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Marketing In the Electronic Marketplace: A Complementarity Approach

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Research Papers from the Department of Social Sciences, Roskilde University, Denmark.

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Abstract

Internet is currently seen mainly as an alternative advertising channel to the traditional media such as newspapers, magazines and television. In this working paper it is argued instead that it is important to take a more radical approach to online marketing by considering online marketing as a specific activity of the value chain that is being transformed from the marketplace to the marketspace. To do this it is first described how the marketing processes are changing from the marketplace to the marketspace with particular focus on online advertising, online market research, online promotions and online pricing models and then a business value complementarity model of online marketing is developed. This model theoretically argues for the importance of considering all the complementary online marketing processes simultaneously when considering online marketing, and avoiding only doing myopic online advertising.

Keywords: Marketing, Internet, Complementarity

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1. Introduction

The Internet is becoming an important new channel of commerce in a wide range of businesses. In 1996, Internet shopping revenues for United States users, excluding cars and real estate, were estimated at approximately $707 million, but are expected to hit nearly $37.5 billions by 2000. The business-to-business revenues for online commerce have been circa $8 billions in 1997 and are predicted to be $327 billions in 2002 for the United States alone (Hoffman et al., 2000). In Europe the diffusion of Internet for both business-to-business and business-to-consumer varies from country to country, with the Scandinavian countries and Finland having the highest number of hosts per thousands inhabitants. Among the factors influencing the degree of Internet uptake across Europe is governments role in promoting the information society, price of services and communications, income level (Money and Mayer, 2000).

Ghosh (1998) states that Internet by allowing for direct, ubiquitous links to anyone, anywhere in the world allows companies to build interactive strategies, interactive relationships with customers and suppliers, and to deliver new products and services at very low cost. Internet is also giving rise to a virtual marketplace (Rayport and Sviokla, 1994) and to a virtualization of the value chain (Rayport and Sviokla, 1995, Zwass, 1996) by offering new ways of distributing, marketing, producing, selling and offering customer support on the electronic marketplace. Managers cannot afford avoiding thinking about the impact of Internet commerce on their businesses and new business models for the electronic marketplace are needed. In particular, online marketing is becoming very important as both business-to-business and consumer-oriented electronic commerce is expanding and as a new marketing paradigm is advocated for the electronic marketplace (Hoffman and Novak, 1996). Internet advertising is also emerging as a key strategic tool in attracting online customers. Total Internet advertising revenues exceeded $3 billions in 1999 and it is growing faster (112%) than traditional mass media advertising vehicles like cable (13%), television (7%), and print (6.2%). It represents however only about 2% of the total advertising industry overall (Hoffman et al., 2000).

The motivation of this working paper has to be found in the fact, as also Choi et al. (1997) state, that currently Internet is seen mainly as an alternative advertising channel to the traditional media such as newspapers, magazines and television and research in this field focuses mainly on changing marketing communication and online advertising. This working paper argues instead that it is important to take a more radical approach to online marketing by considering online marketing as a specific activity of the value chain that is being transformed from the marketplace to the marketspace. Therefore it is important to consider not only advertising, but also other processes of marketing such as online market research and online promotion when doing marketing on Internet. The purpose of the working paper is therefore twofold. First a business value complementarity model of online marketing is developed. This model theoretically argues for the importance of considering all the online marketing processes simultaneously when considering online marketing, and avoiding only doing myopic online advertising. This can be done by exploring complementarities between the different marketing processes, between the marketing processes and the supporting technologies as well as between online marketing and traditional marketing when a company wants to do

marketing in the electronic marketplace. Second, the working paper describes how marketing processes are changing from the marketplace to the marketspace with particular focus on online advertising, online market research, online promotions and online pricing models. Specifically, section 1 introduces electronic commerce and online marketing. Section 2 presents some background information on online marketing and the theories used in the working paper, that is the business value complementarity theory and the value chain. Section 3 introduces a business value model of online marketing, while section 4 discusses how the processes of online marketing are being transformed on the marketspace and briefly presents the technologies allowing such transformation. Finally section 5 present some future trends and concluding remarks.

