SELECTION PROCESSES: FIRMS VERSUS CAPABILITIES

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ABSTRACT

Evolutionary theory discusses the exits of organizations from environments that they do not fit, but most work underemphasizes the distinction between business acquisition and dissolution as selection processes. We address this gap by investigating how the presence of organizational capabilities affects whether struggling firms exit by acquisition or dissolution. The study, which bridges adaptation and selection views on organizational change, highlights two results: first, struggling firms with extensive directive and coordinating managerial capabilities are more likely to exit by acquisition than by dissolution; and, second, managerial capabilities have more influence than functional capabilities on selection processes.
Studies of industry evolution typically depict firm exit as the result of selection processes that remove struggling businesses from an industry (Nelson and Winter, 1982). Recent studies are integrating evolutionary theory with resource-based and dynamic capabilities arguments that emphasize the strategic importance of idiosyncratic business characteristics by investigating how business-level factors influence firm exit in various contexts (e.g., Mata and Portugal, 2002; Huyghebaert and Van de Gucht, 2004; Sarkar et al., 2006; Zuniga-Vicente and Vicente-Lorente, 2006). While valuable in advancing the understanding of business strategy and selection processes, these studies do not make a clear distinction between exit by acquisition and exit by dissolution, even though dissolution and acquisition exits represent distinctly different selection processes. Business dissolution entails a selection process that removes both a corporate entity and its underlying capabilities from the landscape (Aldrich, 1979; Hannan and Freeman, 1989), while business divestiture represents a selection process that removes the corporate entity while preserving some of its organizational capabilities (Mitchell, 1994; Baum and Korn, 1999). At the level of organizational capabilities, therefore, the two types of exit contrast selective and adaptive outcomes. This paper extends the understanding of these contrasting selection processes by examining how the presence of managerial and functional organizational capabilities influences whether a struggling firm exits by acquisition or by dissolution.

The foundation for this study draws on theories that emphasize the importance of firm-specific capabilities in business strategy. The core literatures include evolutionary economics (Nelson and Winter, 1982), resource-based theory (Wernerfelt, 1984), and dynamic capabilities arguments (Teece et al., 1997; Eisenhardt and Martin, 2000; Karim and Mitchell, 2000). Following Amit and Schoemaker (1993: 35), resources are stocks of available factors that are owned or controlled by a firm (including both physical and human assets) while capabilities are the processes by which firms manipulate resources in attempts to achieve desired results. We
focus on two types of capabilities, managerial and functional, which have different spans of activity and may have differential impact on selection forces. This work advances conceptual and empirical understanding of selection processes by distinguishing between exit by acquisition and exit by dissolution and by further incorporating resource-based and dynamics capabilities theories in a discussion of industry evolution.

The remainder of the paper is organized as follows: First, we discuss our theoretical foundation within a review of how evolutionary theories of organizational change construe acquisition and dissolution at different levels of analysis. This section also addresses how market failure and the transfer or replication of organizational capabilities influence selection processes. Second, we develop hypotheses addressing the role of managerial and functional capabilities in determining whether a firm exits by acquisition or by dissolution; we present two brief cases that illustrate our argument. Third, we discuss our sample and methodology. We pay particular attention to empirical and conceptual support for our approach of measuring managerial and functional capabilities, which use the quantity and nature of executive positions of the firms. This approach provides a generalizable measure of capabilities that emphasizes organizational processes within firms. We next present our results and then discuss how they contribute to an understanding of selection processes as well as their more general implications for dynamic capabilities theory, as well as extensions to organizational learning and institutional theory.

THEORY

Evolutionary theories of organizational change note that some firms struggle to meet the demands of their environments and reside at the margins of survival. In turn, selection processes remove struggling firms that fail to improve from the business landscape (Nelson and Winter, 1982; Hannan and Freeman, 1989; Aldrich, 1999). We focus on highlighting how the selection processes of acquisition and dissolution result in different outcomes for struggling firms and
their organizational capabilities.

The importance of organizational capabilities is a central argument of strategic management. In her seminal resource-based arguments, Penrose (1959) highlighted the importance of resource manipulation — as opposed to mere resource possession — for generating competitive advantage. Recently, the dynamic capabilities perspective has built on this view by emphasizing organizational capabilities as key contributors to competitive advantage (Teece et al., 1997; Eisenhardt and Martin, 2000; Helfat et al., 2007). In our discussion of selection processes, we focus on the implications for organizational capabilities that are difficult to imitate or transfer and that face substantial market failure in discrete exchange. These capabilities can contribute to a sustainable advantage (Barney, 1991) and are sensitive to selection outcomes. As we discuss later, we will distinguish between managerial and functional capability endowments.

********** Table 1 about here **********

The Evolutionary Perspective: Selection of Firms and Capabilities

We argue that the selection processes of acquisition and dissolution have different implications when one considers firms and capabilities as different levels of analysis. This argument — that acquisition and dissolution create different outcomes for firms and their capabilities — requires that one distinguish firms from their capabilities. Firms are legal entities that operate in a business environment. In that environment, firms are decision-making entities that convert inputs into outputs via a production function (Sher and Pinola, 1981), while capabilities are the processes that firms employ to use stocks of resources within the production function (Amit and Shoemaker, 1993).

Given the characteristics of firm capabilities most likely to foster an advantage, exit by dissolution and exit by acquisition denote different selection events for firms and their
capabilities. At the firm level, both dissolution and acquisition are forms of selection out of a population: a firm ceases to exist as an independent entity. At the level of organizational capabilities, however, the two types of exit contrast with each other, the first being a selective outcome and the second being an adaptive outcome. As we noted earlier, by selection, we mean the elimination of entities that do not suit an environment. In parallel, we use the term adaptation to mean changes to an entity that create the potential for the entity to survive in a given environment (Levinthal, 1994).

Dissolution is a form of capability selection, because dissolution removes a firm’s organization-specific capabilities from the economic and social landscape (Aldrich, 1979). Typically, dissolution means that the organizational units of the closing firm disband, which eliminates firm-specific organizational capabilities. Thus, dissolution results in the firm, as well as its capabilities, being selected out.

By contrast, acquisition represents adaptation at the level of organizational capabilities, despite being a form of firm-level selection. An acquisition has the potential to preserve some of the organizationally embedded capabilities and resource configurations that existed in the acquired firm, although they may be altered within the acquirer’s legal and organizational entity (Wernerfelt, 1984). Post-acquisition adaptation typically involves some combination of selective retention, elimination, and reconfiguration of elements of the target’s organizational capabilities (Baum and Korn, 1999; McIvor, 2007). The process of retention, elimination, and reconfiguration results in substantial changes of the original organizational capabilities, but not in the wholesale dispersal that takes place in the case of dissolution (Mitchell, 1994).

