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Innovation investments, market engagement and financial performance: A study among Australian manufacturing SMEs

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ABSTRACT

Innovation-related activities within firms have traditionally been viewed as primary drivers of product and service differentiation and hopefully firm performance. Such views assume the effective transfer of newly developed products or services to a market willing to transact for the innovative products at a price that sustains the research, development and commercialisation processes behind the initial investments. In this paper, we 'unpack' this model linking primary R&D and related activities, the steps taken within the firm's market and transform its operational presence, and measures of firm performance. Using a sample of 449 Australian manufacturing companies from the Business Longitudinal Survey from the Australian Bureau of Statistics, the paper develops a mediated model by which we examine the impact of innovation on firm performance mediated through a firm's market engagement and transformation strategies. This paper finds that organisational performance is driven by innovation only when mediated through these transformation outcomes. The results contribute to the innovation literature in finding that innovation-related activities can only drive a firm's competitive advantage when they occur concomitantly with actual changes in the market position and offerings of firms.

1. Introduction

Innovation is often seen as self-evidently positive for organisations. This is despite the fact that innovative activities are often innately risky, with uncertain costs and potential returns (Christensen, 1997; Koellinger, 2008; Ceccagnoli, 2009). A recent example might be Microsoft's Vista operating system which was costly to develop and incorporated many advanced features, although was not well received by the marketplace. Furthermore, depending on the relative appropriation arrangements available within industries, benefits often accrue to customers and competitors and not necessarily the innovating firms themselves (Jacobides et al., 2006; McGahan and Silverman, 2006). Indeed, if there is a consensus emerging in the relevant extant literature, it is that the link between innovation investments and the 'sponsoring' firm's financial performance is highly contingent on complex interactions between endogenous asset stocks and exogenous market and environmental factors (Audretsch, 2004; Diaz-Diaz et al., 2008; Huang and Rice, 2009).

These fundamental issues relating to the nexus between innovation and performance may be seen as underlying recent research efforts in organisational ambidexterity (He and Wong, 2004; Sidhu et al., 2007; Tushman and O'Reilly, 1996). This literature seeks to emphasise the positive performance outcomes available to firms that contemporaneously and effectively pursue exploratory activities (akin to fundamental product and/or service invention within the firm, and also effective search activities outside the firm's boundaries) and exploitative activities (which may be viewed as effective commercialisation of these inventions). An exemplar of recent successful ambidexterity would be Taiwan's ASUS that developed the *Eee* PC series of netbook (mini notebook) PCs, which are built upon strong advances in component technology allowing for a cheap, light and reliable computer that created a strong market niche for potential users. Similarly to the research discussed above, it is an emerging consensus within this ambidexterity literature that the effective configuration of exploratory and exploitative activities by firms is a vital predeterminant of financial performance.

The final literature that informs our analysis relates to 'dynamic capabilities'. Related to the resource-based view (RBV) of the firm (Barney, 1991; Peteraf, 1993; Rumelt, 1984, 1987; Wernerfelt, 1984), the dynamic capabilities view extends what it criticizes as RBV's static approach to emphasise the importance of resource renewal and recreation on an ongoing basis to ensure the sustainability of competitive advantage and financial performance in competitive environments (Helfat et al., 2007; Teece et al., 1997; Verona and Ravasi, 2003; Wilkens et al., 2004; Zollo and Winter, 2002; Zott, 2003). Teece et al. (1997, p. 516) defined dynamic

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capabilities as "the firm's ability to integrate, build and reconfigure internal and external competences to address rapidly changing environments".

The dynamic capabilities view (DCV) has been utilised as the fundamental model employed in this paper due to its fundamental role in explaining those processes within organisations that act as drivers of firm exploration and invention. The DCV draws explicitly on the Schumpeterian approach to rent creation (Teece et al., 1997), where innovation is viewed as the core of ongoing competitive positioning (Helfat et al., 2007). The emphasis here differs from the focus of the RBV literature where the focus rests squarely on the search for quasi-rents derived from the possession of idiosyncratic resources (Barney, 1991; Peteraf, 1993). For DCV, it is the dynamic nature of certain capabilities, like the capability to innovate or the capability to learn, that creates value for firms.