2. Literature Review

2.1 The emerging online marketing concept

Marketing on the Internet is still not mature. Many talk about the usefulness of the traditional marketing paradigm in the online marketplace, but a clear, consolidated marketing concept that works fine for the online commerce has not been developed yet, especially in business to business online marketing (Timmers, 1999; Hoffman and Novak, 2000). There are two main views on online marketing. The first states that online marketing has to become an integrated part of the marketing mix (Parsons et al., 1998). The second argues that online marketing has to be integrated within the marketing strategy, but it has to be treated independently of traditional marketing. This second view is based on the assumption that marketing has to be understood within the context of markets, where interactions occur (Choi et al., 1997) and the difference between marketplace versus marketspace (Rayport and Sviokla, 1994).

There are many definitions of online marketing. Haechel (1998, p.64) defines marketing interactivity as "a person-to-person or person-to-technology exchange designed to effect a change in knowledge or behavior of at least one person". Parsons et al. (1998, p. 32) state that digital or on-line marketing means "leveraging the unique capabilities of new interactive media (e.g. the World Wide Web) to create new forms of interactions and transactions between consumers and marketers". Here we consider marketing as a specific activity of the value chain that electronic commerce technologies are transforming from the marketplace to the marketspace and we call this activity online marketing. Online marketing can then be seen as formed of a number of processes that are also being transformed for the marketspace as for example on online advertising and online market research.
There are two main concepts that are fundamental to online marketing: customization or the idea of providing different users with different types of information; and interactivity, which may be used by the seller to understand the consumer's needs. Another important characteristic of the Web is the possibility to allow for a custom mass production, which is buyer driven. Buyer driven custom mass-production entails joining buyers with locally unique preferences together in a global electronic format to form a market that suppliers can serve in a cost-effective way (Elofson and Robinson, 1998).

From the point of view of marketing communication, online marketing is not anymore a one to many, one way, form of communication as it is in the more

traditional mass communication media, but the web interactive nature lead to a one to one, both way, interactive relationship. Marketing communication performs normally three functions: inform, remind and persuade (Hoffmann and Novak, 1996). The traditional mass media are well suited for the first two functions, inform and remind, but not for the persuasion function which is much more effective in the marketspace, where it is possible to make ads and content highly customized to the specific user. Choi et al. (1997) however state that even though many believe that conventional advertising is not effective on the Internet, banner ads and e-mail solicitations can be seen as electronic versions of traditional advertising where sellers "push" product information to consumers whether or not they are interested in it. The difference is that on the Internet such advertising is highly customized and targeted.

In interactive marketing customer satisfaction is very important. In fact, if in the real world the so called "word of mouth" negative and positive feedback is going to be to some extent limited to the people a single user knows, on the Internet a negative or positive comment could potentially reach hundred or thousand of people, if we only think about the power of Internet tools such as Newsgroups. One of the characteristics of Internet in fact is to give rise to an on-line community, characterized by particular interests (Hagel and Armstrong, 1997; Kannan et al., 1998).

Finally, the ability of the web and other related technologies to gather and distribute large quantities of data makes the WWW very attractive in target and micromarketing. Micromarketing means focussing on a specific segment with particular characteristics within the total target population. Customer targeting, within the selected segment, is also a way to come closer to the consumer and to sustain a two-way communication between the seller and the buyer (Hoffman and Novak, 1996). In the marketplace, micromarketing is mainly implemented by direct mail, telemarketing and sales people. In the marketspace micromarketing can be implemented by producing, possibly on the fly, highly customized ads tailored to the specific needs of the particular customer, therefore producing different advertising contents depending on the customer profile.

