways of new value creation (Berry, Shankar, Parish, Cadwallader, & Dotzel, 2006).

Service innovation has been characterized as distinct from manufacturing innovation, with several researchers suggesting that there are important differences. For example, co-creation at the client-provider interface; the incremental and continuous nature of service innovation; the ‘fuzzy’ nature of the service innovation output; the absence of ‘developmental stages’ and R&D departments in service firms – all suggest that service innovation may be inherently different from manufacturing innovation. Similarly, Service Science literature emphasizes co-creation of value *with* customers/ clients. Unlike the traditional manufacturing-based approach where value is created *for* the customer, a service approach entails creation of value *with* the customer as a collaborative partner (Kowalkowski, 2011; Ordanini & Parasuraman, 2011; Vargo & Lusch, 2004). Here value creation is driven by unique client needs and based on the principle of reciprocity between the service provider and the client. Yet, service innovation thought is still largely based on a manufacturing mindset (Gallouj & Windrum, 2009), even though innovation

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<sup>1</sup> (Moller, Rajala, & Westerlund, 2008)

in services has been shown to be different in that imitation is widespread, especially, in the financial services sector (e.g., Davison, Watkins, & Wright, 1989; Teixeira & Ziskin, 1993). While there has been a strong emphasis in service innovation literature on the success factors (Avlonitis & Papastathopoulou, 2001; Cooper & de Brentani, 1991; De Brentani, 1991; Easingwood & Storey, 1993), there has been less research on how new value is co-created and sustained through innovation. This service centered view which is more customer-oriented and relational needs closer examination in relation to value co-creation and the sources of competitive advantage (Bharadwaj, Varadarajan, & Fahy, 1993)

Although it is commonly understood that service innovation-based advantages cannot be sustained, this observation is predominantly based on research conducted in financial services where imitation is rampant. However, a growing number of researchers suggest that service innovation-based advantages can be sustained (e.g., Bharadwaj, et al., 1993; Gustafsson & Johnson, 2003; Kandampully & Duddy, 1999). While this debate remains inconclusive, it highlights the need for research to model the antecedents of service innovation and to examine innovation-based strategy in industry settings where long-term customer/client involvement is evident. Overall, there is a need for a theoretical framework that captures the antecedent factors driving innovation-based competitive strategy in service firms.

Addressing this need, this paper attempts to build a coherent theoretical framework of innovation-based competitive strategy in project-oriented service firms<sup>2</sup> by drawing on the dynamic capability-based view of competitive strategy and using multiple case study evidence. Project-oriented firms are characterized by relatively long project life cycles where the provision of service often involves close collaboration with the client, reflecting client input to the

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<sup>2</sup> Project oriented firms deliver services to clients using projects (e.g., engineering and construction firms, consultancies, system integrators and architectural firms)

innovation process. These firms co-create value by working closely with clients on a continuous basis to provide effective solutions. Providing solutions not only needs technical knowledge, but also requires an in-depth understanding of the client's industry and business processes. Therefore, project-oriented firms provide an appropriate setting to examine service innovation-based competitive strategy. Findings from in-depth case interviews with 13 project-oriented firms suggests that service entrepreneurs build and nurture a set of dynamic capabilities that drives the service innovation and competitive advantage process. This evidence is used to develop an emergent model of service innovation-based competitive strategy, together with a set of testable propositions.

The paper is structured as follows. First, the theory of competitive strategy is briefly revisited with specific attention given to the dynamic capability-based view of competitive strategy. Second, the literature on service innovation-based competitive strategy is reviewed highlighting existing gaps in the literature. This is followed by a brief discussion of the research method. Third, drawing on the literature and case study findings, a new conceptual model is developed with a set of theoretical propositions. Finally, the implications of the emergent model for theory and practice as well as directions for future research are presented.

## **2. Conceptual background**

### *2.1. The dynamic capability-based view of competitive strategy*

The dynamic capability-based view (DCV) of competitive strategy attempts to explain why some firms gain competitive advantage in continually changing environments (Eisenhardt & Martin, 2000; Teece, Pisano, & Shuen, 1997). Dynamic capabilities are the antecedent organizational and strategic routines by which managers alter their resource base - acquire and shed resources, integrate them together, and recombine them - to generate new value-creating strategies (Grant, 1996; Pisano, 1994), which essentially is an act of innovation (Porter, 1990).



Unlike its predecessor, the resource-based view (RBV) (c.f. Barney, 1991), the DCV assigns a prominent role to the firm's strategic leadership in the nurturing and building of dynamic capabilities critical to the value generation process.

Although early research on dynamic capabilities suggests a link to competitive advantage (Griffith & Harvey, 2001; Lee, Lee, & Rho, 2002; Teece, et al., 1997), there has been lack of agreement on the nature of this relationship. For example, Cepeda and Vera (2007) argue that the link between dynamic capabilities and competitive advantage as presented in early definitions of dynamic capabilities is tautological as researchers have tended to claim dynamic capabilities post hoc, inferring their existence from successful organizational outcomes such as profitability and growth. Eisenhardt and Martin (2000, p. 1107) provide an alternate view and argue that 'dynamic capabilities are the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve, and die'.

More recently, Helfat et al. (2007) building on prior literature define dynamic capabilities as "*the capacity of an organization to purposefully create, extend or modify its resource base*" (p. 4). This definition while highlighting the key processes involved in the dynamic capability-building process, comprehensively captures the essence of prior work in this area. The current paper combines Helfat et al.'s (2007) definition with Zollo and Winter's (2002) view to formulate a knowledge-oriented definition of dynamic capabilities. Here, dynamic capabilities are defined as: *The capacity of an organization to purposefully create, extend or modify its knowledge-related resources, capabilities or routines to pursue improved effectiveness.* This knowledge-based view of dynamic capabilities implies that organizations learn from internal and external sources to build and nurture knowledge assets where organizational learning refers to the process of improving actions through better knowledge and understanding (Fiol & Lyles, 1985).

Consistent with this view, the competitors' inability to easily duplicate a capabilities-based value creating strategy is suggested as a key source of sustained competitive advantage (Grant, 1991, 1996). The sustainability of competitive advantage relies on the "capability differential" on which the competitive strategy is founded (Hall, 1993). Further, Eisenhardt and Martin (2000) point out that 'long-term competitive advantage lies in resource configurations that managers build using dynamic capabilities, not in the capabilities themselves' (p. 1117). Thus, the dynamic capability view of competitive strategy provides a robust theoretical foundation to understand how a firm creates new resource combinations in its pursuit of competitive advantage and to model the antecedents of service innovation in a project-oriented context. We conjecture that dynamic capabilities enable project-oriented firms to create new knowledge-based resource combinations enabling them to undertake service innovation. Although this view has been discussed in prior research (e.g., Bharadwaj, et al., 1993; Hall, 1993), it has escaped empirical scrutiny. The competitors' inability to imitate dynamic capabilities is a source of sustained competitive advantage.

## *2.2. Literature on service innovation-based competitive strategy*

The literature on service innovation-based competitive strategy has progressed around four key themes: (1) modeling the service development process; (2) conceptualization of the service innovation construct; (3) the role of the strategist in the innovation process and; (4) the issue of sustaining the innovation-based competitive advantage. Each is discussed in turn.

### *2.2.1. Modeling the service development process*

Service innovation researchers have attempted to capture the key activities that constitute the service development process and have developed linear or sequential models detailing the process activities and stages. The majority of these efforts looked at how different stages in the development process are carried out and had an implicit emphasis on improving firm

performance based on an efficient service development process. Early innovation models reflect a heavy reliance on new product development (NPD)-based models (c.f. Bowers, 1989; Scheuing & Johnson, 1989) and reflected improvements over the initial normative process model proposed by Booz-Allen (1982). Subsequent research suggested that many stages in the service development process overlap and cannot be clearly identified (e.g., Alam & Perry, 2002; Edvardsson, Haglund, & Mattsson, 1995). Much of this latter research established that the service development process is inherently different from the NPD process (c.f. Johne & Storey, 1998).

