Cultural Influences upon Marketing Intelligence Generation through the Internet and Value Creation in Business-to-Business Organizations: An Empirical Investigation

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Abstract

This paper investigates the relationship of marketing intelligence generation through the Internet with value creation within a business network. The moderate effect of organizational culture upon the aforementioned relationship is also considered. Hypotheses derived from multiple streams of literature are tested through a series of regression, T-test analyses and structural equation modeling (AMOS package). The research findings provide evidence that the Internet may be used as a virtual business network which brings to inter-organizational life new opportunities for business relationship building and new value creation perspectives. We also found that organizational culture may moderate the relationship orientation-value creation equation. Important implications are also considered.

Keywords: Marketing Intelligence through the Internet, value creation, b-to-b organizations

Introduction

It has been almost a commonplace in the contemporary marketing literature that the marketing concept and value creation are well articulated to marketing intelligence generation, treated as a matter of intelligence gathering and dissemination among organizational members within a business network (Slater and Narver 2000; Srivastava et al. 1998). For example, Lambert et al. (1998) following a value chain approach to b-to-b marketing, is stressing the important role of information exchanges for the flow of activities between the actors involved in a business to business context.
However, searching for new needs and changes in the market involves information exchange of a rather highly unstructured content, which frustrates codification and routinization of communication messages (Karayanni 2000). Information exchanges of this nature may be largely conveyed through rich communication media, such as face-to-face communication, or the telephone. At the same time, a few marketing theorists proclaim that the Internet is a rich, not a lean communication vehicle, which preempts its predominance over alternative interorganizational communication networks in enabling marketing orientation (Zaremba 1996). Although that the Internet marketing literature enumerates some notable examples of organizations that may have successfully implemented business networking, product customization and customer relationship management over the Internet, these examples are rather sparse and merely indicative of some yet unshaped rules for business success (Karayanni 2004). Thus, quantitative empirical investigation examining the compatibility of the Internet with the marketing oriented strategies, business networking and value creation, whatsoever, seems to have fallen behind. Furthermore, the extant literature on value, as well as on the measurement of value creation in B-To-B relationships remains in its infancy (Beverland and Lindgreen 2003).
Concurrently, a few marketing theorists proclaim that market orientation may be more, or less beneficial to organizations, depending on the cultural context of an organization. An organization's culture is built on the shared values and beliefs of its members and manifests itself in the ends the organization seeks (i.e. strategic goals) and the means it uses to attain them (i.e. the use of the Internet).

However, inspection of the relevant literature suggests that very little is currently known about these issues. With this study, we start filling this void. More specifically, the purpose of this study is to examine the relationship of organizational culture with marketing intelligence generation and value creation among business-to-business organizations, in the context of the Internet, regarded as a virtual business network. Specifically it examines:
a) The relationship of marketing intelligence that may be generated through the Internet, reflecting intelligence gathering from the market and intelligence dissemination among interorganizational partners, with value creation, as expressed in terms of enhanced customer relations, innovativeness, productivity and efficiency, as drawn from the relationship marketing, the marketing orientation and the Internet literatures. These relationships would place empirical evidence on the Internet's ability to be used as a relationship orientation tool.
b) To test the role of organizational culture as a predictor of the marketing intelligence generation through the Internet and, thereinafter, of value creation. Understanding the relationship between an organization's culture with the receptiveness of its organizational members to use the Internet in marketing intelligence generation, can provide greater insight into the successful implementation of this strategic IT, as a business network integrator.

Toward these ends we build upon existing literature pertaining to marketing orientation in business markets, organizational culture, value creation and the Internet and develop the research constructs and hypotheses.

The organization of the paper is as follows. The next section lays the groundwork by briefly reviewing the relevant literature on the study's constructs. The third section develops selective research hypotheses. The fourth section is concerned with empirical analysis. A concluding section summarizes the paper.

Background

Marketing intelligence generation
Marketing literature treats marketing intelligence generation as an information management issue (Jarwoski and Kohli 1993; Slater and Narver 2000). Furthermore, the importance of information is

overemphasized by a few researchers which sustain that we are running the information era in which information, or knowledge is seen as an asset replacing matter and energy as the primary resource of society (Glazer 1991; Bell 1973). Porter and Millar (1991) propose the concept of the information value chain, elevating information as the cornerstone in their popular IT conceptual model. A few researchers have built upon this model to sustain that information may be seen as an asset which moves across an 'intensiveness' continuum, the levels of which represent the various types of information associated (bundled) with products. At the end of this continuum, information is an asset which may be exchanged in its own right (not as a supplement of a company's product offering) (Glazer 1991; Hoffman and Novak 1994). Furthermore, the more the information intensity of a firm, the more the effects of the expansion in channel capacity and information will come to reshape the reigning business paradigm (Glazer 1991). This aspect is related to the notion of many researchers who have viewed the firm as an 'information processor' or as a 'knowledge system' for some time (Galbraith 1977; March and Simon 1958; Williamson 1975; Deshpande, Farley and Webster 1993; Miles and Snow 1986). Rayport and Sviokla (1996) are narrowing the context of such information intensive organizations to the environment of electronic trading systems. More specifically, they argue that information shapes a new information world, which is called the virtual world, is distinct from the physical world and has been primarily risen through the electronic commerce (i.e., the Internet). In this virtual world, information may create new value for customers by serving a broader set of customer needs, establish new customer relationships and even spin-off new products. The value-adding steps are virtual, in that they are performed through and with information. Indeed, interoperable networks (i.e., the Internet) may leverage the proliferation of network organizations (Anderson and Narus 1991). In the same spirit, the Internet is a rich information medium imposed by the network demands and social interactions (Lee 1994).