2.2 Virtual value chain, virtual activities and business value complementarity theory

Porter (1982) views the firm as a set of activities, interconnected by linkages. Such activities can be primary and secondary. Primary activities are those involved in the physical creation of the product, its marketing and delivery to buyers, and its support and servicing after sale; secondary activities provide the inputs and infrastructure that allow the primary activities to take place. Information technology affects all the activities (Porter & Miller, 1985). Furthermore, Rayport and Sviokla (1995) state that electronic commerce can transform the physical value chain into a virtual value chain made of information, where the activities are part of a value adding process that this time takes place in the online world. Therefore marketing can be seen as a specific activity of the value chain that electronic commerce technologies are transforming from the marketplace to the marketspace.
Milgrom and Roberts (1990) extend the complementarity concept from two inputs to a production process to a set of activities and show for example that complementarities exist between strategy, manufacturing processes and supporting

technologies. Complementarities among activities imply mutual relationships and dependence among various activities whose exploration can lead to higher profitability. Moreover, Lee et al. (2000, p. 89) say that "understanding the complementarity of variables has very important implications when designing business strategies. Practitioners are often puzzled by the fact that many investments in certain business strategies do not result in the degree of satisfactory payoff. The reason may lie in the complementary property among strategies. If two business strategies x and y, are complementary, then a low or unfavorable value of one strategy will lower the effect of its complementary strategy. In other words, to make an intelligent investment in one, we should understand that it is just as worthwhile to study the status of the other and ensure that it is also in a favorable condition". Hax and Wilde (1999) present some examples of corporations that are starting using complementarity in their strategies and in choosing their alliances. Kim and Mauborgne (1999) also analyze how companies can expand their markets by looking at complementary product and service offerings. Finally, the business value complementarity theory (Barua et al., 1996) shows that it is important to take a holistic approach and to explore complementarities among different variables (e.g. organizational and technological variables) in implementing new business processes or in designing new business models. The business value complementarity theory, the concept of complementarity, and the virtual value chain and consequent virtual activities are used in the next paragraph to build a business value complementarity model of online marketing.

3.0 A Business Value Complementarity Model of On-line Marketing

In this section a business value complementarity model of online marketing is developed (Fig. 1). This model is based on the logic of the business value complementarity theory (Barua et al., 1996) and has just two layers of variables. The higher level performance variable or the dependent variable is online marketing. This is the variable that has to be optimized by doing the appropriate changes in the independent or lower level variables. The lower level performance variables are the processes of online marketing and the complementary technologies. In fact, IT and especially Internet technologies are becoming an important part of marketing, as IT is more and more enabling customer-oriented practices (Brannback, 1997) and this is especially true for marketing over Internet.

