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**SMALL BUSINESS INTERNET USE AND STRATEGIC FLEXIBILITY**

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**ABSTRACT**

*Research on SME Internet use has focused almost exclusively on factors leading to the adoption of Internet technologies. In this study, we focus on the potentially valuable connection between Internet use and strategic flexibility. Specifically, we propose that Internet use for communications will promote greater strategic flexibility for the small firm, but only in a dynamic environment. The results, based on a sample of 160 small Midwest companies, largely support this hypothesis. Environmental dynamism was found to moderate the relationship between Internet use for communications and strategic flexibility. Use of the Internet for communications was found to be positively and significantly related to strategic flexibility in a dynamic environment. As expected, dynamism did not moderate the relationship between Internet use for transactions and strategic flexibility. These findings hold implications for future research and for managers of small firms attempting to effectively leverage the Internet for competitive advantage.*

There is a strong consensus that the Internet holds the potential to change business. The information systems, supply chain, human resource, organizational design, and marketing literatures are replete with examples of firms leveraging the Internet for enhanced competitive advantage. For instance, flexible electronic partnering options, applicant tracking and recruitment and benefits communication, enterprise management (the integration of information, processes, and people), and customer relationship management are a small sample of examples across diverse disciplines of initiatives with the overarching objectives of achieving greater coordination at reduced costs (cf., Chatterjee, Segars, & Watson, 2006; Schram, 2006; Applegate, Austin, &

Collins 2005; Kalakota & Robinson, 1999).

Research on Internet applications and related topics has been mainly focused on large organizations. Recently, however, increasing attention related to understanding the effective use of the Internet has shifted to smaller firms. Research on SME Internet use in the entrepreneurship literature has focused almost exclusively on factors leading to the adoption of Internet technologies (c.f. BarNir, Gallagher, & Auger, 2003; Dandridge & Levenburg, 2000; Dholakia & Ksetri, 2004; Lohrke, Franklin, & Frownfelter-Lohrke, 2006; Wright & Ralston, 2002; Zacharakis, Shepherd, & Coombs, 2003). We take a different approach in this paper and focus on the

relationship between SME Internet use and strategic flexibility, a potentially important source of competitive advantage for SMEs (Hatch & Zweig, 2001).

The Internet is supposed to be the great equalizer allowing small and medium-sized enterprises (SMEs) to compete on a more equal footing with larger firms (Choudhury & Galletta, 1998; Kleindl, 2000; Pflughoeft, Ramamurthy, Soofi, Yasai-Ardekani, & Zahedi, 2003). As a public resource, the Internet offers all companies, large and small, a greatly expanded body of available information as well as the potential to reach a larger audience and more closely coordinate business activities (Poon & Swatman, 1997). The evidence to date, however, suggests that SMEs (firms with 500 or fewer employees) (c.f. Gilley, McGee, & Rasheed, 2004; Kleindl, 2000; Liao, Welsh, & Stocia, 2003) have largely not availed themselves of this opportunity (Bernadas & Verville, 2005; Kleindl, 2000; Robeiro & Love, 2003; Van Beveren & Thomson, 2002). This shortfall has been understudied (Pflughoeft et al., 2003) and is disturbing in light of the strategic importance of effective information technology (IT) use in general (Broadbent & Weill, 1997) and Internet use in particular.

SMEs have been labeled by some as technological laggards (Bernadas & Verville, 2005). Several possible reasons have been advanced to explain why SMEs have been slow to adopt Internet technologies. SMEs may lack the required financial resources to adopt Internet technologies (Robeiro & Love, 2003). Understanding how and where to invest resources to support Internet technologies is another problem. Bharadwaj, Bharadwaj, and Konsynski (1999) used Tobin's  $q$  to discover that information technologies clearly provide intangible benefits to firms that help the firm provide better value. The authors noted, however, that more research is needed to unbundle and better understand the sources of intangible benefits. Tallon and Kraemer (2003) offer

some possible insight as to this need. The authors noted that for information technologies to create value, they need to be strategically aligned with the firm's capabilities. There is great need, as a result, to improve understanding of the limits and boundary conditions that impact effective alignment of information technology resources, such as use of Internet technologies. Facing uncertainty, it is not surprising that many SME owners do not believe the adoption of Internet technologies will help them build or sustain a competitive advantage (Levy & Powell, 2003). Clearly, understanding how to integrate Internet technologies with important firm strategies is critical to understanding effective information system implementation. Without a solid understanding of effective integration strategies, many SME owners lack confidence in their ability to implement and use Internet technologies (Lee, 2004).