Specifically, the management of information is a sequence of five activities: gathering, organizing, selecting, synthesizing, and distributing information. In this sense, information seems to be an issue of gathering and exchanging of the subject matter among interested parties which may belong to the same, or different organizations (i.e., network organizations) (Rayport and Sviokla1996; Huber 1984; Zaremba 1994; Day and Glazer 1994).
Furthermore, some researchers have viewed knowledge use (or information use) basically as a social exchange process (Dunn 1980; Zaltman 1979). On their study pertaining to the use of market research information, Deshpande and Zaltman (1982), citing other researchers, pool the activities around which such social exchanges occur into:

i) identification of knowledge needs or gaps (Lingwood 1979),
ii) translation of knowledge needs into research questions (Lindblom and Cohen 1979),
iii) actual conduct of research (Lazarfeld, Sewell and Wilensky 1967),
iv) storage/dissemination (Danziger 1979),
v) translation of research into action implications (Rein 1976),
vi) implementation of action implications (Weiss and Bucuvalas 1980), and,
vii) evaluation of knowledge implementation (Weiss 1980).

The first four categories are congruent to the aforementioned classification, whereas, the last three are issues pertaining to decision making and adaptation and are treated as consequences in this thesis.
Similarly, Huber (1984) refers to the "probing" and integration of information. Probing of the organizational environment for information tends to be ad-hoc and is not routinely gathered. Respective to this information mode is the aforementioned "marketing intelligence gathering".
A similar treatment of information as a process of acquisition and integration is also made by Day and Glazer (1993). More specifically, these researchers regard information as the core issue in their concept of market-driven learning organization, which they base on two processes: gathering and wide distribution of information so that it can be used properly. This may also include distribution to a memory repository –data bank- for later use. Thus, information is acquired, given meaning through interpretation, and either acted on immediately, or stored in memory for later use (Levitt and March 1988; Fiol and Lyles 1985; Huber 1991; Day and Glazer 1993).
Thus, the term "marketing intelligence integration" in this study is treated as a meaning focusing on the information exchanges concerning the members which interact in an interorganizational network. Thus, the Internet is treated as a tool for facilitating network information exchanges with the aim to enhance decision making. In such a case, it plays the role of an Intranet, or a DSS.

Following the aforementioned views, in this study we discriminate the management of information into two major categories, namely: marketing intelligence gathering and marketing intelligence integration. Drawing on the pertinent marketing literature we elicit that these may incarnate a firm's essential

capabilities to transform marketing resources into a firm's marketing assets, which more or less depict a relationship orientation for the firm. Specifically:

Marketing Intelligence Gathering

A few marketing scholars proclaim that value creation is articulated to marketing resources and marketing assets that are ultimately realized directly or indirectly from actors' interaction in the external environment, i.e. the marketplace (Srivastava et al. 1998; Day 1994). Such prominent marketing assets are the customer based assets and the internal based assets, as depicted by Hooley et al. (2003). The customer based assets include the ability to identify customer wants and build appropriate relationships with those customers (Day 2000). In the same spirit, a few theorists have adopted a capability view based on learning, discriminating between knowledge acquisition (intelligence gathering) sharing (intelligence integration) and application process (value creation, i.e., innovation ability). This knowledge is relative to relationship intelligence about customers and other stakeholders and reflects tacit knowledge and skills which are inherently difficult for competitors to copy or imitate (Slater 1996; Tuominen 2004). One such instance is when the salespeople communicate with their customers, in order to be informed of their needs, or complaints. In turn, they come back to their customers to provide them with company and customer information, that is, product catalogues and offerings, customer data etc. This piece of market information is non-routinized, is performed in an ad hoc basis and entails human interaction (Young 1996; Huber 1984). The E-mail is the prominent Internet tool to this purpose, since it is considered as the most ideal electronic trading system for interpersonal communication (Cunningham and Tynan 1993; Young 1996). It facilitates open, interactive, low-cost, interpersonal and effective bilateral business communication. For example, organizations may provide their WWW sites with the e-mail option for immediate customer feedback. By prompt response to certain customer problems, organizational members have the opportunity to be promptly informed about current customer needs and problems and to exchange information with customers in an efficient and effective way.

Marketing Intelligence Integration

It refers to the information processing throughout the organizations. It comprises the facets of transmission of decisions (which may be either unidirectional or, bi-directional) in order to be implemented and information feedback in order to evaluate decision implementation. It also refers to both structured (well-understood, recurring and measurable phenomena) and unstructured decisions (i.e., aiming to reducing ambiguity, to reaching a common frame of reference and entailing subjective information exchange). Hooley et al. (2003) view knowledge conversation (i.e. marketing intelligence integration) as the internal asset which is the necessary process for converting the marketing recourses into a firm's marketing asset. Moreover, Simon (1973) sustains that in the post-industrial society, the central problem is not how to organize to produce efficiently (although this will always remain an important consideration), but how to organize to make decisions – that is, to process information. Organizations use formal, lean and mechanistic information exchange strategies, in order to process information of structured content, which may be easily routinized. Examples of such information relates to administrative issues (e.g., regular electronic ordering, automatic stock replenishment or automatic billing and payment) which represent stereotyped processes that are susceptible to formalization/standardization and routinization. This kind of information may be efficiently processed through lean and mechanistic information exchanges means, namely through rules and regulations, formal information systems, special reports and planning (Daft and Lengel 1986; Galbraith 1973; Tushman and Nadler 1978). Nevertheless, when decisions are related to unstructured problems, then information integration may be enabled only through a relational information exchange strategy (Daft and Macintosh 1984; Mintzberg et al. 1973). This encompasses the use of rich information media, i.e., group meetings, integrators, direct contact, and of course, the Internet (Galbraith 1973; Lawrence and Lorsch 1967; Weick 1979; Lee 1994).
In this study, we focus on information integration regarding decisions of unstructured/strategic content (e.g., new market trends, new customer needs and competitors' movements). In this sense, information integration represents the necessary link between information acquisition about market trends and effective decision-making reflecting an innovative behavior (responsiveness to these market trends) (Huber 1984). The aforementioned information/decision issues are not susceptible of formalization/ standardization and routinization, therefore, they may not be served through mechanistic information exchanges. Thus, they may only be effectively served by relational communication vehicles (i.e., the marketing intelligence generation through the Internet examined in