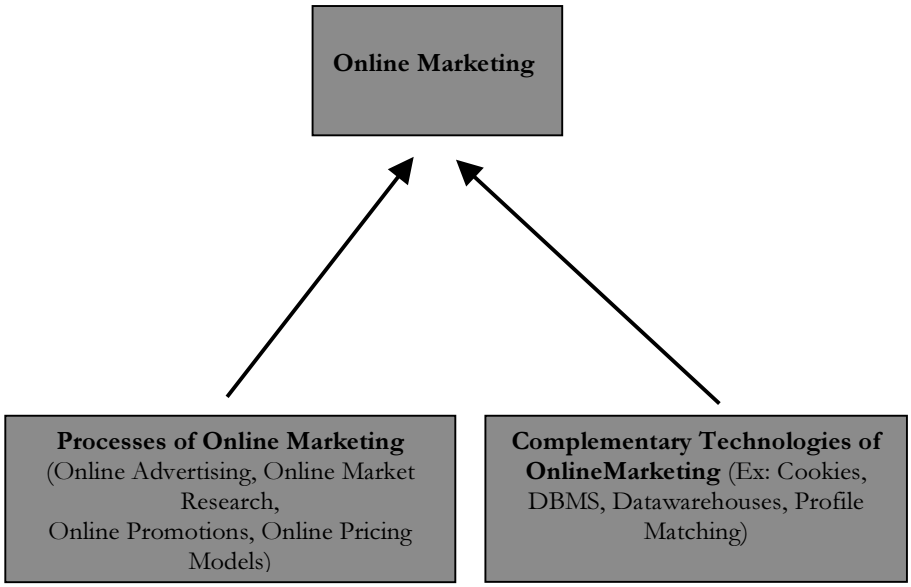

Fig 1: A Business Value Complementarity Model of Online Marketing

As already said, the literature on online marketing usually relates to mainly marketing communication or advertising on the Web. It is argued that online marketing and traditional marketing should coexist in the formulation of a marketing strategy and complementarities between these two should be explored to implement an optimal overall marketing strategy. This is because data collected from traditional marketing could be used in developing an online marketing strategy and vice-versa data from online marketing could be utilized in the development of an overall marketing strategy. Moreover, as Rayport and Sviokla (1994) argue that companies need to manage a physical value chain and a virtual value chain, so we argue that corporations need to manage a traditional marketing mix and a set of online marketing processes. An holistic and complementarity-based approach is also argued important in redesigning the processes of marketing in order to take place on the Internet, which is here considered as a new marketplace with its own characteristics and its own rules. This holistic approach implies that it is important to implement several marketing processes at once on Internet and to explore complementarities between these different processes and between the processes and corresponding technologies as well. The exploration of complementarities between these processes, in fact, should increase the likelihood of success of online marketing. In fact, as Lee et al. (2000) show, if two or more variables are complementary, an unfavorable value of one can affect the result of the other one and vice-versa a favorable result in one can positively influence the result of a complementary variable. Kim and Mauborgne (1999) for example show how Borders and Barnes and Nobles, two bookstores chains, have substantially increased their market share and established a new value curve in book retailing by exploring complementarities existing between different products and services. In the specific case of marketing, for example, complementarities could be expected to exist between an online advertising campaign and the market research data collected on Internet, since these data can help to better identify the online consumers' habits and characteristics. Also complementarities might be expected to exist between the online pricing strategy, online market research and online advertising. This is because through the data collected with online market

research it should be possible to monitor to what extent the online pricing strategy or the advertising strategy are giving positive or negative results on the sales of a product, or how much it costs in advertising expenses to acquire a new customer as Hoffman and Novak (2000) show. Therefore, the application of the business value complementarity theory to online marketing suggests that more processes of the marketing activity itself the company performs online, more successful the company should be in implementing the online marketing strategy. For example a company that conduct advertising, market research, promotion and publicity online should get better results than a company that for example does not take advantage of the power of Internet to conduct useful online market research. Similarly, from a technology point of view, a company that explores complementarities between supporting information technologies (for example DBMS, data mining techniques, pull or push technology, cookies and profile matching) in implementing the online marketing activity should be more successful in its marketing program than a company that does not. It is finally argued that complementarities between the marketing processes to be implemented online and the supporting technologies also have to be explored in order to get an optimal business model of on-line marketing. As Brannback (1997, p.703) says, in fact, "from a management perspective it is vital to pay attention to IT resources and marketing resources simultaneously. If IT becomes a bottleneck, all marketing efforts will be in vain. IT is no longer a support function.., it is a key enabler and in the marketspace this is the most profound consequence of the change in the dominant logic of marketing". Moreover, Brannback (1997) in detail shows how the dominant logic of the product and of marketing, traditionally focused on Kotler's four P of product, place, promotion and price is changing from the marketplace to the marketspace.

4.0 Processes and Technologies of Online Marketing

In this section we give an overview of the lower level variables of the business value complementarity model of online marketing of fig. 1. These variables are distinguished into two categories: the online marketing processes and the technologies supporting the transformation of such processes from the market place to the marketspace. The higher level variable, online marketing has been discussed in section 2.1.

