

## **Invisible Opportunities and Irreversible Trends**

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*Small firms are always vulnerable to complex technological change that may render their existing business model obsolete. This paper emphasises the need to understand how the Internet's ubiquitous World Wide Web is impacting on their operating environments. Consideration of evolutionary theory and the absorptive capacity construct provides the foundation for discussion of how learning and discovery take place within individuals, firms and the environments that interact with. Small firms, we argue, face difficulties identifying what routines and competencies are best aligned with the seemingly invisible dominant designs that support pursuit of new enterprise in web-impacted environments. We argue that such difficulties largely relate to an inability to acquire external knowledge and the subsequent reliance on existing internal selection processes that may reinforce the known, at the expense of the unknown. The paper concludes with consideration as to how managers can overcome the expected difficulties through the development of internal routines that support the continual search, evaluation and acquisition of specific external knowledge.*

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### **Introduction**

How do certain firms sense, interpret, and respond to significant environmental change prior to observable trends emerging? Why is it that other firms seem helpless to react to identifiable environmental change, as if ignorant of new ideas that diffuse their marketplace? This paper aims to contribute answers to both of these questions using evolutionary theory (Aldrich, 1999) to illustrate the social context within which small firms operate, and absorptive capacity (Zahra & George, 2002) to highlight the potential difficulties that may prevent optimal learning in changing environments. In doing so, this paper argues that while many firms confronting significant environmental change face fatal maladjustment of routines and competencies, the internal capabilities of other firms may enable realignment of existing routines and competencies to meet environmental change, thereby having the control of their own destinies. The emergence of the Internet's ubiquitous World Wide Web (the web) is proposed to be an event responsible for significant environmental change.

The context of the discussion is with regards small place-based firms operating in web-impacted environments, i.e. firms whose operations have historically been determined by and confined to their geographical location and, environments characterized by new innovative entrants who use the web's technologies to provide unprecedented and unique consumer value. This includes firms competing in both service and product markets. Within this context, we argue that the development of optimal working knowledge by small firms is determined through the matching of internal capabilities with the external environment. Given that outcomes related to adoption of the web are uncertain and dependent upon such a match (Garud, Nayyar & Shapira, 1997), the process of learning is critical to exploiting the web's technologies. Davenport and Prusak define a firm's working knowledge as:

...a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for incorporating new experiences and information. It originates and is applied in the

minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms (1998:5).

This definition of knowledge suggests that knowledge simultaneously resides not only within individuals but also the firm and its activities. As such, small firm learning is seen as an interactive process occurring across entities (e.g. individuals, routines, firms, populations of firms, and ecosystems) that is governed by specific events (e.g. adaptation and entrepreneurship). Consistent with Aldrich and Martinez, we propose that small firm learning is subsumed within the evolutionary processes of variation, selection and retention given that:

Evolutionary theory unites in a single coherent framework a concern for the entrepreneurial outcomes and the processes and contexts making them possible. An evolutionary approach studies the creation of new organizational structures (variation), the way in which entrepreneurs modify their organizations and use resources to survive in changing environments (adaptation), the circumstances under which such organizational arrangements lead to success and survival (selection), and the way in which successful arrangements tend to be imitated and perpetuated by other entrepreneurs (retention)(2001:42).

This view of small firm learning recognises the adaptive role of the owner/manager in response to both environmental uncertainty and their prior actions (Deakins & Freel, 2003). As such, optimal learning behaviours stem from generative learning behaviours in which firms learn through the meaningful integration of new and old knowledge related to their experiences. From an evolutionary point of view, mature small firms that are slow (or unable) to adapt to the environment's endogenously generated change, may fail to survive. Alternatively, we posit that

small firms with specific knowledge generating routines may be better placed to adapt to such change through transformation of their goals, boundaries and activities to achieve a better fit between the firm and its environment (Aldrich, 1999). The presence of the dynamic absorptive capacity capability is argued to provide small place-based firms with the ability to adapt to web-impacted environments. Most commonly defined as the firm's ability to value, assimilate, and apply new knowledge (Cohen & Levinthal, 1990), absorptive capacity has recently been reconceptualized by Zahra and George as "a set of organizational routines and processes by which firms acquire, assimilate, transform, and exploit knowledge to produce a dynamic organizational capability" (2002:186). Within this new definition are two specific components, potential (i.e. acquisition and assimilation) and realized (i.e. transformation and exploitation) absorptive capacity. It is through these two components that the value and nature of small firm learning can be discussed from an evolutionary point of view.

