Framework of Technology in Marketing World: A Theoretical Review

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Abstract

This concept paper aims to assess a significant part of technology in marketing. Commonly, the mission of technology is the search for innovation and theorizing about new process. There are many types of technologies such as high technology, digital technology, information technology, communication technology, manufacturing and transportation technology, productivity technology and some other types of technologies are connected with all activities of people as well as marketing activities all over the world. From the past years to contemporary situation technology contributes to main parts in the marketing field. There are several parts in marketing area, like service marketing, retail marketing, marketing communication and etc. In this competitive business world technology is one of the most important factors for every organization. Without technology concern, marketing associated firms cannot survive within the industry. As an uncontrollable factor of business environment, the evaluation of technology develops day-by-day. In this way new methods of technologies are making marketing activities very much effective trends than past eras that used traditional methods. The main purpose of this concept paper from the researchers' point of view is to develop a framework to understand the applications of technology in contemporary marketing world. This concept paper gives a general idea of technology connected with marketing aspect through the heavy literature review. This concept paper concludes by citing the past researchers' findings and suggestions. Especially this paper is a review of theories of past literatures. Finally, from the vast theories of literatures and articles this paper found ten applications of technology in the marketing world. Such as; marketing communication, consumer portal and social interaction, internal communication, integrated promotional activities, delivery platforms, customer relationship management, sales force automations, money-making or profit-making transactions, service process integration and research links through the findings derived from the literatures. This study has implications to the theories in marketing as well as technology as a conceptual ground for research ideas.

Keywords: Applications, Contemporary Marketing, Literatures, Technology

INTRODUCTION

Technology has been defined in different ways of perspectives. According to Kumar et al. (1999) technology consists of two primary components: 1) a physical component which comprises of items such as products, tooling, equipments, blueprints, techniques, and processes; and 2) the informational component which consists of know-how in management, marketing, production, quality control, reliability, skilled labor and functional areas. Now-a-days technology is in foremost place around the world. Current situation is like "without technology there is no business or commerce". In this regard lots of researchers have done technology and its importance related researches by using different methodologies in past years. Even though, recently a trend of technology is changing in an effective ways. The report of Hoppermann (2013) enumerates the top ten technology trends that are reshaping the nature and value proposition of business applications today and in the future. One of them is "big data is driving real-time analytics that improve business results". Those ten technology trends help to shape organizations' application strategy. Business applications are set of computer programs that are used by business users to perform business functions. In this way, computer programs assist marketing activities in many ways. But most of the researchers have done their research regarding e-business and e-commerce. Researchers stated that the computer programs help to business requirements through Consolidating, rationalizing, and transforming their business applications. Especially it allows more flexible support of business requirements (Hoppermann et al., 2013).

Marketing is a broad concept, which means "The management process responsible for identifying, anticipating and satisfying customer requirements profitably" (The Chartered Institute of Marketing). Marketing consisted of many activities, start from customer and end with customer. Each and every activity, technology enables to work easier to both organizations and customers. The past researchers reported so many advantages of the adoption by business to business market participants of e-commerce and e-business recognized multidimensional implications for a variety of sides of business activity. Different authors discussed differently about technology, such as Tourism management strategic use of information technologies in the tourism industry (Buhalis, 1998) Success in high-technology markets: Is marketing capability critical? (Dutta et al., 1999), Electronic tickets, smart cards, and online prepayments: when and how to advance sell (Xie and Shugan, 2001) Evidence of the effect of trust building technology in electronic markets: Price premiums and buyer behavior (Ba and Pavlou, 2002) Evaluating the use of the web for tourism marketing: a case

study from new Zealand (Doolin et al., 2002) Influencing the online consumer's behavior: the web experience (Constantinides, 2004) Mobile marketing: the role of permission and acceptance (Barnes and Scornavacca, 2004) Portfolios of inter firm agreements in technology-intensive markets: consequences for innovation and profitability (Wuyts et al., 2004) and so many other technology base studies.

The past researchers did not explore the grade attention to explain about applications of technology in marketing in a deep manner. Therefore, as academicians, there is a need to identify and explore the applications of technology in marketing world. Because of this gap filling purpose researchers have done this concept research work by using past literature as data. Researchers identified the applications of technology to business under many topics, but few researches have considered modeling framework which gathered different perspective. Under a common review, this study is intend to make a frame of theories in applications of technology in marketing under a common specified applications desired by the past researchers.