4.1 Processes of Online Marketing

The processes that are the lower level variables of the business value complementarity model of online marketing of figure 1 are online advertising, online market research, online promotions and online pricing models. These are the variables that determine the result of the overall online marketing program. Below a description of how these processes are being transformed from the marketplace to the marketspace is given.

Online advertising

The goal of advertising is to inform and /or influence consumer demand in a competitive market. The way in which advertising reaches this purpose depends on

the product and the type of market. From an economic point of view, firms use advertising, either traditional or online, for the following purposes: to inform consumers, to increase demand, to increase or decrease demand elasticity, to discourage entry by potential competitors, and to differentiate the firm from existing competitors (Choi et al., 1997). There are two ways of advertising on the Internet: the pull-based and the push-based model. In the push-based advertising model, specific consumers are niched out and addressed directly, traditionally by sales people or direct mail, in the online marketplace by e-mail. E-mail, however, is not appropriate in a networked environment, because it lacks the main characteristics of interactive marketing, which are adaptability, flexibility and responsiveness. In the pull-based advertising model the message is put out in generally available areas (e.g. a banner on a WWW page) from which the consumer must pull the information. Pull-based advertising should be informative and educational to attract the consumer attention. Usually incentives are built in the message to stimulate the customer's interest and response, in order to build a relationship between the company and the customer.

But how to create awareness in the consumer of the existence of a company? This can be done according to O'keefe (1996) with the following three different models: The first, the billboard model, refers to information placed where it will come to the attention of customers in the course of other activities and does not require active search. Billboard advertising is often used to reinforce or remind the consumer of the advertising messages communicated through other media (Kalakota and Whinston, 1996). Billboard advertising should be clear, direct and simple because the ad is going to be seen by the customer while searching Internet and probably the consumer will not spend much time viewing it.

The second, the virtual mall model, relieves the business from managing its own server, by leasing some space from the mall owner, who draws traffic to the mall by advertising. Often the mall owner manages also the orders and the transactions. Virtual malls provide entertainment, information as well as shopping.

The third model includes virtual catalogs and yellow pages directories. These services include electronic resource location and services, yellow pages services, mail address look up, services equivalent to the telephone companies' white pages. They often couple information on products or services with facilities for ordering, like a physical catalog. Other advantages of virtual catalogs include the following: the catalog can be linked to the inventory data, so that the user can see if an item is immediately available or not; a company can immediately add new items to a catalog, without waiting for the next catalog printing; the consumer is provided with search facilities to quickly locate items. This is especially useful for producing catalogs with thousands of items.

According to Monye and Mayer (2000) instead, consumer awareness about a product on Internet can be done in other ways. For example, infomercial are particularly attractive in the marketing of products for which customers require a lot of information to support their decision making process. Sponsorship allows a well-known brand to sustain its visibility through website sponsorship. Examples of sponsor sites are BBC On-line and ESPN SportsZone. A third category is display advertising and advertainment, which means that the company builds and maintains its own web-site. Examples are Levis, Rolex, Coca-Cola. The last two ways of advertisement, according to Monye and Mayer (2000) are banner advertisements,

which have the advantage of creating an effective and instantaneous impression on surfers without a "clickthrough" and online publications, which have the characteristic of traditional print media, with the further advantage of interactivity. Attractive online publications are Wall Street Journal, New York Times, Time Magazine, The Economist and Financial Times Online that is visited from 180 countries worldwide.

New research in this field suggests models of online advertising implemented by introducing intermediaries or agents who contract with the advertising agencies and negotiates with the users to see advertisements while browsing. This process is in many ways similar to the subscription procedure for technical magazines, which are full of technical articles and advertisements that target the subscribers of the magazines (Kohda and Endo, 1996). The technologies enabling interactive advertising are the networking technologies, database systems, profile matching, push technology, and cookies or similar software. For example Infoseek uses cookies to capture behavior information in order to provide more direct future searches.