We propose that a small firm's willingness and ability to acquire and assimilate external knowledge (i.e. potential absorptive capacity) related to the web, provides exposure and awareness to crucial variations that may potentially be incorporated into new business models. Also, we suggest that without the ability to transform and exploit existing and newly acquired knowledge (i.e. realized absorptive capacity), existing routines and competencies are likely to be retained, thus preventing adaptation to web-impacted environments. Therefore, through the use of evolutionary theory and the absorptive capacity construct, this paper examines factors that may prevent the development of optimal working knowledge from which adaptation to web-impacted environments by small place-based firms is possible. This paper now considers the emergence of the web and its significance for small place-based firms. Then, the potential benefits of absorptive capacity are discussed with the difficulties and consequences of not developing absorptive capacity also considered.

Finally, the issue of how to develop potential absorptive capacity within small firms lacking prior knowledge of web-like technologies is canvassed.

### **The Web, A Fad Gone Wrong**

Despite a gap between the adoption and true exploitation of the web by many firms, it has forever changed the business environment (Sawhney & Zabin, 2001). Ries and Trout note that "like a wave, a fad is very visible, but it goes up down in a big hurry. Like a tide, a trend is almost invisible, but it's very powerful over the long term" (1994:121). Clearly while many dotcoms represented fads, the Internet is a very powerful force that is increasingly shaping the business landscape. Since the mid 1990's the impact of the web upon society has been a matter of increasing discourse. Marketspace has emerged as a challenger to the traditional marketplace, with information-based value creating opportunities apparently available to all (Rayport & Sviokla, 1994). The web has grown at an unprecedented scale and speed with many firms caught off guard (Aldrich, 1999) and finding it increasingly difficult to incorporate it into their operations. Survival within web-impacted environments would require continual business process transformation (Tapscott, 2001) through developing new knowledge bases to achieve reconfiguration of the value chain (Benjamin & Wigand, 1995; Afuah & Tucci, 2001). Within this era of technological ferment, exploitation of the web by small firms was also expected (Hamill, 1997), small firms defined by McLennan (1999) as having 19 or less employees.

Amidst the excitement, others recognised patterns of change not so unlike those that accompanied the emergence of the telephone and electricity industries (Shapiro & Varian, 1999). With the old laws of economics emerging from a brief hibernation to win support (Porter, 2001), challenges to existing fundamental marketing theories (e.g. Brännback, 1997) subsided as existing textbook theories were increasingly adapted to provide plausible explanations of the web's presence. However, during the past seven years while firms have experimented with

the web, an irreversible environmental change has commenced with certain industries (e.g. banking, stockbroking, bookselling and auctioneering) transformed forever. Four issues now confront firms regardless of their intentions to include or ignore the web in their future operations.

Firstly, competition for the consumer's mind in the marketspace has been intense with single brands dominant, pervasive and ever threatening to traditional place-based firms (Ries & Ries, 2000). Where it was once acceptable to be ranked second, third, or fourth in a product market, the likes of Schwab.com, Amazon.com and Ebay.com have made such positions increasingly less sustainable. Secondly, as such global brands increase their reach they increasingly raise consumer expectations for service delivery, convenience and competitive pricing. However a double-edged sword has clearly been drawn. Marketspace firms find it difficult to deliver personalised service, and marketplace firms are struggling to satisfy consumers with ever increasing knowledge of market offerings (Chatterjee, 2000). Thirdly, the segmentation of consumers looms as problematic. Communication to homogeneous groupings of consumers on the web is difficult due to increased interactivity between sender and receiver (Hoffman & Novak, 1996). Finally, it would appear many consumers are undergoing an evolutionary process, changing in composition to be part traditional consumer, part cyberconsumer. In comparing these new consumers to the mythological Greek centaur, Wind, Mahajan and Gunther (2002) suggest that consumer behaviour has forever been altered by the emergence of the web. Consumers it seems, will choose from the web what improves their lives, and leave behind what does not. The consequences of such change in consumer behaviour are the difficulties that occur in segmenting markets based on observable and stable preferences.

