

Information Technology in Marketing and Its Role in Business

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Abstract:

Over the last several years, individuals and organizations in India and all over the world have invested significantly in information technologies and systems. It is widely believed that strategic Information Technology (IT) investments will enable firms to cut costs and compete effectively.

Information technology affects marketing in several ways. It saves labor and provides service at a reasonable cost. Others create entirely new products and new organizational forms. Still others create enhance marketing operations in ways that can change their character. An example of the latter is now taking place behind the scenes in the consumer packaged goods industry, where a new generation of data is producing a discontinuity in the information available to marketers.

Keywords: Introduction, Role, IT concept, IT in business, Advantages, Mobile-commerce, Advance selling.

Introduction:

Over the last years, individuals and organizations in India and all over the world have invested significantly in information technologies and systems. It is widely believed that strategic Information Technology (IT) investments will enable firms to cut costs and compete effectively. However, there are concerns about the choice of these technologies and their deployment and hence the organizations ability to successfully achieve appropriate returns forms these technologies.

Senior managers responsible for determining the level of IT expenditure are in a dilemma. They perceive that appropriate IT investment may significantly improve the firm's profit performance, but they do not know how to measure this performance nor do they know precisely how much should be invested in IT. Much of the investment that is made is based on hunch or intuition, on the assumption that real returns will result. As Crows ton and Treacy (1986) stated "Most of what we do in MIS is based on the belief that information

technology has an impact on the bottom line of the business. Surprisingly, we rarely know if this is true”.

The internet and other rapidly evolving information and communication technology have greatly altered the marketing landscape, creating new market forces and offering new marketing advantages to those who best grasp the strategic effects of these changes.

The Concept of Information Technology (IT):

Information technology affects marketing in many ways. Some of these save labor and provide service. Others create entirely new products and new organizational forms. Still others create enhance marketing operations in ways that can change their character.

An example of the latter is now taking place behind the scenes in the consumer packaged goods industry, where a new generation of data is producing a discontinuity in the information available to marketers. In this case the combination of data and technology is bringing increased marketing effectiveness, organization change, and shifts in power within channels of distribution.

More general, information technology blurs traditional strategic and functional boundaries by enabling an organization to deliver a large number of differentiated products to a large number of differentiated markets. For this to be successful, marketing must be closely interwoven with operations, R&D, and sales.

Researchers on information technology had not provided a clear definition of the term Information Technology (IT), many papers on IT either assumed that there is a common understanding of the concept, that the meaning of the term is implicitly understood, or define it in such a way as to serve a specific purpose.

In this, research information technology refers to the collection of products and services that turn data into useful, meaningful, accessible information. IT encompasses all forms of technology used to create, store, exchange, and use of information in its various forms (business data, voice conversations, images, motion pictures, multimedia presentations, and other forms, including those not yet conceived). That's includes modern technologies such as computer, facsimile, transmission, telecommunications and microelectronics.

Information Technology Role in Organizations:

Apparently, information technology is worth something because companies keep investing money to install computers and create application systems. They must see some relationship between the cost of information technology and ultimate company economic performance. At least the benefits received from computers, systems, and programs.

To define the linkage between information technology and business performance, some understanding of the business itself, and its structure, objectives, and interactions with customers, suppliers, and the rest of the economic environment is necessary as each business has a particular relationship to its suppliers and customers.

Porters (1985) value-chain model provides an effective framework for taking a closer look at how IT investments affects particular business activities and thus provides a starting point for a detailed IT investments impact analysis.

According to Porters Value Chain Model (Porter, 1985), the activities conducted in any organization can be divided into two parts: primary activities and support activities. The five primary activities are: (1) inbound logistics, (2) operations, (3) outbound logistics, (4) marketing and sales, and (5) services. The support activities are (1) Firm infrastructure, (2) Human Resource Management, (3) Technology Development, and (4) Procurement.

The primary activities and support activities in Porter's Value Chain Model are shown in Figure (1-1). These activities are discrete, besides that they are also interdependent. Therefore, how well they perform individually and how well they are linked were important determinants of business value.

Information Technology and Business:

Information technology is changing the way companies operate. Its affecting the entire process by which companies create their products. Moreover, it is reshaping the product itself, the entire package of physical goods, services and information, companies provide to create value for their buyers.

When applying technology to a business problem, executives are usually concerned with the first order effects of the technology, reducing costs, improving product quality, etc. The impact of Information Technology is different from the impact of many other types of technology in that the secondary effects of information technology are often more important than their primary effects.

