



Incorporating Flexibility in Information Technology Strategies to Answer Contemporary Marketing Issues

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Abstract

Since the creation of world wide web at CERN the internet has infiltrated every inch of our planet, but its use remains largely rudimentary compared with the potential it has offered. This article contains investigation that focuses strategic marketing issues driven by information technology, internet in particular, and globalization. Marketing successfully requires not only insight into how a product or service can be successfully marketed but also flexibility into the marketing of a product or service. Innovation, creativity and flexibility are needed in any type of marketing efforts. Trying several types of information technology strategies in marketing is usually the best method of eliminating marketing methods that fail, and determining which marketing methods are successful.

Keywords: competitive advantage, flexibility, internet, internal scanning, strategic marketing

Introduction

The impact of performance measures of strategic marketing management must be communicated to those who are responsible for formulating and implementing strategic plans. Strategic information systems perform this function. The system allows all information to be recorded automatically. It helps develop strategy to market new product and the flexibility to respond to major changes and unexpected events (Richards,1996). Information system strategies provide business units competitive advantage. Multinational corporations are finding that the use of sophisticated WWW communication allows their employees to practice *follow-the-sun management*, in which project team members living in one country can pass their work to members in another country in which the work day is just beginning (Greco, 1998). Ultimately, Information Technology is challenged to make these initiatives operational, and to provide comprehensive information snapshots for better decision-making—as close to real time as possible. Also, technology professionals must integrate otherwise disparate legacy information, creating dynamic data-sharing and workflows among multiple units, departments, employees, vendors, and other stakeholders. Forward-looking companies have long aimed to perfect their critical business functions. By examining their best practices in terms of their information technology decisions, specific guidelines emerge as it relates to technology and infrastructure.

Impact of Internet on Strategic Marketing Management

The low cost, global nature of the technology, opportunity to reach millions, interactive nature of the electronic commerce via the Internet are some of the potential benefits to strategic marketing management. The benefits (Turban, Lee, King and Chaung, Shaw, 2000) are:

- Expansion of marketplace to national and international markets
- Decrease the cost of creating, processing, distributing, storing and retrieving information
- Internet search engine enables people to create highly specializes business venture
- Allows just-in-time manufacturing and less overhead expenses by facilitating pull-type supply chain management

Information system strategies provide business units competitive advantage

Technology can provide the means for very low-cost information distribution, remote accessing and information processing and universally accessible and globally distributed electronic commerce and sales.

- Customization of product and services to better suit customer needs
- Initiate reengineering processes
- Provide easy access to information on customers, suppliers and competitors
- Increases flexibility and compresses cycle and delivery time

Information technologies include computers and automated information management but also other related technologies such as scanning, software and databases. Communications technologies refer to telephone-based transmission of digital messages. In the early days, digital transmission was primarily proprietary with information moving back and forth along secure and dedicated networks from remote terminals to centralized mainframes. These networks belonged to large organizations such as governments, the military and global corporations; they are now being superseded in public consciousness and in reality by networks based on personal computers and the Internet.

The Internet started as a network facilitating communication within small scientific communities, particularly those engaged in defense related research. Funded by the U. S. Defense research budget, the initial Internet consisted of restricted electronic links within a small community of American scientists. Over several years these connections spread to link scientists from several disciplines and communities throughout the United States. From there, the network extended even further into the non-scientific community and grew in a decade ago to link thousands of computers.

Research at CERN in Geneva developed a means for the transmission of graphical images over the Internet. HTML (Hyper Text Markup Language) became the basis for the World Wide Web, which created a virtual revolution in the way in which information is managed and communicated electronically. This means for distributing information gave flexibility to the companies to customize information on the real time to many who previously had been isolated from information technology such as those living in rural and remote areas.