Hence, acquisitions and dissolutions have substantially different impacts on the fates of organizational capabilities and on the overall evolution of the markets in which firms use capabilities. Acquisitions retain organizational capabilities within markets, albeit commonly in
changed form. By contrast, dissolution breaks up organizational capabilities and releases them from a market.

**Capability Transfer, Replication, and Market Failure**

Some firm capabilities are quite general and are easy to imitate or transfer. For instance, imitation and transfer occur more readily when capabilities are easy to codify, easy to teach, or marked by parallel development in multiple firms (Zander and Kogut, 1995). However, the knowledge-based perspective suggests that the most desired knowledge of a firm is often complex and ambiguous (Ranft and Lord, 2002). Firm capabilities and routines embody this knowledge because the knowledge-based resources of a firm are difficult to separate from the unique set of relationships that emerge over time in a firm (Nelson and Winter, 1982). The resulting embeddedness of knowledge-based capabilities hinders the replication or imitation of these firm capabilities.

Consequently, the embeddedness of key capabilities and the knowledge that they embody motivates a firm to acquire an entire entity to obtain these capabilities, as opposed to licensing specific goods or hiring employees (Capron, Dussauge, and Mitchell, 1998). For instance, the retention of key personnel of an acquired firm is important to the extent that the desired tacit knowledge resides in these individuals (Ranft and Lord, 2000, 2002). Specifically, the retention of top managers increases the transfer of knowledge to an acquirer and enhances post-acquisition performance (Cannella and Hambrick, 1993). However, unlike acquisition, dissolution restricts access to the private knowledge and routines of a dissolved firm, which in turn limits the transfer and replication of knowledge through employee mobility because the firm’s template is no longer accessible (Hoetker and Agarwal, 2007). Given the difficulty of imitating the valuable organizational capabilities of a struggling firm without the template for the original routine and its tacit knowledge, acquisition is a means of preserving some of the value by maintaining the
key relationships and the integrity of the target firm (Wernerfelt, 1984).

Organizational capabilities that are embedded or otherwise difficult to imitate or transfer are often the basis of an advantage. At the same time, though, these capabilities are the most sensitive or vulnerable to the mode of exit because they often face substantial market failures in discrete exchanges between firms (Penrose, 1959; Wernerfelt, 1984). Market failure arises when it is difficult to negotiate and accomplish an arms-length exchange for an asset. Some market failures arise because one party knows more about the value of an asset than another party (i.e., information is asymmetric). Other market failures arise because neither party can accurately specify the value of an exchange (i.e., information is bilaterally lacking). Market failure arguments suggest that firms sometimes use business acquisitions to obtain organizational capabilities resident in other firms (Nelson and Winter, 1982; Capron et al., 1998). As we discuss below, the more extensive the organizational capabilities of a struggling firm, the more likely it is that it will exit via acquisition rather than dissolution.

The acquisition history of Cisco Systems and the continued success of the company demonstrate the potential of acquisition as an adaptive mechanism. From 1996 through December 2007, Cisco Systems acquired 148 U.S. firms and 30 international firms in their entirety, according to the SDC Platinum database. Discussions with company personnel suggest that the company used these acquisitions to overcome market failure in the discrete exchange of organizational capabilities as it sought to change its technical and market resources.

Conceptual Model: Independently Viable Firms versus Exiting Struggling Firms

The conceptual frame of this work, which Figure 1 depicts, involves two questions: first, whether a firm is viable as an independent entity or not; and, second, if a firm is not independently viable, whether exit by dissolution or exit by acquisition will occur. The lower portion of the figure depicts our core question, concerning how organizational capabilities
influence exit mode (dissolution versus acquisition) for struggling firms. The upper portion of the figure, which is beyond the scope of the study, depicts a similar research question concerning firms that are independently viable.

********** Figure 1 about here **********

Figure 1 highlights the need to distinguish between independently viable and struggling firms since many acquisition targets are profitable businesses with strong capabilities (Ravenscraft and Scherer, 1989). Including successful firms as well as struggling firms in the study could overstate the capability endowments of firms that exit via acquisition relative to the endowments of those that shut down. In turn, this overstatement would confound the effects of profitability and organizational capability in shaping business fates. To avoid this bias, we will limit the argument and analysis to struggling firms.

HYPOTHESES: CAPABILITIES AND BUSINESS EXITS

We distinguish between managerial and functional capabilities because they have different scopes of activity and, in turn, may have different impact on selection. Functional capabilities are discrete processes involved within particular areas or departments in a firm, while managerial capabilities are processes that span multiple areas or departments to coordinate and integrate firm activities (Collis, 1994; Teece et al., 1997; Zollo and Winter, 2001). Table 1 summarizes the distinction between functional and managerial capabilities as two forms of organizational capabilities.

Managerial Capabilities

Since the work of Penrose (1959), the resource-based view of the firm has emphasized the value of resource manipulation. Coordinating organizational routines is a key factor supporting organizational performance (Nelson and Winter, 1982), and this responsibility predominately resides in the managerial levels of firms (Mahoney, 1995). Specifically,
capabilities in the hands of upper management enable coordination, integration, and deployment of resources throughout organizations (Teece et al., 1997). Processes in this category include those that enable a firm to integrate, utilize, and reconfigure activities (Henderson and Cockburn, 1994), including capabilities related to changing its mission (Collis, 1994).

The notion of managerial capabilities has roots in several bodies of work. Relevant concepts include integrative capabilities (Lawrence and Lorsch, 1967; Verona 1999; Yeoh and Roth, 1999), invisible assets (Itami, 1987), organizational architecture (Nelson, 1991), managerial systems, values, and norms (Leonard-Barton, 1992), combinative capabilities (Kogut and Zander, 1993), architectural competence (Henderson and Cockburn, 1994), collective knowledge (Spender, 1996), dynamic capabilities (Teece et al., 1997; Zollo and Winter, 2001), and cooperative competences (Tyler, 2001). The common thread connecting these concepts is that each implies integrative and directive roles for managers that, in turn, allow managerial capabilities to be sources of sustained advantage (Knott, 2003).

Empirical work supports the value and importance of managerial capabilities as sources of advantage. Several studies show that managerial capabilities such as architectural competence (Henderson and Cockburn, 1994), integrative capability (Yeoh and Roth, 1999), and integration capability (Zollo and Singh, 2002) contribute to firm performance. Other work has found similar results when investigating more specific types of managerial processes, such as customer, internal, and technology integration activities (Iansiti and Clark, 1994) and change management, innovation management, and participative management (Hall, 1993). Similarly, research about franchises also demonstrates the importance and relevance of management for successful organizational processes or routines. The existence of franchises challenges the importance of tacitness as an isolating factor that enables capabilities to be sources of sustained advantage. However, franchise scholars show that routines influence efficiency differences between firms
more than do residual claims (Knott and McKelvey, 1999) and that managerial effort enables the
routines of a franchise to be a source of advantage (Knott, 2003). Hence, the activities and
influence of management constitute an important class of organizational capabilities.