While attempts have been made to understand the complexities involved in the service development process, there is limited understanding of the performance drivers and the underlying capabilities or competencies (Johne & Storey, 1998) with two notable exceptions. These are work by Papastathopoulou, Gounaris and Avlonitis (2006), who found that the involvement of different functions during the service innovation process influences different aspects of performance and the work by Bharadwaj et al. (1993), who proposed a comprehensive model consisting of more than 35 variables that focus on the distinctive organizational skills and resources underlying sustained competitive advantage in service firms. Although these contributions have enriched our understanding in this area, a well-founded model of service innovation-based performance and competitive strategy that can be tested is yet to be proposed.

### *2.2.2. Conceptualization of the service innovation construct*

Despite several attempts to conceptualize innovation in service firms, these have mainly focused on the “types” and the “degrees” of service innovation (e.g., Johne & Storey, 1998; Lovelock, 1984). A minority have conceptualized the dimensionality of service innovation (e.g., Den Hertog, 2000; Den Hertog, Wietze, & De Jong, 2010; Edvardsson & Olsson, 1996). For instance, Edvardsson and Olsson (1996) propose service innovation as comprising the *service concept*, *service process* and *service system*. These conceptualizations are based on the notion of

manipulation of knowledge resources (e.g., Grant, 1996) with the customer need in particular as the starting point. That is, the innovation process revolves around the customer logic and the knowledge acquired therein. While these conceptualizations have contributed to a greater understanding of the service innovation construct, they have not been operationalized.

Based on this discussion, we conceptualize service innovation as the extent to which new knowledge is integrated by the firm into service offerings, which directly or indirectly results in value for the firm and its customers/clients. This captures both continuous and discontinuous innovation (e.g., Johne & Storey, 1998; Lovelock, 1984) and brings in value creation criteria suggested in the literature (McKinsey & Co, 1993) as an important ingredient in innovation.

#### *2.2.3. The role of the strategist – A neglected factor in service innovation process?*

Management is responsible for the formulation of new service objectives and strategic focus. Service innovation researchers suggest that top management (Cooper, Easingwood, Edgett, Kleinschmidt, & Storey, 1994; De Brentani, 1991; Drew, 1995) as well as middle management (Athanassopoulou & Johne, 2004) play an important role in driving service development. A clear corporate vision underpinned by specific goals and an appropriate culture fosters successful service development (Johne & Storey, 1998). While management's role has been highlighted as contributing to innovative organizational culture (Johne & Storey, 1998), the role that managers play in the service innovation process has received limited attention. Accordingly, it is not clear how innovation is managed in service firms and the role entrepreneurial key decision-makers play in the development of capabilities driving the service innovation process.

#### *2.2.4. Sustainability of service innovation-based advantages*

Innovation in services is seen as largely incremental (Johne & Storey, 1998) and imitation has been followed by many service firms as a specific strategy (Easingwood, 1986; Hooley & Mann, 1988; Scheuing & Johnson, 1989). This is particularly evident in the insurance and

financial services sectors (Davison, et al., 1989; Teixeira & Ziskin, 1993) and could be attributed to difficulties associated with patenting services (Cowell, 1988) and the ease of copying successful new services (Kelly & Storey, 2000). The ease of copying new services has resulted in “a dangerous focus on ‘me-too’ products” with radical innovation taking a backseat (Johnes & Storey, 1998, p. 205)

While a number of service innovation researchers agree that service firms follow imitation, it appears that service firms continue to rely on innovation to create customer value and ensure growth (Moller, et al., 2008). This view has found support with other researchers (e.g., De Brentani, 1991; Matear, Gray, & Garrett, 2004) who find that service firms use innovation to gain competitive advantage. While few researchers argue that these advantages can be sustained (e.g., Coyne, 1993; Kaplan, 2000; Morris & Westbrook, 1996; Storey & Kahn, 2010), the debate remains inconclusive.

Overall, although the literature on service innovation-based competitive strategy has developed it is still fragmented with the majority of researchers focusing on success factors of innovations. Literature attempting to model the service innovation-based competitive strategy process is limited. Our review of literature also highlights the lack of sufficient evidence to support the dimensionality of the service innovation construct and that the debate on whether innovation-based competitive advantages can be sustained remains inconclusive. Similarly, although the dynamic capability view of competitive strategy has been widely adopted in mainstream competitive strategy literature, there has been no attempt to examine service firm competitive strategy using this view. Hence, there is a need for a theoretical framework that captures the service innovation-based competitive strategy process that can be successfully operationalized.

### **3. Method**

### *3.1. Sample*

Project-oriented service firms provide an ideal setting to investigate innovation-based competitive strategy. Projects are task-oriented, adaptable and flexible and provide an ideal mechanism to provide specific services for clients and often involves co-creation of services (Acha, Gann, & Salter, 2005). In this study we extend the definition of Blindenbach-Driessen and van den Ende (2006) in defining a project-oriented service firm as “a service firm skilled at organizing tasks around projects in anticipation and response to client requirements and in which the needs of the project outweigh other considerations in the firm’s decision making”. Project-oriented service firms potentially reflect several characteristics unique to service settings. In addition to the co-production aspect discussed above, project activities and outcomes are unique and customer centric (Davies & Hobday, 2005), often reflecting the service characteristics of intangibility, perishability, heterogeneity and inseparability (Berry, 1980). Project-oriented firms combine the advantages of a project-based setup (e.g., flexible, flat paced) with that of a functional structure by setting up project teams by retaining and rotating people within different projects and thus accumulating knowledge gained from each project. Examples include engineering and construction companies, consultancies, system integrators and architectural firms that predominantly operate within business-to-business environments.

Consistent with the case study methodology (Yin, 2009) and as recommended by Hutchinson (1993) we conducted a multi-firm field study using a diverse sample of national and international project-oriented service firms located in a major Australian capital city. Accordingly, project-oriented firms that offered services including architectural, construction, maintenance, consultancy and market-research were selected. In line with our research objective, we chose to analyze the ‘firm’ as opposed to the ‘project’. Sampling proceeded until “theoretical saturation” – a point where no additional data is found and the category becomes stable and rich

in detail (Glaser & Strauss, 1967). Initially, we consulted established databases (e.g., Dunn & Bradstreet) to gather information, select and approach the key informants in the chosen key firms. Following Alam (2002), who suggested that very small service firms are less likely to have sufficient resources for innovation, we approached firms with at least 20 employees. Initially we sent letters inviting potential respondents, however, as the study progressed, we followed the snowball technique where informants were referred to by interviewees. The gathered information included the general nature of the business operations, the history, the management team, the number of employees and the demographic information about the firm. This information was supplemented by information on the firm's website which was confirmed during the interviews. Table 1 provides a brief summary of the profiles of the selected firms.

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**Insert Table 1 about here**  
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### 3.2. *Interview process*

Consistent with Eisenhardt's (1989) recommended procedures, we entered the organizations with a well-defined focus. The literature review undertaken for the study suggested the presence of a well-developed body of knowledge on the dynamic capability-based view of competitive strategy and a fragmented body of literature on service innovation and competitive advantage, both of which inform this research (Yin, 2009). This led to *a priori* specification of activities driving innovation in service firms which was derived from the preceding literature review. However, the researchers assumed no preordained theoretical relationships among these activities. In following this direction, we were alert to the identification of activities specific to the service innovation context and to developing context-related specifications to enable their inclusion in the emerging theory.

In-depth interviews with CEOs and senior managers were conducted in each of the selected project-oriented organizations. Respondents who agreed to participate were contacted prior to the interview and briefed about the purpose of the study. Retrospective, reflexive accounts provided by these key informants (e.g., Partington, 2000) provided the basic building blocks to gain insights into the phenomenon of service innovation-based competitive strategy. The interviews were exhaustive ranging from 60-75 minutes and conducted by two interviewers simultaneously, which facilitated in-depth coverage of issues and probes where necessary. Open-ended prompts and probes were used to elicit further discussion from participants on a given question (Creswell, 2009). An interview protocol<sup>3</sup> consisting of questions relating to service innovation guided the interview process. The interview protocol was customized for each firm using publicly available information available on the firm's website. Interviews were conducted in accordance with the key points listed in the interview protocol and a strict criterion was followed in relation to the coverage of these points. We followed an emergent design method (Taylor & Bogdan, 1984) by which questions were added, deleted and modified throughout the research process. To begin with, our initial set of questions was designed to motivate informants to talk in general about the organization and their competitive environment. Once they were comfortable discussing the general business and the competition, we began to delve more thoroughly into the specifics of competitive advantage, the role of service innovation and the sustaining of advantages issues. If the interviewee stated that he was not privy to the specific information that was being asked, the respondent was requested to refer us to another person within the organization who would be able to help us out. While this was not the case in the majority of the firms, only one firm (Case M) advised us to speak to another senior manager to gain additional insights to the questions.