OBJECTIVE OF THE RESEARCH

To explore the theoretical background of the literatures related to some basic applications of tech-marketing

To form a theoretical platform as a conceptual framework for tech-marketing

METHODOLOGY

It is basically a concept paper to explore the theories behind tech-marketing literatures. It is a secondary source research – desk research. Sources like; research reports, conference proceedings, journal articles and also books (Around 65 sources).

FINDINGS

Through this literature studies researchers have found ten applications of technology in marketing world. Such as;

Applications of Technology in Marketing Communication

According to Kotler and Keller (2009) marketing communications are the means by which firms attempt to inform, persuade, and remind consumers – directly or indirectly about the

products and brands that sell. Basically, marketers should consider customers' trust, belief, life style, spending pattern, technology knowledge, technology availability level and some other things while organize marketing communication activities. Elizabeth Shove (1998) discussed relating technical potential under following topics; the nature of technical potential. The second relates to the gaps, barriers believed to slow up the realization of that technical potential and concerns the process of technology transfer. Baranson (1970) defines technology transfer as transmission of know-how (knowledge) which enables the recipient enterprise to manufacture a particular product or provide a specific service. Elizabeth stated that the concept of technical potential constitutes the cornerstone of energy related policy and the driving force of energy related research. If energy saving measures are indeed cost effective, and if individual consumers were to act in an appropriately rational fashion, the gap should not exist and reinforce the belief, first, that such barriers are real and, second, that governments have a legitimate part to play in supporting efforts to correct these and other market imperfections. Therefore, marketers can use the potentials of technology for their marketing communication activities in an effective and efficient manner to directly or indirectly persuade and remind customers about their products.

At the same time a lot of technology based devices' modifications and extensions have been suggested in the literature, the basis for most of these studies can be found within the theory of reasoned action (TRA) (Fishbein and Ajzen, 1975) the theory of planned behavior (TPB) (Ajzen, 1985) and the technology acceptance model (TAM) proposed by Davis (1989). Reason for technology adaption related study is the continuous development of technology based devices and tools. Now-a-days there are more flexible technology devices available everywhere. Marketers can easily do their communication activities ever time with their customers.

Apart of electronic marketing, there is another kind of technology usage marketing is mobile marketing. Robinson (2002) define mobile marketing as "the distribution of any kind of message or promotion that adds value to the customer while enhancing revenue for the firm". The most important advantage of mobile marketing deceits in its potential to enhance communications by providing customized / personalized, timely and location specific information without restriction of time and place (Smutkupt et al., 2010) Good example is Mobile Instant Message (MIM). MIM facilitates consumers, whether sitting at the computer or on the road, to connect instant message (IM) with existing communities and across the

mobile Internet. MIM brings tremendous conveniences for customers, and is widely adopted by younger. And also Short Message Service (SMS) and Multimedia Messaging Service (MMS) are an additional popular handheld-based communication tools (Zhaohua Deng, 2010).

Applications of Technology in Consumer Portal and Social Interaction

In academic field as well as industrial field researchers' most important goal is acceptance of technological innovations. It has become an integral part of modern life and the world economy in recent decades (Kulviwat, 2009). Then only, it leads to create the way of social interaction to consumers. Peppers (1999) summarizes four basic strategies and objectives of customer relationship management initiatives. One is customer interaction. An organization is to keep track of customer behavior and needs over time. He suggested that the relationship of customers is very important for an organization. At the same instance customers also have to ready to accept technology influences level and technology usage. Readiness refers to people's propensity to embrace and use new technologies for accomplishing goals in home life and at work (Parasuraman, 2000). In 2009, another research clearly explains about digital marketing. Pull digital marketing involves the user having to seek out and directly grab (or pull) the content while push digital marketing involve both the marketer (creator of the message) as well as the recipients (the user), the marketer having to send (push) the messages to the users (subscribers) in order for the message to be received (Morozan et al., 2009). Web sites, therefore, represent the most important form of interactive social platform for customers to collect appropriate information regarding products and services. There are many conceptual and empirical studies have focused on the implications of interactive media for consumers within the marketing literature. Therefore, technology helps to develop consumer portal and social interaction (Balabanis, 1999).