Market failures create incentives for firms to acquire struggling firms to obtain their
managerial capabilities. Managerial capabilities face market failure because their embeddedness
in organizations makes it difficult to isolate and value these capabilities discretely. For instance,
managerial capabilities typically involve both people and processes. To obtain the set of a firm’s
managerial capabilities, a buyer usually needs to identify multiple individuals who work together
to carry out managerial activities in the firm. Negotiating individual contracts with multiple
members of a formal or an informal managerial team is often impossible. Moreover, many of the
these managers’ activities – such as accounting systems, incentive and reward systems, and
planning systems – are difficult to extract from their organization-specific contexts. As a result
of the inability to purchase managerial capabilities discretely, owing to the market failures, firms
may turn to acquisition of entire firms as a way to obtain the capabilities, intending to undertake
the process of extracting and revising the capabilities after the acquisitions (Capron et al., 1998).

Thus, the difficulty in replicating the desired managerial capabilities of another firm
contributes to the use of business acquisition as a mode of obtaining potentially valuable
capabilities. Part of the value inherent in a set of managerial capabilities resides in their
complexity, causal ambiguity, and embeddedness in a firm (Barney, 1991). Moreover, like other
organizational skills, managerial capabilities possess an element of path dependence (Teece et
al., 1997) and involve given patterns of learning (Zollo and Winter, 2002), characteristics that
inhibit the precise replication of these capabilities because recreating the historical context is
impossible. Consequently, a struggling firm that possesses extensive managerial capabilities is
more likely to exit via acquisition than dissolution because its managerial capabilities make the
struggling firm a more attractive target.

Acquirers’ interest in the managerial capabilities of a struggling firm may appear surprising. After all, the fact that the firm is struggling suggests that it has only limited managerial competence. However, even struggling firms often have strong capabilities that are not sufficient by themselves to engender success but can help another firm build an aggregate set of capabilities. Thus, even struggling firms may possess desirable capabilities that attract potential acquirers.

**Hypothesis 1**: The more managerial capabilities that a struggling firm possesses, the more likely that the firm will exit via acquisition rather than dissolution.

**Functional Capabilities**

The roots of functional capability are in the functional areas of firms (Amit and Schoemaker, 1993), typically located in their line and staff activities (Teece *et al.*, 1997). Functional capabilities embody operational activities (Zollo and Winter, 2002) and relate to “the [firm’s] ability to do specific things” (Hall, 1993: 610). Functional capabilities include activities such as R&D, production, marketing, and distribution (Collis, 1994; Verona, 1999). The notion of functional capability encompasses concepts such as component competence (Henderson and Cockburn, 1994) and technical systems (Leonard-Barton, 1992). Because functional capabilities typically evolve in a firm-specific context, they often lack substitutes and may be difficult to imitate, which implies that functional capabilities are potential contributors to competitive advantage (Barney, 1991).

Empirical evidence supports the value and importance of organizational processes that fall into the category of functional capability. Prior research indicates that measures of component capability, technological capability, technical capability, and research capability contribute to sustained advantage (Yeoh and Roth, 1999), improved performance (Lee *et al.*, 2001), entrepreneurial wealth (Deeds, 2001), and IPO capital (Deeds *et al.*, 1997).
As in the case of managerial capabilities, the combined effects of market failure and barriers to replication create incentives for the use of acquisition to obtain the functional capabilities of a struggling firm. Market failures arise because historical context and learning processes influence the development of functional capabilities, which in turn leads to organizational embeddedness. Consequently, the possession of extensive functional capabilities may make a struggling firm an attractive acquisition target.

**Hypothesis 2**: The more functional capabilities that a struggling firm possesses, the more likely that the firm will exit via acquisition rather than dissolution.

The question arises of whether managerial or functional capabilities have greater influence on a struggling firm’s mode of exit. We expect managerial capabilities to have more impact. As we noted above, both managerial and functional capabilities incur market failures in their replication or transfer. However, we argue that managerial capabilities commonly face greater market failures and more difficulties with replication and transfer as a result of their directive role and the involvement of people and processes that permeate multiple parts of an organization. This tacit and integrative role makes the discrete transfer or replication of managerial capabilities more difficult than the transfer or replication of functional capabilities, which relate more closely to people and processes in specific areas of a firm.

The franchise literature helps highlight the greater influence that managerial capabilities have on firm outcomes, relative to functional capabilities. Operational routines that are consistent with functional capabilities are important in the success of a franchise (Knott and McKelvey, 1999). Nonetheless, the directive influence of management provides an isolating mechanism that enables franchise routines to be a source of sustainable advantage (Knott, 2003).

We argue that the greater influence of managerial relative to functional capabilities extends to the context of organizational exit. As a consequence of the characteristics that create market failure and exacerbate transfer and replication, managerial capabilities will have more
influence than functional capabilities in determining the mode of exit for a struggling firm.

**Hypothesis 3:** Managerial capabilities will be more influential than functional capabilities in determining the mode of exit for struggling firms.

**Firm Age and Size**

Finally, we consider the relationship of firm age and size to organizational capabilities. Firm age and size traditionally are control variables in strategy work, but age and size also possess conceptual interest in this discussion of firm exit because of their implications for capability development. Age and size complement the investigation of managerial and functional capabilities, because they provide insight regarding the maturity and depth of capability development even if they do not indicate the presence of specific categories of organizational capability.

Previous work demonstrates that younger and smaller firms have a higher failure rate than older and larger firms. Population ecologists show that failure rates decline with age and size (Carroll and Delacroix, 1982; Carroll, 1983; Freeman, Carroll, and Hannan, 1983; Singh, House, and Tucker, 1986), arguing that liabilities of newness and smallness result from a lack of resources, legitimacy, and stability. Similarly, institutional theory suggests a higher failure rate for new and small firms that lack connections with and the approval and support of their institutional environment (Meyer and Rowan, 1977; Scott and Meyer, 1983; Baum and Oliver, 1991). The current work builds on such studies by exploring the capability-based rationale for the effects of age and size in determining which type of exit struggling firms will encounter.

Because capabilities develop and improve over time, older firms tend to possess larger and better-developed stocks of organizational capabilities than younger firms. Learning and storing the knowledge embodied in organizational capabilities necessitate the passage of time because the learning process entails both repetition and experimentation (Teece et al., 1997: 520). Hence, even in the presence of persistent poor performance, which precipitates the
inability of a struggling firm to continue independently and suggests the presence of a misalignment with its environment, the struggling firm may possess valuable capabilities. Furthermore, an older struggling firm is more likely than a younger one to possess valuable capabilities, which makes an older firm more likely than a younger firm to exit via acquisition.

**Hypothesis 4a:** The older a struggling firm, the more likely the firm will exit via acquisition rather than dissolution.

