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Will Your Acquisitions Increase Your IT Budget? The Effects of Mergers and Acquisitions Strategy on Firms? Information Technology Strategy\r\n

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ABSTRACT:

Many firms engage in series of mergers and acquisitions to grow. While IT has been recognized as one of the critical factors that influence merger success, little research has been done to investigate the development of appropriate IT strategy to facilitate the maximum exploitation of synergies from the mergers. This research provides theoretical insight which aims at answering the research question "How do firms' growth strategy by mergers and acquisitions influence their IT investments strategy?"

Key words: IT Strategy, Mergers and Acquisitions.

INTRODUCTION

In growing their business, firms engage in different strategies. While some firms engage in internal growth, others engage in series of mergers and acquisitions in order to expand their business. Over the last few decades, firms have increasingly been spending tremendous amounts of money on mergers and acquisitions. On a global scale, total value of announced mergers and takeovers in 2006 has passed the record year 2000's $3.3 trillion (The Economist, Nov 23rd, 2006). However, there is considerable evidence from business practice and research that between 60 to 80 percent of mergers and acquisitions (M&A) cases end up in failure (Homburg and Bucerius, 2006).

IT has been recognized as one of the critical factors that influence mergers success. IT and IT-dependent synergies account for about 40 percents of value created by mergers (CIO magazine, Information Week). IT has been suggested to accomplish two important goals in M&A: 1) IT is responsible for the merger of the two IT functions, including the integration of the infrastructure and rationalizing the application portfolio; and 2) the IT function must develop IT strategy that enable the business strategies of the merged firm, enabling the firm to maximize potential benefits gained from the merger. A recent study by Booz Allen Hamilton (CIO, shows that while most IT executives are comfortable accomplishing the first goal, they have much less experience accomplishing the second goal.

Important the role of appropriate IT strategy in enable firms to maximize benefits gained from their acquisitions, little research has been done to investigate the issue. In this research, we provide theoretical insight aimed at answering the research question: *How do firms' growth strategies by mergers and acquisitions influence their IT investments strategy?* More specifically, we develop propositions regarding how different types of mergers influence firms' investment strategy in the three different types of IT initiatives: automate, informate, and transform.

The following section will describe merger types that firms engage in as well as different types of IT investments initiatives that comprise IT strategy. Afterwards, propositions regarding the impacts of merger and acquisition strategy on IT investments strategy will be proposed.

RESEARCH MODEL AND PROPOSITIONS

Mergers and Acquisitions and IT Investments

Merger Types

Firms choosing to follow an external growth strategy can engage in series of M&A to implement these strategies. In this paper, we specifically investigate vertical mergers, related horizontal mergers, and unrelated horizontal mergers.

A firm can engage in vertical mergers whereby the target and the bidding firms provide goods, services at different stages of a single value chain. The interactions among the firms involve the flow of goods, services, and information along a single value chain with the output of one becoming the input of the other (Clemons and Row, 199) (e.g. manufacturers and retailers). As the results of a vertical merger, successive activities in a value chain which has been conducted by different firms are brought in-house in a single firm.

Firms can also engage in horizontal mergers in which the target and bidding firms can provide similar or complementary goods, services at the same stage of a value chain, in the same or different markets. The two firms can employ similar or complementary strategic resources, or have common fixed factors of production (Clemens and Row, 1991; Capron, 1999; Hill and Hoskisson, 1987). For example, when two commercial banks engage in a merger, the acquiring bank can benefit from having a larger branch and automated teller machine (ATM) system.