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Internet and Social Responsibility

Internet provides fast way to communicate a company's mistakes and any unethical or illegal actions to interested people throughout the world. Every data packet contains the users' electronic identification. Internet activists have launched WEB site to monitor working of corporations (Berkeley,2000). Differential access to Information and Communication Technologies (ICT) is likely to become one of the major part of social and economic life in rural and metropolitan areas. As ever larger elements of the productive economy become integrated and infused with ICT, any limitation on access to the technology or to the training required to effectively use ICT will become a new basis for social and economic inequality, the "information rich" and the "information poor". ICT is the new means of production, as were the tools of the early craft workers or the machines of the industrial age of production. Those without access to these tools whether through limited physical access, funds or training will find individual and community advancement restricted.

ICTs also give local communities and enterprises an historic opportunity to participate remotely but directly in the global economy as suppliers of specialty items in the world market and participants in production networks as information processors and suppliers. Local enterprises can work with and leverage the entire network of interdependent information processing nodes and inter-communicating hubs to become globalized. The network at least for the moment is open to everyone. Smoothly integrated communications networks, wideband information delivery channels, the capacity for remote and secure management and administrative controls all allow enterprises and individuals to rapidly expand local into national and national into global enterprises.

Internet on Market Scanning

The Internet has changed the way the strategist in market scanning. It provides the quickest

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means to obtain data on almost any subject. A recent study (Miller (1998) of 77 companies reveals that 73% of the firms ranked the Internet as being used to a great extent. Other mentioned sources of information were competitors' offerings and products (66%), industry expert (62%), personal industry contacts (60%), online databases (56%), market research (55%), and the sales force (54%). Today there are softwares available like e-signal® which provides real – time fast, reliable, world market information and decision support tools delivered to active traders and professionals, directly to the networked PC or laptop. It allows traders to scan their database of stocks and find any stock that is performing to technical analysis criteria that they have set. The following information is available upon scanning the market.

- Customers and markets
 - The changing needs of customers
 - Their changing relationship to company
 - Their degree of solvability
- Suppliers
 - The supply of new products
 - The changing relationship of suppliers to the company
 - The suppliers' ability to provide essential products at the lowest possible cost
- Labor market
 - Changes in the supply of new skills
 - The relationship between labor and management
 - Manpower costs
- Dissatisfaction of the customers

Identifying factors associated with market scanning should have important implications for policy makers, managers of small businesses and researchers. By identifying which aspects of market scanning are critical to business growth, policy makers may be able to provide the companies with sales leads, exhibit their products in new geographic territories, and help advertise their products. Also, it may be possible to identify forms of market information companies want from research agencies and to develop methods in which the same agencies can assist in promoting these companies to potential buyers. Additionally, firms with reliable information sources continually exploit opportunities by tailoring service and products to well defined market niches, retrieve and react to market information more quickly, pursue orders, and typically are more flexible in meeting specific market demands. Yet, many companies, especially smaller ones usually possess fewer resources for instituting elaborate market-scanning mechanisms, thus possibly making them vulnerable to environmental shifts. Examining market-scanning activities of firms should enhance understanding of the complexities they face in dealing with market demands.

Internet on Corporate Competitive Advantage

Establishing one set of values throughout its global operation an MNC can get advantage over its rivals (Guyon,1996). Percy Bernevik, Swedish Chairman of Asea Brown Boveri AG introduced his concept of a company with no geographic base which draws its expertise from around the globe. The Company adopts local cultures while executing global marketing strategies. It gets competitive advantage to cut costs, improve efficiency and integrate local businesses with the world view. Many in the “real world” are attempting to use information technology to create a world where they can participate. Technology provides a new and powerful set of tools to enable participation rather than to create a “virtual world.” The Internet can be a “marketing” tool for small rural businesses, where local entrepreneurs develop Web sites and increase their markets. These successes will likely be repeated and extended as the Web expands. In rural areas the Net can also be used as a “tool” for product or marketing information or for collaborative business activities (production, marketing). ICT supports the formation of online networks for distributed economic development and production. Technology allows for continuous

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communication; work sharing; remote administration and management; and, seamless presentation and marketing of multiple centres as a single entity to the world.

