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Marketing's role in the knowledge economy

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Keywords *Marketing strategy, Value analysis, Business-to-business marketing, Technology, Networks, Knowledge workers*

Abstract *A potential weakness of marketing in the strategy dialogue has been a tendency on the part of marketing scholars to stay with outmoded frameworks. As the economy is decreasingly influenced by industrial value creation and increasingly influenced by knowledge creation and dissemination, the role of marketing in value creation and thus in strategy is accentuated. Synthesizing current literature regarding the environmental changes and the underlying foundations for value creation affected by these changes, and contrasting them to traditional, industrial value creation, an argument for the central role of marketing in the knowledge economy is provided and examples support the new value creation-marketing link.*

Introduction

Firm valuation and wealth generation by firms operating in the new economy continue to challenge traditional wisdom. The market valuation of many firms is increasingly out of proportion to the relative streams of revenue and collection of tangible assets. One of the significant variables explaining this phenomenon is the increasing importance of knowledge assets held by the firm (Kim and Mauborgne, 1999). Knowledge acquisition and exploitation becomes the center of differentiation between firms and, in fact, can sustain value creation separate and apart from value creation generated within the traditional models. Firms that effectively align their organizational efforts in this direction will increase their opportunities to create wealth above and beyond management of traditional physical assets. Kim and Mauborgne (1999) explicate the notion that growth and innovation now stem from within the firm, versus the traditionally accepted concept of external innovation driving growth; this change signals the arrival of the knowledge economy.

Value chain concept

Historically firms have based their value creation on the transformation of goods as they move from manufacturer to end-user, as evidenced by Porter's (1985) value chain concept and its focus on product, logistics and operations. Today's environment offers firms new opportunities to create value from information. In fact, more economic value creation may be inherent in *information* than in the transformation of goods (Evans and Wurster, 2000). It is within the network flow of information that marketing has tremendous opportunity to create value for firms: the opportunity to use knowledge.

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Emerald

Marketing's new strategic role is evolving rapidly and is affected by a variety of changes in the business milieu including the emergence of the knowledge economy (Day and Montgomery, 1999). As economies, and thus new opportunities for value creation, are being altered or newly created by technological advances, academics and practitioners need to re-evaluate the universal acceptance of traditional fundamental value creation assumptions that serve as the pedestal on which business structures are built and decisions made to choose specific methods, strategies and tactics.

Historical perspective

In order to better understand the new dynamics of marketing's role a historical perspective on value creation and marketing's traditional role is provided, followed by an examination of the changes leading to new value creation opportunities. First, to situate the change, the traditional value chain concept is reviewed. Second, marketing's role in the traditional mode is presented. Third, a précis of the environmental changes that have brought about the knowledge economy is offered. It is these environmental changes that have created the knowledge economy; an economy based on value creation not founded in physical goods transformation. Firms deriving significant value creation that is not founded in physical or fiscal assets are prevalent in today's environment (Kim and Mauborgne, 1999). Based on this understanding of the new environment, opportunities for new methods of value creation are offered, and marketing's unique contributions, afforded by these new opportunities, are explicated. Finally, a synthesis of the information presented clarifies the role marketing plays strategically in the new environment, demonstrating that the marketing function, essentially focused on knowledge of the product, the environment and customers, is situated precisely at the core of the value creation process in new information based value systems.

Traditional strategy and value creation

An understanding of the traditional framework of the value chain concept provides a starting point for explicating marketing's role in creating value. The concepts of the value system and the value chain are cornerstones of business strategy development (Porter, 1985). These notions are elements of what has been the primary framework for businesses to evaluate and map their sources of sustainable competitive advantage for over a decade. The development and widespread acceptance of the value system and value chain concepts pre-dates the information and connectivity explosion created by advances in information technology generally and the Internet in particular.