Social media represents two-way communication between consumers and the appearance of the communication content differs from the one-way model of communication in most mass media. Another line of framework, Social Feedback Loop, links consumer purchase funnel with social media. Dave Evans (2008) has argued that traditional purchase funnel has three stages (awareness, consideration, and purchases) during which a marketer could influence a consumer's decision making. Therefore, social media has revived more ancient types of decision-making prevalent before the emergence of mass media, when the exchange of

opinions between one's families, relatives, friends, and neighbors was the basis for product purchase (Dellarocas, 2003). The promise of electronic commerce and online shopping depends, to a great extent, on user interfaces and how people interact with computers (Hoque and Lohse, 1999).

Applications of Technology in Internal Communication

Jo and Shim (2004) note that "given the emerging paradigm of public relations by relationship management, the terms of internal communication need to be redefined as part of building favorable relationships between management and employees". In 2002, some authors suggested that the networked computers will be everywhere in near future. Low-cost microprocessors and network connections will be embedded in all consumer durable devices. Every one of these devices will be connected to the Internet, through either the electrical wiring system or through a community wireless network (Watson et al., 2002). Now-a-days inside of every organization there is an internal communication through technological devices. Especially for the firms which doing marketing functions apart of external communication, there should be an internal communication between management and employees for the successful operations and proper supply chain management. Cooper and Edgett (2010) state that high-tech firms lack clearly formulated strategy and suggest the framework covering the process from the establishment of business goals and objectives to the allocation of resources. Authors also present the steps of new product development (NPD) strategy and describe the importance of goals and objectives of innovative products, because new product development is one of the most needed facts in marketing field. Allocation of resources and create the NPD strategy are the management's responsibility and duty. Employees want to perform according management's decisions. Therefore, internal communication should be there in every marketing organization. In this situation firms should accept and adopt enhanced technology for their better internal communication. Some researchers stated that the technology acceptance model (TAM) is a specific and parsimonious framework for predicting and explaining people's adoption of information technology in work settings. The technology acceptance model posits that ease of use and the perceived usefulness of a new technology influence customers' attitude toward using the technology, which in turn directly influences intentions to use the technology (davis, 1989; davis, bagozzi, & warshaw, 1989)

Applications of Technology in Integrated Promotional Activities

As defined by the American Association of Advertising Agencies, integrated marketing communications recognizes the value of a comprehensive plan that evaluates the strategic roles of a variety of communication disciplines advertising, public relations, personal selling, and sales promotion and combines them to provide clarity, consistency, and maximum communication impact. This revolution in the business world is due primarily to an explosion in information technology (IT) development and the resulting emergence of electronic commerce (Shaw et al. 1997). Integration ensures customers receive the same information in all categories of communications. For example now-a-days marketers can use direct marketing through e-mail and telemarketing simultaneously. Altogether, technology helps to promotional activities as integrated approach.

Applications of Technology in Delivery Platforms

Mostly delivery platforms are associated with service delivery platforms. Advancement of technology and the alignment of market forces and competitive marketing environments have given service delivery platforms renewed relevance and currency as a middle-ground solution for enabling the optimized exchange of services across different networks and devices and between users, operators, and service and content providers (Johnston et al., 2007). As the economy transforms into an electronic marketplace with the proliferation of electronic commerce and inter organizational trading exchanges, information asymmetry and opportunism could increase as more transactions take place. Therefore, basic trust in a partner's credibility that is induced by appropriate information technology determined feedback mechanisms will become an important component of electronic exchange relationships. By reducing transaction risks, augment the extent of electronic markets and assist the proliferation of the electronic economy trust could generate positive outcomes (Pavlou, 2002).

During the last few years we have seen a remarkable development in services available through mobile devices, with new opportunities for users that are creating new motives for use and new channels for marketing communication and distribution (Balasubramanian et al., 2002). The online shopping environment enables consumers to reduce their decision making efforts by providing vast selection, information screening, reliability and product comparison

(Alba et at., 1997). Therefore, technology applications help to easier and speed up the work related delivery functions of marketing.