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<sup>3</sup> A copy of the interview protocol used in this study will be provided upon request.



### *3.3. Analysis*

Interviews were recorded, transcribed and analyzed using coding procedures described by Miles and Huberman (1984). Each interview on an average yielded just over 20 pages comprising about 1000 lines of transcript. We followed a systematic step-wise recursive process suggested by Braun and Clarke (2006) in the thematic analysis of the data to identify repeated patterns of meaning relevant to this research. First, the 14 transcripts were read several times by the researchers to familiarize with the data. Second, coding was followed to enhance internal validity (Pandit, 1995) and is understood here as “representing the operations by which data are broken down, conceptualized and put back together in new ways” (Flick, 2002). In other words, coding involves organizing of data into meaningful groups and was ‘data-driven’. Accordingly, the transcripts and documentary evidence from each organization were then organized into “chunks” and each “chunk” was labeled with a term often based on the natural language of the interviewee, forming the basis of the coding frame. Third, the analysis shifted to collation of the codes into dimensions and broader themes (or sub-themes and overarching themes). Fourth, the themes were reviewed to consolidate and identify the most salient themes relevant to the research question. Next, the themes were labeled and refined to distinctly fit in with the overarching narrative of how project-oriented service firms compete in the marketplace using innovation. Finally, returning to the literature, the emergent themes were written up by comparing with the literature seeking both conflicting and similar frameworks (Miles & Huberman, 1984; Sutton, 1991). As observed by Eisenhardt (1989), tying emergent theory to extant literature enhances the internal validity, generalizability and theoretical level.

With a view to achieving research soundness and validity, we implemented processes recommended by Creswell (2009); (a) collection of documents and archival data about the organization and member checking by providing a transcript of their own interview to each

participant, (b) use of rich, thick descriptions to convey the findings of the research to improve the shared experience and demonstrating the chain of evidence in analysis, and (c) implementing an external audit where the overall research process was conducted in consultation with an external third party expert researcher. In addition, cross-case analysis was undertaken to reach a deeper understanding of service innovation-based competitive strategy. Cross-case analysis increases generalizability (Eisenhardt, 1989; Miles & Huberman, 1984). Creative insights often arise from the juxtaposition of contradictory or paradoxical evidence, with the “building theory from case studies centers directly on this kind of juxtaposition” (Eisenhardt, 1989, p . 546).

#### **4. Towards a model of service innovation-based competitive strategy**

In the identification of key themes, we were interested in identifying key drivers of service innovation and competitive advantage in project-oriented firms. In this attempt we revisited both the competitive strategy and the service innovation literature to develop theoretically robust constructs that constitute a model of innovation-based competitive strategy as shown in Figure 1. Our model was guided by Keats and Bracker (1988) who argue that the process of theory building requires the specification of the model to include important variables, yet remain sufficiently bounded so as to be testable within the given domain. This approach is consistent with prior service innovation research (e.g., Blazevic, Lievens, & Klein, 2003; van Riel & Lievens, 2004). In the following sections we present the key constructs and the proposed theoretical relationships in the emergent model.

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##### *4.1. Service entrepreneurship: a key driver of the dynamic capability building process*

We find that the majority of sampled project-oriented firms (all cases except E and H) display entrepreneurial behavioral characteristics of *proactiveness*, *innovativeness* and *risk-taking*

in their strategic decision-making (Covin & Slevin, 1986; Lyon, Lumpkin, & Dess, 2000; Naman & Slevin, 1993). For instance, Case I (an architectural firm) enhances its competitive advantage by offering flexible terms of service fee payments for its clients (i.e., developers). By leveraging its financial strength, the firm offers clients a delayed fee payment schedule before its competitors (proactiveness). Thereby, the firm acts as a “quasi-banker” by sharing the client’s financial risk with expected benefits (calculated risk-taking). The innovative nature of this partnership (innovativeness) enabled the firm to establish stronger relationships with its clients. These three dimensions that have primarily originated in manufacturing context are foundational to the behavioral entrepreneurship literature. In addition to these dimensions the case findings suggest that in the services context, the firm’s tendency to adapt to client needs or “adaptiveness” is an important aspect of the entrepreneurial effort. These entrepreneurial behavioral traits are displayed in their strategic decisions. As the CEO of Case I relates:

*“It has certainly helped us to secure the larger projects (in comparison to our competitors)... We have delayed the financing or the way that we structure our fee package towards developers. Obviously, an architectural fee is a reasonably large component of the consultant fee base. So some of the things that we are doing is to add delay to the fee schedule where we agree at certain stages of the project to help the developer (client) get over the line and not carry so much debt upfront..... So, as our financier says... we are a quasi-banker really because we are carrying that fee for a certain period of time... till we get our dues and get a reward fee for doing that.”*

Similarly, Case L, in choosing whether to undertake a particular project, makes a selection decision based on a systematic evaluation of the factors involved. As illustrated below, the factors of evaluation reflect risk assessment, proactiveness, innovativeness and adaptiveness.

In Case L, the choice of which project to undertake depends on:

*“...what’s our position within the marketplace on this particular project and what needs to be done?”* (proactiveness)

*“The relationship with the client... it’s perceptions based on previous jobs conducted for these clients..., type of services, whether this is something new, whether it is well established; or requires acquisition of some special set of skills.”* (adaptiveness)

*“... in terms of effectively servicing the client in relation to projects, sometimes we look at a different way of delivering it ..... which might not necessarily be exactly what they were thinking about when they first approached us.” (innovativeness)*

*“... properly evaluate them before you commit to it, and into that comes all the resources but it comes risk and commercial aspects and exposure in the market place and the experience..... And this is being reviewed by various committees within the company and questions are being asked and if they are answered in a positive way, the project goes ahead.” (assessment of risk)*

Thus, the case evidence demonstrates that the majority of the sampled project-oriented firms exhibit entrepreneurial behavioral characteristics of proactiveness, innovativeness, risk-taking and adaptiveness. The additional dimension of adaptiveness highlights the need to capture the customer co-creation aspect, which differentiates service innovation from goods innovation. To reflect the distinctive nature of entrepreneurship in the service context, we label this construct as service entrepreneurship.

As noted earlier, the dynamic capability-based view assigns a prominent role to entrepreneurial key decision-makers in the development of dynamic capabilities (e.g., Zahra, Sapienza, & Davidsson, 2006). A growing number of researchers suggest a link between entrepreneurship, dynamic capabilities and innovation (e.g., Ahuja & Lampert, 2001; Zahra, et al., 2006). These studies suggest that key entrepreneurial initiatives including the creation and application of dynamic capabilities are critical to pursue innovation-based performance. Next, we identify the key activities undertaken by project-oriented firms to build these dynamic capabilities.

#### *4.2. Episodic learning*

The case evidence suggests that the majority of the sampled project-oriented firms (all cases except C) actively learn from episodic project events and this activity is undertaken as a strategic activity. For example, Case D utilized an initial opportunity from a small one-off project

to learn about the process of alliancing. This learning enabled the firm to progressively undertake larger projects which involved alliancing experience and capability and opened new business opportunities for the firm.

*“We were fortunate to win a small alliance in XXXX that nobody else wanted... The project came along that they (our competitors) weren’t interested in, so we were able to secure that and from that small project, we had an exponential sort of learning curve where we were able to win a lot of work and therefore learn a lot more and do a lot larger size.... The learning there was more about the process of alliancing rather than the technical learnings.”*

To a great extent, the pattern in which episodic learning is undertaken reflects the three processes that constitute a dynamic capability as suggested by Helfat et al. (2007) i.e., *create, extend and modify*. Evidence in relation to each of these processes is presented in Appendix 1. Thus, episodic learning is viewed as a dynamic capability and defined as the project-oriented firm’s capacity to purposefully create new knowledge from past project experience, extend such knowledge to value creating activities and modify such knowledge to address the changing market conditions.

