The Role of IT and Inter-firm Partnership Activities in SME Performance

Abstract
This research draws upon the resource-based view theory, the information systems (IS) and fast growth company literature to examine the impact of IT on fast growth small-to-medium enterprise (SME) performance. The results show that fast growth SMEs are highly entrepreneurial and innovative, know how to strategically utilize IT to improve inter-firm partnership activities such as information sharing, activity integration, coordination, and partnership enhancement and thus achieve rapid growth. This study contributes to the ongoing debate surrounding the business value of IT in the SME context and highlights the ways in which IT helps fast growth SMEs to achieve business success.

Keywords: IT Infrastructure, Strategic IT Alignment, Inter-Firm Business Processes, Fast Growth SMEs, Resource-based View of Firms.

1. INTRODUCTION
Since Carr [11], research focusing on information technology (IT) business value has become an increasing thematic line of enquiry for investigators and business practitioners. However, debate has been focused on large companies, with scant attention paid to SMEs. It is well acknowledged that SMEs are the driving engines of most economies [36]. Specifically, rapidly growing firms represent a substantial proportion of power in the small business sector, creating wealth, income, and jobs [16]. According to Upton et al. [52], fast growth SMEs are those enterprises that “are willing to take risks, to be innovative, and to initiate aggressive competitive actions” and grow faster than their industry sector average. Barringer et al. [7] posit that “firm growth is not a random or chance event” but associated with entrepreneurial firm attributes, behaviors, strategies, and relative environmental munificence. Despite a burgeoning research base on fast growth SMEs, understanding the determinants and behaviors of this cohort remains limited and fragmented.
IT is regarded by managers as a competitive tool for implementation of strategic plans and support for firm core competencies [2]. Compared with larger companies, SMEs in general lack resources for IT innovation. However, Steiner and Solem [45] observed that the adoption of new technologies and the availability of resources to adopt new technologies are strongly related to SME success, highlighting that small firm access to resources is a key to growth. Todd and Taylor [51] stated that access to new technologies is “frequently the basis of the fast growth firms’ competitive advantage”. More recently, Khazanchi [25] concluded that the flexible structure and sound managerial capabilities of SMEs not only guarantee success of IT adoption and use, but also have positive effects on financial performance. Nevertheless, we notice that there is not a substantial body of theory-driven empirical studies that demonstrate how IT enhances SME performance, constituting an apparent gap in both the fast growth company and information systems (IS) literature.

Examining IT usage in digitally enabled inter-firm processes has also gained intensive attention in the IS area. As IT provides new opportunities for firms to manage inter-firm relationships, it is imperative that we understand the impact of IT on business performance through inter-firm business processes [17]. Although research has examined the performance benefits of IT resources, there is still limited understanding of the links between IT and SME performance. Moreover, understanding IT value creation in the SME context will have significant implications for the ways in which SMEs approach IT investment and management. Thus, further rigorous empirical examination is needed to understand how and why IT enhances firm performance through intermediate processes.

Drawing upon the resource-based view of the firm (RBV) theory [6] and the IS and fast growth company literature, we explore the relationship between IT and fast growth SME performance. We argue that IT infrastructure and strategic IT alignment help fast growth firms to achieve business value by improving inter-firm business process performance such
as activity integration and information sharing. We examine the hypothesized linkages empirically based on data drawn from a survey of Australian fast growth SMEs.

This paper is structured as follows. The theoretical background section introduces the tenets of the RBV which forms the backbone of our conceptual model for hypothesis formulation. The research method section outlines the procedures used for data collection, validation of the measurement properties of the constructs, and the test of the proposed research model. Next we present our findings and finally conclude with a discussion of findings, implications for research and practice, limitations and potential avenues for future research.

2. LITERATURE REVIEW

The RBV posits that the improvements of firm performance depend on availability of, or access to, valuable, rare, inimitable, non-substitutable and relatively immobile resources or resource bundles [6]. Wernerfelt [55] posits that resources are “anything that might be thought of as a strength or weakness of a given firm”, comprising tangible and intangible assets. While tangible resources include financial capital (e.g., equity capital, dept capital, retained earnings) and physical capital (e.g., machinery & buildings), intangible resources such as organization culture, learning, networks, and reputation tend to be tacit, idiosyncratic, and deeply embedded in an organization’s social fabric and are more likely to produce a competitive advantage [57].

Owing to resource constraints, small or new firms are usually unable to achieve significant economies of scale or scope, or serve a broad target market, limiting their choices of strategy [41]. Notwithstanding, Brush et al. [10] advise that the resources of innovative and growth-oriented firms are different from those of slow-growth niche enterprises. Recently, fast growth company research employs the resource constraints [4] and the slack resources argument [20] to explain SME growth. While the resource constraints literature [4] states that
firms with fewer resources are likely to leverage them more efficiently, the slack resources argument [20] proposes that slackness provides a cushion of actual or potential resources, enabling firms not only to adapt successfully to internal pressures of transformation but also to initiate changes in strategy, thus influencing business performance.