this study) and by organizational forms that may be supportive (i.e., compatible) to relationship orientation.
Indeed, organizations may capitalize upon the e-mail tool of the Internet in order to diffuse rapidly information within their boundaries. This Internet tool may facilitate all the communication flows, namely the top-down, bottom-up and horizontal communication which is necessary for effective information integration (Zaremba 1994). To the extent it is used as and information integrator with decision support capabilities, the Internet is becoming a DSS for marketing managers (Huber 1984; Lee 1994).

Organizational Culture

Organizational culture has been defined as: "the pattern of shared values and beliefs that help individuals understand organizational functioning and thus provide them norms for behavior in the organization" (Deshpande and Webster 1989). As such, it materializes organizational resources, i.e. assets and capabilities, which a few researchers identify as contextual factors of value creation and appropriation. Indeed, although new to the field of marketing, many marketing scholars have noted the rich potential explanatory power of organizational culture as a predictor of buyer-seller relationships and other marketing issues (Parasuraman and Deshpande 1984). For example, Morand (1995) has denoted that, "the culture of an organization will determine the extent to which it is willing to interact with other organizations and the nature of this interaction". In the same spirit, Kothandaraman and Wilson (2001) proclaim that the value creation process links to core capabilities of firms in a business network. Along similar lines, Moller and Torronen (2003) propose a selection of indicators of supplier capabilities for determining the value of relationship. However, these capabilities should be closely linked to its organizational culture which essentially reflects the backbone of its structure, core values, strategic orientation and extrovert behavior (Karayanni 2000).
Furthermore, Porter and Roberts (1976) proclaim that "the total configuration of the organization undoubtedly exerts a strong influence on the characteristics of communication within it". In this view, the management of information should aim at serving the optimization criteria of decision making. Specifically, the decision-making steps are interlinked with the organizational element of power (i.e., ability to influence decisions of others) and the way that power is distributed (i.e., centralization vs. decentralization of power for decision making, or who has the authority for decision making) and exercised (communication of the decisions and evaluation of their outcomes), among organizational members. Organizational mechanisms determine the types of power and participation in power (i.e., authority for making decisions and communication and evaluation of decisions). These organizational mechanisms determine the issues of *who* is more appropriate to make the decisions (power distribution/concentration, *how* decisions *are conveyed* to the organizational members (power exercise through respective communication means, i.e., relational vs. mechanistic), and *how* decision implementation *is evaluated* (control and evaluation of performance outcomes). In turn, the applied information systems (i.e., management of information through the Internet) should be compatible to the prevailing organizational power elements, in order to serve the decision-making process, effectively. Power may be discriminated into symmetrical vs. asymmetrical. Furthermore, power exercise is coherent to the management of information and communication (since communication is the vehicle, or means of power exercise). Thus, information exchange is a conveyor of power, symmetrical vs. asymmetrical, and it may be discriminated into relational vs. mechanistic, respectively.
As a matter of fact, communication through the Internet should be related to the organizational mechanisms which determine the norms of decision making and are reflected upon organizational culture. In corollary, organizational culture conveys the values, norms and shared mental models within a firm which determine the type of interactions (i.e., degree of relational exchange) with key external stakeholders- before, during and after transactions. In this sense it incarnates the extent of a firm's relationship orientation.

Thus, we built upon the marketing cognition paradigm for studying culture, which focuses on managerial information processing and views organizations as knowledge systems. This paradigm has been successfully operationalized through the Competing Values Model of organizational effectiveness (Quinn and Rohrbaugh 1983). According to this model, one pair of competing values examines whether the organizational emphasis is more on flexibility, spontaneity, diversity, individual initiative and organizational adaptability or, on control, coordination, authority, structure, stability and order. Flexibility-organicity is related to high uncertainty and performance ambiguity, goal congruence, decentralization of power for decision-making, exercise of leadership through symmetry types of power (i.e., empowerment of employees) and relational communication strategies (i.e., highly

interpersonal, spontaneous and informal communication). On the other extreme, mechanistic, bureaucratic organizational structures are characterized by low-medium levels of uncertainty and performance ambiguity, goal incongruence, centralized power (i.e., centralization of decision-making), use of asymmetry types of power for implementing decisions (i.e., resting upon hierarchy of authority), and mechanistic communication strategies (i.e., highly formalized and routinized/standardized information systems) (Mohr and Nevin 1990; Frazier and Antia 1995; Daft 1994).

To use our own conceptualization for the purposes of the study, the above pair of competing values may also be interpreted as a problem of:

a) high uncertainty-ambiguity, goal incongruence, power symmetry and relational communication (i.e. reflecting a high relationship orientation in the management intelligence generation).

vis-à-vis,

b) low-medium uncertainty-ambiguity, goal congruence, power asymmetry and mechanistic communication (i.e. reflecting a rather low relationship orientation in the management intelligence generation).