In the face of such environmental upheaval, opportunities would seem endless for existing small firms and new

entrants to pursue entrepreneurial endeavours. The starting point, as with all entrepreneurial marketing activities, is claimed to be an appreciation of consumers' needs and wants (Hoffman & Novak, 1997; Lodish, Morgan & Kallianpur, 2001). It was assumed that armed with intimate knowledge of consumer needs and wants, market-oriented firms (see Narver & Slater, 1990; Jaworski & Kohli, 1993) could develop new routines and competencies that satisfied their consumers' changing needs and enable adaptation of the firm to its changing environment. However, Connor (1997) and Wrenn (1997) note that where radical technologies significantly alter market conditions, the ability of consumers to articulate their latent needs is very questionable. Not surprisingly, little evidence presently exists to support this prescriptive view of small firm exploitation of the web. Conversely, growing evidence suggests many small firms in advanced economies have experienced difficulties exploiting the web (Vescovi, 2000; Chaston, Badger, Mangles & Sadler-Smith, 2001; Plume, 2001; Jones, Hecker & Holland, 2002; Van Beveren & Thomson, 2002).

Typically, resource constraints of time, capital and knowledge prevent small firm exploitation of the web. It would appear that despite the good intentions of small firms (market-oriented or not), their existing marketplace knowledge base might have less currency in marketspace. Given that the long-term survival of all firms depends upon the fit between their routines and competencies and the characteristics of their operating environment (Aldrich, 1999), the viability of many small place-based firms may be in doubt. The true nature of the challenge that may prevent small firm exploitation of the web is now discussed from an evolutionary point of view with specific consideration of the absorptive capacity construct.

### **Absorptive Capacity: To Sense and Respond**

Based upon their synthesis of the absorptive capacity literature, Zahra and George define absorptive capacity as "a set

of organizational routines and processes by which firms acquire, assimilate, transform, and exploit knowledge to produce a dynamic organizational capability" (2002:186). When considered from an evolutionary point of view, absorptive capacity theory highlights critical activities that would greatly influence small firm adaptation in web-impacted environments. Absorptive capacity theory identifies knowledge development capabilities (and deficiencies) similar to the generic evolutionary processes "of variation, selection, retention and struggle that jointly produce patterned changing in evolving systems" (Aldrich, 1999:2). The remainder of this paper, with reference to the proposed association between both absorptive capacity and evolutionary theory, explores the small firm adaptation to web-impacted environments. Several perceived barriers to adaptation provide examples of how maladjustments with the operating environment (Santos, 2002) may occur, from which small firm survival may be threatened.

Since the seminal contribution of Cohen and Levinthal (1990), absorptive capacity has been associated with the acquisition and use of knowledge to enhance firm performance through increased learning and innovation (e.g. Keller, 1996; Liu & White, 1997; Kim, 1998). Absorptive capacity, as defined by Zahra and George (2002) has four dimensions, the acquisition, assimilation, transformation and exploitation of knowledge. These four dimensions allow observation of specific firm capabilities that would typically influence the potential adaptation of a firm. Two subsets, potential and realized absorptive capacity, host the four dimensions. Potential absorptive capacity (i.e. acquisition and assimilation) is the capability to sense what information is relevant, acquire it, analyse it, comprehend it and internalise it. Alternatively, routines that blend existing knowledge with newly acquired knowledge to gain new insights to opportunities or problems and provide structured pathways to develop new competencies through knowledge exploitation are associated with realized absorptive capacity (i.e.

transformation and exploitation). So while potential absorptive capacity does not ensure knowledge exploitation, it does reduce the firm's ignorance of extant variations that may increase the fit between the business model and the changing environment. Correspondingly, the value of routines associated with realized absorptive capacity is largely reliant upon the nature of the external knowledge introduced. The assertion is that both subsets of absorptive capacity increase firm responsiveness to environmental change and facilitate adaptation.