Episodic learning is a key activity undertaken by project-oriented service firms (Acha, et al., 2005; March, Sproull, & Tamuz, 1991; Newell & Edelman, 2008). Episodic learning refers to the ability of service firms to build episodic knowledge from past project experiences (Acha, et al., 2005). Such “episodes” or “events” may occur as a result of problem-solving initiatives or unexpected breakthroughs or venturing into uncharted territory. As such, episodic learning involves learning from project-related activities and subsequently reusing or adapting such knowledge for future service innovation-related activities. Organizations learn from experience and convert infrequent events that have occurred in the past into knowledge for future use (March, et al., 1991). Episodic learning is linked to core competence (Stein & Zwass, 1995), entrepreneurial knowledge (Shane, 2000) and project capabilities (Davies & Brady, 2000).

However past research has not viewed episodic learning as a strategic capability having the potential to contribute to the competitiveness of a service firm. The case evidence suggests that the sampled firms invest substantial time in building episodic knowledge and use it to deliver improved services to their clients. Based on the foregoing discussion, we advance the following proposition:

*Proposition 1: Service entrepreneurial intensity in project-oriented firms is positively related to dynamic episodic learning capability.*

#### *4.3. Relational learning*

The case evidence suggests that all project-oriented firms in our sample actively learn from their networks and external linkages. For instance, Case D builds new knowledge using personal networks and boundary spanning contacts. This relational learning enables the firm to acquire new work opportunities. This process involves identifying important project linkages and building relationships with the client much before the project is formally initiated via a Request for Proposal (RFP). As the CEO of Case D relates:

*“We identify new projects by talking to people, by reading newspapers, by being out there in the community, by having dedicated business development people and marketing people. We also rely on people working on projects and by talking to architects and engineers that we are dealing with... I mean some clients don’t want to talk to you in the early stages, but then you talk to designers and people who are working on the periphery of the project.”*

*“Typically we identify the project, and then we talk to the person who might be in charge of that project. We get to know the people who are associated with it and then eventually a RFP (Request for Proposal) comes out from that client and we respond to it. Hopefully we get short listed and it goes to tender. We tender it and hopefully we win it... Yeah, networking plays a big part in all of this...”*

Similar to dynamic episodic learning, the pattern by which relational learning is undertaken reflects the three processes that underpin a dynamic capability (i.e., *create, extend and modify*) (Helfat, et al., 2007). Evidence in relation to each of these processes is presented in Appendix 1. Thus, relational learning is conceptualized as a dynamic capability and defined as

the project-oriented firm's capacity to purposefully create new knowledge from its external networks and linkages, extend such knowledge to value creating activities and modify such knowledge to address the changing market conditions.

It is evident from the case study findings that provisioning of business services in the project-oriented context is often undertaken in networks or alliances comprising multiple service providers who bring complementary capabilities to the alliance. Each project-oriented firm operating within a network brings in a unique value adding capability that is complementary to the overall service offering. This provides ample opportunities for service firms to network and learn from each other (Hsueh, Lin, & Li, 2010). Given this, it is critical that service firms build and nurture dynamic capabilities pertaining to relational learning.

Firms acquire knowledge from external networks and linkages such as suppliers, distributors, networks or other collaborative linkages (Weerawardena & McColl-Kennedy, 2002); through professional memberships (Granovetter, 1985), cluster memberships (Perez-Aleman, 2005), personal networks (Kim, 1993), academic linkages (Johnson & Johnston, 2004), alliances (Gulati, 1999) and boundary-spanning contacts in projects (Hoegl, Parboteeah, & Munson, 2003). As project-oriented settings involve frequent collaboration with other businesses including competitors, it is likely that such settings are conducive to relational learning. Successful firms create knowledge by exposing themselves to a variety of external knowledge sources that enable them to reshape competencies and this process is driven by entrepreneurial efforts (Weerawardena & McColl-Kennedy, 2002). There is limited research, if any, that has viewed relational learning as a strategic capability that contributes to the service firm competitive strategy. Based on the foregoing discussion, we advance the following proposition:

*Proposition 2: Service entrepreneurial intensity in project-oriented firms is positively related to dynamic relational learning capability.*

#### 4.4. Client-focused learning

We find that the majority of our sampled project-oriented firms (all cases except E) actively undertake learning from clients as a strategic activity where learning occurs not by accident but is undertaken as a strategic choice (Child, 1972). The strategic choice perspective views managerial choices and ability as the primary link to create, manage and learn from the interactions that take place between the organization and its environment (Miles & Snow, 1978). Accordingly, we find that project-oriented firms utilize opportunities to interact with clients to gain additional insights into their needs and wants. For example, Case J explains the process by which a solution is formulated for its clients. This usually involves active collaboration with the client on the back of technical expertise provided by the service provider. Client's input is critical in this process. As the CEO of Case J relates:

*“The client usually has an idea of what they need, whether it’s an outcome or whether it’s a formed solution. They’ve got a bit of an idea. But usually there’s lots of blanks and lots of holes, because they’re not always experts in the built form or the infrastructure or whatever. They might be very good at the delivery of a service, whatever it is that they do, but in terms of the box that it has to occur in, they don’t have a clue. So we help them with that.”*

Projects that take a substantial time for completion provide opportunities for greater interaction and relationship building between the firm and its clients. This setting also provides ample opportunity for the service provider to acquire greater knowledge about the client's preferences. The findings suggest that pattern in which client-focused learning occurs is similar to the *build*, *create* and *extend* processes in dynamic capabilities, thus providing support for the conceptualization of client-focused learning as a dynamic capability. Evidence in relation to each of these processes is presented in Appendix 1. Akin to episodic and relational learning, we define dynamic client-focused learning capability as the project-oriented firm's capacity to purposefully *create* new knowledge from its direct and indirect interactions with clients, *extend* such



knowledge to value creating activities and *modify* such knowledge to address the changing market conditions.

Client-focused learning refers to acquisition of knowledge through interactions with its customers/clients with a view to understanding and satisfying their needs and wants. It involves learning through implicit needs (latent or hidden) (e.g., Leonard & Rayport, 1997) and explicit needs (stated or expressed) (e.g., Christensen & Bower, 1996). Prior research has highlighted the importance of learning from customers/clients: lead users (Von Hippel, 1989); customer as a resource (Gouthier & Schmid, 2003); creation of superior customer value (Narver & Slater, 1990) and customer linking capabilities (Day, 1994). In project-oriented environments, client learning may occur as a result of client-centered activities such as recognizing changing client demand patterns, negotiating, understanding the client's business and specific problems, and above all listening to the client (Davies & Hobday, 2005). Similarly, in the service literature, there is considerable emphasis placed on customer/client as an important resource of the service firm. Understandably, the co-creation aspect unique to services is based on customer/client participation. The importance of customer/client input to service innovation has also been emphasized by several researchers (e.g., Alam & Perry, 2002; Athanassopoulou & Johne, 2004). However, past research has not viewed client-focused learning as a strategic capability having the potential to contribute to service firm competitive strategy. As noted earlier, customer/ client-centered learning is driven by entrepreneurial efforts (e.g., Slater & Narver, 1995). Based on the foregoing discussion, the following proposition is advanced:

*Proposition 3: Service entrepreneurial intensity in project-oriented firms is positively related to dynamic client-focused learning capability.*

#### 4.5. Combining resources

We found that all cases in the sampled project-oriented firms actively combine various resources needed for different projects, which is a critical capability for the timely completion of projects. The process involves drawing and integrating appropriate internal and external skills and resources. The case evidence suggests that each project is unique and requires a specific set of skills and capabilities as the client requirements may vary from project to project. For example, Case G (a mid-sized architectural firm) creates new work opportunities by putting together a team that represents the best possible combination of people for the project. The firm draws on its internal and external resources to address the project requirements. This is critical to the firm's ability to successfully bid for new work. As the CEO of Case G relates:

*“We get maybe three weeks or something to put a tender together. And we select a number of sub-consultants that we may need, and which would advantage our team. Like, we will get the best health services planner from wherever they are in Australia that satisfies that particular type of project. We'll get the best engineers for that particular type of project. And in the three weeks, we'll get them to give us their quality statements I suppose, but also their fees. And then we'd find out within a month whether we're successful or not.”*

Similar to the dynamic capabilities of episodic learning, relational learning and client-focused learning, the patterns of *create*, *extend* and *modify* were also evident in combinative capabilities possessed in the sampled project-oriented firms. See Appendix 1. Thus, combinative capability is conceptualized as a dynamic capability and defined as the project-oriented firm's capacity to purposefully *create* new knowledge from combination of tangible and intangible resources, *extend* such knowledge to value creating activities and *modify* such knowledge to address the changing market conditions.