Another dimension describes the second pair of competing values, internal versus external. From the external point of view, the organization is a logically designed tool with the ultimate goal of *accomplishing its tasks (i.e., functions/activities)* and *acquiring resources*, and places emphasis on the overall competitiveness of the organization in sometimes changing environments. From the internal point of view, the organization is a socio-technical system, where participants have unique feelings, likes and dislikes, and require consideration, appropriate information and stability in their workplace (Quinn and Rohrbaugh 1983). Thus, this competing values dimension examines whether the organization places emphasis on internal maintenance (i.e., smoothing activities, integration, person-oriented which stresses micro emphasis on the well-being and development of people in the organization) vs. external positioning (i.e., competition, environmental differentiation, organization-oriented which stresses macro emphasis on the well-being and development of the organization itself) (Quinn and Rohrbaugh 1983; Deshpande et al. 1993). For the purposes of our study, the pertinent dimension may be also interpreted as a problem of monolithic organization vs. network participation or, high vs. low dependence on external actors for acquiring resources and complementing activities (i.e., integrating tasks/functions). Thus, various combinations between uncertainty, ambiguity and goal congruence entail the adoption of different organizational forms (e.g., decision making, directing and controlling), which may be codified under four generic categories, that is, markets, hierarchies (i.e., bureaucracies), clans and adhocracies (Ouchi 1979, Ouchi 1980; Williamson 1985).

Previous research has empirically tested the model, in regard to organizational characteristics, climate and strategy (Zammuto and O'Connor 1992), organizational effectivess (Quinn and Rohrbaugh 1983), customer orientation and business performance (Dehspande, Farley and Webster 1990). In this study we examine the explanatory capabilities of the Competing Values Model upon the communication through the Internet. More specifically, we examine how each one of the four aforementioned different cultural types may affect the relationship between marketing intelligence generation attributed to the Internet and value creation.

Value Creation

Value can be thought of as being a consequence of relational exchange between independent actors where interactions and association of personnel affect governance (Simpson, Siguaw and Baker 2001). In the same vein, value can be regarded as a raison d' étre of collaborative customer-supplier relationships (Anderson 1996). Specifically, value creation is a multifacet concept which may be articulated to multiple effectiveness criteria. Notwithstanding, contemporary marketing scholars almost invariably link value creation to the core strategic objectives of a business organization, in terms of revenues creation and growth (i.e., innovation, customer focus and increased performance) and cost efficiencies (Andersen and Narus, 1998; Aldin, Brehmer and Johansson 2004; Vandermerwe 2000; Anderson et al. 2004; Wilson 2004). For example, Gadde and Snehota (2000) define relationship benefits as economic consequences of relationships that are related to revenues (i.e. productivity). The same researchers sustain that apart from revenues, the relationship benefits may be also defined as savings in various costs of operations (i.e. efficiency) that can be related to collaboration with another actor.

Furthermore, a few marketing scholars further distinguish the value concept into two tightly interconnected elements, i.e., value creation and value appropriation (Amit and Zott 2001). For example, value creation involves the creation of customer value, combined of innovating, producing, and delivering the offering to the market through business networks. On the other hand, value appropriation involves the economic component to extract profits (i.e. productivity and efficiency) in the market place (Mizik and Jacobson 2003). For the purposes of this study we don't discriminate between value creation and value appropriation, but we use the term of value creation to define both elements of the value concept.

Hypotheses

Marketing Intelligence Generation through the Internet and Value Creation

Marketing intelligence generation and innovativeness

To the extent that marketing intelligence gathering and integration presuppose a certain amount of relationship building, they may also reflect the relationship strength among interacting partners. The positive relationship between marketing intelligence generation examined in this study and innovativeness is supported by multiple streams of research. Innovation requires that businesses accommodate information from diverse market sources to remain responsive to changes in the competitive environment. Adaptive capability has been associated with the "wandering organization" using "voluntary elaboration of process" and involvement of the "non-right type" individual to arrive at variation of standard practice (Zammuto 1982; Mckee, Varadarajan and Pride 1989). The above imply the existence of free flow, spontaneous, informal and relational communication (i.e., the marketing intelligence generation through the Internet, as examined here). Indeed, Lukas (1999) has found that the degree of marketing orientation is ranked from highest to lowest according to the strategic type (i.e., highest for prospectors, followed by analyzers, defenders and reactors). In turn, the aforementioned Miles and Snow typology is developed in terms of innovative capability, i.e., the prospector-analyzer-defender-reactor continuum is commonly ranked as decreasingly adaptive to the environment (i.e. innovative) (Hambrick 1981; McDaniel and Kolari 1987; Meyer 1982; Walker and Ruekert 1987). The positive relationship between innovation and information gathering has been also extensively noticed in the Internet literature. Specifically, the Internet has been characterized as the ultimate medium that promotes interactivity, defined as the ability to store in memory buying behavior, which reflects buying needs and to respond by customized offers. Thus, it may affect marketing responsiveness (i.e., innovation) to such a high extent, as to drive a few researchers to argue that the marketing paradigm is reshaping (Blattberg and Deighton 1991; Sheth and Sisodia 1995; Deighton 1997; Webster 1997). In the same spirit, the Internet enables the development of marketing strategies emphasizing relationships based on customer-specific product offerings and messages, which are responsive to the individual customer changing needs, wants and preferences, thus promoting the firm's innovativeness (Blattberg and Deighton 1991; Narasimham 1997). Thus we make the following hypothesis:

H1: Marketing intelligence generation through the Internet, as expressed by information gathering and information integration, will be positively related to a firm's innovativeness.