Both the resource constraints and slack resources arguments are consistent with the combination of entrepreneurial firm [38] and the RBV theory [6], the perspective of which suggest that organizations can be regarded as a set of resources and firm growth can be explained through the availability of idle resources. According to Penrose [38], when a firm is entrepreneurial, the existence of slack resources promotes firm growth. It is argued that slack resources are potentially utilizable, and can be diverted or redeployed for the achievement of organizational goals [33]. The availability of idle resources can enhance experimentation and risk-taking, insulate firms from exogenous shocks, and provide flexibility for managers to develop strategic options. Compared with their larger counterparts, entrepreneurial SMEs are viewed as having greater availability of slack resources and are impelled to grow in order to reach their optimal size [33].

The RBV theory provides a lens to explain an indirect role of IT in business value creation. The basic logic is that IT affects intermediate business processes which, in turn, lead to business performance [53]. In line with this view, we investigate how IT enhances fast growth SME performance through improving business process performance. Specially, we examine IT infrastructure, strategic planning (i.e., strategic IT alignment), and culture (i.e., market orientation) which are the pertinent resources identified in the IS and fast growth SME literature.

3. RESEARCH FRAMEWORK

Figure 1 depicts a hypothesized model of resources, inter-firm business processes, and firm performance, and is followed by a discussion and formulation of testable hypotheses.
IT infrastructure refers to a set of shared, tangible IT resources, including computers, network and telecommunication facilities, shareable technical platforms, and databases [60]. Viewed from the RBV perspective, IT infrastructure is a key resource, enabling firms to innovate and to make continuous improvement to products in order to achieve competitive advantage. IT infrastructure provides not only a solid platform upon which firms develop and implement IT applications to conduct business activities, but also an agile and flexible technological structure for future business development [9]. A reliable technological platform ensures security and maintenance of firm-wide installations and applications, helping companies to do business with suppliers and customers [54]. Flexible IT infrastructure facilitates rapid development and implementation of business applications which enable organizations to respond swiftly, to take advantage of emerging opportunities, and to neutralize competitive threats [47].

A typical value chain network involves collecting, interpreting, storing, and sharing data through effective activity integration and information exchange between value chain members in order to improve efficiency in collaboration and coordination activities [29]. While activity integration is the extent to which firms collaborate on strategic planning and forecasting activities with their business partners and suppliers in value chains, information
sharing refers to the effective and efficient exchange of knowledge between firms and their trading partners [26]. Quality IT infrastructure fosters strong linkages, integration, and information sharing between firms and their trading partners [43]. Thus, we hypothesize that:

**H1**: IT infrastructure impacts positively on information sharing.

**H2**: IT infrastructure impacts positively on activity integration.

**H3**: IT infrastructure impacts positively on coordination.

Strategic IT alignment concerns the degree to which IS priorities, goals, and objectives are aligned with business plans [44]. According to Powell and Dent-Micallef [42], strategic IT alignment is a valuable planning resource, ensuring firms to use IT and implement IT-based strategies successfully. Strategic IT alignment represents patterns of deployment of IT applications to support business strategies geared towards reducing costs and increasing revenue. While early studies suggest that when compared with their larger counterparts, SMEs are regarded as being less strategically-oriented when using IT investments, recent IS research diminishes this perspective. For example, Cragg et al. [13] surveyed 250 UK manufacturing SMEs. Results showed that a significant proportion of enterprises achieve high levels of IT alignment; furthermore, firms with a high level of alignment achieve better performance than their counterparts. In another study of 110 Canadian manufacturing SMEs, Oh and Pinsonneault [37] highlighted that aligning IT investment in growth-orientated applications with business strategy is necessary for gaining strategic value of IT. Findings from these investigations imply that the success of IT use is related strongly to aligning IT strategy with business objectives, which is regarded as a crucial determinant of SME business success.

Fast growth company research indicates that this cohort of firms tends to integrate future-oriented planning into strategic planning processes in order to achieve substantive benefits. For example, Levy et al. [30] found that “IT strategy has been an integral and tightly woven
part of business strategy” within innovative SMEs, enabling firms to achieve and sustain competitive advantage. Larsen et al. [28] argued that the reason why high growth SMEs gain real benefit and value from IT is because they employ strategic IS planning for their future. These various sources of evidence highlight the strategic use of IT in high growth firms, implying a degree of IT alignment with business strategy in the SME context. The IT alignment literature [23, 47] posits that developing mutual coherence between IT strategy and business strategy is imperative for firms to prioritize IT plans and activities effectively and to channel IT complementary resources towards areas of strategic importance of firms.