This study partially addresses important issues raised by Bharadwaj et al. (1999) and Tallon and Kraemer (2003) by investigating the conditions under which Internet use (an important information technology) affects strategic flexibility, an important intangible benefit for SMEs. Strategic flexibility has been identified as a critical intangible benefit for small businesses, allowing them to quickly reposition themselves and gain a competitive advantage vis-à-vis their larger competitors (Hatch & Zweig, 2001). It is possible that, incorrectly applied, the adoption of advanced Internet technologies may not provide the strategic flexibility needed by SMEs to succeed in a dynamic business environment. We investigate this possibility by examining the relationship between the use of Internet technology in SMEs and strategic flexibility across various environments. Specifically, we propose that the relationship between Internet use and strategic flexibility will depend on the competitive environment, whether it is static or dynamic, and on the type of Internet activities used (communications versus transactions).

### **Strategic Flexibility**

Strategic flexibility has been defined as the ability to precipitate and adapt to external and internal environmental changes by altering strategies (Bierly & Chakrabarti, 1996; Nadkarni & Narayanan, 2004). Strategic flexibility helps firms better manage risks by quickly responding in a proactive or reactive manner (Grewal & Tansuhaj, 2001).

The concept of strategic flexibility has emerged primarily from the strategic management and marketing literatures and is related, yet clearly distinct from concepts more frequently used in the existing entrepreneurship literature. Most notably, strategic flexibility bears similarity to important elements of entrepreneurial orientation (Lumpkin & Dess, 1996; Dess & Lumpkin, 2005) in that both concepts can be tied to organizational change efforts and are proposed to impact firm level performance. Lumpkin and Dess (1996) identified autonomy, innovativeness, proactiveness, competitive aggressiveness, and risk-taking as elements of entrepreneurial orientation. Of these, proactiveness is conceptually closest to strategic flexibility. Dess and Lumpkin (2005: 148) defined proactiveness as "a forward-looking perspective characteristic of a marketplace leader that has the foresight to seize opportunities in anticipation of future demand." There are, however, some critical differences between the concepts of strategic flexibility and proactiveness, especially as they apply to SMEs. First, proactiveness and the other elements of entrepreneurial orientation have been described as being part of a mindset (Lumpkin & Dess, 1996) or personal disposition (Becherer & Maurer, 1999). Strategic flexibility, on the other hand, focuses more on behavior than personality and is a firm, rather than individual, level variable. A second and more important difference is that proactiveness, as part of the entrepreneurial orientation, assumes that entrepreneurs will have a significant role in shaping their

environment (Lumpkin & Dess, 1996) while strategic flexibility neither requires the SME to assume an industry driving nor pioneering influence. Likewise, the prospector type proposed by Miles and Snow (1978) requires that firms be engaged in a constant search for new products or markets (Liao et al., 2003). This difference is significant given Vesper's (1989) observation that most ventures pursue what he calls parallel competition, meaning they follow tried and proven business models. Strategic flexibility allows SMEs to move from one proven business model to another: proactiveness and prospecting, by definition, do not.

