

ORGANIZATIONAL CAPABILITIES FOR SMALL FIRMS' COMPETITIVENESS

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1. SMALL FIRM PERSPECTIVE ON RESOURCES VS. CAPABILITIES

European Commission suggests that small firms (i.e. firms with less than 50 employees) constitute more than 90% of the active enterprises in Europe. Therefore, it is not surprising that supporting small firms is one of the “EU priorities for economic growth, job creation and economic and social cohesion” (European Commission). However, we know that small firms are vulnerable and prone to failure. They usually have problems with scarcity of internal resources (e.g. capital) that limit the scope of their development and reduce their access to new technologies and/or innovations. These limitations lead to failure of a significant number of small firms during early years of creation and struggles with survival in a competitive market situation. Thus, understanding more about the dynamics behind small firm competitiveness¹ is important as they provide great value for the economy and society.

A central theoretical perspective conceptualizing how firms make use of resources to build competitiveness is offered by the resource-based view (RBV). This perspective has become one of the most influential frameworks in strategic management. Building on early work of Penrose (1959) provides an inward looking perspective on firms and regards them as heterogeneous entities consisting of bundles of idiosyncratic internal resources. Firms with superior internal resources can create barriers that secure economic rents and lead to profitability. Firms can have resources that are financial, physical, technological, human, reputation-related, and organizational. However, not all resources are a source of competitiveness. Additionally, mere

1. Competitiveness is a broad concept denoting a firm's ability to survive and prosper in relation to competitors

acquisition of resources is not sufficient, they need to be valuable, rare, imperfectly imitable, and non-substitutable (VRIN) compared to the competitors' resources, which then lead to competitive advantage.

As an extension to the resource centric view, recent studies have been focusing on firm capabilities. This perspective has also been referred to as the capability-based view, where capabilities are defined as "complex bundles of skills and accumulated knowledge, exercised through organizational processes that enable firms to coordinate activities and make use of their assets" (Day, 1994, p. 38). Thus, in comparison to resources which can be tradable and transferable, capabilities tend to be inimitable and unique to the firm and likely to be a source of competitiveness. Capabilities are like glue that binds together or combines resources and make them perform an advantageous task or activity. For example, firms with superior operational capabilities can achieve competitive advantage by effectively handling processes and efficiently utilizing assets. Several studies also back this perspective, as they have found that a small firm's capabilities can influence its performance through the effective and efficient use of resources. With this background, two key questions are addressed in this report. First, which capabilities can be important for small firm competitiveness? Second, how can a small firm benefit from capabilities and secure future competitiveness advantage?

2. ORGANIZATIONAL CAPABILITIES FOR SMALL FIRMS' COMPETITIVENESS

To gain insights into which types of capabilities can be important for small firms, we started identifying numerous capabilities which are recognized within the literature as important for small firms' competitiveness. Instead of creating a laundry list of capabilities, we highlighted five distinct capabilities, which were discussed in interviews with small firms' owners/CEOs (see Table 1).

1) Absorptive capability: a firm's ability to interact with its external environment (exploratory learning), interaction between the individual within the firm (transformative learning), and distribution of new knowledge within the firm (exploitative learning).

2) Adaptive capability: a firm's ability to quickly identify and capitalize on emerging market opportunities.

3) Innovation capability: a firm's ability to introduce new products to the market, or open up new markets, through the combination of strategic orientation with innovative behaviour and processes.

4) Network capability: firms with network capability that are able to develop and utilize inter-organizational relationships to gain access to various resources held by other actors.

5) Information and communication technology (ICT) capability: a firm's ability to use a wide array of technology, ranging from database programs to local area networks.

The above listed capabilities have been found to be important and relevant for small firm growth. However, when considering small firms with scarce internal resources and high growth ambition, we found two organizational capabilities to be of high importance for mitigating resource scarcity by providing access to external resources and effectively using existing resources. More specifically, we found network capability and information and communication technology (ICT) capability to play a critical role for small firms' competitiveness. By considering these capabilities, we extend the RBV, which has placed limited emphasis on resource efficiency and network perception in the small-firm context.