Firms with high levels of strategic IT alignment tend to focus IT efforts on critical areas, to effectively align IT resources with strategic purposes and market positions, and to achieve sustainable IT-based competitive advantage [23]. Today’s information-intensive environments require firms to develop high levels of organizational ability to integrate resources across value chain processes in a synergistic manner and generate high rents for all partners along value chains. Strategic IT alignment provides a basis for such integration by bringing into line different business processes, facilitates information and resource sharing within and across firms, permits trading partners to codify jointly valuable market knowledge into explicit strategies, and helps firms to coordinate strategic planning processes that are critical for organizing and allocating resources effectively [58]. Thus, we hypothesize that:

**H4:** Strategic IT alignment impacts positively on information sharing.

**H5:** Strategic IT alignment impacts positively on activity integration.

**H6:** Strategic IT alignment impacts positively on coordination.

Extending the RBV theory, the relational view of competitive advantage (Dyer & Hatch, 2006; Dyer & Singh, 1998) suggests that critical resources often span firm boundaries and are embedded in inter-firm routines and processes. This type of resources has great potential to generate a relational rent. Following this logic, we argue that IT-enabled inter-firm
partnership activities facilitate rent generation by means of inter-firm relation-specific assets and inter-firm knowledge-sharing routines (Rosenzweig, 2009). IS literature (Grover & Malhotra, 1999; Rai & Tang, 2010) highlights that IT can help firms to gain sustainable competitive advantage by facilitating communication, collaboration, and fostering relational capabilities. Firms can achieve business advantage when they understand how to strategically employ IT to enhance collaboration and coordination activities, leading to the development of inter-firm complementary capabilities (Powell & Dent-Micalef, 1997). Companies such as Dell and Wal-Mart develop strategic relationships with their partners and derive substantial benefits from such partnerships.

In the context of relationship development, the sustainability of strategic advantage depends on how IT is employed to foster inter-firm processes and to facilitate the development and use of complementary capabilities (Dyer & Singh, 1998). Recent research (Autry & Golicic, 2010; Oh, Teo, & Sambamurthy, 2012; Rai & Tang, 2010) demonstrates that the inter-firm collaboration and coordination can help the focal company to increase the intensity of, and enrich the quality of, its interactions with partners and suppliers, thus enhancing business relationship development. Firms sharing important product planning and inventory information with value chain members on a regular and real-time basis are more likely to develop productive relationships than those who do not (Paulraj, Lado, & Chen, 2008). In addition, an important precursor to effective and efficient inter-firm processes is the commitment of resources among value chain members to ensure that their business processes and systems are mutually compatible (Carr & Pearson, 1999). When the focal company’s systems and online information repositories are integrated with those of its partners and suppliers, these parties are able to exhibit a greater commitment to their mutual relationships (Du et al., 2012). Such commitment can, in turn, foster trusting, long-lasting relationships and
can credibly signal the parties’ intentions to ensure the long-term success of their business relationships (Wu, Mahajan, & Balasubramanian, 2003). Thus, we hypothesize that:

H7: Information sharing impacts positively to partnership enhancement.

H8: Activity integration impacts positively to partnership enhancement.

H9: Coordination impacts positively to partnership enhancement.

Inter-firm collaboration and coordination is necessary to ensure performance (Stank, Keller, & Daugherty, 2001). Effective coordination not only reinforces a firm’s ability to maintain, advance, and strengthen its relationships with value chain partners (Rai & Tang, 2010), but also enables partner organizations in the value chain to share information in a timely manner, schedule procurement, production, and distribution operations synchronously, and respond to market changes swiftly (Devaraj, Krajewski, & Wei, 2007). Given that coordination is facilitated by the efficacy of a robust back-end integration and a repetitive collaboration process, firms endowed with superior coordination competency can outperform competitors through efficient order handling procedures and short delivery lead time, therefore achieving improved performance (Kim et al., 2006).