Larger firms also tend to have greater stocks of organizational capabilities because the social and interactive aspects of organizational learning reside in groups (Teece *et al.*, 1997). Increased firm size contributes to the development of organizational capabilities by providing the potential for more varied and complex sets of interactions. This condition contributes to the likelihood that organizational capabilities will foster a sustained advantage by hampering imitation and replication and increasing causal ambiguity (Barney, 1991).

Greater firm size indicates two sources of value in a struggling firm. First, size indicates the potential presence of well-developed organizational capabilities because size creates more opportunities for learning. Second, size indicates the potential presence of firm-specific learning mechanisms, which may possess value in the continued development and improvement of organizational capabilities. Consequently, larger struggling firms are more likely to possess valuable organizational capabilities that support an advantage, which makes these firms more likely than smaller ones to exit via acquisition rather than via dissolution.

**Hypothesis 4b:** The larger a struggling firm, the more likely the firm will exit via acquisition rather than dissolution.

In sum, we argue that possession of organizational capabilities influences the selection processes that struggling firms face. The presence of organizational capabilities makes a firm more valuable as a whole because capability development is path dependent and idiosyncratic to individual firms. The embeddedness of firm-specific capabilities compromises the ability of
other firms to obtain these capabilities as discrete entities, causing market failures that motivate the use of business acquisition to access the organizational capabilities. In the case of struggling firms, the possession of managerial and functional capabilities and the characteristics that indicate the possession of organizational capabilities, such as age and size, help distinguish acquisitions from dissolutions.

**Case Examples**

eMation, Inc. and iWant.com, Inc. are two firms that demonstrate how managerial and functional capabilities, firm age, and firm size influenced the selection processes of struggling firms. Both of these firms were private companies headquartered in Massachusetts that operated in the software and programming industry (SIC code 7372) in the late 1990s. eMation developed device relationship management software for use in automated computing monitoring and control, and iWant.com developed direct response advertising infrastructure software. Both firms were struggling to survive in the early 2000s. During 2001, both firms exited the market, eMation by acquisition and iWant.com by dissolution. The differences between eMation and iWant.com offer insights regarding why some struggling firms exit by acquisition and others exit by dissolution.

Founded in Israel in 1986 as PC Soft, eMation had developed a relatively extensive set of managerial and functional capabilities when it was acquired in 2001. By 2001, the company had about 165 employees and $12 million in annual sales, but realized a net loss of about $14 million for the 2001 fiscal year. The company’s executive team encompassed a wide range of business processes. eMation had eleven distinct executive positions ranging from senior scientist to chief officer. Senior executives acting in positions such as CEO, CFO, president, senior vice president, and general managers of geographic regions were responsible for an extensive set of integrative managerial processes within the company. In parallel, senior executives in functional
positions for human resources, sales, marketing, and R&D were responsible for an extensive set of functional processes.

In 2001, the software company Ravisent acquired eMation for about $27 million, and then in 2002 combined the two businesses to create an enterprise software and services company called Axeda Systems, Inc. When it announced the acquisition of eMation, Ravisent stated that it wanted to obtain eMation’s skills in the “pervasive computing” market, particularly eMation’s technology for user access to remote computers. Ravisent stated that it planned to focus its attention on the products and services that it acquired with eMation and that the executive team of the target company would play a critical role in helping Ravisent develop the acquired technology. The CEO of eMation joined Ravisent’s board and then became president of Axeda, while senior technical and sales executives from eMation also played leading roles in the new company, along with members of their staffs.

The contrasting example, iWant.com, began operations in 1999, raising about $20 million of initial investment capital. The company began as a “shop-by-request” Web-based service in which buyers posted notices about products that they wanted to buy, and it later attempted to transform itself into a Web-based advertising services firm. iWant grew to about 25 employees and $1 million in revenue but had substantial losses. In June 2001, iWant.com shut down, after the company and its venture capital investment firm failed in attempts to attract a buyer.

iWant.com’s limited range of capabilities contributed to its inability to find a buyer. iWant was smaller and younger than eMation. In addition, iWant had a simpler underlying set of capabilities, reflected in its smaller and less elaborate executive team. iWant.com had only six executive positions, ranging from area director to chief officer. The positions of CEO, CFO, and director of finance encompassed the firm’s managerial processes. In parallel, executive positions related to engineering, operations, and sales encompassed iWant’s functional processes. Relative
to eMation, iWant.com possessed a smaller range of business processes. Firms that wanted to
gain access to iWant’s skills could simply hire individual senior executives, rather than purchase
the company. For instance, after the dissolution, the company’s CFO became the CFO of a
wireless system provider funded by one of the investment companies that provided iWant’s
initial capital. The differences between these two cases illustrate the idea that endowments of
managerial and functional capabilities help distinguish between acquisitions and dissolutions of
struggling firms. Of course, a larger sample is required to distinguish among the effects of age,
size, managerial capabilities, and functional capabilities.

METHODS

Data and Methods

We tested the hypotheses by examining the exits of struggling firms in the Internet sector
during 2001, following the collapse of the market commonly referred to as the “burst of the
Internet bubble.” The context appropriately matched the research questions of this study because
of the varied capability bases of the companies (Whinston et al., 2001), as well as the high
incidence of acquisition and dissolution activity in this sector. During calendar year 2001, about
537 U.S.–based Internet companies shut down (Webmergers, Inc., 2002a), and acquisitions of
another 1,289 Internet companies occurred (Webmergers, Inc., 2002b). We obtained detailed
information that we could use to construct capability profiles for 177 of the exiting firms.

We checked for differences between firms that reported detailed information and those
that did not, in order to ensure that the sample did not reflect differences that would bias the
results. Overall, firms reporting enough information to construct capability profiles were older (t
= 4.25, p <0.001), had more employees (t = 3.80, p < 0.001), and had higher annual revenues (t =
3.18, p = 0.002). These differences were stable when we compared firms with and without
adequate information in the acquisition exits and the dissolution exits groups separately. The
acquisition exits with sufficient information were older (t = 2.91, p = 0.004), had more employees (t = 3.84, p < 0.001), and had higher annual revenues (t = 2.73, p = 0.008). The dissolution exits with sufficient information were older (t = 4.35, p < 0.001) and had more employees (t = 2.06, p = 0.04), but they had no significant difference in annual revenues (t = 1.53, p = 0.13). Hence, the sample may have a slight tendency toward older and larger firms, but it includes many young and small firms: the median age is 3 years old, the median number of employees is 100, and the median annual revenue is $10 million in sales. Thus, our data represent a sample of adolescent small to medium-sized firms. Moreover, any tendency toward older and larger firms within the sector is consistent over both acquisition and dissolution exits, which alleviates possible bias in interpreting the results.

We used several sources to identify the population and to establish the sample, which included public and private firms in multiple industries in the Internet sector. OneSource and Lexis-Nexis databases were the primary sources for company information. We also used publications of Webmergers, Inc., the Industry Standard, and the Securities and Exchange Commission (SEC) to gather additional information and to track company status. Given the lapse of time that sometimes occurs between the halt of a firm’s operations and acquisition, we continued the data collection during 2002 to confirm that none of the apparent dissolutions in the sample later became acquisitions.