Marketing intelligence generation through the Internet and customer relations

Customer relations reflect customer value or the customer based assets of a firm (Tuominen et al. 2004; Slater and Narver 2000) and are regarded as the result of the tacit knowledge of a firm's relationship intelligence about customers and other stakeholders (Day 2000). Thus, they reflect a relationship orientation, which is integral to a firm's overall orientation, i.e. to put the customer's interest first (Slater and Narver 2000).

The relationship between the marketing intelligence generation and customer relations (i.e. frequency of communication, faster dissolution of disputes and increase of customers' retention) may be supported drawing on the marketing orientation and relationship marketing literatures.

More specifically, information acquisition and exchange which is related to customer issues, has enabled manufactures to deliver better service to retailers and they, in turn, to serve better their customers (Buttle 1994). Thus, knowledge (i.e. intraorganizational information exchanges examined in

this study) about individual customers is used to guide highly focused marketing strategies; the result is enduring relationships with customers which cannot be duplicated by competitors, and therefore provide for a unique and sustained competitive advantage (Buttle 1994; Badaracco 1991; Cunningham and Tynan 1994). Similarly, Heide and John (1994) found that information exchange (i.e. mutual proactive provision of information to the relationship partner, as examined in this study) facilitates relationship duration. Moreover, customer oriented activities (i.e. the intraorganizational information exchanges examined here) are related to customer retention and decrease of customer complaints (Williams and Attaway 1996). This is because customer orientation refers to the seller's empathy towards customer needs, and willingness to prioritize those needs. Similarly, Marti and Sohi (1993) note that customer orientation (i.e. the intraorganizational information exchanges examined in this study) of the seller influences the duration of its customer relationships. For example, customer databases, incorporating up-to-date, accurate information that is both accessible and relevant, are seen as one of the building blocks of relationships; they allow organizations to know what has been communicated to individual customers and how they have responded; they allow companies to share pertinent information with the customers and to hold information on customers' needs and preferences thereby accommodating a closer understanding of customers and enhanced service based on a two-way dialogue (Cram 1994; Webster 1997; Deighton 1997; Seth and Sisodia 1995). At the same time, Stump and Sriram (1997) found that IT investments (i.e. the Internet) have positively affected information sharing and closeness and negatively affected frequency of disputes among firms with their vendors.

H2: Marketing intelligence generation through the Internet, as expressed by information gathering and information integration, will be positively related to a firm's customer relations.

Marketing intelligence generation through the Internet and productivity

First, the positive relationship between marketing intelligence generation and productivity has been extensively supported in a large number of empirical studies, pertaining to the marketing orientation literature (Narver and Slater 1990; Ruekert 1992; Jaworski and Kohli 1993; Slater and Narver 1994; Pelham and Wilson 1996). On the other hand, Heide and Stump (1995) stated that the performance implications (i.e., productivity) of relationship formation still remain highly unexplored. Specifically, the aforementioned researchers argue that the conditions under which particular relationship dimensions are expected to enhance performance are rarely made explicit, and empirical evidence regarding performance is virtually nonexistent.

Nevertheless, the raison d'être of network collaborative relationships is value creation (i.e., enhanced joint performance) and value sharing (i.e., ability to appropriate the joint network performance outcomes) (Anderson 1995). Given limited resources and capabilities, network partners seek to leverage them through collaborative efforts (i.e., through marketing intelligence gathering and integration through the Internet). In doing so, each partner can accelerate and synergistically enhance value creation at a network level, resulting in enhanced productivity (Hamel and Prahalad 1993). In this sense, a network of organizations (i.e., cooperating firms at a strategic level) may have outcomes that are greater than the sum of its parts (Achrol 1997). Similarly, the general objective of channel relationships is to derive benefits (i.e., maximization of long-term financial returns) for their stockholders, that they would not be able to achieve on their own, thus implying the existence of network synergistic effects for the interacting parties (Weitz and Jap 1995; Jarillo 1988) (i.e., thus resulting in superior productivity). Indeed, in a network context, pursue of wealth maximization would expand beyond the nominal boundaries of the organization, whereas, it should be viewed as a network performance issue (i.e., network wealth maximization). Knowledge sharing (i.e., the network information exchanges) among network partners, results in enhanced value (i.e., enhanced performance outcomes) because it stems from the synergistic combination of the network partners' strengths and information sources (Wilson 1995; Anderson 1997; Anderson, Hakansson and Johansson 1994). This value may be created in many forms, which are linked to the motives of strategic network relationships, i.e., enhancing productivity by permitting market access to each other's market segments, enabling cross-selling activities, using cooperative marketing and joint distribution policies, enabling joint product innovations and access to capital sources (Villa 1996; Biemans 1990; Jarillo 1988; Wilson 1995; Sheth and Sisodia 1995; Bucklin and Sengupta 1993; Varadarajan and Cunningham 1995).

Thus, we hypothesize:

H3: Marketing intelligence generation through the Internet, as expressed by information gathering and information integration, will be positively related to a firm's productivity.