Value activities

The value chain is built on the notion of value activities and margin, where value activities employ purchased inputs, human resources, and technology as well as information (Porter, 1985). Value activities thus defined are essentially activities involved in transforming goods as they move along a path from raw materials to production and eventually to end users. Primary value activities defined by Porter include inbound logistics, operations, outbound logistics, marketing and sales, and service, while secondary or support activities include procurement, technology development, human resource management and firm infrastructure. The marketing and sales component in the traditional value chain is defined as communication, pricing and channel management (Porter, 1985; Aaker, 1998). The method and level of disaggregating to delimit value activities has been grounded in traditional thinking based on experience in a primarily industrial economy. Activities have been isolated for evaluation according to their contribution to value creation based on ability to differentiate or contribution to cost, yet, the door is left open to isolate activities if they have different economics (Porter, 1985). As our economy becomes decreasingly influenced by industrial production and increasingly dependent upon knowledge work, a re-evaluation of value activities is in order.

Traditionally, information has traveled through the value chain attached to physical things and there has been a trade-off between the ability to achieve richness of information and breadth of reach, where reach is defined as the numbers of people exchanging information (Day and Montgomery, 1999; Evans and Wurster, 1997, 2000). That is to say, historically the richest messages reach the fewest people, while less rich communication can reach many. Organizations have traditionally been faced with a choice: reach few people with a rich communication or reach many people with a less rich communication.

New economics of information

Value activities that have traditionally been isolated and measured regarding their contribution to value creation were activities embedded within the traditional economic frameworks of business: those frameworks where information is integrated and inseparable from things. This economic foundation inherently accepts a trade-off between the richness and reach of information. Separating value activities relevant specifically to information from value activities specifically dealing with movement or transformation of things has not been widely practiced, nor have scholars conducted in-depth examinations of such phenomena. This is due to the historical prevalence of identifying value activities as either those with the ability to differentiate or those that contribute to cost, as previously noted. Sometimes, value creation activities stem from operation under different economics. Until recently, existing circumstances have not forced a separation based on the criteria of separate economics. Value activities of information have not been treated separate from value activities related to physical things, however, as technology and communication advances allow for a new economics of information this is precisely what needs to happen.

Marketing's traditional role

Strategy concerns the relationship of an organization to its environment (Jain, 1983; Biggadike, 1981) and the creation of value in the form of sustainable competitive advantage (Aaker, 1998). Specifically, "an organization monitors its environment, incorporates the effects of environmental changes into its corporate decision making, and formulates new strategies" (Jain, 1983). Marketing, as a function, is uniquely positioned in the strategy dialogue by virtue of association with relational and intellectual assets (Wind and Robertson, 1983).

Environmental changes

Weakness of marketing in the strategy dialogue has been lamented, and a tendency on the part of marketing scholars to stay with outmoded frameworks has been raised among other concerns (Day, 1992; Wind and Robertson, 1983). The current state of marketing strategy registers information technology's significance within the field of marketing strategy as one of several consequential issues to consider in efforts required to advance the marketing discipline (Varadarajan and Jayachandran, 1999). Research related to information technology and its influence on industry structures is needed, as are efforts toward integration of understanding of environmental changes driven by information technologies, value creation and marketing.

The notion of embracing new, relevant conceptions of the environment, contrary to the inclination toward the conservative position that sometimes cements academicians to outmoded frameworks, is just one element required in developing renewed efforts toward an updated marketing strategy model to guide the discipline. Specifically, there is potential for redefinition of industry structures that rapid information technology changes may produce which generates the prospect for new characterization of marketing's role in these emergent structures (Varadarajan and Jayachandran, 1999). The notion of information and relationships becoming ever more central to the firm is not new. Webster (1992) predicted the evolving reliance of firms on knowledge and relationships, writing nearly a decade ago, directing scholars to consider specific marketing proficiency in understanding end-user markets and in producing a knowledge base for the firm as a firm's core capabilities. In the new millennium, the role these intangible assets play in creating sustainable competitive advantage seems increasingly relevant. Within traditional value creation frameworks, however, these are not separated nor identified as specific to value creation.