A firm's combinative capability refers to the ability of the firm to synthesize and apply current and acquired knowledge in the pursuit of business opportunities. Using this capability, firms activate and alter resource configurations and learn new skills by recombining their current

capabilities (Kogut & Zander, 1992). There is a growing interest in the notion of firm combination and it has been linked with absorptive capacity (Van den Bosch, Volberda, & de Boer, 1999), leveraging resources (Koruna, 2003) and organizational learning (Mathews & Cho, 1999). The entrepreneurial reorganization of sub-optimally utilized resources and capabilities also been linked to value creation (Casson, 1982). It has been suggested that innovation is an outcome of “carrying out new combinations” (Schumpeter, 1934, p. 68) and that a firm’s ability to recombine the resources that are inside of its boundaries constitute a major competitive advantage (Penrose, 1959), thus linking combinative capability to innovation and competitive advantage. Although past research has identified the value of combinative capability in value creation there is no known research examining its role in service innovation-based competitive strategy. Based on the foregoing discussion we propose that entrepreneurial key decision-makers drive the combinative capability building process.

*Proposition 4: Service entrepreneurial intensity in project-oriented firms is positively related to dynamic combinative capability.*

#### *4.6. Service Innovation*

All cases in our sample support the innovation conceptualization proposed by Edvardsson and Olsson (1996) in which they suggest three dimensions of service innovation i.e., *new service concept, new service process and new service system*. The evidence in this regard is presented in Table 2.

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**Insert Table 2 about here**  
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New concept development occurs at the interface between the service provider and the client organization and usually consists of a novel conceptual element. This may involve

collaboration with the client and in general is a new idea or a solution to a problem faced by the client. The new service concept is usually the face of the innovation and is visible to the client.

New service process development refers to continuous improvement and redesign of processes or routines that are necessary to generate the service. Often, service processes are not easily visible and are interwoven with organizational, managerial and change processes. A relatively stable activity dedicated to incremental service process improvements and service process redesign appears to contribute to continuous innovation in services.

A service system refers to a formal mechanism that allows firms to respond to client requirements in an organized and efficient manner. A new system may involve formation of specific organizational structures, empowering and facilitating service employees, staged delivery procedures, etc. Formation of new systems or changes to service systems constitute “backend changes” that are usually not visible to the client, although it adds value directly or indirectly to client activities.

As indicated earlier, our case findings provide adequate support to the theoretical dimensions of service innovation as conceptualized by Edvardsson and Olson (1996) and provide a useful basis for measurement of service innovation. Adopting this perspective as the basis, this research defines service innovation as the extent to which new knowledge is integrated by the firm to its service offerings, which directly or indirectly results in value addition to the firm and its customers/clients.

#### *4.7. Episodic learning capability and service innovation*

As noted earlier, episodic learning is often a prerequisite for the innovation of new services. As indicated in Appendix 1, using episodic learning Case B develops a new major program of work based on their expertise of handling asbestos; Case G uses prefabrication of materials or modularization as a new way delivering onsite services. Case D gained new

knowledge from episodic learning to formulate new ways of overcoming the problems they encountered in their service delivery. With the lessons they learnt from the previous “episodes”, they moved into backward integration i.e., they created their own capacity to manufacture precast units in-house and they formed new forms of partnerships (e.g., partnered with precast manufacturers at an early stage, thus making them partners instead of approaching them as suppliers). As the CEO of Case D indicates:

*“In the current market, the precast industry can’t keep up with the demand and they can’t make precast units quick enough for people like us to use them... so we’ve done a couple of things. One is we’ve created our own precast factory, so we’re building our own precast. And the second thing we do is... we’ll actually choose a partner who’s a precast supplier...”*

These examples suggest that episodic learning drives new forms of firm value creation through innovation in the majority of the firms in our sample (all cases except C).

The importance of project learning to service innovation has been discussed in literature (e.g., MacCormack, Verganti, & Iansiti, 2001). The service innovation literature and project based literature in particular suggests that episodic learning leads to innovation in project oriented service firms. As projects by nature are episodic, knowledge gained from one project can be usefully transposed to other projects. Blazevic et al. (2003, p. 130) provide evidence of this form of learning and application: “project teams retrieve past knowledge from previous projects that could be used and applied to the respective innovation project”. It is clear that project-oriented environments provide opportunities for episodic learning and this in turn contributes to episodic innovation (e.g., Acha, et al., 2005). Moreover, the transfer of best practices involves the movement of experience, activities and lessons learnt from each project to processes that are central to the organization. Knowledge gained from episodic innovation can be useful in aiding service innovation. It is thus evident that strategic episodic learning drives innovation and new value creation within project-oriented firms.

*Proposition 5: Dynamic episodic learning capability in project-oriented firms is positively related to service innovation intensity.*

#### *4.8. Relational learning capability and service innovation*

The link between relational learning and innovation is evident in all cases in our sampled project-oriented firms. As indicated in Appendix 1, using dynamic relational learning Case C introduced new product lines; Case E makes innovative use of its external network of highly experienced people; Case G has found new ways of collaborating with partners to deliver services in remote locations – all of which suggests that relational learning is linked to new forms of innovation which creates value for the firm and its client/ customers.

Literature suggests that knowledge acquired from networks and linkages is an important antecedent of innovation. Collaborative learning or “networking” improves the innovation potential of the organization (Contractor & Lorange, 1988). The importance of learning through relationships is also highlighted by Nonaka and Konno (1998) and is considered foundational to knowledge creation and innovation. Relational learning has also been linked to firm innovative output (Ahuja, 1996), value creation (Anand & Khanna, 2000) and the growth and performance of firms (Gulati, 1999).

*Proposition 6: Dynamic relational learning capability in project-oriented firms is positively related to service innovation intensity.*

#### *4.9. Client-focused learning capability and service innovation*

The case evidence suggests that dynamic client-focused learning capability is used by all firms (except Case E) to drive innovation. As indicated in Appendix 1, Case I has developed a new model of service delivery based on the client’s expectations of speedy service delivery; Case G’s in-depth understanding of the client’s expectations reflects an emphasis on innovation based

on the client's implicit needs; Case I responds to client needs by providing an innovative global quality of design. This suggests that dynamic client-focused learning capability is linked to new forms of firm value creation and innovation.

The literature suggests a link between client/customer-focused learning and service innovation. While some researchers have found that a high degree of customer orientation leads to new service success (e.g., De Brentani, 1995), others have demonstrated the benefits of user involvement in the service innovation process (e.g., Alam, 2002). Close customer relationships and the resultant input ensure that needs of the business environments are fed directly into the innovation process. In brief, as discussed earlier, client/customer-focused learning is critical to the process of service innovation in project-based service firms. Therefore,

*Proposition 7: Dynamic client-focused learning capability in project-oriented firms is positively related to service innovation intensity.*

#### *4.10. Combinative capability and service innovation*

The case evidence suggests that combinative capability is a key factor driving innovation in project-oriented service firms. As indicated in Appendix 1, Case L has developed the ability to draw upon its reservoir of in-depth expertise to offer innovative solutions to clients from various industries; Case D innovatively combines its network expertise on various projects; Case B combines in-sourcing and outsourcing to ensure new and efficient project outcomes. These forms of new value creation reflect the innovation within the firm by using combinative capability.