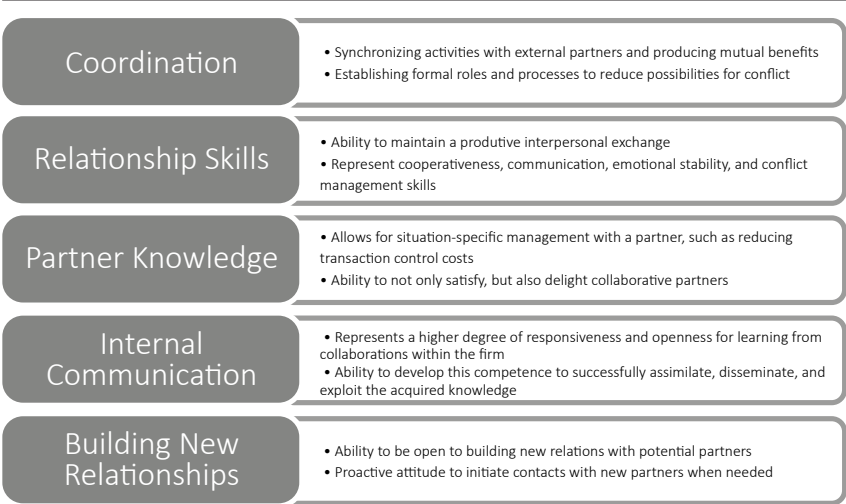
2.1 Network capability

Network capability represents a firm's ability to develop and utilize inter-organizational relationships for gaining access to various resources held by external actors. This capability provides the medium through which firms are able to acquire external resources and maintain long lasting relations with external actors. Moreover, this social capability can enable small firms to increase the perceived worth of the collaboration and reduce the likelihood of opportunistic behaviour. In earlier work on network capability it has been conceptualized as a multidimensional construct consisting of five sub-dimensions, namely: (1) coordination, (2) relational skills, (3) partner knowledge, (4) internal communication, and (5) building new relationships. These sub-dimensions are distinct, but still closely related to one another (see Figure 1).

Network capability can, arguably, be regarded as one of the crucial factors that distinguish successful collaborating firms from unsuccessful firms. Networking is not only related to benefits, firms also need to invest a lot of money, time, resources, and effort. However, if the benefits from collaboration surpass the costs, firms can enjoy competitiveness and achieve higher performance. Each component of network capability can facilitate such an outcome. For example, internal communication helps small firms to avoid redundant processes – when communication functions well between functional areas the detection of real synergies between partners becomes easier. In addition, knowing your partners' potential and having good relational skills and the ability to coordinate partners in supportive interactions could be prerequisites for small firms to proactively develop their performance. Moreover, firms with networking capability can acquire a strategic position in the network which can help

them draw information and learn from a variety of partners. Thus, the ability of the firm to manage and gain from collaborations can become valuable attributes that could help the small firm to achieve competitiveness.

FIGURE 1: SUB-DIMENSIONS OF NETWORK CAPABILITY



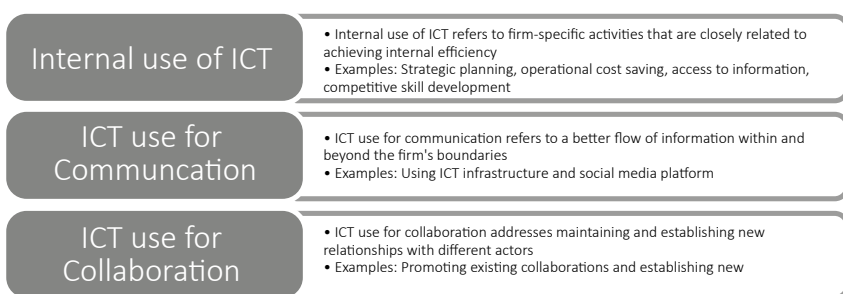
2.2 Information and communication technology (ICT) capability

ICT capability represents a firm's ability to strategically use ICT for different business purposes. This ability has been regarded as particularly valuable for small firms as investment in ICT may lead to several benefits, such as the development of efficient internal operations. The feasible benefits have driven several initiatives around Europe to promote the use of ICT for small firms. Prior studies on ICT capability have also argued that the use of ICT can facilitate small firm's access to valuable information and address market opportunities leading to higher performance. Three key aspects or sub-routines of ICT capability are widely discussed within the literature, (1) internal use, (2) use for collaboration, and (3) use for communication (see Figure 2).