The new environment of the new millennium

New technologies and value

As technology increasingly influences business, firms look increasingly to new technologies for value and competitive advantage. Technology and information processing advances have spawned the recognition of knowledge as an asset to be managed and the notion that competitive advantage is achieved through the set of relations or exchanges in which a firm is involved (Glazer, 1991).

Results from surveys questioning firms about their e-commerce initiatives are illustrative of the concept that the new environment is changing how firms view value creation. In a study of 250 information technology managers performed by *Information Week* Research (Fisher Center, University of California, Berkeley) 71 percent of respondents mentioned improving customer relationships and it was the most frequently mentioned factor influencing the decision to engage in e-commerce; the second most mentioned factor was competitive advantage, noted by 59 percent of respondents (Szuprowicz, 1999). Another study reported that the top three expected pay-offs from Internet investments were improved communication, enhanced customer service and improved knowledge sharing (Callahan and Pasternack, 1999).

Information exchange

Technological advances have altered communication within and across firms, and are increasingly altering the foundations of business. The concepts that have framed the notion of value creation and value activities no longer encompass the value creation formulae of all of today's firms. Information is "the glue that holds value chains and supply chains together" but "that glue is now melting" (Evans and Wurster, 2000). The open and inexpensive exchange of information alters the value equation within that traditional channel structure for the flow of things.

New value creation options

A major change brought about by technology and telecommunications is the split between physical movement of goods and the movement of information (Evans and Wurster, 1997, 2000). In terms of value creation, the importance of this change is noteworthy. Value creation can happen through the transformation of physical goods in a value chain (as goods pass through a hierarchical stream from a producer to a customer) or else from the network flow of information (Evans and Wurster, 1997, 2000). The notion of deconstruction of the value chain is prevalent and the phrase "cannibalize your own markets" has become a mantra for businesses facing new competition emerging from the chaotic business landscape embroiled by the rapid growth of Internet use by business (Downes and Mui, 1998). These factors contribute to create an environment where the acquisition and exploitation of information assets will be increasingly important.

The traditional, hierarchical value chain will continue to exist for physical goods movement from producer to customer. The traditional framework for understanding the creation of value continues to be apropos in that physical realm, although it may be altered by the removal of much of the information portion that is integrated in the traditional value equation. Examining the changes to value systems based on the movement of physical assets through the value system is not the topic examined here, rather, it is the other side of the new, bifurcated value creation scheme that is created by the influences of technology and communication advances on the business landscape.

Information value networks

As value chains are reconstructed or demolished, and hyperarchies or information value networks evolve as new means of value creation, value activities are increasingly based on non-tangible assets (Kim and Mauborgne, 1999). It is this increasing dependence on non-tangible assets for value creation in the knowledge economy that presents an opportunity for marketing to contribute in an essential way to the strategy dialogue.

Intellectual assets and relational assets

Two types of market-based assets, defined as those that "arise from the comingling of the firm with other entities in its external environment" (Srivastava *et al.*, 1998) satisfy the criteria for providing a firm with sustainable competitive advantage: relational assets and intellectual assets. The resource based theory of strategy formation stems from the learning and cultural schools (Mintzberg and Lampel, 1999). Using this theory, a firm's resources can be judged to provide a firm with sustainable competitive advantage when these four criteria are satisfied: the resource is found to be valuable, rare and imperfectly imitable; and no strategically equivalent substitute resource exists (Barney, 1991). Market based assets, that is relational and intellectual assets, have been shown to satisfy these criteria for value generation (Srivastava *et al.*, 1998).