Among horizontal mergers, the level of similarity between the bidding firm's and the target firm's resources and product-market can be used to gage the level of relatedness between the two firms (King et al., 2004). The more similar the two firms' resources, product markets and activities, the more related they are. Less related firms are categorized as having complementary, rather than similar, resources and product markets. For example, the mergers of two retail banks would be considered related as they offer the same services, but might be in different markets. Meanwhile, when an airline company acquires a hotel chain, this could be considered unrelated as the two firms do not offer similar services and their resources are not similar. However, the two companies' resources and services are complementary as both companies offer services to travelers. While greater relatedness of horizontally merging firms allow them to exploit cost savings through sharing fixed costs and similar resources across business lines, less related firms have more potential to gain benefits from combining complementary resources and products to increase product value or create new product classes, helping firms to move to new product markets. Here, we define related-horizontal mergers are mergers among firms that have similar resources and product markets, while unrelated-horizontal mergers are mergers among firms that have complementary resources and product markets.

IT Investment Strategy

Firms can invest in different IT initiatives to enable the exploitation of potential synergies from the mergers. Due to the differences in their nature, each type of merger would have different needs for different types of IT initiatives. As conceptualized by Schein (1992) and Zuboff (1988), IT can be viewed as serving three strategic roles within organizations:

- Automate, i.e., replacing human labor by automating business processes.
- Informate (up or down), i.e., facilitating access to information by managers and employees.
- Transform, i.e., redefining business and industry practices, processes and relationships.

This IT strategic role construct has been incorporated into research models examining the business value of IT at the industry level (Anderson et al. 2006, Chaterjee et al. 2001, Dehning et al. 2003), the firm level (Armstrong and Sambamurthy 1999), and IT investment initiative - investments in applications and systems that has automate, informate, or transform role within organizations - level (Dehning et al. 2003). Here, we follow the approach of Dehning et al. (2003) and apply the IT strategic role construct at the level of an IT investment initiative. As IT strategy is concerned with technology policies regarding *what* IT solutions, applications, systems that firms invest in to meet business needs (Earl, 1989, Weill and Ross, 2004).

Figure 1 illustrates our research model, in which different types of merger would result in variation in firms' IT strategy.

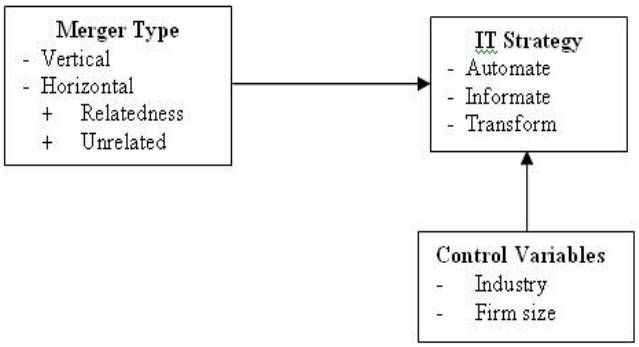

Figure 1. Research Model

Mergers and Acquisitions and Overall IT Investments Demands

Transaction cost economics provides a theoretical base for previous research on the relationship between IT investments and the structures and processes linking different business activities (Hitt, 1999). Transaction cost economics posits that the organization of economic activities is strongly influenced by the costs of coordinating and managing interactions between economic activities. Two types of coordination costs exist: internal and external (e.g. Gurbaxani and Whang, 1991; Dewan et al. 1998; Hitt, 1999). Internal coordination costs represent costs associated with the processing, sharing and communicating decision information within and across levels of management hierarchy, as well as costs associated with the monitoring and performance evaluation required to deal with the agency problems arising from incentive conflicts in delegated decision settings. External coordination costs consist of costs associated with the writing and enforcing of contracts with customers and suppliers as well as search, communication and transportation activities associated with acquiring inputs or distributing output products (Dewan et al. 1998; Hitt, 1999).

IT can help reduce coordination costs by improving the speed and quality of information processing, thus facilitating better information communication. At the same time, IT can also provide management with the ability to reduce agency costs through improved monitoring capabilities and performance evaluation scheme (Gurbaxani and Whang, 1991). In addition, IT investments have potential to help firms reduce production costs by automating business processes, reducing labor costs related to production and increase throughput. Production costs represent all expenses other than internal and external coordination.