The literature suggests that recombination or “carrying out new combinations” of resources (Schumpeter, 1934) is an important source of innovation and novelty (e.g., Galunic & Rodan, 1998). This ability of the firm reflects potential competitive advantage (Penrose, 1959). Recombinant activity is central to a project structure, where firms try to make efficient use of

resources by combining internal and external resources to create new resources or competencies (Davies & Hobday, 2005).

*Proposition 8: Dynamic combinative capability in project-oriented firms is positively related to service innovation intensity.*

#### *4.11. Sustained competitive advantage*

The case findings (all cases except Case E) suggest that innovation is an integral component of competitive strategy in project-oriented service firms. As Case D emphasized: *“We have worked hard to create a culture of innovation on those projects because it’s actually one of the ways we get judged by the client...whether he selects us or doesn’t (for the project). So innovation is a very important part of his consideration as to whether we are an appropriate partner or not.”* He further asserted that the benefits of innovation are presented to the clients in a tangible form: *“Well, how does the client know that we are an innovative organization?”* We can say... *“On the last project we came up with 240 innovations, 120 of them were utilized in the project and they had a value of \$20 million, which saved our client 5% of his contract value.”* Case L attributes its competitive advantage to niche innovative capabilities: *“I think where the difference (between us and competition) is greater is in areas where we have developed niche capabilities in terms of life marine sciences and environmentally sustainable design and some of those key areas. Sometimes you are in there bidding on those jobs... and everyone’s trying to position themselves so they have got some kind of unique service or some unique activity that they can perform.”* Thus, the above discussion provides support to the proposition that innovation is utilized by service firms to gain and sustain competitive advantage.

Sustained competitive advantage (SCA), refers to the firm’s ability to achieve a “superior marketplace position” (Hunt & Morgan, 1995) by excluding its rivals. This superior position



reflects the capture of superior customer value and/or the achievement of lower relative costs, which results in market share dominance and superior financial performance (Hunt & Morgan, 1995). In this study we adopt the definition of Barney (1991, p. 102): “SCA occurs when current and potential competitors are unable to duplicate the value-creating strategy adopted by the firm and the benefits of such a strategy.”

There is general consensus that firms create competitive advantages through innovation. For instance, Porter (1980) suggests that firms create competitive advantage in the value chain by conceiving new ways of delivering superior value to customers, which is an act of innovation. Both product innovation literature (e.g., Lengnick-Hall, 1992; Rothwell, 1992) and service innovation literature (e.g., Bharadwaj, et al., 1993; Weerawardena & McColl-Kennedy, 2002) concur with this view.

*Proposition 9: Service innovation intensity in project-oriented firms is positively related to sustained competitive advantage.*

## **5. Emergent model of innovation-based competitive strategy in project-oriented firms**

Our case study findings suggest that several key factors exert a strong influence on service innovation activity of project-oriented firms. The identification of these key factors was facilitated by the well-developed competitive advantage theory and reasonably developed service innovation literature. We find that client-focused learning, episodic learning, relational learning and combination of resources emerge as key drivers of the service innovation activity. It is clear from the case findings that the unique nature of service provisioning through projects not only provides above average opportunities for project-oriented firms to engage in these forms of learning but also requires that they are embedded in appropriate robust capabilities. The case findings also suggest that the entrepreneurial key decision-makers of project oriented firms build

and nurture these activities which involves three inter-related processes or routines, namely, *create*, *extend* and *modify*. These activities are undertaken by the sampled firms as strategic activities with substantial resource commitment over a long period of time. These activities are specific to project-oriented service firm context and matches with the description of dynamic capabilities suggested in the literature (Helfat, et al., 2007).

The emergent model of service innovation-based competitive strategy in project-oriented firms is presented in Figure 1. The key theoretical constructs of the model are service entrepreneurship, dynamic client-focused learning capability, episodic learning capability, relational learning capability, combinative capability, service innovation and sustained competitive advantage. We theorize that project-oriented firms displaying a higher degree of service entrepreneurship and pursuing service innovation as a key thrust of their competitive strategy build and nurture a set of dynamic capabilities which enable them to achieve a higher degree of innovation and sustained competitive advantage.

### *5.1. Operationalizing the model*

As in any relatively new area of theory building, there are a number of obstacles in the transition from theorizing to measurement and testing. The emergent model is built on the case evidence and is premised on the dynamic capability-based view of competitive strategy. Our model fills a void in the extant literature i.e., the absence of a unified model that can be successfully operationalized to describe the service innovation-based competitive strategy in project-oriented service firms.

In operationalizing the emergent model, existing scales can be modified to measure the two constructs: service entrepreneurship and sustained competitive advantage. First, in regard to service entrepreneurship construct, as noted the Covin and Slevin (1986) measure of behavioral entrepreneurship that has been widely used in the product innovation literature provides a useful

basis. This measure comprises three dimensions, namely, proactiveness, innovativeness and risk-taking. The dimensionality of this measure that has originated in “goods” context does not adequately capture the unique characteristics in service firms. Based on the case evidence we suggest that Covin and Slevin (1986) measure be strengthened with an added dimension of “adaptiveness”. The adaptiveness dimension captures the co-production/co-creation dimension of service delivery. The work by Gwinner, Bitner, Brown, and Kumar (2005) provides a useful basis to measure the firm’s adaptiveness to client needs within the domain of service entrepreneurship. Second, to measure the sustained competitive advantage construct, the discussion by Day and Wensley (1988) and Weerawardena (2003) provide a useful basis.

New measures need to be developed for the dynamic capability constructs (i.e., episodic learning, relational learning, client-focused learning and combinative capability) and service innovation. The conceptualization of dynamic capabilities as underpinned by “*create, extend and modify*” processes (Helfat, et al., 2007) provides a useful foundation to measure dynamic capabilities. As indicated earlier, Edvardsson and Olsson’s (1996) work could be operationalized to develop a composite measure of service innovation that captures the innovation intensity of the firm. In developing new measures, the process suggested by Churchill (1979) provides useful guidance.

## **6. Implications for theory and practice**

Although the service innovation-based competitive strategy literature has grown in significance, the literature is fragmented with the majority of researchers focusing on innovation success factors. There have been relatively few attempts to model the service innovation-based competitive strategy process. Clearly, there is a need for a conceptual model that captures the antecedents of service innovation-based competitive strategy. With the increased emphasis on service-based value creation in the marketing literature (e.g., Lusch, Vargo, & O'Brien, 2007;

Vargo & Lusch, 2004), this need represents a substantial void. Although there had been some attempts to conceptualize the service innovation-based competitive advantage using the capability-based view (Bharadwaj, et al., 1993), there has been no further advancements. In particular, the dynamic capabilities view that has been popular in the mainstream competitive strategy literature has not been adopted in the service firm competitive strategy context.

Addressing the foregoing knowledge gaps in the literature and the need for a unifying model that captures the antecedent factors, our paper makes several important theoretical contributions. First, the research proposes a conceptual model that captures the service innovation-based competitive strategy in a project-oriented setting based upon the dynamic capability view of competitive strategy. Second, the research incorporates four dynamic capabilities that drive the service innovation process in a project-oriented setting of which three are learning capabilities, namely, episodic learning, relational learning and client focused learning. The identification and conceptualization of these learning activities as dynamic capabilities contributes to the service innovation literature. Additionally, this conceptualization advances the literature on organizational learning and in the area of competitive strategy. Third, the case findings offer empirical support to conceptualizations of dimensionality for service innovation and dynamic capabilities, thus paving the way for future researchers to systematically develop measures for these constructs. Fourth, the research proposes entrepreneurship as distinct in the service context, thus opening the possibilities for further research in extending the meaning of entrepreneurship in service settings.