Marketing intelligence generation through the Internet and efficiency

Efficiency is the outcome of business' programs in relation to the resources employed in implementing them. According to an Office of Technology Assessment report "networking technologies, that is, the Internet, can greatly reduce the costs entailed in exchange transactions, i.e., information exchanges". Specifically, the IT (i.e., the use of the Internet in marketing intelligence generation) is regarded as the strategic weapon that provides the organizations with competitive advantage mainly through improving their efficiency (Porter and Millar 1985; McFarlan 1984). In the same spirit, a few marketing researchers have stressed the great competitive advantage of the Internet to be used as an efficient marketing tool (Porter and Millar 1995; Press 1993; Sheth and Sisodia 1995; Walker 1997). For example, Stump and Sriram (1997) report that the Internet may diminish the costs of identifying and evaluating business partners' capabilities and performance, as well as of conducting transactions. Efficiency gained through interlinking of activities is a primary function (i.e., direct effect) of the network relationships in the context of network theory (Anderson, Hakansson and Johnansson 1994; Anderson 1995).

Furthermore, the positive relationship between marketing orientation and efficiency has been extensively supported, though under the wider umbrella of profitability (Narver and Slater 1990; Ruekert 1992; Pelham and Wilson 1996; Deshpande, Farley and Webster 1993). Thus, we hypothesize that:

H4: Marketing intelligence generation through the Internet, as expressed by information gathering and information integration, will be positively related to a firm's efficiency.

The moderating role of organizational culture in the relationship of marketing intelligence generation through the Internet with value creation

Due to space limitations, below we briefly discuss the hypothesis that is concerned with the moderating effects of the adchocratic competing values archetype upon the relationship of the marketing intelligence generation and value creation variables, as follows.

Adhocracies are predominantly met in small, entrepreneurial, functionally separate units which are integrated through reciprocal, multiplex and dense ties of long-term relationships, instead of hierarchical authority (Achrol 1997; Daft 1994). Indeed, adhocracies, following a strategy which places emphasis on flexibility (i.e., capital flexibility) and growth, they should prefer strategies other than forward vertical integration (i.e. since these entail large investments which tend to create organizational inertia and inflexibility), for controlling their network (Walker and Ruekert 1987). Then, they should relay upon network relationships, emphasising intensive informal interactions (i.e., absence, or low presence of formal and contractual agreements) characterized by spontaneity, casualness and interpersonal familiarity, in order to act as coordinating and integrating mechanisms, alternative for vertical integration (Jarillo 1988). Moreover, in adhocratic organizations, information literally represents a sixth source of power, as put forward by some theorists to characterize channel relationships, though in the limited context of franchising systems (Parsa and Khan 1995). Since great deal of interdependences should be related to joint projects resulting from synergy and shared technology and/or market knowledge, adhocracies should be intensively sharing information regarding product characteristics, or marketing trends, proclaiming communication content with strategy intent, as discussed in this paper. Furthermore, being at the cutting edge of technology innovation, which reflects a strategic orientation similar to the prospector type of Miles and Snow (1982), adhocracies should be the first to adopt any new successful communication system, i.e., the use of the Internet in their relationship orientation building efforts. Thus, the idiosyncratic characteristics of adhocracies should fit with the relationship of marketing intelligence generation and value creation. Stated formally, adhocracies should be the most intensive of all four cultural types in using the Internet for management intelligence generation through their business network counterparts. However, this issue

has not been empirically tested in the marketing literature. Thus we put forward the hypotheses for all four organizational culture archetypes:

H5a: Organizations that emphasize adhocracy culture values will enhance the relationship of marketing intelligence generation through the Internet with value creation, in terms of innovativeness, customer relations, productivity and efficiency.

H5b: Organizations that emphasize hierarchy, clan, or market culture values will hamper the relationship of marketing intelligence generation through the Internet with value creation, in terms of innovativeness, customer relations, productivity and efficiency.

Methodology

Measures

The marketing intelligence generation variables were tapped by a 7-item and a 3-item scale for market intelligence gathering and intelligence dissemination, respectively, using items from existing scales. As a matter of course, all the aforementioned items were selected and adopted in accordance to their applicability in the context of Internet, as derived from extensive literature review pertaining to the subject matter (Slater and Narver 2000; Kohli and Jaworski 1993; Karayanni 2000). The value creation variables were measured in terms of i) customer relations, ii) innovativeness (e.g. faster new product testing, development of more new products), iii) productivity (e.g. increase in sales, increase in sales leads), and, iv) efficiency (e.g. reduction in marketing research and promotion costs, reduction in new product development costs), all tapped by multiple-item Likert scales, as adopted by prior theoretical and empirical marketing research on the subject matters.

For example, the variable customer relations construct was operationalized by a six-item scale, which was developed in order to assess the extent to which the use of the Internet by the sales/marketing departments had resulted in closer customer relationships, i.e. more frequent and intense contact with customers, faster dissolution of disputes and increase of customer retention. This scale was based on the Stump and Sriram's scale (1995) which was used to measure overall closeness of buyer-supplier, and on relationship marketing theory, which considers resolution of disputes (i.e. conflict resolution), stability (i.e. customer retention) and communication frequency as indicators of good customer relations (Marti and Sohi 1993; Williams and Attaway 1996; Churchill, Ford and Walker 1993). The scale was very reliable (a=.88).

Finally, for the organizational culture measures we adopted the scales used by Deshpande, Farley and Webster (1993). Table 1 depicts the correlations, descriptive statistics and reliability measures of the research constructs. Crosstabulation analysis which was performed among nationality, size and industry sector, indicated that there was no meaningful relationship among the above variables.

TABLE 1 ABOUT HERE

Analyses and Findings

Measure validation was achieved through a series of both reliability analyses and confirmatory factor analyses that were performed on data collected through the e-mail from 240 USA, Canadian, European and Asian business-to-business companies. The research sample was randomly selected, using the Yahoo WWW portal (industrial supplies sub-directory) as the research frame. Furthermore, unidimensionality of the four culture scales, namely, hierarchy, market, clan and adhocracy, was assessed using the EUCLID distance model of multidimensional scaling. This produced an RSQ statistic of .87 (i.e., indicating the proportion of variance of the disparities in the matrix which is accounted for by the corresponding distances in the underlying values), thus indicating quite high explanatory capabilities of the competitive values model to describe respondents perceptions.