Previous research has analyzed coordination needs to investigate the impacts of variation in firm structure on IT investment demands. The basic premise is that organization structures that are more coordination or control intensive also have a higher demand for information processing and IT. Since IT plays a critical role in facilitating these information processing needs, IT demands will rise with increased coordination and control requirements (Dewan et al., 1998).

Vertical mergers might help firms reduce external coordination costs. However, much of this external coordination is reduced at the expense of new internal coordination in terms of information sharing, communication, etc. Therefore, the need for IT doesn't seem to reduce as coordination demands are not reduced. However, firms decide to engage in vertical mergers might be able to invest in IT that help coordinate activities and achieve reduction in costs such as reduced inventories or faster reaction time (Clemons and Row, 1991), and these costs reduction might be greater than increased investments in technology to enable them.

As firms engage in horizontal mergers, they are more likely to expand their activities, rather than internalize previously external transactions (Dewan et al., 1998). Therefore, they are more likely to have to handle increased coordination and information processing demand. This comes from increased internal coordination requirements as firms have to manage more complex and diverse activities. IT investments and initiatives have potential to help reduce coordination and information processing costs (Hitt, 1999). Therefore, we would expect to see an increased level of investments in IT as firms engage in more horizontal mergers. Combining the discussed arguments, we propose:

Proposition 1: *For firms that follow growth strategy via mergers and acquisitions, the greater the number of mergers, the greater the level of IT investments.*

Merger Types and IT Investments

The decision to invest in an IT initiative does not depend solely on the characteristics of the technology, but also on other characteristics of the organizational context that the technology is used. In the following section, we will develop arguments for the variation in investment demand for different types of IT initiatives in different types of mergers.

Vertical Mergers

Lubatkin (1983) suggests that a vertical merger will most likely benefit from the schedule economies where two levels of production at two stages of a value chain are merged. In order to gain the efficiency and effectiveness between the two units in the value chain, processes can be automated by IT applications and systems which cannot be done before the merger. By automating repetitive business processes and substituting labor, automate IT initiatives focus directly on enhancing work processes associated with value chain activities. Therefore, firms engaged in vertical mergers are most likely to observe increase in automate IT initiatives.

Proposition 2: *For firms that follow growth strategy via vertical mergers, the greater the number of vertical mergers, the greater the level of investments in automate IT initiatives.*

Related Horizontal Mergers vs. Unrelated Horizontal Mergers

Except for conglomerate mergers, where two firms with totally different resources and product markets are merged, horizontal mergers result in two participating firms becoming interdependent. In Thompson's (1967) model, three types of interdependence between different parts of an organization are suggested: 1) *Pooled*: Each part renders a discrete contribution to the whole and each is supported by the whole; 2) *Sequential*: one part must act properly before another part can act, the output of one part is the input for another one, this is the description of traditional supply chain.; and 3) *Reciprocal:* outputs of each part become inputs for another. Thompson proposes that the three types of interdependence have increasing demand for coordination costs. It is arguable that pooled interdependence is incurred by un-related mergers, while reciprocal interdependence is incurred by related mergers (e.g. Dewan et al., 1998). Therefore, related horizontal mergers would require greater level of IT investments. Hence:

Proposition 3: *For firms that follow growth strategy via horizontal mergers, related horizontal mergers require greater level of IT investments than unrelated horizontal mergers.*

Related Horizontal Mergers

The major benefits that firms gain from related mergers are by exploiting economies of scale and scope (Hill and Hoskisson, 1987; Clemens and Row, 1991; Capron, 1999). Research has relied on taking cost efficiency theories to argue for the potential benefits gained from related horizontal mergers (Capron, 1999). Cost-based synergies in related mergers are gained by coordinating similar resources across the newly merged firms. For example, by integrating two similar business lines, a firm can increase its bargaining power of supplies, eventually leading to reduced costs. Exploiting similar resources across business lines would also help firms improve resources utilization, or spreading fixed costs over a higher total volume. Hence, a significant portion of synergies gained from related horizontal mergers come from coordinating activities closely tied to the value chains of the two newly merged firms, integrating the two value chains together. By automating business processes of the two merged firms, automate IT investments can facilitate the integration of these activities.