Market based assets

These assets are largely intangible and external to the firm. Intellectual assets are intertwined with relational market based assets, and are defined as "the types of knowledge a firm possesses about the environment, such as the emerging and potential state of market conditions and the entities in it, including competitors, customers, channels, suppliers, and social and political interest groups" (Srivastava *et al.*, 1998). The value of these assets in use is likely to serve as a basis for long-term customer value and they are suited ideally to exploit the benefits of organizational networks. In the new economy, knowledge use and understanding of customer value form the basis of value creation for the firm (Kim and Mauborgne, 1999). Market based assets are squarely rooted in the domain of the marketing discipline, both in practice and in theory, and are assets that are central to value creation in the economics of information when information can move separate from things.

Marketing's new role in value creation

Given the boundary spanning nature of marketing's function, it is a natural extension of marketing's traditional role in value creation to note that marketing informs strategy and value creation when it comes to market-based assets. In fact, the foundations of relational and intellectual assets are drawn from concepts of brand equity, customer satisfaction and strategic relationships (Srivastava *et al.*, 1998). Relational and intellectual assets are clearly in the domain of the marketing function.

Intellectual assets

Of all the various members of the organization, marketing is traditionally the most informed and involved in those relationships (relational assets) involving channel members, end users, and other stakeholders central to customer value. Marketing is also positioned to better acquire additional information as it is generated in the external environment. In addition, marketing has a unique position as a listening source, where knowledge of the environment (intellectual assets) may be acquired. Marketing, as a function central to value creation, is the central link between knowledge and relational assets that can fuel the engine of value creation in the knowledge economy.

Early evidence of market-based assets creating value in the knowledge economy is not hard to find. Examples of intellectual assets creating value, customized offerings based on market knowledge and/or individual customer definitions of value, and the market power of alliances built upon knowledge bases are just a few of the ways market-based assets are being employed.

Intellectual and relational assets create value

Firms that create value in the knowledge economy do so through stimulation of the demand side of the economy, expansion of existing markets, and creation of new markets (Kim and Maugorgne, 1999). The ability to create value by isolating activities that operate with a different set of economics (as in the separate economics of information now able to move separately from things such as salespeople, letters and envelopes) is the crux of some of the new opportunities in the knowledge economy for value creation. Engaging in value creation within these new economics of the knowledge economy involves a central role for marketing activities in view of the fact that marketing, as a function, is expert in utilizing intellectual and relational assets.

Collaboration of competitors

An example of this is MetalSite, formerly MetalExchange LP (Szuprowicz, 1999), an organization founded and supported by competing steel companies that makes excess inventory information available, making the market for steel more efficient as noted in *Information Week* (1998). This company is remarkable in that it was one of the first to stem from a collaboration of competitors according to *Information Week* (1998). The value created by knowledge assets is produced by the new economics that occur when information is able to move freely. It is an example of the first force in the deconstruction of the value chain, separation of the economics of information from the economics of things. The information itself is the basis of value. Prior to the ability of information to travel without envelopes and people, the value creation in information alone was limited by the constraints of the physical movement. Now, it functions separately and can be a value creation source, generated from, yet separate and apart from, the business of selling metals.

Following this trend in the metals trading industry is E-metra, launched in October of 2000 according to *Financial Times* (2000a). E-metra is lauded as competition for London Metal Exchange as a marketplace for the trading of metals and is expected to also trade derivatives soon. E-metra has moved away from the practices of expensive international courier-based movement of documents to support metal trading. The trading of metals is an industry whose participants have recognized the separation of the economics of information. Competition in this industry can and is now played out in one of two ways: in the traditional hierarchy, as in competing logistics efforts for moving of the product within markets, or in the knowledge arena, where value is created for organizations by the capture and sharing of information.

Consumer/product information

Information in a marketing context can be "rich about the consumer, or rich about the product" (Evans and Wurster, 2000). Rich consumer information, coupled with broad reach in the new economics of information, makes the segment-of-one and branding more powerful. Competing on rich information in the knowledge economy will be possible if market-based intellectual and relational assets are employed productively. Bradley and Nolan (1998) assert the notion that capturing value in the network era means a move away from "make and sell" toward "sense and respond". This sense and respond notion illustrates that market-based relational and intellectual assets that are rich in information about the customer can be harnessed by marketing and operate as value producing assets, separate and apart from physical and hierarchical transactions. As firms can identify and capture their knowledge assets, value creation stemming from information and relationships can be the basis of new business endeavors. Another way value is created is in the customizing of offerings to customers based on knowledge assets.