Grewal and Tansuhaj (2001) consider strategic flexibility a polymorphous construct. A review of the literature suggests that strategic flexibility is likely achieved by small firms in a different way than it is in large firms. Large firms attain strategic flexibility through over-investment in strategic options that are not presently being fully exploited by the organization (Bierly & Chakrabarti, 1996; Broadbent & Weill, 1996; Grewal & Tansuhaj, 2001). Small firms are more likely to achieve strategic flexibility through developing options as a result of entrepreneurial alertness and faster response and implementation times (Hatch & Zweig, 2001; Liao et al., 2003; Yu, 2001). Aligned Internet technology capabilities should assist the entrepreneurial venture in attaining these important attributes, thereby improving their ability to capitalize on strategic flexibility. Hatch and Zweig (2001) noted that the ability of small firms to survive and flourish is defined by their "ability to quickly adapt by modifying their competitive positioning, adjusting their value propositions, and targeting different customer segments," and to "quickly perceive the need for change and make it happen" (p. 45). Ironically, the importance of using aligned Internet capabilities to help achieve strategic flexibility may be heightened by large firms' use of the Internet to encroach on SMEs' niche markets (Kleindl, 2000).

### **SME Internet Use for Communications and Transactions**

While the strategic alignment of a firm's IT capabilities has been related to enhanced firm performance, questions have been raised as to the limiting conditions of such effects (Tallon & Kraemer, 2003). A potentially relevant factor is the nature of Internet usage. Internet use, for example, may facilitate the external knowledge acquisition and intra-firm knowledge dissemination needs to improve a firm's absorptive capacity (Liao et al., 2003). It is for this reason that we examine Internet usage for both communications and transactions. Internet use encompasses a range of behaviors. We focus on communication and transactions, as these are discrete behavioral domains which we believe hold different implications for a firm's ability to operate flexibly in response to changing environmental conditions.

Internet usage for communication (with both customers and suppliers) is one potentially important component of a small firm's market-sensing activity or market orientation. Note that the marketing strategy literature places the notion of gathering, disseminating, and responding to market information at the center of a firm's market orientation (cf., Kohli & Jaworski, 1990; Narver & Slater, 1990). Further, market orientation has been found to be positively related to firm performance (Jaworski & Kohli, 1993; Baker & Sinkula, 1999). The strategy literature also suggests that communications are important in developing and sustaining effective knowledge management (Bhandari, Bliemel, & Hassanein, 2004). Of relevance to the present research, firms responding to market information may generate strategic options such as adjusting product/service offerings and anticipating customers' future needs and wants (Evans, 1991; Achrol & Kotler, 1999; Day, 1999). These options allow firms to operate more flexibly in response to market dynamics.

In contrast to Internet usage for communication, using the Internet for transactions is not as likely to serve as a critical market-sensing activity for the small firm. While the Internet can certainly link a firm to market stakeholders, we view the typical order-taking and order-processing of small firms as more routine and static in nature. While large firms may convert this relatively static transaction process into a more dynamic process of discovery through data mining, small firms typically lack the resources and capabilities required to transform transaction information into a more dynamic market-sensing ability. Acquiring resources and capabilities needed to convert routine transaction data into dynamic information entails at least two substantial and potentially prohibitive costs. First, development and maintenance costs are much higher if carefully detailed and formatted back-end database management features are required. The second major cost is greater than the first. Acquiring the human resource expertise needed to effectively use and interpret advanced data-mining software can be very expensive. As a result of these costs, we believe that the more dynamic Internet communication function (i.e., facilitating dialogues regarding current and future scenarios) is more likely than Internet transactions to be implicated in strategic flexibility for small firms.

### **Environmental Dynamism**

Environmental dynamism should moderate the relationship between Internet use and strategic flexibility for SMEs. Strategic flexibility is more important in a dynamic environment than in a static environment (Bierly & Chakrabarti, 1996; Johnson, Lee, & Saini, 2003; Luo, 1999; Nadkarni & Narayanan, 2004; Shi & Daniels, 2003; Tallon & Kraemer, 2003). In fact, strategic flexibility has been defined by some as the ability to anticipate and react to environmental changes (Johnson et al., 2003). Information technology investments, including Internet-based systems, are usually