On-line market research

An important part of the marketing communication activity is market research. This research is necessary for example to measure the market potential, do sales analysis, promotional studies of premiums and determinations of market characteristics (Kotler, 1988). Online market research is the process of collecting information on-line about the consumers, such as the types of products they buy, how often, how much they buy and other collectable types of information. This information can be used for on-demand mass customization of digital products or to develop a push or pull strategy.

The question of how to collect data in the electronic market place and for the electronic marketplace is still an important issue. This can be done in different ways. One way is the establishment of discussion or forums about the subject (Kannan, 1998) and incentives can be given to participate in such a discussion forum. Another alternative is site analysis. This includes for example the number of customer clicks on banner ads or featured product-ads (Korper and Ellis, 2000) or collection of data about what the client buys, how much they buy, what are their preferences. These data are then collected in a database from which it should be possible to conduct market segmentation, customer profile, etc. This is similar to what the point of sale (POS) systems have been doing until now at the retailer site.

Kannan et al. (1998) states that Internet intermediaries can contribute to conduct market research by adding value in several ways. For example they conduct research on customer information needs, acquire the relevant information products, manage intellectual properties and copyrights, authenticate information servers, and finally complement, process and add value to information products. The role of intermediaries in researching customers needs will contribute to lowering search costs as they have better knowledge of the information sources and the suitability of the diverse and complementary information from different sources. Although on-line information can be accessed quickly, it is not necessarily inexpensive. Most on-line servers now charge by the hour, which may result in high costs for inexperienced searchers. Intermediaries provide a valuable service in this context because of their expertise in searching and their extensive knowledge of the servers, their contents and value. This cost advantage will get even better in time as

intermediaries acquire specialized knowledge and expertise (Kannan et al., 1998). An example of electronic intermediary in the marketing field is Doubleclick (Moukheiber, 1996).

Ethical issues about collecting information on the consumers without they knowing it are very important and a possible barrier to the collection of such data. There are other online sources of information that can be used for market research. Examples are general and specialized newspapers and periodicals online, historical research that can help marketers to get a perspective on events and discover the history of their competitors as well as information about advancements in the field. Finally, while the point of sale (POS) terminals memorize only numerical data, the data collected on the marketspace are more complicated, therefore new techniques to store and analyze them are required. Another area of interest is what kind of analytic tool such as forecasting models, statistical programs, etc. to use in analyzing these raw data to come up with a successful marketing strategy. The most important technologies supporting the market research process are web-database integration, datawarehouses, database and datamining tools such as intelligent agents, multidimensional analysis, traditional querying and reporting tools (Watterson, 95).

On-line promotions and public relations

Kotler (1988) states that sale promotion have several characteristics and purposes. For example to gain attention and to provide information that may lead the consumer to the product; to give incentives incorporating concessions, inducement, or contribution that gives value to the consumer and invite the consumer to engage in a buying transaction. The appeal of publicity is according to Kotler (1988) also based on several qualities. For example, high credibility in the sense that new stories and features seem more authentic and credible to readers than ads do; and publicity can reach many buyers as news rather than as sales-directed communication. In the electronic marketplace, promotion and public relations are the activities of finding successful strategies to promote the company and the company's products in the online environment by posting company's information to newsgroups, list-servers, e-mail lists and banners. The technologies supporting this process are Internet services such as e-mails and newsgroups. A strategy could be to combine the on-line promotional activities with traditional promotion on the marketplace as most companies operating on the Internet are doing (Timmers, 1999). In the electronic marketplace, one of the promotion strategies that have been proving successful is a free product sample. This is very much used in the software industry, where the WWW enables tens of thousands of interested individuals to access a free release of software and use it for a limited period (Stroud, 1998). This is especially important because the all culture of the Internet has evolved around free available information.

Online publicity also has the advantages of creating a one-to-one relationship between the company and the customer. In order to do online publicity it is necessary to publish informative material about the company and its products online. The information published online could include press releases, company background, fact sheets, testimonials, data sheets, case histories and financial reports. Another form of publicity is to have information about the company and its products on the Web home page and let the customers look at it by themselves and give them the possibility of asking questions about the products and the companies. These questions need to be answered very quickly by the company

either by automatic response systems, or by allocating an operator to check the messages and to respond to them as soon as possible as Marshall Industries do (Timmers, 1999).