### **Ignorance of the Invisible**

Currently, an era of technological ferment exists. Many existing small place-based firms are experimenting with varieties of web applications. Four basic business models are possible; stay place-based without connecting, stay place-based and use a shopping mall (portal) to exploit the web, integrate the web within existing place-based assets, or reject place-based operations in favour of a pure web model (e.g. Amazon.com). As yet however, a dominant design for successfully conducting exchange on the web, regardless of the business model chosen, seems elusive. Tushman and Murmann (1998) note new dominant designs (i.e. trends) are dependent upon patterns of variation, selection and retention at the subsystem level that ultimately effect firm and industry change. Given the resource poorness of many small firms, identification of a particular business model that will be both efficient and effective is a major challenge. Also, the volume of web-based exchange in many industries is still relatively low restricting the observability of variations upon which new dominant designs are conditional. This paper posits that the degree of potential absorptive capacity will influence exposure to and appreciation of such variations.

This capability is deemed important given that dominant designs are only known in retrospect and then only after only they account for over 50% of exchange against competing designs (Anderson & Tushman, 1990). Despite optimism that

transformation of the firm during such uncertainty is plausible (Ruef, 1997), our thesis is that many firms, and especially small firms, will experience difficulty learning in rapidly changing environments. This view is premised upon recognition that small firm exploitation of a complex innovation such as the web is typically dependent upon external knowledge. In the absence of acquiring and strategically using external knowledge, it is possible that the web may only represent an efficient medium for communications and acquiring generic information (Jones et al., 2002). Even in situations where small firms experiment with sub-systems components (e.g. payment devices, delivery capabilities, real-time capabilities, advertising and communications) and the linking mechanisms that comprise the product or service, learning by doing is no guarantee of adaptation.

Adaptation by small firm exploitation of the web requires the development of different knowledge bases, typically from new knowledge sources. In the absence of new knowledge, exploitation of the web is limited by the technological paradigm within the firm (Dosi, 1984) that governs the normal patterns of problem solving or opportunity exploitation. Such paradigms may prevent the firm from fully appreciating the potential of the web's technologies regarding new value creation. Without access to external knowledge, firms are less likely to develop the necessary potential absorptive capacity required to understand the extent to the web's possible application. Given that small firms typically have less internal resources at their disposal to evaluate environmental threats and opportunities (Lang, Calantone & Gudmundson, 1997), reliance upon external sources may be intensified. Under such circumstances the web, despite being a source of new variation and a catalyst to altering the existing selection criteria (Aldrich, 1999), may also pose a threat.

### **Awareness yes, exploitation no**

The emergence of the web can be viewed as a technological triggering event, expected to promote firms to increase

their efforts to seek external knowledge from the market related to developing forms of web-based value for their customers. However, in many cases the required knowledge base is new and not merely an extension of the existing. Consequently, acquiring knowledge from a novel domain without prior knowledge challenges the ability to develop potential absorptive capacity (Cohen & Levinthal, 1990). Compounding the situation is the difficulty small firms face in locating technology linkers who can understand how their core activities relate to web-based opportunities and guide their exploitation (Plume, 2001; Jones et al., 2002). The technology linker is the person/s responsible for transferring specific knowledge related to exploiting the web's technologies from the market to the firm (Marshall & Reday, 2001). It is common for this role to be performed by Information Technology consultants. However, given the limited scope of small firm operations, the responsibility of this role may fall to persons without the necessary ability to adequately transfer such knowledge, for example, the local Internet Service Provider (Jones et al., 2002).