best employed to deepen an organization's existing core competency in a static environment. In a static environment, large firms in particular have been known to spend great amounts of money developing specific, costly-to-imitate, idiosyncratic information technology capabilities to increase efficiency (Tallon & Kraemer, 2003; Tippins & Sohi, 2003). These specific, idiosyncratic investments, however, may have the effect of limiting rather than enhancing strategic flexibility. As Nadkarni and Narayanan (2004) noted, strategic persistence is usually superior to strategic flexibility in a static industry. Spending money to promote strategic flexibility may be unnecessary and wasteful if the SME has no need to respond or react to environmental changes (Johnson et al., 2003; Nadkarni & Narayanan, 2004). The exception would be firms seeking to drive radical change in a static industry (Johnson et al., 2003). However, in contrast to large firms which may try to drive radical industry change, the majority of SMEs follow tried and proven business models (Vesper, 1989) and are not trying to drive radical industry change. Therefore, we do not expect SMEs' Internet technology use to be significantly related to strategic flexibility in a static environment.

The ability to employ strategic flexibility by effectively responding to changes in a dynamic environment should be of considerable benefit to firms in general (Bhandari, Bliemel, Harold, & Hassanein, 2004; Johnson et al., 2003; Karin, 2004) and to SMEs in particular (Yoffie & Cusumano, 1999). Whether the use of Internet technology in a dynamic environment results in increased strategic flexibility or not should depend on the nature of Internet activities used.

Johnson et al. (2003) posit that in a highly turbulent environment, market-focused strategic flexibility should be important to allow firms to develop the most balanced near-term and future-oriented options portfolio. While large firms have a number

of market-sensing avenues through which to develop strategic options (e.g., market research and competitive intelligence), small firms are unlikely to have these formal functions available. Therefore, we expect that dynamism will moderate the relationship between using the Internet for communicating with important market stakeholders (i.e., customers and suppliers) and strategic flexibility. Owing to its important market-sensing role in dynamic environments, using the Internet for communications should be positively related to strategic flexibility. Conversely, to the extent that small firms are technological laggards (Bernadas & Verville, 2005) and do not invest in costly systems that would allow them to turn static transaction data into dynamic market information, we do not expect dynamism to moderate the relationship between Internet use for transactions and strategic flexibility. Formally, we propose that:

H1: Dynamism will moderate the relationship between the use of Internet technology for communications and strategic flexibility. Specifically, use of Internet technology for communications will be positively and significantly related to strategic flexibility for firms in more dynamic environments.

H2: Dynamism will not moderate the relationship between the use of Internet technology for transactions and strategic flexibility.

## **METHODS**

### **Sample and Questionnaire**

Reference USA was used to identify a list of 1,300 Midwest firms with 500 employees or fewer in a variety of industry groups such as retail, construction, and financial services. A letter addressed to top management was sent to each company with a questionnaire and a postage-paid return envelope. 160 surveys were returned for a response rate of 12.3

percent. The response rate of this study is similar to rates commonly encountered in similar and related research. Tests for non-response bias between early and late respondents on the variables used in this research revealed no statistically significant differences (Malhotra, 1999).

Most of the respondents were male and were the owner-operator or top manager. 36 percent of the companies in the sample had between 20-49 employees while another 33 percent had between 50-99 employees. Most companies in the sample reported only domestic sales (77%). Typical sales ranges were \$2.5-5 million (21%), \$5-10 million (21%), and >\$10-20 million (21%). Approximately half of the sample reported that some of their IT function was outsourced, most of which reported domestic outsourcing (96%).

Literature reviews and knowledge of regional firms guided the development of measures used in this study. The questionnaire was carefully reviewed and edited for readability and understandability. The questionnaire included measures of Internet use, environmental dynamism, and strategic flexibility. The measures focused on capturing perceptions of top managers about their companies. Executive cognitions are assumed to define reality for their organizations, especially in the context of small businesses. This approach is consistent with Day and Nedungadi (1994) and others who note the significance of perceptual aspects of managerial decision-making in the competitive strategy domain.

Hierarchical regression analysis was used to test the hypotheses. For the strategic flexibility criterion variable, either the use of Internet technology for communications or for transactions was entered in the first step. In step two, dynamism was then entered. Finally, as a means of testing the moderating effect of dynamism on either the use of Internet technology for communications or transactions, the interaction terms

(communications x dynamism or transactions x dynamism) were entered in step three.