We used two sample selection techniques to eliminate successful acquisition targets from the sample. First, we excluded firms that reported positive net income. Second, when we lacked profitability information (as was the case for about two-thirds of the sample), we excluded firms if their productivity efficiency ratio (sales per employee) exceeded 0.30. We determined the productivity efficiency cutoff through analysis of productivity levels and company exits at the end of 2001 for a random sample of 300 firms taken from a population of 17,262 firms within
the high-technology product classification codes of the OneSource database. At productivity efficiency levels of 0.30, the incidence of dissolution decreased noticeably. At sales per employee below 0.30 (inefficient firms), the incidence of dissolution was 41 percent; at productivity efficiency levels above 0.30 (efficient firms), the incidence of dissolution was only 19 percent. The profitability and productivity benchmarks for successful operations led us to eliminate five acquisitions from the sample. This deletion reduced our original sample from 177 to 172 firms, each of which we could identify as a struggling firm. Of the 172 firms, 90 exited by dissolution and 82 exited by acquisition during 2001.

Several characteristics of the firms in the sample stand out. Fifty-nine percent of the firms were in SIC major group 73, which covers sellers of business services such as prepackaged software and information retrieval services. The remaining firms were distributed among eleven other SIC major groups. Private firms accounted for 70 percent of the sample. Parent companies accounted for 87 percent of the sample. As we noted earlier, the firms were often small and young: about 50 percent had annual sales of $11 million or less; about 50 percent had 100 or fewer employees; and about 70 percent were five years old or younger (90 percent were less than 10 years old).

We used logistic regression to explore the impact of organizational capabilities on the mode of exit (acquisition versus dissolution) of these struggling Internet sector businesses. Logistic regression was an appropriate technique given the dichotomous dependent variable.

**Variables**

**Managerial and functional capabilities.** We developed the capability profiles for the firms by assessing the number and nature of their executive positions. Table 2 depicts the scheme for classifying the executive positions as managerial and functional. We classified all C-level positions (e.g., CEO, COO, CFO) as managerial. We classified other executive positions with
general management duties as managerial. We classified executive positions with specific operational duties as functional. The analysis grouped the measures of managerial and functional capability within similar levels. We combined all C-level positions into one group. The second group included executive vice presidents, senior vice presidents, and vice presidents (EVP, SVP, VP). And the third group, "Below VP," included director and lower-level executive positions.

********** Table 2 about here **********

Our motivation for developing capability measures based on executive positions was our intent to employ process-oriented measures that were generalizable and amenable to large-sample study. Contemporary business practice and work from several streams of research in multiple areas, including organizational studies and social stratification, supports the idea that executive positions reflect salient underlying capabilities of an organization.

Prior organizational research developed the idea that there is a relationship between organizational positions and underlying processes and that executive positions offer an appropriate measure of organizational capabilities. Inkson et al. (1970) showed that counts of organizational positions were valid measures of functional specialization. Kazanjian and Rao (1999) later drew on the Inkson study to support using a count of job positions as a measure of engineering/technology-based capabilities. Moreover, a seminal paper in the sociological stratification literature showed that proliferation of job titles and positions reflected technical and administrative imperatives aimed at increasing the efficiency of firm activities (Baron and Bielby, 1986). In particular, the study rejected the alternative argument that a proliferation of job titles simply indicated political and institutional processes, as opposed to economic value. Hence, like the work of Inkson et al. (1970), this finding indicates that job titles reflect underlying task activities in an organization, which supports the relevance of executive positions as measures of organizational capabilities.
Job titles also represent an integral element in the study of organizational structure (Strang and Baron, 1990). Empirically, Romanelli and Tushman (1994) operationalized organizational structure using measures drawn from the executive lists of firms in their sample. Given that a firm can be construed as a nexus of routines (Nelson and Winter, 1982), the structure of an organization embodies the configuration of processes within it. Hence, the relationship between job titles and organizational structure provides additional support for the idea that job titles reflect underlying organizational processes.

Interviews with two knowledgeable executives corroborated the arguments from sociology and organizational research that counts of executive positions provide meaningful measures of organizational capabilities. The executives held senior positions in their firms (CEO and Chief Relationships Officer). Discussions with both executives confirmed that the positions listed on the executive lists reflected important firm activities and processes, even though the executives of smaller firms sometimes fill multiple roles. In addition, the discussions corroborated the distinction between managerial and functional positions.

**Age and size.** We measured firm age as the number of years that a firm existed, beginning with the year of founding and ending in the year the firm exited, whether by dissolution or acquisition. We measured firm size as the annual firm revenue (in millions of dollars). Both annual sales and number of employees are common measures of firm size. For this study, annual sales represented the more relevant measure of capabilities, because the presence of organizational processes that help produce revenue was our central concern. Table 3 provides the descriptive statistics and the correlation matrix. The most notable correlations are those between firm sales and the measures of managerial and functional capabilities. As one would expect, sales and the number of managerial and functional executive positions have positive correlations, but there is substantial variation in the number of executive positions,
independent of firm size. Similarly, there is moderate correlation among some of the managerial
and functional capability measures but, again, with substantial variation.

********** Table 3 about here **********

We included a business services industry dummy variable to control for macro level
industry segment effects. This variable equals 1 if a firm was in the business services industry
(SIC major group 73: over 50 percent of the sample). Sensitivity analyses showed no effect of
including a dummy variable for firms in the communications industry (SIC major group 48),
which had the second highest representation in the sample (about 10 percent). Sensitivity
analyses also indicated no significant influence for control variables that measured either
productivity (sales per employee) or the size of a firm’s executive team (number of executive
positions, number of people on the executive team, or number of levels in the executive team).

RESULTS

Table 4 reports the logistic regression models. Model 1 serves as the baseline model,
which has significant explanatory power ($\chi^2$ log-likelihood = 148.8).

********** Table 4 about here **********

Model 1 in Table 4 supports Hypotheses 4a and 4b, showing that the capabilities
associated with firm age and size influence selection processes. Age and size remain significant
across subsequent models, although the magnitude of the effects becomes smaller once we add
the other capability measures.

Model 2 adds the managerial capability measures. The results support Hypothesis 1 with
respect to executives with responsibility for the widest-ranging business processes, showing that
C-level managerial capability has a significant impact on acquisition ($\beta = 0.31, p = 0.03$).

It is notable that only the “No. of C-level” variable among the managerial capability
measures influences acquisition. The other two measures of managerial capability (“No. of

managerial EVP, SPV, VP”; “No. of managerial below VP”) have no influence on selection processes. Although the number of C-level positions correlate moderately with the other two managerial capability measures (r = 0.50), the other two variables are not significant when entered independently. This contrast suggests that the capabilities with the strongest firm-specific value to acquirers are those with the most general and greatest integrative scope across a firm's activities, which is the primary purview of C-level executives.