ICT capability is widely believed to be fundamental for firms of all sizes and many authors would argue that in this era of globalization it plays a central role for firm survival and growth. The three dimensions of ICT capability can facilitate small firms to acquire external knowledge and manage several relationships with lower overheads. ICT oriented firms can use infrastructure for internal and external communication for achieving a constant inflow and outflow of information, which may

result in better learning opportunities. An intranet provides a potentially valuable communication platform to share information, ideas and knowledge within the firm. This can allow employees to perform their activities and processes with higher effectiveness and efficiency. Extranet enhances a firm's ability to find new partners for collaboration or maintain close collaboration with existing partners (Nieto & Fernandez, 2005). These technological communication setups combined can eliminate geographical barriers and facilitate the forming of collaborations with new firms, making it possible for small firms to handle large pools of business relations.

FIGURE 2: SUB-DIMENSIONS OF ICT CAPABILITY



3. PATHS TOWARDS BENEFITING FROM ORGANIZATIONAL CAPABILITIES

Path 1: Benefiting from one capability or multiple capabilities

Studies support that both ICT capability and network capability are relevant for small firm competitiveness. However, small firms may find themselves at a crossroads where they need to choose between these two capabilities rather than working with both simultaneously. The quantitative analysis (see Table 1) suggests that if there is a need to choose between the two capabilities, it would be preferred that a small firm invest in and develop network capability. This reason is motivated by logic that network capability was found to be most influential across multiple outcome variables, such as innovation performance, sales growth, return on investment, and others. The study also shows that network capability leads to two distinctive advantages. First, it increases the firm's potential to pursue an entrepreneurial strategy. This is because network capability enhances opportunity identification and opportunity exploitation. Second, it allows for better cost effectiveness as the firm can leverage its partners' resources and competences. The view to focus on network

capability development in the context of small firms can be further connected to research studies from management information system literature. They argue and define ICT capability as the “ability to mobilize and deploy IT-based resources in combination or copresent with other resources and capabilities”. This implies that ICT capability has an underlining role to support and build other capabilities and may not necessarily have direct influence on small firm performance.

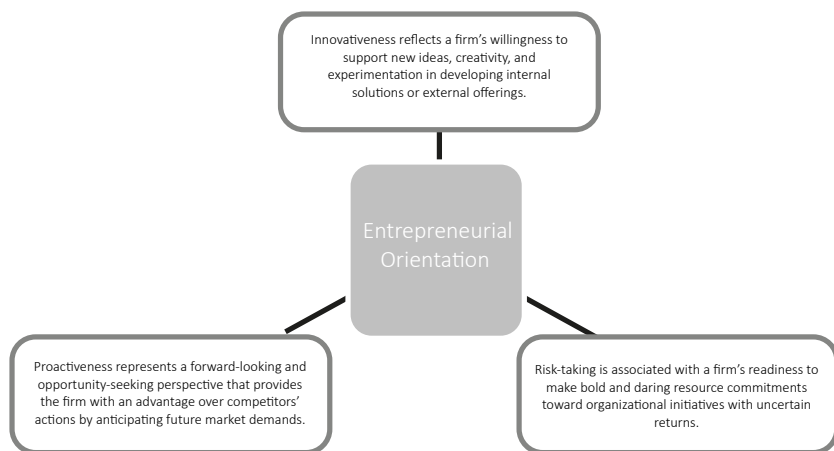
In addition, we also wanted to investigate how small firms can benefit from multiple capabilities. Prior studies suggest that capabilities, such as network capability and ICT capability, can either have enhancing or suppressing effects. Therefore, we undertook a study to better understand the effect of interplay between network capabilities and ICT capability on small firm competitiveness. It can be suggested that for small firms, developing and using multiple capabilities can be a complex, uncertain, costly, and time-consuming process. For example, due to limited number of employee and internal resources, small firms are challenged with managing diverse routines effectively in multiple areas. When investigating these assumptions across a sample of high-tech small firms, we found that the positive effect of organizational capabilities is largely dependent on presence of slack resources.