The results of the regression analyses are presented in Table 2. Hypothesis 1, that dynamism will moderate the relationship between the use of Internet technology for communications and strategic flexibility, is supported by the data. After controlling for the direct effects of communications and dynamism, the communications x dynamism interaction significantly explained an additional amount of variance in strategic flexibility ( $R^2$  change significant at the  $p < .05$  level). Such effects ( $R^2$  changes .02 - .03) are within typical ranges reported for moderator effects in non-experimental studies (Champoux and Peters, 1987).

In order to identify the nature of the interaction, we plotted slopes for companies identified in the upper third for dynamism (Mean = 5.44) and lower third for dynamism (Mean = 3.10). Figure 1 displays the interaction effect on strategic flexibility. Consistent with expectations, for firms in more dynamic environments, the use of Internet technology for communications positively influenced strategic flexibility. Subgroup analysis also confirms these findings with the correlation between the use of the Internet for communications and strategic flexibility much higher for the high dynamism group ( $r = .52, p < .01$ ) than for the low dynamism group ( $r = .16$ ).

Hypothesis 2, that dynamism will not moderate the relationship between the use of the Internet for transactions and strategic flexibility, is also supported by the data. After controlling for the direct effects of transactions and dynamism, the transactions x dynamism interaction did not explain any additional amount of variance in strategic flexibility ( $R^2$  change was not significant).

## DISCUSSION

The present study extends prior IT-strategy

**Table 1 - Means, Standard Deviations and Correlations**

Variable	Mean	S.D.	1	2	3
1. Internet Use for Communications	3.65	1.66			
2. Internet Use for Transactions	3.40	1.67	** .66		
3. Strategic Flexibility	4.69	.98	** .32	* .18	
4. Environmental Dynamism	4.26	1.13	** .27	** .35	** .27

\* = statistically significant at .05

\*\* = statistically significant at .01

**Table 2 - Hierarchical Regression Results for the Influence of Internet Use Variables and Dynamism on Strategic Flexibility**

<u>Use of Internet for Communication</u>	R <sup>2</sup>	F-value
Strategic Flexibility = (.32**) Communications	.10**	16.57**
Strategic Flexibility = (.26**) Communications + (.20*) Dynamism	.14*	11.51**
Strategic Flexibility = (-.35) Communications + (-.13) Dynamism + (.78*) Communications x Dynamism	.16*	9.30**
<u>Use of the Internet for Transactions</u>		
Strategic Flexibility = (.18*) Transactions	.03*	4.98*
Strategic Flexibility = (.09) Transactions + (.24**) Dynamism	.08**	6.34**
Strategic Flexibility = (.15) Transactions + (.26) Dynamism + (-.08) Transactions x Dynamism	.08	4.21**

Note: Standardized coefficients are in parentheses.