Coordinating production, optimizing the selective advantages within the network and using the larger scale capacities of the network to undertake more elaborate activities are being explored. This could be a major opportunity for local economies that previously had been limited by their access to specialized skills and their small and dispersed populations. "Flexible networks" gain advantage from geographic or cultural social distinctiveness and from being a component of a larger network of producers, even when the linkages are largely "virtual." New types of networked organizations may be created. They could be structured as hubs and multiple self-sufficient nodes (Gurstein,1998). Collaborative specialization, information dispersal and multiple or distributed ownership, decentralized and horizontal support structures, and a high degree of local self-sufficiency (and thus structural redundancy/survivability) characterizes these new organizations. These structures allow for a speed of adaptation, highly efficient (low friction) horizontal rather than vertical information flow, and the economies of mutual rather than functional support. Client needs can be responded to more immediately, both geographically and culturally, creating powerful and globally competitive marketing opportunities.

This in turn would map onto the strengths and competitive advantages of existing local enterprise efforts. Highly adaptive responses to external economic conditions would help the local economy to evolve towards information intensity, increasing complexity and functional elaboration while integrating clients directly into dispersed supplier chains. The resulting disintermediation between user and supplier is precisely what many are predicting as being the organizational model of the marketplace of the immediate future.

The Growth of Global Internet Commerce

According to a report (Enter the Eco System 2000) the electronic commerce is poised to grow rapidly throughout the world to a total over USD 7 trillion in the Internet sales by 2006. Asia-Pacific region will grow to USD 1.6 trillion Internet sales. In a liberalized economy under the WTO umbrella the trading partners will invest in crucial technology infrastructure such as phone lines, computers, Internet hosts, CAIDA- type network and cell phones. Economic climate is improving in a border-less economy. As the Internet empowers citizens and democratizes societies, it is also changing classic business and economic paradigms. New models of commercial interaction are developing as businesses and consumers participate in the electronic marketplace and reap the resultant benefits. Entrepreneurs are able to start new businesses more

Internet may be the next major phase in the evolution of the competitive intelligence function.

WORLD INTERNET USAGE AND POPULATION STATISTICS						
World Regions	Population (2006 Est.)	Population % of World	Internet Usage Latest Data	% Population (Penetration)	Usage % of World	Usage Growth 2000-2005
Africa	915,210,928	14.1 %	23,649,000	2.6 %	2.3 %	423.9 %
Asia	3,667,774,066	56.4 %	364,270,713	9.9 %	35.6 %	218.7 %
Europe	807,289,020	12.4 %	291,600,898	36.1 %	28.5 %	177.5 %
Middle East	190,084,161	2.9 %	18,203,500	9.6 %	1.8 %	454.2 %
North America	331,473,276	5.1 %	227,303,680	68.6 %	22.2 %	110.3 %
Latin America/ Caribbean	553,908,632	8.5 %	79,962,809	14.4 %	7.8 %	342.5 %
Oceania/ Australia	33,956,977	0.5 %	17,872,707	52.6 %	1.7 %	134.6 %
WORLD TOTAL	6,499,697,060	100.0 %	1,022,863,307	15.7 %	100.0 %	183.4 %

NOTES: (1) Internet Usage and World Population Statistics were updated for March 31, 2006. (2) Demographic (Population) numbers are based on data contained in the world-gazetteer website. (3) Internet usage information comes from data published by Nielsen//NetRatings, by the International Telecommunications Union, by local NICs, and other reliable sources.Source: www.internetworldstats.com.

Figure 1



easily, with smaller up-front investment requirements, by accessing the Internet's worldwide network of customers.

Internet technology is having a profound effect on the global trade in services. World trade involving computer software, entertainment products (motion pictures, videos, games, sound recordings), information services (databases, online newspapers), technical information, product licenses, financial services, and professional services (businesses and technical consulting, accounting, architectural design, legal advice, travel services, etc.). An increasing share of these transactions occurs online. The Internet has also revolutionized retail and direct marketing. Consumers are now able to shop in their homes for a wide variety of products from manufacturers and retailers all over the world.