Research hypotheses were tested through a series of four linear regression analyses that regressed each one of the value creation variables (i.e. the dependent variables) against the marketing intelligence generation variables trough the Internet which served as the independent ones. Table 2

presents the regression analyses results, which placed evidence on all four hypotheses concerning the respective relationships among the variables of the study.

TABLE 2 ABOUT HERE

Additionally, H1 to H4 hypotheses we tested using path analysis and the AMOS statistical package as discussed along the following lines.

Structural model: in order to reinforce our regression analyses results, we furthermore tested a number of structural equation models, though on an a-posteriori basis. Figure 1 presents the final model which proved to be the most robust among a number of alternative models, in interpreting the relationships among the constructs of this study. Indeed, the measures of overall goodness-of-fit for the entire model are very good (NFI=.99, RFI=.99, CFI=.996, RMSEA=.000). Also, the Chi-square statistic was not significant (χ^2=7.39, p=0.19), which demonstrates a very good fit of the model (Carmines and Mclver 1981). As shown in this figure, all paths between latent constructs were significant. Specifically, according to this model, the marketing intelligence generation variables through the Internet are related to both innovativeness and customer relations, which in turn affect productivity and efficiency. Furthermore, the indirect effects of the marketing intelligence generation variables upon productivity and efficiency were assessed by examining the total effects of the latent constructs upon the dependent ones (Figure 1). Only the total effect of marketing intelligence generation upon productivity barely missed significance (b=.12) which calls for further research, as discussed below. Moreover, the significant relationship between the construct pair of customer relations - innovativeness reinforces the nomological validity of the proposed model (Churchill, 2000).

FIGURE 1 ABOUT HERE

Finally, in order to test hypothesis H5, regarding the moderating effect of the four moderator culture variables we used a series of T-test analyses. To this end, first we calculated the summative index for the ten Internet marketing intelligence generation scales (min=12, max=50, mean=25.0, st. dev.=7.3). Next, the research respondents were divided into high and low Internet marketing intelligence generation performers by a median split, with ties at the median assigned to the high Internet marketing generation performers. Means of culture and value creation variables are depicted on Table 3.

TABLE 3 ABOUT HERE

As shown on this Table, six of eight measures have significant differences for high and low marketing intelligence generating companies through the Internet – two of four culture types and the value creation variables, i.e., customer relations, innovativeness, productivity and efficiency measures. Specifically, adhocracies were found to be the highest performers, whereas hierarchies were the lowest performers in marketing intelligence generation through the Internet, as anticipated. On the other hand, both the market and the clan culture type were below average in generating marketing intelligence with other market actors through the Internet, though that they barely missed significance. In the next session we briefly discuss the research findings.

Conclusions

Research results are of double nature. First, they provide some empirical evidence of the compatibility of the Internet, regarded as a virtual business network with relationship orientation. Second, they identify the role of organizational culture as a predictor of value creation through the Internet. Overall, research findings largely supported the initial hypotheses. Indeed, research findings showed that value creation, as examined in terms of customer relations, innovativeness, productivity and efficiency, may be a reason d' etré of inter-organizational relationship building, as reflected upon the marketing intelligence generation through the Internet. The implication is that the Internet is a rich, not a lean communication vehicle, which may play the role of the efficient interoperable platform which is necessary for the constructive communication within any business network.

As a matter of course, much of the relationship building is based on unstructured and non-mediated, non-routinized communication messages, which may be successfully served through face-to-face interpersonal contact among interacting organizational members, e.g. salespersons or project managers. Notwithstanding, the Internet's properties, such as interactivity, interoperability and memory storage, enable immediate customer feedback, firm-customer dialogue and public dialogue among a vast array of network participants, thus providing the value creation objective with new perspectives. For example, how possible is it for business partners that are located in different continents to have frequent face-to-face communication? Or, how possible is it for large organizations to spare valuable resources for communicating with small, though flexible and often adhocratic, new idea-generator organizations at an equal basis with their larger counterparts within a business network? The Internet provides new opportunities to such asymmetrical business problems, where value would not be able to be created otherwise. Additionally, value created through vertical and network communication would be easily appropriated by any organization that has the inspiration to use the vast information resources that are equally available to all business participants. It depends on an organization's ability to analyze and combine multiple streams of information, mined from customers-to-customers, business-to-customers, or business-to-business conversations and information databases, in order to produce new knowledge, thus promoting customer relations, innovation and the co-current productivity and efficiency gains.

Moreover, as research results showed, value creation through the Internet prerequisites the adaptation of corporate values that emphasize the adhocratic culture archetype.

It appears that in our new era of globalization of markets and Internet marketing, new variables have to be investigated and included in the interorganizational relationship building and value creation problem.

Limitations and Future Research

A word of caution should be in order. We cannot generalize too far from a single study. Future research is essential in replicating the aforementioned findings and in examining a more detailed framework of relationship orientation building constituents through the Internet and value creation components.

P.S. The measures of the study, together with the complete reference list will be kindly provided upon request.