Strategic alliance research (Dyer & Hatch, 2006; Dyer & Singh, 1998) emphasizes that it is imperative for companies to build strategic relationships in order to achieve sustainable value in the face of the increasing pace of change and complexity of business environments. Building strategic relationships with business partners and suppliers not only enables firms to access to new technologies, markets, and complementary resources, but also to increase their responsiveness to market changes, fosters great knowledge seeking, and achieve synergetic rents (Gulati, Nohria, & Zaheer, 2000). Studies show that the higher level of collaboration in a relationship, the better business performance companies can achieve (Rosenzweig, 2009). In relation to fast growth SME context, research (Barringer et al., 2005; Beekman & Robinson, 2004) suggests owing to a lack of resources, rapid growth SMEs tend to engage
proactively in inter-organizational partnerships to build resources which provide another avenue to high growth. Thus, we hypothesize that:

**H10**: Partnership enhancement is related positively to sales performance.

4. **RESEARCH METHOD**

   A random sample of 1,500 Australian SMEs was selected. Firms are categorized by industry sector using the Australian and New Zealand Standard Industrial Classification (ANZSIC) criteria developed by the Australian Bureau of Statistics (ABS), containing 16 categories (ABS, 1983). CEOs and/or founders of the companies are key informants. An online survey will be used to collect data. An instrument based on the literature will be developed to tap data relating to the five broad areas identified in the proposed research model (Figure 1).

   SPSS&AMOS software packages will be used to carry out the analysis. SPSS will be used to compute exploratory factor analysis (EFA). AMOS will be employed to undertake confirmatory factor analyses (CFA), to validate factor loadings identified in EFA, and to test a full structural model and related hypotheses.

5. **EXPECTED CONTRIBUTION**

   This study contributes to theory and research in four salient ways. First, a fundamental contribution relates to developing, theorizing, and empirically validating a theoretical model investigating nomological links among resources, business processes, and organizational performance. We empirically test the application of RBV theory, resource constraints, and slack resource arguments, thus offering a sharp theoretical lens to view the impact of resources on the creation of business value.

   Second, this study contributes to IS research by providing initial empirical evidence from an investigation of the relationship between strategic IT alignment and fast growth company performance. While extensive empirical research has confirmed a direct positive relationship
between IT strategy alignment and performance, understanding the strategic use of IT in the SME context still remains enigmatic. Recently, researchers [47] have suggested that the link between alignment and performance could be revisited by examining the intermediate effects of business processes, highlighting “an advantage of conceptualizing alignment at the process level”. Our study heeds this call, suggesting that strategic IT alignment is a valuable planning resource, helping firms to create value by virtue of how IT is employed to support core process activities.

Third, this study highlights that market orientation is a distinctive cultural resource, providing source of advantage when fostering behaviors and activities that are necessary to exploit the appropriate assets to attain positional advantage. Market orientation is a well-established concept in the strategic and marketing research field. Extensive research has been conducted investigating the association between market orientation and firm performance. It is noteworthy, however, that this construct gains little attention from the IS community [31]. Our research might open up new research opportunities by investigating the impact of market orientation and IT on firm performance.

Finally, this study bridges insights from the IS and fast growth SME literature to examine the role of IT in business processes and its consequences on SME success. As a major component of industrial economics, SME survival and growth is imperative. Understanding how IT impacts business processes is important for SMEs to achieve business advantage in dynamic and turbulent business environments. Research related to IT issues in fast growth SMEs remains thin on the ground and the benefits they derive from IT are far from conclusive. This study provides insightful understanding as to how IT and slack resources can foster firm growth. Our results also highlight that IT business value hinges on how organizations strategically employ IT in improving intermediate processes such as strategic
integration, timely information sharing, and effective collaboration activities among value
chain members.

This study has four important implications for management. First, we offer a theoretical
framework for managers to understand how IT investments help firms to achieve business
success through the improvement of business processes. This study highlights that resources
are determinants of firm growth only when they are exploited through effective and efficient
collaboration activities. For managers, identifying resource competencies that have high
potential for facilitating specific business activities and focusing on proper business processes
where these resources are deployed should be a priority.

Second, we investigate the links between strategic IT alignment, business processes, and
firm performance. Firms can gain real benefits and value from IT when they employ strategic
IT planning for their future. Digital technologies provide firms with new ways not only to
receive and process information effectively, but also to respond to market changes quickly.
Managers should understand the imperative role of aligning IT strategy with business strategy
at the firm-process level in business success. Managers should continue to look to alignment
as a way to boost firm performance in a short-term but also keep an eye to how this alignment
can enable a future long-term advantage.

Third, market orientation is a valuable firm resource. Managers are advised to balance
market orientation and innovativeness to promote cooperative activities with value chain
members in order to increase customer value. In addition, managers should emphasize the
importance of market orientation as a part of the firm’s business strategy and culture; and
integrate their knowledge, belief, and participation in IT innovation by developing the firm’s
market orientation.

Finally, we show that activity integration and information sharing between firms and their
business partners and suppliers exert a significant impact on organizational performance. As
digital technology connects businesses on a global scale, firms no longer work in isolation. Managers should be aware that building such strategic collaboration is critical when doing business, particularly in dynamic environments.

6. CURRENT PROGRESS

Currently, this research project is at the data collection stage. We plan to finish data collection in August and conduct data analysis and then write a journal paper.

References