More specifically, it is financial slack defined as excessive financial resources that are not required to maintain the organization’s operations, which provides the enhancing effect rather than a suppressing effect from multiple capabilities. Two reasons motivates why small firms should possess sufficient slack before engaging in capability development and utilization. First, deploying multiple capabilities at a high level can be a challenge for small firms with limited internal resources. Usually, small firms find it highly complex and costly to manage the use of network capability and ICT capability simultaneously. Therefore, financial slack can provide the necessary additional resources which can be directed toward activities related to ICT use and networking. Taken together, the combination of capabilities and financial slack provide grounds for small firms to pursue innovation efforts. Second, the likelihood of negative effects originating from investment in network capability and ICT capability could also be partially diminished by the presence of slack, which provides the needed buffer against financial shocks and diversifies risks by encouraging involvement in different innovation projects. Although challenging, we find strong support for a positive aggregated effect from the interaction among proposed capabilities and financial slack for small firm competitiveness. Thus, we conclude that if small firms intend to benefit from multiple organizational capabilities to achieve higher innovation and performance outputs they also need to secure financial slack to support such resource intensive activities.

Path 2: Benefits of matching capabilities with entrepreneurial strategy

When trying to understand how small firms achieve competitiveness, focus on firm strategy has been central. Small firms are characterized as being inclined towards a flexible and opportunity oriented strategic posture, rather than following long-term strategic plans. This can be related with the conceptualization of entrepreneurial strategy, which has been shown to have a strong relation to small firm performance. Several studies have argued that firms implementing an entrepreneurial strategy can be regarded as entrepreneurially oriented, thus representing a more behaviourally oriented view of entrepreneurship. Therefore it is not surprising that during the last three decades, entrepreneurial orientation (EO) has become one of the most extensively researched topics in the entrepreneurship and strategic management literature, with more than 100 studies exploring the concept. Prior studies define EO as 'strategy-making practices, management philosophies, and firm-level behaviors that are entrepreneurial in nature and suggest that EO is evidenced through the simultaneous manifestation of (1) innovative, (2) risk-taking, and (3) proactive firm behaviors (see Figure 3).

FIGURE 3: SUB-DIMENSIONS OF ENTREPRENEURIAL ORIENTATION



Even though studies addressing this relationship in the small firm context remain limited, the general view suggests that entrepreneurial small firms are also more capable than conservatively oriented counterparts in effectively utilizing and exploiting available resources. These firms monitor market changes, respond proactively, and capitalize on the emerging opportunities leading to better performance. The

development of innovative products further provides them with the potential to target the premium market segments ahead of their competitors and gain first mover advantage. These arguments are further supported by the meta-analysis finding of a strong relation between Entrepreneurial orientation (EO) and performance, over a wide set of entrepreneurship studies. Thus, EO can have a strong association with small firm performance.

However, is it always good to be entrepreneurial? This is in line with Wiklund's (1999, p. 37) view that: "entrepreneurship is presently a very popular term and there is a tendency to regard entrepreneurship as something inherently good, something firms should always pursue". It seems possible that too much entrepreneurship can lead to failure and financial losses, particularly in the case of small firms. The idea that firms can be too entrepreneurial has also been acknowledged by entrepreneurship scholars. EO has been regarded as an exceptionally resource intensive strategic orientation and small firms with limited resource slack and low level of competence face problems when they aim to gain from high levels of EO. Therefore, this study also investigates the often overlooked "dark side" of EO, which has not been widely explored.