Customized offerings based on market knowledge

Accumulated information assets, derived from facilitating the interactions between buyers and sellers, would appear to be a key feature of network intermediaries (Peter and Tulskie, 1999a). Empirical Media's WiseWire, forerunner to the popular Lycos searches available today, was a customizable search engine, and an example of the accumulated information assets approach to value creation according to the *New York Times* (1998). This firm offers a search engine that conforms to the information a user indicates is "preferred" by providing a "satisfaction rating bar" that the user marks as he or she moves through pages. This information is combined with data from other similar users, to customize the user's search processes. This ingenious customization uses both individual and community filtering to ensure the ability to avoid "staying too close to their customers" (Peppers and Rogers, 1997). This company illustrates the use of the intertwined nature of relational and intellectual assets, integrated through the operations of the marketing function. Value is created by reducing search time for consumers, and by building the loyalty of consumers who return to the search tools that bring them results most targeted to their needs. The relationship with customers fuels the data-driven customization of the service. Bought by Lycos in 1998 according to the *New York Times* (1998), the example of WiseWire demonstrates that the ability to create value from customization of information is yet another example of an opportunity to create value with market-based assets alone.

Customized offerings based on customer-defined value

Traditional search mode

Customized offerings based on customer-defined value are another prevalent use of market-based assets. Searching in a hierarchy can be compared to "crawling along the richness reach trade off" of the traditional search mode (Evans and Wurster, 2000). The traditional mode has been replaced; thus, a great benefit in the information value network is virtually unrestricted reach. However, all this expanded reach is only clutter without navigators, and navigators that add value to customers are those that are based on market-based intellectual and relational assets.

This is illustrated by IBM's definition of e-business vectors: fluid technology-based competencies that make firms responsive to change (Peter and Tulskie, 1999b). The concept IBM is heralding is a modular response to each customer's expression of his/her unique, individual definition of value. The idea that a catalogue of customer value components can be created for Web-based businesses, and that each firm/customer interface can be customized in terms of deploying these modules is another example of the use of intellectual and relational assets, intertwined and informed by the marketing function. Modules might include such items as automatic responses to e-mail, topic specific chat rooms, order status information on line, and so on. The use of such "plug and play" modular approaches, activated by the customer to meet specific customer needs and preferences, eases the path toward outsourcing, and toward building flexible value offerings for customers. Exploring customer based customization using information and physical assets is Yamazaki Mazak of Japan, a machine tool producer that is connecting factory machinery to customers via the Internet and letting customers run the machinery, remotely, via the transmission of bits of information, eliminating constraints of distance according to the *Financial Times* (2000b).

Market power built on knowledge bases

Synthesize skills of network partners

It has been suggested that building knowledge bases to serve customers and synthesize skills of network partners is often a leverage point for alliances of firms (McKenna, 1991). As organizations of the future become increasingly disaggregated and specialized, alliance relationships and their market power are likely to become more important (Achrol, 1997). Examples are marketplace concentrators like Industry.net, a marketplace concentrator that provides engineering information and access to 250,000 industrial online catalogues (Szuprowicz, 1999). Now part of the IHSGroup[1] operating as TechSavvy.co [2], this information aggregator provides information on parts, suppliers and military specifications as well as hard to find historical data for engineering. Another example of an information aggregator is the Mountain Zone, a content and community Internet site for skiing, snowboarding, climbing, hiking and biking (Szuprowicz, 1999). Another firm, e-Filtration Inc.[3] is an electronic marketplace for the filtration industry.