To ensure the growth of global electronic commerce over the Internet, standards will be needed to assure reliability, interoperability, ease of use and scalability in areas such as:

- electronic payments;
- security (confidentiality, authentication, data integrity, access control, non-repudiation);
- security services infrastructure (e.g., public key certificate authorities);
- electronic copyright management systems;
- video and data-conferencing;
- high-speed network technologies (e.g., Asynchronous Transfer Mode, Synchronous Digital Hierarchy); and
- digital object and data interchange.

Internet on Strategic Internal Scanning

The market-oriented Internet has made significant expansion into intranets and extranets contribute to increased performance through supply chain management (Poirer, 1999). Industry leaders are integrating modern information systems into their corporate value chains to harmonize efforts to achieve competitive advantage. With actual-point-of-sale information, products are replenished to meet the current demand and minimize stock-outs while maintaining low inventories. All organizations need to monitor at some level what goes on in their environments and recognize their strengths and weaknesses in relation to it. The importance of environmental information depends on the degree to which the success of the organization itself depends on its environment. In the business literature, this dependency of the organization on its environment is referred to as perceived environmental uncertainty (PEU). Gordon and Narayanan (Gordon, Lawrence and Narayanan, 1984) identified factors that determine PEU. These factors include the nature of the society, economic stability, legal stability, political constraints, the nature of the industry, the customer base and the nature of the organization. While PEU varies from industry to industry, the level of recognition of the importance of the environment also varies from company to company, as does the reaction of companies to their environment. Internet resources and services are quickly becoming strategic information tools for a growing number of commercial, government, and non-profit organizations. Organizations connected to the Internet can break out from the traditional model of managing information as a form of exercising control over the integrity of and access to information. In the Internet-enabled paradigm, information management may be based simultaneously on widespread access to an expanded range of information resources, and on the capability to implement and sustain far-reaching yet coherent information strategies that bestow competitive advantage.

Internet on Business Strategy

Business to Business (B2B) web portals have been designed to make electronic connection between buyers with suppliers to strengthen collective purchasing activities. B2 B operation is a recent example of the use of corporate strategies to obtain competitive advantage." If our information was 100% right", asserts Dick Hunter, head of Dell's Computer's supply chain management, "the only inventory that would exist would be in transit" (Enter the Eco-System, 2000). Internet may be the next major phase in the evolution of the competitive intelligence function. A higher form of competitive intelligence is evolved when businesses and organizations integrate the resources and services on the Internet into their organizational learning processes.

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Networking is linked to improved productivity and competitiveness, and the Internet and e-commerce technologies are being used to coordinate global operations in a variety of industries.



The organization's knowledge network expands as more people in the organization tap into external knowledge, and as connections are made with relevant expertise and advice outside the organization. Businesses develop deeper insight about their customers, competitors, and technologies; broaden their intellectual horizons; and generally become more swift-footed in responding to market needs and external opportunities. Businesses new to the net are initially enticed by the access to open information sources and the access to potential markets, but access to information and access to markets are only the opening gambits, the longer term value of the Internet could be the facilitation of a new information and learning culture that enables organizations to adapt themselves as nimbly as the external environment transmutes.

Networking on Corporate Strategy

Growth of Internet allows corporations to rethink what business they should be in. Any company considering entering international markets must consider the impact of the Internet. Simply creating a Web site is likely to result in inquiries from people in foreign countries where the company has no experience (Gimeno and Woo, 1999). Creating a Flexible Manufacturing Network seems to be a promising possibility of the future.

A flexible network is a group of two or more firms which have banded together to carry out some new business activity that the members of the network could not pursue independently. The network can involve similar firms which band together to share the costs of developing a new product or market, or dissimilar but complementary firms which collectively approach the capability of a vertically integrated large firm. Typically the nature of the cooperation within the network is carefully defined so as to preserve each firm's independence and original lines of business.