To understand EO-performance relationship in the small firm context it is useful to distinguish between what can be the benefits and costs of following EO for small firms. If the costs associated with EO increase more quickly than the benefits, the performance-related returns derived from EO will diminish and become negative. The primary marginal benefits of pursuing higher levels of EO are an increase in the discovery of new entry opportunities and enhanced motivation to exploit these opportunities. The broader pool of new entry alternatives produced through higher EO are likely to enhance a firm's decision-making processes, thereby enabling the small firm to improve its overall competitive capability and ultimately secure a more favorable strategic position when pursuing growth and combating 'liabilities of smallness'. Still, the primary cost of higher levels of EO in small firms is a greater expenditure of limited firm resources, which are consumed in the process of experimenting with new entry possibilities. Firms with high EO tend to expend resources by embracing experimentation through new product development and new market entry leading to negative performance effect. Thus, ICT capability and network capability together provide a more complete perspective concerning the role of synchronized resource orchestration-based mechanisms in the EO-small firm performance relationship. We posit that ICT capability and network capability serve to mitigate the resource constraints that hinder the effective utilization of EO in small firms and, thereby, alter the nature of the EO-small firm performance relationship.

4. IMPLICATIONS FOR PRACTITIONERS AND POLICY MAKERS

In addition to the theoretical contributions, several findings from the study hold practical implications for managers and policymakers. First, practical implications from the perspective of the small firm and second, implications for governmental organizations and policymakers will be discussed.

4.1 Implications for small firm managers

- *Organizational capabilities can help small firms to achieve competitiveness:* Small firm managers are encouraged to focus their attention on developing network capability and ICT capability. When developed, these two capabilities facilitate access to external resources, competences, and knowledge, for small firms which reduce the internal resource limitations. Moreover, these capabilities represent different functions for achieving competitiveness. If necessary to choose between these two capabilities, it is recommended to focus on network capability. It was found that network capability leads to two distinctive advantages. First, it increases the firm's potential to pursue an entrepreneurial strategy. This is because network capability enhances opportunity identification and opportunity exploitation. Second, it allows for better cost effectiveness as the firm can leverage its partners' resources and competences.
- *Need for financial slack:* The ability to use and deploy multiple capabilities largely depends upon presence of financial slack. Setting aside financial resources, which can be purposefully utilized for promoting capabilities usage, would represent the differentiating factor between a successful and unsuccessful innovative and high performing small firm. Thus, presence of financial slack would empower small firms to take a more proactive approach toward innovation efforts and absorb environmental turbulence.
- *Be careful with adapting an entrepreneurial strategy:* Entrepreneurial small firms are able to identify and exploit unexplored opportunities. This opportunity-driven strategy allows small firms to be more flexible and adaptive to the changing demands of the market. However, small firm managers are advised to be careful with being highly entrepreneurially oriented as too much risk-taking, proactiveness, and innovativeness could hurt performance. Acting entrepreneurially is a resource-consuming strategy which at too high levels could lead to difficulties for small firms with limited resources. However, this study shows that, through

developing the two capabilities, i.e. network capability and ICT capability, small firms can profit from being entrepreneurial even at a very high level.

4.2 Implication for policy makers

- *Develop programs for promoting capability development:* Governmental organizations should support small firm growth and the national innovation agenda through introducing training and educational programs addressing how to develop and use network and ICT capability. Governmental organizations (e.g. Tillväxtverket, Almi, etc.) can play a critical role by providing training programs on how small firms can develop routines and activities that will allow them to gain from collaboration. Thus, it is suggested that policymakers should provide financial support for programs aimed at developing externally oriented capabilities in small firms as these may be the key to how network initiatives actually lead to small firm competitiveness.
- *Promoting networking opportunities:* We encourage national and European level efforts to create collaborative environments (e.g., high-tech clusters) for small firms to establish new relationships and potentially gain access to opportunities and information.
- *Supportive role of university and research institutes:* Educational institutions in Sweden are not specifically active in providing executive training programs to small firm CEOs. This can area can be enhanced by creating national level incentives for university to provide executive training programs, such as towards capability development.