Information Technology and Competitive Advantage:

A firm gains competitive advantage by performing value chain strategically important activities more cheaply or better than its competitors (Porter, 1985). Since IT investments permeates the entire value chain, some and perhaps even all the activities and links in the value chain can be enhanced or transformed to provide a means of competitive advantage (Hammer, 1990; Weill and Broadbent, 1998).

IT investments can improve the efficiency of operational processes through automation, or enhance their effectiveness and reliability by linking them together. IT investments may enable the organization to reduce cycle time and production costs, improve quality and customer service, and increase sales.

Information sharing, timely communications and improved decisions may enhance management processes. For example when a firm's production schedule is linked to real time sales data and to suppliers' logistics systems, these linkages may not only create production efficiencies but may also markedly improve customer relations through greater responsiveness.

Information technology has a powerful effect on competitive advantage according to Porter (1985) in either cost or differentiation.

Enhancing differentiation:

The impact of information technology on differentiation strategies is equally dramatic. The role of a company and its product in the buyer's value chain is the key determinant of differentiation.

The new information technology makes it possible to customize products. By bundling more information with the physical product package sold to the buyer, the new technology affects a company's ability to differentiate itself.

Information technology can add distinctiveness through additions to the product itself or changes in the ways the product is provided to the buyer or creation of new products. These types of investments increase consumer demand for products and services.

Changing Competitive scope:

Information technology can alter the relation between competitive scope and competitive advantage. The technology increases company ability to coordinate its activities regionally, nationally, and globally. It can unlock the power of broader geographic scope to create competitive advantage.

The only way IT (or any input) can lead to sustained supernormal profits is if the industry has barriers to entry. A "barrier to entry" is broadly defined as anything that allows firms to earn supernormal profits, such as patents, economies of scale, search costs, product differentiation, or preferential access to scarce resources (Hitt and Brynjolfsson; 1996). There are two possible ways in which IT

The first is that in industries with existing barriers to entry, it may be possible for firms in a particular industry to increase profits through the innovative use of IT, provided the barriers to entry remain intact. Second, the use of IT may raise or lower existing barriers or create new ones, thus changing the profitability of individual firms and industries.

The impact of IT on barriers to entry is ambiguous. On one hand, it may reduce economies of scale and search costs (Bakos, 1993), thereby leading to lower industry profits. On the other hand, it may also enable increased product differentiation (Brooke, 1992), supporting higher profits.

Furthermore, if particular IT investments cannot be replicated by other firms, then firms can increase their own profits, while industry profits may be either increased or decreased. However, there are relatively few IT investments that provide sustainable advantage of this sort (Clemons, 1991).

On balance, any or all of the above conditions may hold for a given industry, so competitive strategy theory does not clearly predict either a positive or negative relationship between IT and profits or market value.

Mobile Commerce and Global Position System (GPS) Tracking:

Mobile commerce (a.k.a. M-commerce) is the use of various information and communication technologies that allow the mobile exchange of information. It includes a variety of products, including mobile communication devices, wireless internet, personal digital assistant (a.k.a. PDA), global positioning system (GPS), and so on.

Certainly, M-commerce has fallen far short of the loft expectations of the original advocates. As usual, remarkable technology was confused with genuine buyer benefits. Moreover, the technology fell short as well.

Small screen, tiny keypads, limited bandwidth (i.e., communication speed), and other problems thwarted many potential applications. However, M-commerce-related technologies still have great potential. For example, consider GPS technology.

As with most emerging technologies, the cost of GPS devices, users can determine their precise location and, when linked to communication and computational components, they can transmit location and do location-based computation.

There have been different definitions of M-Commerce. Lehman Brothers (1995) define M-Commerce as “the use of mobile hand-held devices to communicate, inform, transact and entertain using text and data via connection to public and private networks”. Their reason for using such a broad definition is because the borders between messaging and commerce have become too blurred to separate these categories.

Another definition is “finance transaction especially buying and selling: trading”. Durlacher researches use a fairly broad definition as they as more distinct and is as follows: “any transaction with a monetary value that is conducted via a mobile telecommunication network”.

M-Commerce Existing and Futures Possible Application Include:

- Mobile banking service (check account information, money transfer)
- Mobile trade service (stock quotes, selling/buying)
- Credit card information (account balance)
- Life insurance account information (account information, money transfer)
- Airline (online reservation, mileage account check)
- Travel (online reservation, timetables)
- Concert ticket reservation (online or telephone booking)
- Sales (online books, CDs)
- Entertainment (games)
- News/information (headline, sports, weather, horse racing information, business, technology, regional)
- Database, application (yellow pages, dictionary, restaurant guide)

Marketing Communication through Information Technology:

A communication and marketing strategy covering the implementation of the Investors in People standard at various sites within the domain of the BANKSETA needs to be seen in the context of the target “market” – the people who will be required to buy in to the process.