The duration of the collaboration may be very short and limited to a particular project for a single customer. A new network may then be assembled with the best configuration to meet the needs of the next customer. A flexible production network is not just a joint venture among several firms. nature of the collaboration tends to be deeper in a true network, and one form of collaborative endeavor tends to lead to others. Shared input procurement to get large scale cost breaks may lead to joint bids or a common work force training program.

Small firms, who want to improve their competitiveness, develop new products, penetrate new markets, adopt new technology and upgrade work force skills while retaining the unique lifestyle of a small business should be interested in the network approach. Significant progress on these fronts can be achieved more easily in a well functioning network than in isolation. A significant new opportunity presented by ICT may be through the formation of flexible networks online, using electronic links to manage and coordinate distributed development and processing of information intensive products.

The capacity of technology to facilitate and accelerate continuous communication, work sharing and remote administration and management, seamless presentation and marketing of multiple centres as a single source to the world (the basis of "flexible networks") is only beginning to be explored. In addition new types of networked enterprises would emerge that would take advantage of product differentiation and the flexibility of distributed and more adaptable systems. In this way it might be possible to achieve economies of "disaggregation" rather than economies of scale.

Internet on Functional Strategy

Tracking potential online customers is the rationale for electronic customer relationship management (e-CRM) software (Medford, 2001). Every time a corporate executive clicks on a banner or views a product on the Internet, Web site operators add this information to the person's digital trail. The user does not have to purchase anything because a decision not to buy is almost as important as a decision to buy. The data is used to answer questions such as, "Why did the customer visit our site but not buy our product? Is our checkout process too long? Did the customer come from an affiliate site? Should we have offered this person a discount of special offer? The answer to these questions can strongly influence an MNC's marketing strategy (Brady, 2000). The position of Internet strategy among functional strategies is special in that it must support both the superior business strategy and the rest of the functional strategies with all of whom it should be interrelated so that the Internet can contribute to the achievement of



partial strategic goals of the related functional strategies as much as possible.

Internet Provides Infrastructure for Companies to Become Global

In today's economic life globalization is becoming a permanent and irreversible part. A key reason is the use of information system technology to connect operations around the world. The Internet via e-mail and Web sites in multiple languages provides instantaneous communication. Enterprise resource planning (Garten, 1998) (ERP) Systems software can manage any corporation's internal and international operations in a single powerful server network. ERP is able to unite customers and suppliers so that they can transact business with each other online with global sourcing and pricing strategy. Enterprise resource planning (ERP) is an exercise that focuses on optimizing the way things are done internally. It attempts to integrate all departments and functions across a company onto a single computer system that can serve all those different departments' particular needs. The best way to demonstrate the value of ERP is by improving the way the company takes a customer order and processes it into an invoice and revenue.

The process of economic globalization is perhaps most vivid with the integration of information technology and Internet. Networking is linked to improved productivity and competitiveness, and the Internet and e-commerce technologies are being used to coordinate global operations in a variety of industries. The rapid adoption of Internet-based electronic commerce is expected to have major impacts on the way companies do business worldwide. These include changes in the internal organization of firms, helping to link all of the firm's activities and allowing for better communication, sharing of information, and coordination of activities within the firm. The expected impacts also include changes in the external organization of economic activities. As companies apply IT internally, they have also developed electronic linkages with suppliers, customers and business partners to pursue similar improvements in performance in the entire value chain. The Internet and electronic commerce are bringing countries together to create a global networked economy.

Conclusion

This article develops an understanding of the adopting various information technology strategies to achieving business success. It firmly establishes the impact of Internet on strategic research on marketing management. It integrates most of the strategic marketing management concepts, research and theories on the Internet. There is growing consensus in the industry to create adaptive, agile Information Technology architecture. The world of business is characterized by rapid change, unexpected shifts, and relentless competition. In this environment, companies need the ability to adapt quickly to change, and to use change as an advantage. Flexibility means success.

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