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ABOUT THE AUTHOR

Vinit Parida is Professor of Entrepreneurship and Innovation at Luleå University of Technology. Parida's PhD thesis (2010) is titled "Achieving competitiveness through externally oriented capabilities: an empirical study of technology-based small firms". He is involved in two Vinnova excellence research centres at LTU- FASTE Excellence Centre for Functional Product Innovation and Centre for Inter-organizational Innovation Research (CIIR). Within these centres, he is conducting research on entrepreneurship and strategic management with specific focus on firm capabilities, entrepreneurial orientation, inter-organizational relationships, open innovation, R&D internationalization and industrial product-service systems. His research work involves close collaboration with large firms, such as Volvo Construction Equipment, Sandvik Coromant and Volvo Aero, as well as high-tech Swedish SMEs and ventures. The results of Parida's work have been published in leading international peer-reviewed journals, such as *Strategic Management Journal*, *Strategic Entrepreneurship Journal*, *Long Range Planning*, *Journal of Small Business Management*, *Production and Operation Management*, *Industry and Innovation*, *Industrial Marketing Management*, *Journal of Business Research*, and *Entrepreneurship and Regional Development*, among others. Involved in teaching courses at bachelor, master, and PhD levels. His teaching interest includes research methods, entrepreneurial start-ups, international entrepreneurship, and advanced project management. He has also supervised three PhD students and is currently supervising seven PhD students on topics related to entrepreneurship and innovation.

METHOD OVERVIEW

The present report builds on three data sets.

1. Literature review

A literature review and search was conducted to obtain an in-depth understanding of the main existing theories related to the research topic. In addition to the literature review, doctoral courses (e.g. Entrepreneurship and Theory of Organization, Networks and Social Capital, etc.) were also helpful in acquiring the relevant theoretical knowledge. All searches were made at the Luleå University of Technology Library. The databases used for the literature search were Business Source Elite, Emerald Insight, JSTOR, Scopus and the Social Sciences Citation Index. During the literature search, several keywords and combinations of words were used. Some of the successful keywords are listed below:

- ICT capability: IT capability, information system capability, information technology competence, technology capability, IT resource
- Network capability: network competence, alliance capability, relational capability
- Entrepreneurial orientation: Entrepreneurial behavior, entrepreneurship, entrepreneurial strategy
- Network structure: network configuration, customer integration, supplier integration, alliances, inter-firm relationships, collaborations
- Small firms: Micro firms, small and medium sized enterprise, SMEs
- Innovativeness: Innovation, innovation orientation
- Firm performance

2. Qualitative pre-study

The purpose of the pre-study was to obtain a better understanding of which capabilities influenced competitiveness of small firms. In the pre-study, three cases were selected (UniMob AB, isMobile AB and BnearIT AB), where each case was chosen to add variety given a certain commonality. The respondents were selected for the interview based on their level of relevant knowledge regarding firm capabilities and operations. In each case, either the chief executive officer (CEO) or the senior manager were selected. Each case study included several sources of documentation that increased the validity of the study by providing a data source for data triangulation, or using multiple data sources for investigating the phenomenon.

3. Quantitative study

For this study data was collected from two different sources – respondent survey and performance data from secondary sources. Survey data was gathered from Swedish technology-based small firms by a postal survey. The sampled firms represent technology-based industry representing the Swedish industry index code (SNI code: 72 220). This context was chosen because it constitutes a high-technology industry where firm resources and capabilities are likely to be important drivers of firm performance. By focusing upon a single industry, the data becomes less vulnerable to the effects of uncontrolled variables, as sample firms are from a common environment. The study was sent to 1471 firms that had fewer than 50 employees (i.e. small firms) and more than one million Swedish SEK (approximately €100,000) in sales to ensure active business operations. The questionnaire was addressed to the CEO of the firm accompanied by a descriptive letter explaining the purpose of the study. As the unit of analysis is at firm level, and to capture a holistic view of firm operations, it was deemed most appropriate to send the questionnaire directly to the CEO. To avoid any issues with common method bias, objective performance data was collected from business registers. The secondary data on the following performance variables, such as sales growth, operating profit growth and return on assets, was collected from the Swedish business database *Affärsdata*.



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