Therefore, it is possible that the firm may not acquire the specific knowledge required to exploit the web's technologies. This may result in existing internal selection processes promoting persistence rather than change. In such situations small firms could become stymied, unable to adequately understand variations and ignorant of external environmental selection forces. Penrose suggests that an imbalance between embodied technology (e.g. the web's hardware) and disembodied technology (e.g. know-how of the web) would prove detrimental to optimally developing new technologies, stating that:

Both an automatic increase in knowledge and an incentive to search for new knowledge are, as it were, 'built into' the very nature of firms possessing entrepreneurial resources of even average initiative. Physically describable resources [i.e. the web] are purchased in the market for their known services; but

as soon as they become part of the firm the range of services they are capable of yielding [i.e. business model variation] starts to change. The services that the resources will yield depend on the capacities of the men using them, but the development of the capacities of the men is partly shaped by the resources men deal with [i.e. prior knowledge]. The two together create the special productive opportunity of a particular firm. The full potentialities for growth provided by this reciprocal change will not necessarily be realized by any given firm, but in so far as they are realized, growth will take place that cannot be satisfactorily explained with reference only to changes in the environment of the firm" (1959:78-79).

Thus, the interaction between potential and realized subsets of absorptive capacity endows capabilities that enable the exploitation of new technologies. Without such capabilities, firms intent on exploiting the web may gain only sub-optimal returns from their initial investments. While such returns (e.g. e-mail reducing prior communication costs) may contribute towards the internal efficiency of the firm, they do not prevent maladjustment within web-impacted environments and a potential date with evolutionary demise.

### **Tends that Dominate**

The web has been the catalyst for much variation within many industries with small firms seemingly under constant pressure to incorporate the web into existing operations. Unlike previous forms of directly observable competition, emerging web-based business model variations that are more favoured by consumers (e.g. Amazon.com) remain largely unobservable to many small place-based firms. It is likely that change agents who promote the web's virtues may introduce it as an intentional variation. However, as previously noted, little evidence exists to support small firm selection of new routines and competencies associated with the

exploitation of the web. This may be due an inability to acquire the know-how knowledge (e.g. information necessary to fully exploit the web) and principle knowledge (e.g. information relating to the web's theoretical underpinnings) (Rogers, 1995) vital to assimilating the web into existing routines and competencies.

Again a firm's ability to develop potential absorptive capacity may be limited by a lack of prior knowledge (Cohen & Levinthal, 1990) related to the web. Consequently, increased complexity of learning may result in firms struggling to acquire, comprehend and implement knowledge associated with new routines and competencies (McKelvey, 1982). Barriers may exist through geography such as an inability to adequately observe the operations of marketplace firms, and through legalities such as Amazon.com's patented one-click payment system. These barriers can decrease exposure to variations thereby restricting a firm's ability to change. This is because the firm must bridge the knowledge gap between what is known and what is not through difficult to acquire and assimilate (and therefore difficult to transform and exploit) foreign knowledge bases. It is also possible that routines imprinted into firms (Tucker, Singh & Meinhard, 1990) prior to the emergence of the web may not support the learning behaviors required to adapt to the web. Again, the suggestion is that small firms that demonstrate the ability to develop potential absorptive capacity are more likely to expose themselves to variations from which new business models may develop.

Just as potential and realized absorptive capacity have a symbiotic dependence upon each other to increase firm performance, firm transformation "involves a major change in an organization over time and represents a substantial variation, planned or unplanned, that has been selected and retained" (Aldrich, 1999:194). Despite the fact that variation and retention are at odds with each other, all three conditions are required to enable firm adaptation to the web. So it would seem that a small place-based firm's inability to discern

variations within web-impacted environments, may represent a major obstacle to their survival.