The impact of C-level managerial capabilities is intriguing because several studies have shown that C-level executives commonly leave acquired firms within a few years of an acquisition (Seward and Walsh, 1994). Nonetheless, despite the pending departures, such executives – and the executive teams under them – play important roles in managing the integration of target and acquiring firms (Haspeslagh and Jemison, 1991).

Model 3 replaces the managerial capability variables with the measures of functional capability. The results do not support Hypothesis 2 for either of the two measures of functional capabilities. Indeed, by contrast, the functional capability variable that denotes the number of executives at the vice president level (“No. of functional EVP, SVP, VP”) has a negative sign, falling just outside common significance levels (β = –0.14, p = 0.13). This result suggests that acquirers may have a slight preference for struggling targets with less functional capability, which is both counterintuitive and intriguing. Consequently, additional questions arise regarding the influence of other factors, such as a favored configuration or a curvilinear effect, that may explain this relationship. We probe this unexpected result later in the paper.

To explore the robustness of the results, we estimated models that entered each of the managerial and functional capability measures separately along with the variables of the baseline model. The results for the individual capability measures in the submodels were consistent with the results in Models 2 and 3. For brevity, we do not report results of these submodels.
Model 4 includes all five measures of managerial and functional capabilities. The results continue to support Hypothesis 1, as the “No. of C-level” variable holds its significance in this model ($\beta = 0.32, p = 0.02$). The first functional capability measure (“No. of functional EVP, SVP, VP”) continues to have a near-significant unexpected negative impact on acquisition ($\beta = -0.17, p = 0.11$). Thus, the results in Model 4 support Hypothesis 3, which predicted that managerial capability would be a more important determinant of an acquisition than functional capability.

Model 5 tests the robustness of the effects of the significant managerial and functional capability variables. The model drops the insignificant capability measures. In this analysis, the “No. of C-level” ($\beta = 0.23, p = 0.04$) and “No. of functional EVP, SVP, VP” ($\beta = -0.19, p = 0.07$) capability variables maintain the same direction as in the previous models, while the negative functional capability effect increases in significance.

In sum, the results support hypotheses concerning managerial capabilities, age, and size, while refuting the functional capability prediction. Struggling firms with higher levels of C-level managerial capability are more likely to exit via acquisition than via dissolution (H1), with managerial capability having more impact than functional capability in determining selection processes (H3). Furthermore, the likelihood of acquisition increases with firm age (H4a) and size (H4b).

We explored the unexpected impact of functional capabilities with two investigations of whether the configuration of functional executives might influence the selection process. First, we examined the breadth of functional capabilities, which is the number of different functional areas in which a firm has functional executives. Conceptually, capability breadth raises potential competing influences on acquisition, stemming from market failure and fragmentation. A market failure argument would suggest that thinly dispersed functional capabilities would lead to
acquisition rather than dissolution because this situation exacerbates the problem of identifying and distinguishing these capabilities from the firm in which they reside. On the other hand, a fragmentation argument would suggest that more narrowly focused (i.e., less dispersed) functional capabilities will more likely lead to acquisition because of the value of depth and intensity in a targeted set of activities. The fragmentation argument would be particularly relevant in the case of the acquisition of a struggling firm, where the overall performance indicates substantial weakness. A potential acquirer may be more interested in a struggling firm that demonstrates depth and understanding in a given functional area.

To investigate the role of capability breadth on the acquisition of struggling firms, we estimated additional models that included two variables specifying the number of functional capability areas (EVP to VP, below VP), as well as any interaction effects between functional capability and the breadth of functional capability. However, the variables for breadth of functional capabilities did not produce a significant influence on selection processes.

Second, we estimated models to investigate the possible presence of curvilinear effects for the level and breadth of functional capabilities, which also might arise as influences of capability configuration. The level of functional capability did not have a significant curvilinear impact. The functional breadth of executives below VP, though, did have a near significant curvilinear effect, as Model 6 of Table 4 reports. These results ($\beta_1 = -0.86, p = 0.11$ and $\beta_2 = 0.32, p = 0.12$) reveal a weak U-shaped relationship between functional capability breadth and the acquisition of struggling firms. This pattern suggests that acquirers have at least some interest in struggling firms with a wide range of lower-level functional capabilities, where the breadth of the capabilities would create both potential value and substantial market failure for attempts to simply hire the individual executives.
DISCUSSION AND CONCLUSIONS

This study provides a bridge between adaptation (Cyert and March, 1963; Levitt and March, 1988) and selection (Hannan and Freeman, 1977; Nelson and Winter, 1982) views on organizational change. Recent research in organizational change presents adaptation and selection as complementary and interdependent processes (Singh et al., 1986; Levinthal, 1991; Aldrich, 1999). This study shows that adaptation and selection can operate concurrently at different levels of analysis. At the firm level of analysis, exit by either acquisition or dissolution represents a selection process that removes a firm from an environment. At the level of organizational capabilities, firm exit by acquisition represents an adaptive mechanism that preserves capabilities, but exit by dissolution represents selection that removes capabilities from the business landscape. Hence, acquisition represents a mechanism that connects firm-level selection with capability-level adaptation.

The selection process that a struggling firm faces is more likely to foster capability adaptation (i.e., exit by acquisition rather than dissolution) if the struggling firm possesses extensive directive and coordinating managerial capabilities, as well as somewhat broadly based functional capabilities. Furthermore, time-dependent and complexity-dependent capabilities are more likely to engender an exit that fosters capability adaptation, since greater age and size provide the opportunity for capability development. The commonality between these types of organizational capabilities is ambiguity and embeddedness that foster a susceptibility to market failure, in addition to marked difficulties in transfer and replication. The inability to capture the value of these capabilities and the tacit knowledge that they embody upon business dissolution (Hoetker and Agarwal, 2007) necessitates acquisition as a means of preservation because acquisition maintains aspects of a firm’s capability template.

The finding that capabilities influence the selection processes of struggling firms has
implications for questions of dynamic capabilities. Specifically, these results highlight the relevance of crossing resource-based arguments with evolutionary theory (Helfat et al. 2007). The presence of market failure in the organizational capabilities favored by acquisition – managerial capabilities and, to a lesser extent, thinly dispersed functional capabilities – supports the resource-based rationale for acquisition and provides an insight into the role of acquisition and dissolution as mechanisms of business and market evolution. These results indicate that the presence of market failure in these capabilities links the fate of a struggling firm to the fate of its capabilities.