While this will eventually involve people at all levels within the relevant organizations, the initial phase demands a heavy emphasis on the higher management levels. This is critical, firstly because they need to be fully committed to Investors in People and aware of the implications of the process for their people, and secondly because they will largely drive the on-going communications process down through their organizations as the implementation proceeds.

A communication revaluation is occurring new technology allow retailer to fax design to clothing in India as quickly as they can be sent to Leeds. Related technology allow as small further education college to produce an “in house” News paper to professional standards using desk-top publishing.

New graphics soft-ware permits the lecture to include visuals, images and a host of audiovisual aids to present ideas, concepts and issue.

Much of marketing activity centre on the communication process. Despite this, them has until recently been relatively little attention paid to the total communication such as advertising. Press relatives, selling and personal contact. Failure to understand the underlying process and undermine the dialogue the firm is seeking to establish which its client groups.

Information Technology and Marketing Strategies:

Independent Production Information:

One emerging market phenomenon is the increasing popularity of product information produced by independent sources. The internet and fast developing information technology have significantly reduced both information delivery cost and information retrieval cost. Many popular consumer magazines and websites (e.g., PC Magazine, Consumer Reports, Car and Driver, CNET.com ZDNET.com) regularly publish comprehensive product reviews based on independent laboratory tests and expert evaluations.

An increasing number of online sellers (e.g., amazon.com, circuitcity.com, wine.com) invite users to post personal product evaluations on the sellers’ websites. Several recent papers (Chen and Xie, 2004, 2005), examine when and how a manufacturing firm should adapt its marketing strategies to such independent product information.

For example, should a firm receiving an unfavourable third-party review reduces its price or adjust its advertising? Should a winning product of a product review (e.g., “Editor’s Choice”) boost its advertising expenditure to spread the good news? How should firms’ strategic responses to product reviews differ across different types of product reviews (description vs. recommendation) and different advertising media (the reviewer’s publication vs. other media)? A theory is developed to address these issues and derive firms’ optimal responses to product reviews under different product/market/review/media conditions.

Advance Selling:

Another important impact of new information technology concerns advance selling strategy for service (selling before the time of service delivery).

Until recently technological limitations restricted the advance selling practice mainly to travel and entertainment related industries (e.g., airlines, hotels, theatre tickets). Most advance selling research focused on the airline industry (e.g., Yield Management), which has specific characteristics such as the negative correlation between consumers' arrival time and their price sensitivity (e.g., leisure travellers come early but business travellers come late) and capacity constraints.

The emergence of new technologies such as personalized bar-coded tickets, biometric readers, smart cards and web-based transactions have dramatically reduced transaction costs of advance selling and given sellers more control over arbitrage (i.e. middleman reselling) which had previously discouraged sellers in many industries from implementing advance selling.

Recent studies (Xie and Shugan 2001), Shugan and Xie 2004, 2005) show that advance selling is a far more general marketing tool than previously thought. We show that the profit advantage of advance selling does not require these industry-specific characteristic but only requires the existence of buyer uncertainty about future valuations.

Network Effects and Standards Competition:

Finally, with the rapid development of information technology and the digital revolution, network effects and technological standards have an increasingly important effect on the success of many new products/services, including computers, electronic video games, wireless communication, home networking, video/audio electronics, banking services, and online music.

Network effects and standards competition impose unique challenges in both firms and consumers. Sun, Xie and Cao (2004) examines under what conditions and innovating firm should keep its technology proprietary, license its competitors, create a line of compatible products, or simultaneously license its technology and extends its product line. Wang and Xie (2005) empirically test how the patterns of competition between innovating and imitating firms change over product life cycle in the presence of network effects.

Conclusion:

The impact of IT on a particular process could have downstream effects on subsequent processes. In effect, there will likely be some degree of interaction between the various processes, for companies to succeed in business;

it is becoming increasingly important for all parts of the organization to move in the same strategic direction. Of particular importance is that the business strategy and the information technology (IT) strategy are complementary.

If they are trying to move the organization in different directions the risk of business failure may increase. Given the high level of resources invested in information technology by

most organizations, it is important for to be used as a strategic resource to contribute towards the achievement of business objectives.

The ability of IT to add economic value to the firm has been the subject of many case studies which have provided many evidences of the use of IT to lower costs, differentiate products or services, create switching costs to retain suppliers and customers, and impose barriers to market entry.

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