Firms engaged in a related merger are reciprocally interdependent after the merger. Therefore, they rely on mutual adjustment for coordination, which requires continuous and intensive communication among parties involved (Thompson, 1967). In addition, in order to be able to exploit similar resources across business lines, the newly merged firm needs an extensive level of information exchange to coordinate the activities based on two similar platforms of the two merged firms. For example, intensive information exchange is required in coordinating procurement activities across the two business lines. Consequently, firms engaged in related mergers have greater demand for technologies that support communications among them. By providing information up and down the decision making hierarchy, informate IT investment initiatives provide capabilities that facilitate firms' exchange of extensive information during these coordination processes, helping firms improve decision and coordination processes, with associated effects expressed in increased effectiveness, improved decision quality, and improved resource utilization (Mooney et al. 1996). Hence we propose:

Proposition 4: *For firms that follow growth strategy via related horizontal mergers, the greater the number of related horizontal mergers, the greater the level of investments in automate and informate IT initiatives.*

Unrelated Horizontal Mergers

While research on horizontal acquisitions tend to pay more attention on cost-based synergies and argue for the better benefits of related mergers compared to unrelated mergers, unrelated merger integration also has potential to bring about synergies and long-term benefits for the acquiring firms. While firms engaged in related mergers mainly draw their benefits from coordinating similar resources across different business lines, firms engaged in unrelated mergers can gain benefits from revenue-based synergies. Revenue-enhanced synergies are theoretically developed based on the resource-based view, and are gained by increased market coverage and enhanced innovation capability (Capron, 1999). Resources in firms engaged in an unrelated merger are less likely similar, but more likely complementary. Reconfiguring and combining complementary resources can help firms gain strategic advantage and increase their revenues by creating newly-added value to the existing product, e.g. via cross-sellingor product bundling, as well as creating totally new product classes, helping firms move into different product-markets (Clemens and Row, 1991; Capron, 1999).

The exploitation of revenue-based synergies in mergers is usually achieved through resource redeployment, which requires reconfiguration of target and acquirer business (Capron, 1999; Capron et al., 2001). However, identifying resources that can be exploited with unrelated horizontal IT applications is problematic given the great variety of resources available (Clemens and Row, 1991). Therefore, greater levels of interaction and coordination among the two merged firms are required for the employees and management to "learn" how to use the newly acquired resources and combine them effectively with the acquiring firm's resources to create new value. This would require various collaborating mechanisms such as cross-posting of staffs, joint management of shared functions, etc. (Capron, 1999). By providing information that enable collaboration and decision making, informate IT initiatives possess potential to enable the discussed collaboration processes and mechanisms that help firms "learn" how to exploit their newly merged complementary resources.

Besides cross-selling and bundled products, the newly merged firm can innovate based on redeployment, reconfiguration, and integration of newly merged complementary resources to enhance product features, create new product classes that help the firm move to new product markets and increase revenue. Such innovation activities might require radical changes in business processes and relationships. By focusing on innovating within existing and new product-markets and on the reengineering of business practices and processes, transform IT investment initiatives bring about radical changes to business models enable the firm to enter new produce-market regimes (Dehning et al. 2003, Weill, 1992). Therefore, we propose:

Proposition 5: *For firms that follow growth strategy via unrelated horizontal mergers, the greater the number of unrelated horizontal mergers, the greater the levels of investments in inform and transform IT initiatives.*

CONCLUSION

While IT and IT-dependent synergies has been cited as an important factors influencing post-merger success, little research has been done on the relationships between merger and acquisition strategy and IT investment strategy to help firms exploit the maximum potential synergies from their acquisitions. In this research, we theoretically develop propositions that provide theoretical insight on the impacts of different growth strategies via mergers and acquisitions on firms' IT investments strategy. We hope that this research will attract more attention, both theoretical and empirical, on this important research phenomenon.

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