Applications of Technology in Customer Relationship Management

Couldwell (1999) defines that the CRM is "a combination of business process and technology that that seeks to understand company's customers from perspective of who they are, what they do and what they are like". Peppers and Rogers (1995) consider the IT as one of the most important aspects of CRM and they define CRM as "the market place of the future is undergoing a technology-driven metamorphosis". It is widely recognized that the use of information technology has transformed business processes over the past ten years. With the explosion of the Internet and other tools, many firms are incorporating technology into their marketing and operations. The impact has been especially profound in the services arena, which has traditionally relied on close, personal contact between customers and employees (Matthew, 2005). Seen as a considerably important factor for building and maintaining relationships, trust is viewed as a main part of the success of electronic commerce (Lee & Turban, 2001), as well as of mobile commerce (Siau & Shen, 2003). There is increasing recognition and agreement that website satisfaction is fundamental to establishing long-term relationships with customers and hence ensuring the long-term profitability of online operations (McKinney et al., 2002; Straub et al., 2002).

Applications of Technology in Sales Force Automations

Teylor (1993) reports that SFA provides sales people with faster access to information, thus reducing the time required to prepare for a client presentation and reducing the number of follow-ups when further information is requested. Although mankind has been seeking to create mechanical devices that can perform simple and complex tasks for millennia, AI and exponential improvements in technology are bringing what were once futuristic visions into the mainstream of business and society. Now robots do the work, which substantially increases the company's output and ability to grow demand by reducing its prices. As a result, workers can now earn more by maintaining and supervising a growing number of robots (Greenblatt, 2013).

Technology-based self-service includes "on-site" options such as touch screens in department stores, information kiosks at hotels, and self-scanning in grocery stores and libraries; it also includes "off-site" options such as telephone and online banking and shopping on the Internet (Chandler, 1995). According this study of technology based self service it's clear that there is huge chances for automations within an organization by using advance technology. Mobile and wireless technologies are deeply affecting the way many organizations do business. Among the several types of wireless applications, business-to-employee (B2E) applications have a strong potential to generate considerable value for organizations. Promoting the ease of use, or "user-friendliness," as well as the fun or "enjoyment" of their technology-based self-service is critical if marketers expect that consumers will encounter either long waiting lines or crowded conditions that could cause social anxiety. Thus, waiting time is a strong deterrent to the use of on-site technology-based self-service despite contrary observations. Implications for practitioners are to plan service design and layout so as to minimize waiting time. Marketers should promote the ease of use, or "user-friendliness" of their technology-based self-service, especially if their target market is likely to (1) be low in self-efficacy or (2) have a high need for interaction with a service employee. In addition, service firms must ensure that through sufficient pre-testing their technology-based self-service is actually designed to be easy to use by typical consumers in these target groups (Pratibha et al., 2002).
The network is not the only thing being reimagined. Software-defined storage (SDS) represents logical storage arrays that can be dynamically defined, provisioned, managed, optimized, and shared. Coupled with compute and network virtualization, entire operating environments can be abstracted and automated. The software-defined data center (SDDC) is also becoming a reality. A Forrester report estimates that "static virtual servers, private clouds, and hosted private clouds will together support 58 percent of all workloads in 2017, more than double the number installed directly on physical servers." This is where companies should focus their software-defined everything efforts (Rachael King, 2014).

Applications of Technology in Money-Making or Profit-Making Transactions

In the 21st century, emerging technology holds out the promise of transforming both human life and business practice. To cite one example, the Internet makes it possible for people with specialized interests to find each other and engage in very elaborate communications or transactions (Zinkhan, 2005). The electronic fund transfer system (EFT - Electronic Funds Transfer) represent a set of devices and specific procedures used to make possible the

movement of the monetary flux from the payer to the payee, in an exclusive electronic medium (Patriciu et al., 2004). The Internet too is an innovative medium for commercial transactions. Its characteristics include the anonymity associated with the medium, inability to observe the other party physically, requirement to divulge personal information to a non-physical firm, and concerns about security and privacy (Hoffman et al., 1999). Electronic commerce is a new form of online exchange in which most transactions occur among entities that have never met. As in traditional exchanges, trust has been considered crucial in the online transaction process (Brynjolfsson and Smith, 2000). While most online shopping sites provide personal information privacy protection policy and guarantee for transaction security, they do not offer detailed information on how transaction and personal data are secured. (Elliot and Fowell, 2000).