Spin-off businesses

Firms with bricks and mortar-based operations are finding opportunities to spin off new businesses in the knowledge economy too. A prime example is General Electric (GE), whose profit has jumped 20 percent according to the *Los Angeles Times* (2000) attributed to a variety of technology uses, one of which is Global Exchange Services, a business-to-business online marketplace. Scott McNealy of Sun Microsystems notes GE's strategy of claiming the information economy, noting that GE, rather than being disintermediated, sets up its own exchange for information rather than joining an exchange (*Financial Times*, 2000c).

Discussion and managerial implications

As the dynamics of the marketplace change, practitioners and scholars are recognizing that the potential for marketing to add strategic value is magnified in the knowledge economy. How can firms recognize the opportunities? First, they must be able to separate from the traditional industrial thinking about value creation. Acknowledging the ability to build competencies and profit centers that have previously not existed because of the constraints of the traditional hierarchy, in which information moved with physical carriers, is a skill to be acquired. This skill can pay off in entirely new forms of commerce as the examples of such new endeavors have demonstrated. Second, and perhaps most importantly, marketing managers and senior managers must identify their market-based assets and evaluate their properties. Exchanging goods for money leaves each party with one thing, either the good or the money. However, exchanging and sharing market-based assets has the potential to result in both parties doubling their assets. Trust in sharing may need to take on an expanded role in commerce in order to facilitate the open sharing that may be required to reap the benefits. Another property to consider is the shelf-life of market-based assets. How long do they retain their value? The role of continuous learning is likely to be increasingly important if these assets are limited in the ability to hold their value over time, and urgency relative to use of these assets may increase the already frenetic pace of business transactions. Do market-based assets depreciate or accumulate? Our traditional mindset built on the concept of depreciating assets may or may not suit market-based assets. The increase in freelance workers associated with the underlying changes creating the knowledge economy may alter significantly the ability of a firm to retain ownership of intellectual and relational assets. If capital has traditionally been a barrier to entry, and ideas are now taking the place of capital, new thinking about competition is required as reported in the *Economist* (2000).

Organizational awareness

Third, marketing managers can promote organizational awareness of marketing's value creating role through effective communication, not only to the marketing organizational members, but also to senior management. As marketing attempts to improve its inventory of market-based assets, and to build new businesses based on intellectual and relational assets not constrained by movement dependent on physical carriers, businesses will need to invest time and effort in the new opportunities in order to utilize those intangible assets effectively.

Fourth, in order to sustain advantages in value creation derived from successful implementation of these recommendations marketing managers must continually monitor activity and results. By performing these tasks, marketing managers will increase the likelihood for optimization of a new market-based asset management system.

Conclusions and future research

The creation of value by the firm is no longer restricted to the traditional hierarchical value chain but now can occur in an information network. For some firms, the entire value equation will be an information-based system. For other organizations, separate value creation systems will co-exist within the firm: hierarchies for physical goods transformation, and network value systems that create value for the firm in new ways and require new strategies. The market-based assets founded in the resources termed relational assets and intellectual assets are resources essential to strategic success in the new knowledge economy, and these are inextricably embedded in the marketing function.

Challenges for marketers

The first challenge for marketers is identifying and operationalizing intellectual and relational assets. This will aid in organizing future thinking about marketing's function relative to value creation in the knowledge economy. Firms can begin by examining their current inventories of market-based assets for additional value creation. Spin-off opportunities may exist stemming solely from the use of these market-based assets in business arenas beyond current business definition boundaries. Bounding the opportunities for marketing with thinking limited by outmoded frameworks is akin to the myopia Levitt (1975) cautioned against several decades ago. Future research into marketing and strategy related decisions altered by rapid changes in information technology and industry structures, and further exploration of the relationship between marketing and its centrality to value creation in the knowledge economy will require new lenses for scholars and practitioners alike.

Web resources

1. http://www.ihsgroup.com
2. http://www.TechSavvy.com
3. http://www.eFiltration.com

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