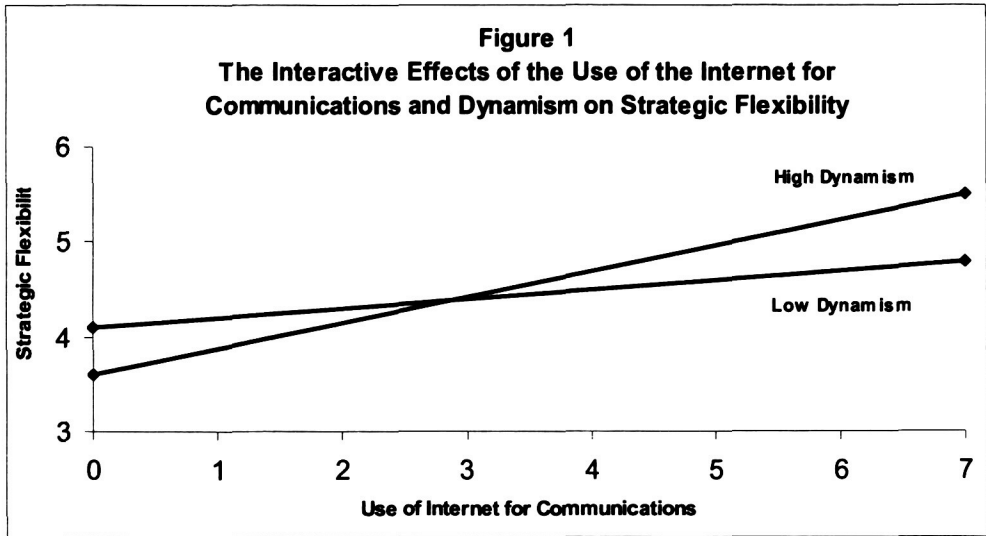
\* p<.05

\*\* p<.01

research which raised questions concerning the nature of benefits as well as limiting conditions, which are particularly relevant for small businesses as they struggle to integrate Internet technology into their strategy to achieve or sustain competitive advantage. This research effort begins to address this issue by assessing the effects of Internet use for B2B and B2C transactions and communications on strategic flexibility in static and dynamic environments. Strategic flexibility has been identified as being essential for small businesses in

general and small, growth-oriented businesses in particular (Hatch & Zweig, 2001). This paper contributes to the literature by addressing the issues of how and when Internet use promotes strategic flexibility. The results suggest that small businesses can best improve their strategic flexibility in dynamic environments by focusing on Internet applications that improve communications.

Zack (1999) identified what he termed a strategic gap, or the difference between what



a firm “must do” and what it “can do.” What a firm must do dictates what a firm “must know,” a concept clearly related to that of a knowledge gap, or the difference between what a firm must know and what it presently knows. Bridging the strategy gap is only possible by first bridging the knowledge gap (Zack, 1999). Zach’s (1999) concepts of strategy gap and knowledge gap clearly relate to strategic flexibility. A firm cannot proactively anticipate needed changes if it doesn’t know what it needs to know and it cannot react to needed changes if it is unable to do what it must do.

Internet applications offer tools to small businesses that can be used to close the knowledge gap. Bhandari et al. (2004) add that a close focus on customers should clearly help small businesses close the knowledge gap. Consistent with this recommendation, we find in this study that Internet use of communications offer the greatest benefit to strategic flexibility, but only in dynamic environments. Significant knowledge gaps are more likely to occur in dynamic than static environments, given obvious differences in rates of change. Accordingly, our recommendation to small business owners and managers facing dynamic environments is to seek to bridge

the knowledge gap by using Internet communication tools, especially those that significantly improve market-sensing capabilities.

Recall that we did not expect dynamism to moderate the relationship between using the Internet for transactions and strategic flexibility. Results supported this expectation. Our reasoning for the expectation of no significant relationship between Internet transactions and strategic flexibility under dynamic conditions was that, in contrast to Internet usage for communication, using the Internet for transactions is not as likely to serve as a critical market-sensing activity for the small firm. That is, the typical order-taking, order-processing of small firms is more routine and static in nature in comparison to the more dynamic Internet communication function, and therefore not as likely to be implicated in strategic flexibility.

**Research Implications**

This study employed cross-sectional, self-report measures of small business managers’ perceptions of measured constructs. Although the appropriateness of examining managerial representations in the





competitive strategy area is well accepted, particularly in the small business arena where the owner/manager's perceptual reality typically defines the reality of the firm, future research could address design and measurement issues. For example, longitudinal designs employing additional objective measures beyond the ones employed in the present study would prove useful. Specifically, employing firm performance indicators would allow for an examination of the more extended "chain" of constructs from Internet use to strategic flexibility to performance.

The integration of additional strategy constructs such as aspects of market orientation (i.e., competitive information orientation) and learning orientation with Internet use and strategic flexibility could prove fruitful as these constructs have been implicated in organizational change in turbulent environments. Further, what other technologies beyond using the Internet might impact a small businesses' ability to adjust to a changing environment? Taking a more fine-grained approach by explicating Internet-based information to communicate with customers and suppliers as well as how the information is used would also be interesting.

In conclusion, understanding the benefits and limiting conditions of Internet use will continue to be a significant topic within the small business sector. It is hoped that the present study, which considers the affect of Internet use on strategic flexibility under different environmental conditions, will contribute to future efforts aimed at increasing understanding of the dynamics of competitive advantage for small businesses.

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