Applications of Technology in Service Process Integration

Integration is the process of merging elements from two similar antecedent processes to create a single process that can be used to replace the original processes. Integration is broken into two parts, aggregation and regression (Wang and Miller, 2005). Service integration is a set of practices and an accompanying model and approach that adapt, managing, governing, and coordinating the delivery of services provided by multiple suppliers (internal and external to the business organization). Under the topic "A simple framework for understanding the impact of a new technology" George explained four suggestions like; the Internet can enhance the power of human information processing. It also enhances the human voice; direct marketing to deal with corporate clients directly, how the Internet has expanded the ability of everyday people to perform genealogy searches and identify their ancestors and the potential impact of the Internet is far reaching. At this stage of development, it is rather difficult to identify a human endeavor that is not affected by the Internet (Zinkhan, 2005). With the development of wireless telecommunication technologies, many customer services that are used in the computer-based Internet have also appeared in mobile phones (Barnes, 2002).

Applications of Technology in Research Links

Marketing research is one of the marketing activities which link other activities. Many studies identified the technology and research in business perspective (Elg-VINNOVA, 2014). Some of them, defined the marketing research activities in different ways, but a few researchers

considered the review of theories related to application of technology in marketing research. This study fills this gap. Market research is the continuous process of collecting and analyzing data on products, services, business practices and vendor capabilities to satisfy agency needs. Information has long been viewed as a key marketing asset (Glazer, 1991). Most obviously, information about customers, channel members, and competitors are important inputs for marketing activities such as pricing, advertising, product development, and marketing planning (Morgan et al., 2009a, b). The discipline of marketing is based on making forecasts about the future. The marketing plan provides a blueprint for meeting quarterly or yearly objectives. The objectives themselves are often cast in terms of future demand (Zinkhan, 2005). The development of effective marketing strategy involves conducting internal, competitor and customer analyses as preliminaries to formulating strategies for market segmentation, targeting and positioning. Within this process, ICT is mostly considered either as (a) an environmental influence on the business-to-business market (Hutt et al., 1998). The high-technology (high tech) development process, influenced by the innovative process, brings products an exceptional value which stimulates product market demand. Innovation provides products the specific basis for which world economies compete with each other on the global market. Able to find new solutions, innovations generate significant changes in existing markets, destroy them, or create new markets (Hauser et al., 2006). In addition, segmented and targeted markets cannot be adequately identified and selected in marketing settings by TAM alone because it is sometimes impractical to have consumers try systems before they decide to adopt them. Therefore, the construct of technology readiness can be used as a basis for segmenting markets (Chien-Hsin Lin et al., 2007)

CONCLUSION

Most important part of this study is conclusion which achieves the aim of study as explore the theoretical background of the literatures related to ten applications of tech-marketing. According to a report by Harvard Business Review Analytic Services, “57 percent of the business and technology leaders surveyed view IT as an investment that drives innovation and growth.” But according to a Gartner report, “Currently, 51 percent of CIOs agree that the torrent of digital opportunities threatens both business success and their IT organizations’ credibility. In addition, 42 percent of them believe their current IT organization lacks the key

skills and capabilities necessary to respond to a complex digital business landscape (Bidwell, 2013). Because of this competitive environment of business or marketing world, e-commerce has the potential to change the competitive situation, all participants in the business market are likely to be affected by e-commerce, regardless of whether they are proactive about adoption or not. The impacts need to be analyzed on a case specific basis (Pires and Aisbett, 2003). In this way researchers have done theoretical review on technology in marketing. Major limitation of this study is; this research study only relies on the review of past studies. Future researchers can adopt some other source of data and methodologies for this topic of study. All in all this study initially concludes ten technology applications in contemporary marketing world, for example; marketing communication, customer relationship activities, money transfer activities, promotional activities, sales force automation and some other marketing activities. Future researchers can analysis and explore about how far these technology applications exercise in the real working conditions of marketing firms and the enhancement of technology usage in marketing activities.

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