Table 1

Summary statistics and construct correlations

	Variables	Intercorrelations 1	2	3	4	5	6	7	8	9	10
1	Marketing intelligence gathering	1									
2	Marketing intelligence integration	.58**	1								
3	Customer relations	.43**	.51**	1							
4	Innovation	.44**	.50**	.63**	1						
5	Productivity	.27**	.30**	.44**	.50**	1					
6	Efficiency	.30**	.32**	.56**	.68**	.45**	1				
7	Clan culture	-.21	-.05	.07	.02	-.03	-.08	1			
8	Adhocracy culture	.18**	.19**	.19**	.18**	.18**	.17**	-.23**	1		
9	Hierarchy culture	-.17**	-.15*	-0.1	-.18**	-.07	-.17**	-.22**	-.52**	1	
10	Market Culture	-.03	-.04	-.21**	-.08	-.04	-.12	-.51**	-.28**	-.04	1
	No of items	6	4	6	10	3	3	4	4	4	4
	Mean	16.3	10.3	16.4	19.1	8.1	6.4	113.3	122.3	68.1	86.9
	Standard Deviation	6.4	4.6	6.4	9.1	9.1	3.2	67.3	69.3	56.4	59.4
	Coefficient Alpha	.83	.72	.88	.92	.79	.8	.78	.73	.64	.71

**** significance at 0.05**
*** significance at 0.1**

Table 2

The relationship of marketing intelligence generation through the Internet with value creation

	Regression Coefficients			
	Value creation			
	Customer relations	*Innovation*	*Productivity*	*Efficiency*
Marketing intelligence generation through the Internet				
Marketing intelligence gathering	.20**	.23***	.14*	.18**
Marketing intellligence integration	.40***	.37***	.21***	.22***
Overall R^2 =	.29	.28	.10	.12
df =	2	2	2	2
F =	48.45	46.12	1 3.6	16.7
Sig. =	.000	.000	.000	.000
VIF < 1.5 for all the coefficients				

* p < .10
** p < .05
*** p < .01

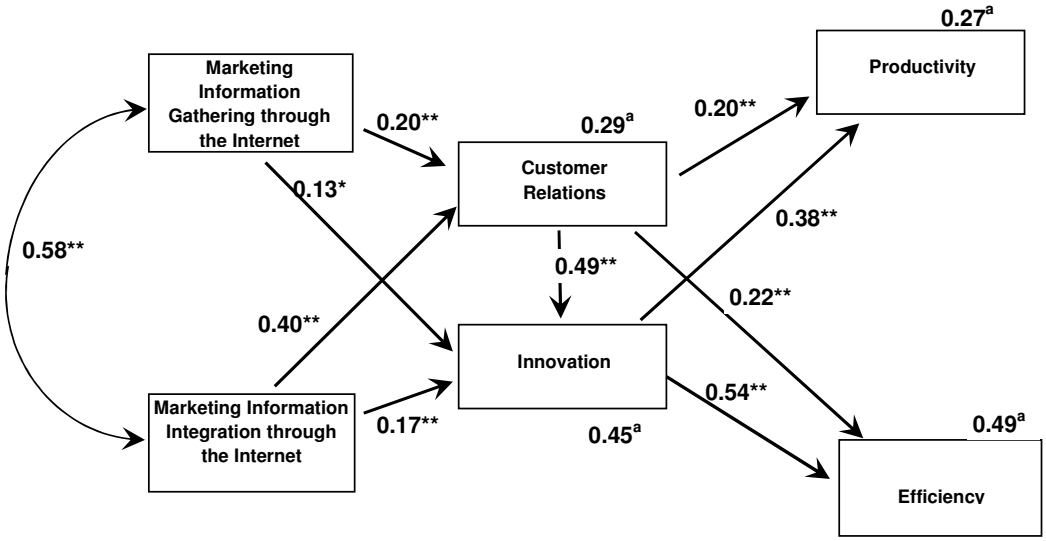
Table 3

Measures

Scale	Number of Items	Cronbach Alpha	Means			Std. Dev.
			All	Low	High	
Culture			**Marketing Intelligence Generation through the Internet**			
Adhocracy	4	0.73	125.1[a]	112.9	137.3	69.3
Clan	4	0.78	113.3	115.2	111.5	67.3
Hierarchy	4	0.64	68.1[a]	76.0	60.1	56.4
Market	4	0.71	86.9	87.1	86.7	59.4
Value creation						
Innovativeness	10	0.88	19.1[a]	15.7	22.7	9.1
Customer relationships	6	0.92	16.4[a]	14.0	18.9	6.4
Productivity	3	0.79	8.1[a]	7.2	9.1	3.2
Efficiency	3	0.80	6.4[a]	5.7	7.1	3.2

[a] Significant univariate difference between high and low information and social exchanges performers at a level of 0.001

Figure 1



Causal Model of Marketing Information Gathering and Integration through the Internet and Value Creation

** **Standardised Estimates significant at p<0.05.**

* **Standardised Estimates significant at p<0.1.**

a: **Squared Multiple Correlations.**

Goodness of Fit Summary:

χ^2=7.39, df=5, p=0.19, RMSEA=0.000, PCLOSE=.000, GFI=0.99, AGFI=0.99, NFI=0.99, CFI=0.996.

Standardized total effects of marketing intelligence generation through the Internet

	Intelligence Gathering through the Internet			Intelligence Integration through the Internet		
Dependent Variables	Direct effect	Indirect effect	Total effect	Direct effect	Indirect effect	Total effect
Customer relations	.20	-	.20	.40	-	.40
Innovation	.13	.10	.23	.17	.20	.37
Productivity	-	.12	.12	-	.22	.22
Efficiency	-	.17	.17	-	.29	.29

Total effect = Direct effect + Indirect effect

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* The complete list of references is available upon request to the author.