Furthermore, the paper offers valuable insights for policy planning and managerial practice. The study presents firm-level evidence on service innovation from the multiple case studies, thereby providing valuable inputs to formulate a service firm-focused innovation policy. This is especially relevant considering that firm-level evidence is limited. The findings provide a

feasible path for service firm managers adopting innovation to outperform competitors, in that they must build and nurture a set of strategic capabilities. The managers who pursue this path will adopt an entrepreneurial posture displaying innovativeness, proactiveness, risk taking and adaptiveness in their strategic decision-making. These attributes constitute the nature of service entrepreneurship, which is the primary driver of the dynamic capability building process and resultant innovation-based sustained competitive advantage in service firms. Understanding the antecedents of competitive advantage will help managers choose appropriate learning mechanisms to foster and nurture innovation and pursue strategies to gain competitive advantage. Given finite organizational resources, managers should concentrate on building key learning capabilities and strengthen the underlying processes. This active learning strategy should be supplemented and combined with a conscious orientation towards innovation (e.g., Calantone, Cavusgil, & Yushman, 2002). The focus should be on creating valuable, rare, inimitable and non-substitutable resource combinations (Eisenhardt & Martin, 2000) to create enduring advantages and drive overall consistent and superior marketplace performance.

## **7. Limitations and conclusion**

As with every research, our study has some limitations. First, a potential limitation of the study is that results are applicable only within project-oriented contexts. Therefore, caution should be exercised in generalizing our results to other service sectors. Future research should examine the suitability of each construct and its dimensions to assess its applicability to the particular context. Second, the use of single key informants has intrinsic limitations and future studies should recruit multiple informants, although this might not always be feasible. Notwithstanding the limitations of using single key respondents, our in-depth interviews were conducted with respondents who were highly knowledgeable and were involved in all aspects of running the business, a process likely to produce valid results. The CEO has the best vantage

point and is likely to be very conversant with organizational strategy, and is therefore a reliable source of information in collecting information about strategic capability building process (Hambrick, 1981). In addition, the documents and archival data about the organization provided a source of cross reference to the narrative provided by the CEO. Third, the narratives were based on events in history (e.g., creation of dynamic capabilities), which may be subject to recall bias and guided by the benefit of hindsight. However, we do not expect significantly biased information as the narratives had strands in common with extant literature. Given these limitations, a necessary next step is a quantitative study to validate the findings of this study.

Overall, this study addressed the need for a comprehensive model that captures the antecedent factors driving the innovation-based competitive strategy in service firms. Using multiple case study evidence and drawing on the dynamic capability-based view of competitive strategy, the paper presents a compelling model of service innovation-based competitive strategy in project-oriented service firms. The project-oriented service firm context provided an appropriate setting for this research. The emergent model will inform future research in that the key constructs and the theoretical relationships identified in this research can be further examined and validated.

In conclusion, our research provides provide valuable insights for both policy planners and practitioners. Our model presented here suggests that entrepreneurial service firms that adopt service innovation as a primary strategy build a set of key dynamic capabilities which enable them to sustain the benefits of the strategy and consistently outperform their competitors. We encourage further research that tests our propositions further moving forward this important area.

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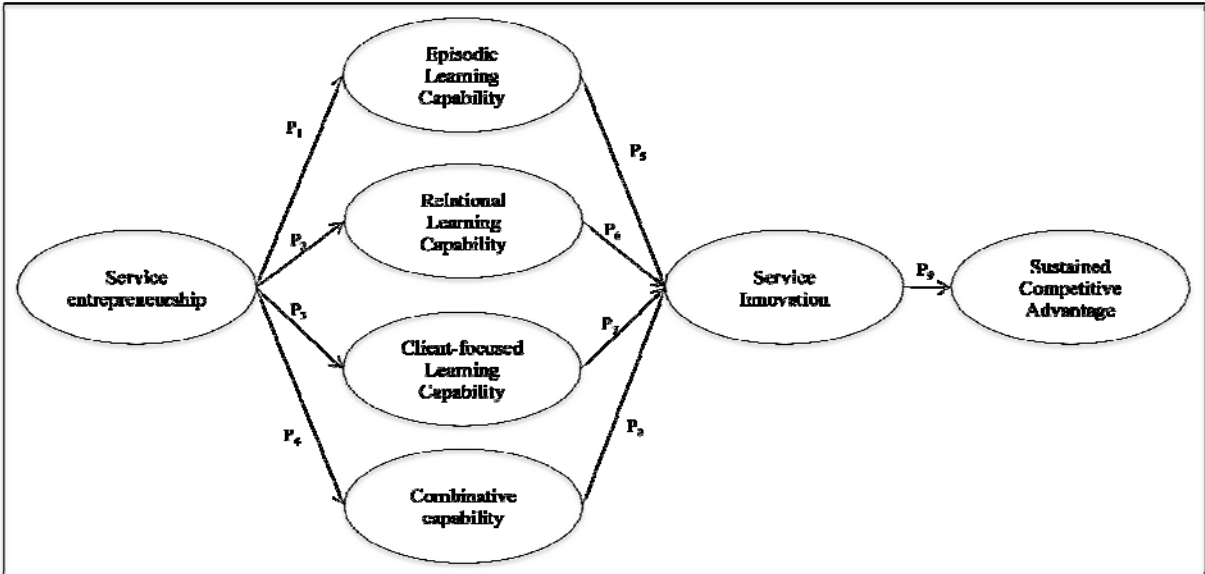
**Table 1: The characteristics of the sample**

<b>Case</b>	<b>Respondent</b>	<b>Firm size</b>	<b>Firm type</b>
A	Director	Medium	Architectural firm
B	CEO	Medium	Construction and maintenance service provider
C	CEO	Medium	Market research firm
D	CEO	Large	Construction services firm
E	Director	Medium	Project consultancy firm
F	GM	Large	Building design and professional services firm
G	CEO	Medium	Architectural firm
H	Marketing Manager	Medium	Construction firm
I	CEO	Medium	Architectural firm
J	CEO	Large	Multi-specialty firm
K	Director	Large	Architectural and engineering firm
L	CEO	Large	Architectural and engineering services firm
M	CEO + Innovation Manager	Medium	Architectural firm

**Table 2: Service innovation dimensions**

New service concept	New service process	New service system
<p><i>“Normally we try to be innovative by (following) what they call a reverse engineering process where they (the clients) will tell the builder a price and then the builder works it backwards. So that’s a new thing we are doing. Clients are really appreciative and we are being encouraged to work harder on that...”</i></p> <p style="text-align: right;"><b>Case I</b></p>	<p><i>“We do incremental innovation, I’m pretty sure of that...we incrementally improve our view on things and the way we do things on an incremental basis. Some increments are bigger than others.”...</i></p> <p style="text-align: right;"><b>Case B</b></p>	<p><i>“The clients are usually after a very coordinated result because they are highly engineered facilities but also the architecture in them is very, very specialized... So we decided to form a single point of contact that provided a single solution for the pharmaceutical industry... and we have grown from there.”</i></p> <p style="text-align: right;"><b>Case K</b></p>
<p><i>“...there’s a shortage of sand at the moment, and so the suppliers of sand are charging an absolute fortune, so we’ve got the license into XXXXXX Dam, because the water is down so low and we’re extracting sand out ourselves and using that so we’re doing it for half the price of what the market was trying to charge us. So rather than accept the status quo that you’ve got to buy it from us at [these prices] we went and sourced our own, reducing our own sand.”</i></p> <p style="text-align: right;"><b>Case D</b></p>	<p><i>“Some of the business processes that I put in place, you could call those innovative...They are not going to sound innovative but relatively speaking they are... This business has been broken into streams which align with our products and there’s a manager for each stream and he has got a certain amount of staff and he’s got to budget because my budget is broken down into different components.”</i></p> <p style="text-align: right;"><b>Case B</b></p>	<p><i>“On a particular project... they started to think well, hang on, we really need a system here where we can capture all the bits and pieces (on a project)... RFIs (request for information), extensions of time, budgets, the whole lot. We need to come up with a system, so a system is developed to do that, and then obviously that would have been version one. The next project would have come along, well, hang on, we need to upgrade it now and so it’s probably evolved as different projects come along.”</i></p> <p style="text-align: right;"><b>Case L</b></p>

Figure 1: Service innovation-based competitive advantage model for project-oriented firms