In turn, the results help clarify the role of organizational learning in fostering the adaptive outcomes of acquisition. Although acquisition of a firm in its entirety may overcome the obstacle of market failure in the discrete exchange of valuable organizational capabilities, acquisition does not guarantee the successful transfer or replication of a target’s capabilities in an acquiring firm. The same embeddedness and tacitness that makes the target’s capabilities attractive and desirable may inhibit the ability of the acquiring firm to capture and exploit the value inherent in these capabilities. Specifically, the successful transfer and replication of target capabilities hinges on organizational learning and the absorptive capacity (Cohen and Levinthal, 1990) of the acquiring firm.

Organizational learning involves developing, improving, and organizing routines and knowledge (Dodgson, 1993); the information processing embodied in this process results in expansion of an organization’s range of behaviors (Huber, 1991). Hence, the transfer or replication of target capabilities embody organizational learning since the acquiring firm must reorganize and expand its knowledge and behaviors to incorporate the capabilities of the target. The limited codifiability and teachability of the tacit knowledge embodied in the target’s capabilities impede the transfer and replication of routines and capabilities (Zander and Kogut,
and complicate the learning process. Absorptive capacity relates to the ability of a firm to recognize, assimilate, and apply new information, which is primarily a function of prior experience (Cohen and Levinthal, 1990). Given the potential demands of this learning effort, the absorptive capacity of an acquiring firm is critical for the transfer of capabilities from a target or their replication in the acquirer. Hence, organizational learning supports the adaptive outcomes of acquisition at the capability level. In turn, the adaptive outcomes at the capability level also represent the foundation for adaptive implications at the firm level from the perspective of the acquiring firm.

Lastly, the results have two implications relating to institutional theory. First, the institutional implications speak to the ongoing debate regarding the predominance of institutional or economic forces. In particular, the results contrast with an institutional perspective on business acquisitions, which emphasizes the importance of environment-level influences such as legitimacy and isomorphism (DiMaggio and Powell, 1983) in determining the fates of firms. The institutional perspective acknowledges the effects of age and size, which represent firm-level factors, but ties the explanation of these firm-level effects to the connection, approval, or support of the institutional environment (Meyer and Rowan, 1977; Scott and Meyer, 1983). Hence, the institutional perspective suggests the absence of an effect for any firm-level factor beyond age and size in determining the fates of firms. Therefore, if institutional theory is correct in its focus on environmental influences, we would not expect managerial and functional capability endowments to affect selection processes. By contrast, the observed presence of an effect for managerial and functional capabilities on the mode of exit demonstrates the relevance of a firm-level orientation in general – and a capabilities approach in particular – to investigation of the mechanisms of market evolution.

Nonetheless, the role of learning in fostering the adaptive outcome of acquisition exits at
the capability level suggests that acquisition activity resulting from institutional mimetic forces also plays a role in the evolution of capabilities, firms, and the market. While the results provide support for the resource-based perspective on acquisition, merger activity often increases as a result of repetitive and contextual momentum (Amburgey and Miner, 1992). As we discussed above, the adaptive outcomes of acquisition are uncertain and depend partially on the absorptive capacity of the acquiring firm. In the presence of uncertainty and a lack of experience that limits absorptive capacity, the decisions of referent organizations provide legitimacy and information to an open decision (Henisz and Delios, 2001). Even though both social and technical indicators drive imitation (Haunschild and Miner, 1997), social considerations and comparisons become more important as uncertainty increases (DiMaggio and Powell, 1983; Abrahamson and Rosenkopf, 1993). However, the adaptive outcome of acquisition still depends on organizational learning and the ability of an acquiring firm to understand and assimilate the tacit knowledge embodied in the organizational capabilities of the target firm.

Even if the outcome of an acquisition exit is maladaptive for the capabilities of the target firm, the potential for evolutionary impact is present. For instance, the acquisition may foster change in the capabilities and knowledge of the acquiring firm, thus perhaps fostering adaptive outcomes at the firm and capability levels for the acquirer. Furthermore, the presence of the selective implications for the target firm creates change in the business landscape by removing a firm and its capabilities. Moreover, the relevance of outcome salience in fostering imitation suggests the presence of vicarious learning (Haunschild and Miner, 1997). Consequently, the adaptive implications of acquisition as a mode of exit or as an adaptive mechanism at both the capability and firm levels engages a consideration of organization learning on the part of the acquiring firm, given the tacit and embedded nature of the valuable capabilities residing within a target firm. Of course, this study assesses capabilities within struggling firms; the extension of
these questions to other contexts, such as independently viable firms or different industries, offers an avenue for continued research.

This work depicts how firm-specific characteristics influence the evolution of markets and stimulates additional inquiry at the intersection of the resource-based and evolutionary perspectives. In addition to exploring the boundary conditions of this study’s findings, additional research could enrich understanding of the mechanisms driving different aspects of market evolution. For example, research questions that provide a finer-grained understanding of how and why organizational resources or capabilities influence organizational outcomes represent a fruitful line of inquiry. In addition, incorporating a learning perspective in investigation of research questions regarding organizational capabilities and how they change would provide the opportunity to advance understanding of the mechanics of organizational learning. Lastly, the development and investigation of resource-based research questions that delineate the predominance of opposing perspectives such as adaptation versus selection and economic versus institutional forces offer the opportunity to advance work at the intersection of resource-based thinking and evolutionary theory, as well as to engage key debates within the broader strategy literature.
REFERENCES
Figure 1
Conceptual Model

- Firm
  - Financial Performance
    - Capabilities
      - Not Viable Independently
        - Acquisition
          - +
        - -
      - Capabilities
    - +
  - -
- Continue Independent
  - More valuable in current firm
- Viable Independently
  - +
  - More valuable in another firm
  - Acquisition
- Dissolution
### TABLE 1. MANAGERIAL VERSUS FUNCTIONAL CAPABILITIES

<table>
<thead>
<tr>
<th>Definition</th>
<th>Managerial Capabilities</th>
<th>Functional Capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predominant location in the firm</td>
<td>General management positions</td>
<td>Line and staff positions</td>
</tr>
<tr>
<td>Relation to other firm capabilities</td>
<td>Pervasive, directive, and transcending</td>
<td>Segregated, but complementary</td>
</tr>
<tr>
<td>Examples</td>
<td>Strategy, HR/personnel, finance, legal</td>
<td>Production, marketing/sales, engineering, R&amp;D</td>
</tr>
</tbody>
</table>