As a mechanism for commercial exchange, the web represents a technological breakthrough capable of jolting existing selection criteria through recognition of external opportunities or threats. Without such disruption, internal selection criteria may continue to act as "vicarious representatives of past external criteria that are no longer relevant" (Aldrich, 1999:174). Perceived as either a competence-enhancing (opportunity) or competence-destroying (threat) technological event (Tushman & Anderson, 1986), the web may strengthen or weaken a firm's position within an industry. However, Aldrich (1999) with reference to Hunt and Aldrich (1998), suggests an alternative view exists to Tushman and Anderson's dichotomy. The web can be viewed as a competence-extending innovation that permits:

Existing firms to pursue new opportunities that allow them to stretch their existing competencies into complementary ventures. Unlike competence-enhancing opportunities, these new ventures are not a straightforward extension of their current routines and competencies and therefore cannot be pursued with minimal effort. At the same time, however, these opportunities are not direct threats to their existing business pursuits and competencies. Instead, they are potential opportunities for expanding their domains by pursuing new markets through exploitation of new competencies (1999:315).

From this perspective, the ability of small firms to develop absorptive capacity would seem central to their development and exploitation of the new knowledge bases from which new variations would be selected. For those firms who sense industry variations in routines and competencies, two approaches to the web are likely; ignore emerging variations or adopt a Lamarckian posture to

intentionally develop the web. Given the focus of this paper to discuss potential obstacles to small firm survival in web-impacted environments, the latter is considered.

Consistent with the basic tenets of the absorptive capacity, the Lamarckian evolutionary view holds that “organizations exist in environments and are responsive to environmental forces” (McKelvey, 1982:242). From this perspective, small firms may seek to identify specific niches that promote the value of their physical assets, use the web’s reach to enter new markets, or a combination of both. However, despite a small firm’s deliberate intention to consider new variations, external selection pressures may prevent transformation occurring. Grant (1985) and Amburgey, Dacin and Kelly (1994) suggest that external selection processes can be considered in three general patterns, stabilizing, directional, and disruptive. As previously noted, dominant designs for small firm use of the web are by and large yet to crystallize. Therefore, stabilizing selection (e.g. the reduction of variance) is not a significant issue as yet. However, directional selection pressures (e.g. movement of the mean along some dimension) and disruptive selection pressures (e.g. removal of some firms from the population’s extreme interior distribution along some dimension to form a new population) are likely to impact small firms.

Given an ongoing change in consumer behavior, small firms who sense (and respond to) such change may be favoured by directional pressure more so than those who do not. Also, in the instance of firms attempting to incorporate the web’s technology into existing routines and competencies, those with a history of previous change may do so more efficiently than firms with strong overriding internal selection processes. It may also be that firms, irrespective of size, with access to specific resources (e.g. capital, technical knowledge and learning capabilities) that support exploitation of the web will be favoured. For example, large firms may enter new (and distant)

markets while small firms may exploit their unique closeness to their customer base. Firms that have neither access to the resources required to expand, or have in place strong customer relationships, may be disruptively selected out of their industry.

Evolutionary transformation can be observed through content changes within the firm’s goals, boundaries and activities (Aldrich, 1999). While it may appear many small firms have made changes within their activities (e.g. email and increased information searching capabilities) that potentially impact the nature of their knowledge processing, it is the scope and depth of such change that matters (Aldrich, 1999). A web presence without obvious strategic intent may create awareness, but technology is not a substitute for strategy (Rangan & Adner, 2001). Given the difficulty in isolating and communicating with a specific target market on the web (Hoffman & Novak, 1996), transformation of the firm cannot be achieved by merely connecting to the web. Clearly, the firm’s goals and the domain of operation must be matched with consideration of boundary expansion or contraction and the development of activities (e.g. routines and competencies) that support the process of transformation. Such a process would be complete when the knowledge required to replicate this variation is embodied within the firm (Aldrich, 1999).

In summary, survival within web-impacted environments cannot be guaranteed by the presumption of knowledge, and is more likely to be denied through the ignorance of variations present within the operating environment. While directional and disruptive selection pressures may overwhelm firms, access to and exploitation of external knowledge increase awareness of variations and potentially decrease the influence of external selection pressures.