**APPENDIX 1: Dynamic Capabilities and Processes (Illustrative examples)**

	<b>Create</b>	<b>Extend</b>	<b>Modify</b>
<b>Episodic learning capability</b>	<p><i>We were fortunate to win a small alliance in CXXXX that nobody else wanted ....., so we were able to secure that and from that small project, we had an exponential sort of learning ....., The learning there was more about the process of alliancing rather than the technical learnings. <b>Case D</b></i></p> <p><i>We were a part of the team of project managers for the XXX project ....., it was something very new. But it was a unique project management exercise and I guess the guys learnt as they went with the client's requirement and they built up a lot of knowledge. And a lot of those guys are still around with us today... .. so we have that knowledge at hand. <b>Case E</b></i></p>	<p><i>And the same thing with our QA procedures, if there is something that needs to be improved on or innovated, it's amended in our QA so that mistake or that improvement is included or omitted in the next project. <b>Case F</b></i></p> <p><i>That all started, that whole major program of work (asbestos replacement)... to replace all the roofs in schools started from a responsive call from a Principal..... So you end up with a program of work that comes out of it that's done on a major basis... (and)... move it over into a planned approach. That's how something that is responsive can become a planned program of work. <b>Case B</b></i></p>	<p><i>Given that there's a boom in the market everywhere, there's a challenge of actually getting buildings built... so, we've got to work out a way of delivering the buildings with a lowering level of (onsite) expertise.</i></p> <p><i>So if we can push more towards work in the factory, and less on the site where it's uncontrolled, we'd be doing that. And you would see that in the revolution in joinery and bathrooms and things like that. All of those things can now be manufactured off-site and brought in, and façade systems... So really reducing the amount of high-risk work that's done on site... <b>Case G</b></i></p>
<b>Relational learning capability</b>	<p><i>We identify new projects by talking to people, by reading newspapers, by being out there in the community, by having dedicated business development people and marketing people. We also rely on people working on projects and by talking to architects and engineers that we are dealing with... .. you (also) talk to designers and people who are working on the periphery of the project. <b>Case E</b></i></p> <p><i>I think particularly going away to conferences and seeing what other companies are doing or seeing what's happening, industry trends overseas are really good. It gives you ideas about what's happening, what peoples' thinking is... .... We've done that, we've liaised with XXXX academics or marketing gurus. We've even brought some over to Australia in the past... and it certainly leads into new product innovation. <b>Case C</b></i></p>	<p><i>We do things like... we recently sent some staff to Dubai to look around; we also go to conferences; we have a lot of training courses... all that sort of thing. Yeah, it's an ongoing process internally..... Often at those is where we would learn about new things that you didn't quite know about. So you'll go and find out about that or pick up on issues which possibly a competitor is doing and you're going look at that and train your staff. <b>Case H</b></i></p> <p><i>We've got people that have been Managing Directors of major building companies (in XXXX), Director Generals of government agencies... So we're able to use those networks and use those people, bring those people in as senior advisors or strategic advisors..., we've proposed this to a number of clients and they've seen it as a positive. <b>Case E</b></i></p>	<p><i>What we have done in the past is subcontract out to local practices, like some of our work in XXXX.... And we have established strong relationships with those practices over a number of projects and a number of years... The advantage is I suppose that they know what's generally available locally... <b>Case G</b></i></p> <p><i>The delivery systems have changed... the structure of bidding is such that you can bring the builder a little bit closer to the front end of the job so he feels more a partner to the design process. So that he can tell you of his difficulties in construction, which may be related to a particular time in the industry, like now, where he feels comfortable with certain trades, and uncomfortable with other trades, so you can design around his ability to deliver the building on site. <b>Case G</b></i></p>



<p><b>Client-focused learning capability</b></p>	<p><i>The brief... when it comes in to us often has a hint of what the university is about... the image of the university. But it's for the architect really to interpret what that means. For example, we moved the XXXX from where they were at...to XXXX (a new location). ... They had a design competition...we won that largely because we could understand their mission statement and demonstrate to them that we could create an (appropriate) environment... Case G</i></p> <p><i>In a project, we're always learning about what the client does because a lot of buildings we do are purpose fit for them. So in that mould we also are learning from our client in terms of understanding what they do ... Case H</i></p> <p><i>We do things like... we actually put the kitchen at the front of the apartment and they can then open onto the balcony... because a lot of people spend a lot of time on the balcony. So we are always looking for...the ways in which people use spaces. Case I</i></p>	<p><i>It was the client who requested it..... Depending upon his needs we can say to the client in our proposal, "our database now does this, but for your project we're going to tap on these extra widgets which will enable you to pull this data out of your database and enable you to forecast 25 years in advance rather than just 10 for your maintenance Case J</i></p> <p><i>... most of our clients are private developers and they need quick answers, we have setup our business to be able to respond very quickly. So we have a dedicated design unit and 3-D visualization team that are right there and they are available to be able to do these schemes very quickly... Case I</i></p> <p><i>We do workshops with clients (who in our case tend to be developers) and buyers to understand whether the buildings we propose to build fit in not only with our client's expectations but also with the expectations of the people who live in those buildings... This learning we try and incorporate in our future designs... Case A</i></p>	<p><i>In the case of an airport project XXXX, they (our client) decide they want to go and build a new XXXX, so we start talking to them about that project, working out who the people are within that client who are going to be associated with it, getting to understand what the project's about a bit better, .... And then start funneling in all that information to get a better understanding of what we need to do, so that when that project comes out to tender,... But the earlier you get on, the earlier you identify the opportunity, the better the result will be for you Case D</i></p> <p><i>I think people have become a lot more aware... ..and what happened was there was some sort of change.... Earlier people just used to buy what was provided to them by the developers. With people getting more access to the popular press..... people had this appreciation and taste for better design. And we were just able to offer that...a global quality of design that the market would actually be craving for... Developers today cannot compete without a design quality. Case I</i></p>
<p><b>Combinative capability</b></p>	<p><i>...we've got the depth of expertise across the organization where if we don't know the answer straight away, there sure is XXXX a combination of people can get in a room and work it out. As we get more of these non-traditional clients... .. with all kinds of new issues of their own creation, they don't know, we don't know, but we can certainly come up with a solution for them. Case L</i></p> <p><i>We get maybe three weeks or something to put a tender together. And we select a number of sub-consultants that we may need, and which would advantage our team. Like, we will get the best health services planner from wherever they are in XXXX that satisfies that particular type of project. We'll get the best engineers for that particular type of project. And in the three weeks we'll get them to give us their quality statements I suppose, but also their fees. And then we'd find out within a month whether we're successful or not. Case G</i></p>	<p><i>We talk to various consultants and partners and we'll interview them, we'll establish whether they've got the right credentials to partner up with. Whether they've got the resources, whether the timeframe works for them, whether the clients had a good or bad experience with them previously..... I guess in the normal course of events we do (outsource work), so we don't have electricians, so we sub-contract it. We don't have plumbers, so we sub-contract that work. Case D</i></p> <p><i>...we might for example get a project that comes up that requires somebody else's expertise or there may be insufficient resources, because you can see there's a lot of vacancies there. We're short staffed so we might end up using her, him and him on a particular project together. Case C</i></p> <p><i>We use mentoring quite effectively... we have a set-up where the project director is in-charge of a number of projects... so the junior architects are involved early on with the project designer and other architects on the project... they work alongside and get introduced to the project and learn things as they go along Case M</i></p>	<p><i>"...the projects when they got progressively larger and larger, they're more demanding on resources and more demanding on the type of services you're providing, and you cannot be expected to have these capabilities and skills available in one place...Then we draw on the capability of various centers around XXXX and overseas and various skills required for it, and then we set out a plan, assign the resources,..... So it's a matter of getting the priorities and set of skills complimentary in different offices on which you can draw, you can marry depending on availability and depending on time lines. Case J</i></p> <p><i>If I get big programs of work and government wants to spend all their money in a year, which is sometimes extremely hard for me to do, the only way I can do it is to outsource a heap of it ..... It's not that I couldn't do the work, it's just I can't do it in the timeframe. So therefore you would go and you'd put together an outsourcing proposal... .. then we would outsource that component in a structured way to that part of the industry and make the difference up ourselves. So it's on that kind of basis. Case B</i></p>