### TABLE 2. CLASSIFICATION OF EXECUTIVE POSITIONS

<table>
<thead>
<tr>
<th>Positions</th>
<th>Designation</th>
<th>Capability</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-level (e.g. CEO, COO, CFO)</td>
<td>All</td>
<td></td>
<td>No. of levels on the executive list</td>
</tr>
<tr>
<td>Executive vice president (EVP)</td>
<td>Undesignated Business unit, or Division</td>
<td>Managerial capability</td>
<td>No. of C-level positions</td>
</tr>
<tr>
<td>Senior vice president (SVP)</td>
<td>Strategy</td>
<td></td>
<td>No. of managerial positions EVP, SVP, VP</td>
</tr>
<tr>
<td>Vice president (VP)</td>
<td>Finance/Legal</td>
<td></td>
<td>No. of managerial positions below VP</td>
</tr>
<tr>
<td>Director</td>
<td>Human resources/Personnel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manager</td>
<td>Administration/Communication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>Marketing/Sales</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Development/R&amp;D</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Operations</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Engineering</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Customer relations</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Technology/E-biz/E-commerce</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Functional capability</td>
<td></td>
<td>No. of functional positions EVP, SVP, VP</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>No. of functional positions below VP</td>
</tr>
</tbody>
</table>
### TABLE 3. DESCRIPTIVE STATISTICS AND CORRELATION MATRIX

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean (Median)</th>
<th>SD</th>
<th>DV</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
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</thead>
<tbody>
<tr>
<td>DV (Acquisition)</td>
<td>172</td>
<td>0</td>
<td>1</td>
<td>0.48</td>
<td>0.50</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Levels</td>
<td>172</td>
<td>1</td>
<td>7</td>
<td>3.24</td>
<td>1.29</td>
<td>.00</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>2. No. of mgr. C-level</td>
<td>172</td>
<td>0</td>
<td>9</td>
<td>3.41</td>
<td>1.80</td>
<td>.14</td>
<td>.42</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. No. of mgr. EVP, SVP, VP</td>
<td>172</td>
<td>0</td>
<td>7</td>
<td>1.21</td>
<td>1.43</td>
<td>.03</td>
<td>.55</td>
<td>.50</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4. No. of mgr. below VP</td>
<td>172</td>
<td>0</td>
<td>10</td>
<td>2.13</td>
<td>2.75</td>
<td>.14</td>
<td>.58</td>
<td>.50</td>
<td>.35</td>
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<tr>
<td>5. No. of fun. EVP, SVP, VP</td>
<td>172</td>
<td>0</td>
<td>9</td>
<td>1.45</td>
<td>1.70</td>
<td>-.14</td>
<td>.47</td>
<td>.23</td>
<td>.37</td>
<td>.12</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>6. No. of fun. below VP</td>
<td>172</td>
<td>0</td>
<td>8</td>
<td>0.44</td>
<td>0.98</td>
<td>.05</td>
<td>.14</td>
<td>-.16</td>
<td>-.12</td>
<td>-.15</td>
<td>.00</td>
<td>1</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>7. Communications</td>
<td>158</td>
<td>0</td>
<td>1</td>
<td>0.18</td>
<td>0.39</td>
<td>-.16</td>
<td>.03</td>
<td>-.10</td>
<td>.01</td>
<td>-.01</td>
<td>.07</td>
<td>-.03</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>8. Business services</td>
<td>158</td>
<td>0</td>
<td>1</td>
<td>0.64</td>
<td>0.48</td>
<td>.11</td>
<td>.00</td>
<td>.01</td>
<td>-.09</td>
<td>-.09</td>
<td>-.01</td>
<td>.13</td>
<td>-.63</td>
<td>1</td>
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<td></td>
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<tr>
<td>9. Sales</td>
<td>158</td>
<td>0.30</td>
<td>359</td>
<td>32.75 (10.70)</td>
<td>60.61</td>
<td>.22</td>
<td>.21</td>
<td>.43</td>
<td>.36</td>
<td>.36</td>
<td>-.04</td>
<td>-.14</td>
<td>-.06</td>
<td>-.15</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>10. Employees</td>
<td>156</td>
<td>2</td>
<td>4476</td>
<td>267 (100)</td>
<td>549</td>
<td>-.01</td>
<td>.11</td>
<td>.29</td>
<td>.35</td>
<td>.18</td>
<td>.04</td>
<td>-.12</td>
<td>.03</td>
<td>-.16</td>
<td>.62</td>
<td>1</td>
</tr>
<tr>
<td>11. Age</td>
<td>161</td>
<td>1</td>
<td>69</td>
<td>5.02 (3.00)</td>
<td>6.27</td>
<td>.24</td>
<td>.07</td>
<td>.11</td>
<td>-.04</td>
<td>.17</td>
<td>-.04</td>
<td>.03</td>
<td>-.12</td>
<td>-.02</td>
<td>.05</td>
<td>.05</td>
</tr>
</tbody>
</table>

\[ r = 0.15 \text{ significant at } p<0.05 \]

### TABLE 4. LOGISTIC REGRESSION ESTIMATES OF HOW ORGANIZATIONAL CAPABILITIES INFLUENCE SELECTION PROCESSES OF STRUGGLING FIRMS

(172 cases; positive coefficient = more likely to exit by acquisition than by dissolution)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managerial capability: Positions (H1 +)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of C-level (e.g., CEO, COO, CFO)</td>
<td>0.306**</td>
<td>0.320**</td>
<td>0.227**</td>
<td>0.203*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of managerial EVP, SVP, VP</td>
<td>-0.128</td>
<td>-0.064</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>No. of managerial below VP</td>
<td>-0.095</td>
<td>-0.088</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Functional capability: Positions (H2 +)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of functional EVP, SVP, VP</td>
<td>-0.13813</td>
<td>-0.16711</td>
<td>-0.190*</td>
<td>-0.169*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of functional below VP</td>
<td>0.024</td>
<td>0.035</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breadth of functional capabilities: Areas</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>No. of functional areas below VP</td>
<td></td>
<td></td>
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<tr>
<td>(No. of functional areas below VP) squared</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (H4a +)</td>
<td>0.921**</td>
<td>0.143**</td>
<td>0.141**</td>
<td>0.145**</td>
<td>0.128**</td>
<td>0.121**</td>
</tr>
<tr>
<td>Sales (H4b +)</td>
<td>0.136**</td>
<td>0.011**</td>
<td>0.012**</td>
<td>0.011**</td>
<td>0.009**</td>
<td>0.009**</td>
</tr>
<tr>
<td>Business services industry (a)</td>
<td>0.012**</td>
<td>0.853**</td>
<td>0.931**</td>
<td>0.865**</td>
<td>0.905**</td>
<td>0.964**</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-148.84</td>
<td>-144.85</td>
<td>-147.51</td>
<td>-143.28</td>
<td>-144.55</td>
<td>-142.83</td>
</tr>
<tr>
<td>Loglikelihood ratio v. model 1 (df)</td>
<td>8.0 (3)**</td>
<td>2.7 (2)</td>
<td>11.1 (5)**</td>
<td>8.6 (2)**</td>
<td>12.0 (4)**</td>
<td></td>
</tr>
</tbody>
</table>

** p<0.05;  * p<0.10 (one-tailed tests)

(a) Compared to 11 other industries in the Internet sector

Note: Models 4 to 6 support H3, which predicts that managerial capabilities will have more impact than functional capabilities on acquisition.

Note: Sensitivity analyses found no influence of control variables for firm productivity or the size of the executive team.