We follow and elaborate on the propositions espoused by Eisenhardt, Helfat and their colleagues (Eisenhardt and Martin, 2000; Helfat et al., 2007; Zott, 2003) that the relationships between dynamic capabilities and firm performance may exist through indirect causal relationships. The focus of this paper emanates from a model that posits that a firm's competitive performance is mediated through changes in the market presence and operation of the firm (which we term 'transformation outcomes'). We propose that a firm's innovation-based activities are able to be viewed as effective only insofar as they become evident in their marketplaces, disturbing the economic equilibrium in industries (Brouwer, 1991; Schumpeter, 1982; Sivadas and Dwyer, 2000). An example might be Apple's suite of innovations relating to its hardware (iPods, iPhones) and related services (iTunes). The fundamental technological innovations underlying these products fundamentally disturbed the music, PDA and mobile telecommunications industries, creating strong returns for Apple along the way. Only through this effective configuration of innovation-related capabilities and market perturbation can firm financial performance emerge.

As such, we provide important evidence that links these hitherto disparate literatures emphasising the importance of dynamic, innovation-focused capabilities, and effective market engagement, as a means to achieve firm performance. Our essential contribution is the development and testing of a relatively parsimonious model linking firm performance, innovation and market engagement, within a sample of highly regular businesses (Australian manufacturing SMEs). Furthermore, through the use of structural equation modelling (SEM) we show that this exploration-exploitation configuration is necessary for innovation-related dynamic capabilities to drive performance (in our sample). In so doing, the paper addresses a gap in the dynamic capabilities and knowledge-based view of the firm literature (Eisenhardt and Santos, 2002).

The paper proceeds as follows. First, the research framework will be developed that outlines the latent constructs, including the factors of organisational performance, transformation outcomes and innovation, in our research model. Second, our empirical analysis (primarily based on SEM) will be discussed. Finally, the paper concludes the findings and posits some possible research directions that may allow researchers in the field of strategic management to further advance dynamic theories in relation to innovation, organisational capabilities and performance.

2. Research framework: linking innovation and firm performance

Having introduced a focus on the role of innovation on an ongoing basis as a driver of firm dynamics, this paper suggests a research framework (shown in Fig. 1), primarily aimed at understanding the nature of and inter-relations among innovation, transformation outcomes and organisational performance. This framework in part echoes Eisenhardt and Martin's (2000) and Zott's (2003) notions, especially in relation to firm performance being influenced by dynamic capabilities which are in turn driven by those reconfiguration processes that adapt an organisation's knowledge, resources and competences.

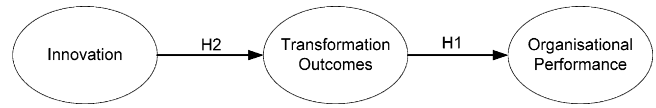

Fig. 1. The research framework.

2.1. Organisational performance

As organisations compete in dynamic markets, their competitive advantage may emerge and then decay, driven by internal dynamics and by changes in the external environment (D'Aveni, 1994; Casper et al., 1999; Lehrer, 2001). As such, competitive advantage may be temporally constrained, reflecting firms' short-term market performance from time to time. Measures of organisations' competitive advantage generally focus on some short-term measure or measures, often extracted cross-sectionally as 'snap shots' within samples.

Common measures of performance include growth in sales and firm productivity, which have the benefit of both firm growth and market relative strength at least partially incorporated in the measurement of firm performance (Bird and Beechler, 1995; Demirag, 1987; Madu et al., 1996; Steers, 1975; Venkatraman and Ramanujam, 1986; also see the discussion of revenue productivity in Charan, 2004, and growth persistence in Helfat et al., 2007). Furthermore, growth expectations for future sales and returns are important aspects of firm performance, as these expectations can spur and guide a firm's current investments in research development, manufacturing and market development through the lens of its strategy–creating the elements of developmental orientation and self-fulfilment in terms of current and future success (Bird and Beechler, 1995; Charan, 2004; Miller et al., 2008).

Our measure of performance incorporates both historical and expected sales growth. The addition of expected sales growth is a novel addition to historically derived sales growth measures of performance, although we think it adds significant value to the sales growth measure as it provides an indication of the commitment to strategic resourcing and evidence of a growth orientation regarding future investment initiatives that are necessary to sustainably continue historical performance (Charan, 2004; Miller et al., 2008).

2.2. Transformation outcomes and organisational performance

Firms exist to meet the demand of their customers, through markets, by supplying products and services (Grant, 1996a,b). It is logical that only those firms capable of effectively anticipating and/or identifying market needs and adapting their internal resource configurations (and the external market offerings) in a timely manner to meet such emergent demand can develop and sustain their superior performance outcomes (Amit and Schoemaker, 1993; Langlois and Foss, 1999; Teece et al., 1997).

For firms, the creation of "economic rents"[2] can be viewed as the logical outcomes of these successful market transformation

[2] There is a rich literature on *economic rents* in innovation and microeconomics (for a brief review, see Mahoney and Pandian, 1992). In the context of this paper, we mean the achievement of financial returns unavailable to competitors through the productive use of resource stocks and other factors of production.