### **Managing in Web-Impacted Environments**

The discussion thus far suggests that managers of small place-based firms face a daunting task to determine what is a fad, a

trend, and what is relevant to their individual operations. Behind all manner of decision making within firms lay processes and routines that expose the decision makers to perceptions of their environment, be they flawed or accurate. Given that trends are complex functions of multilateral behaviour (Smircich & Stubbart, 1985) and are difficult to determine in advance, the first major task is to determine how and why the current realities were formed.

Potential absorptive capacity has a cumulative influence upon realized absorptive capacity and therefore the firm's exploitation of profitable opportunities. If, as it appears, small firms are experiencing difficulty developing awareness of and gaining appreciation of variations in new business web-based models, the development of potential absorptive capacity represents a significant starting point. Comprised of knowledge acquisition and assimilation capabilities, potential absorptive capacity provides the gateway to internalising and comprehending external knowledge for competence-extending innovations such as the web. A clear challenge remains for those firms whose histories are without experience with web-like technologies. To move beyond a potentially inadequate technological paradigm, boundary-spanning behaviours of inquiry must be present. The failure to do so may result in existing firm knowledge ensuring the replication of current practice and therefore blocking out open consideration of new variations from which possible adaptation is possible.

In the absence of persons whom adequately perform the role of technology linker to small firms, the owner/manager must act in this capacity by default. Ensuring a link exists between the sources of technology and the ultimate users of technology increases exposure to external knowledge related to the web's disembodied technology. However, this process requires consultation with employees, customers and suppliers to ensure application of the web's technologies is considered from the perspective of the firm's existing

relationships and the future relationships they wish to create. Such a process enables internal questioning through which the firm's identity, purpose, goals and opportunities are addressed. It is critical that previously held assumptions are open to question and that tolerance of experimentation and playfulness during the process occurs.

It is important to contemplate the firm's current goals, boundaries and activities with regards to changes that may be emerging in web-impacted environments. Such consideration should enable the firm to develop intensity and direction in their search for external knowledge, and therefore increase the likelihood of developing potential absorptive capacity (Kim, 1997). Throughout this process, dilution of current internal selection criteria is possible thereby enabling new variations to be genuinely considered. Small place-based firms who fail to become knowledgeable with respect to the web face the prospect that consumers may bypass their value proposition choosing other firms whose value offering has evolved to meet their changing needs. Given that adaptation requires a significant variation, planned or unplanned, that once selected is retained, awareness of alternative business models variation is critical.

### **Conclusion**

Recognition of what are the relevant trends associated with the web would seem dependent upon learning processes not typically found within many small firms. Therefore, adaptation of small place-based firms whose operations occur within web-impacted environments cannot be assured merely on the basis of the development of a web page. Traditional market-oriented behaviours associated with market-oriented firms may become less valuable (Slater, 2001) with increasing reliance upon new market sensing capabilities to develop awareness of emerging variations. The development of such capabilities should not be taken for granted, as they require interaction with new bodies of external knowledge that are difficult to acquire.

In the absence of technology linkers, small firms may remain unaware of emerging trends through which new value is possible. Therefore, the presence of potential absorptive capacity is critical in providing the firm with awareness of market variations. However, potential absorptive capacity is an intangible resource that cannot be purchased from the market; it must be developed from within the individual firm. The presence of entrepreneurial capabilities may well provide small firms with the cognitive skills to inquire, explore and discover knowledge related to market opportunities from novel domains, such as the web. Such capabilities would provide the impetus for developing potential absorptive capacity and may well support the coordination and allocation of appropriate resources to exploit recognised market opportunities. The task perhaps confronting the majority of small firms whose entrepreneurial disposition is at best that of reproducer of existing organizational forms (Aldrich & Kenworthy, 1999) rather than innovator, is to challenge their own identity, to question their current and future direction and seek affirmation from their major stakeholders (e.g. their employees, customers and suppliers) as to the value of their market offerings. Only through such examination can the necessary intensity, speed, and direction of inquiry be established that would support the consideration of new variations from which adaptation to web-impacted environments depends.

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