Generally online promotions are not very used yet by online companies. Timmers (1999) investigates some companies, among which Marshall Industries, FedEx, Amazon.Com, Tradezone, Citius, and DTGlobana. He found that most of these companies, although having an Internet presence, are all fairly low in their use of the Internet for promotional purposes. The general conclusions regarding online promotion and publicity of Timmers (1999) study are that there is only a marginal use of the Web for targeted promotion towards supplier customers and somewhat more but still very limited use of the Web for targeted promotion towards business buyers. Marshall Industries and Industry.Net were exceptions in this study.

Pricing models for on-line business

Developing an online pricing strategy involves finding the most suitable pricing models for the online community in order to diversify the company's products and generate high revenues. The pricing model that a company can adopt is strongly dependent upon the technologies used to build the repository and the payment systems. The main pricing models can be generally classified into selling content versus licensing access. Based on this distinction, we can identify six main pricing models to sell information on the web: pay per drink (or pay per glass), site licensing or pay per site, subscription, connect time, search time, free information subsidized by advertising.

Traditionally, the dominant model has been subscription or connect time. Now also the other models are becoming popular. For example Ovid Technologies, an electronic intermediary in the Scientific, Technology and Medical Publishing sector (http://www.ovid-tech) uses the subscription model, the pay-per-drink model and a combination of both. In the publishing industry, Dow Jones has used all such models. Commercial online service pricing models based upon connect time and usage charges have, however, the effect of discouraging usage. Consumers are instead demanding flat-rate pricing schemes. In the short run, flat-rate systems encourage consumer experimentation and system use. In the long run, usage-based pricing maybe more appropriate as the Web matures as a medium, one day becoming as ubiquitous as the telephone (Hoffman and Novak, 1996).

4.2 Technologies of Online Marketing

In this paragraph, some of the most important technologies supporting the transformation of the marketing activity from the marketplace to the marketspace are described. Shortly, they are cookies, database management systems (DBMS), profile matching, data mining and push and pull technology. Other technologies as for example Internet and the World Wide Web are not considered here because extensively treated elsewhere as for example in Choi et al. (1997) and Kalakota and Whinston (1996). As already said, it is important to explore synergies between these technologies and between the technologies and the online marketing processes described in the section above when implementing an online marketing program in order to optimize the configuration of the system and get the most from the online marketing program.

Cookies

Technologically speaking, a cookie is a small file located on the client side of the Internet connection, which allows a site to tag the browser with a unique identification. When a person visits a particular site, the server at that site requests a unique ID from that person's browser. If that person does not have an ID associated with that site yet the server delivers one. This process is called passing a cookie. The cookie concept is not really a big revolution, since it is very similar to the caller ID feature that has existed in the telephone systems for long time. Examples of applications enabled by the use of cookies are targeted marketing, tracking consumer purchase patterns, customized promotions, testing the effectiveness of banner advertising, consumer tailored content, collecting and reselling consumer data (often done from third party advertising agencies), monitoring consumer sessions on the web sites (Hoffman et al., 1997, Http://www.vanderbilt/project2000).

Infoseek, for example, uses cookies to capture behavioral information in order to provide more direct future searches. Lycos uses cookies to tailor advertising to specific users. It customizes advertising banners based on the terms that a particular customer has searched on the Internet in the past. Cookies prevent the user from being showed repeatedly the same ad, if he is not interested in it. There are also problems in using the cookie technology to track information on the customer. Software programs for example exist that give the option to turn off the capability to receive cookies. Finally cookies are associated with browsers and not with specific users. This is a problem especially in educational or corporate environments, where a workstation is shared among different users.

Database Management Systems, Datawarehouses and Datamining

In order to implement target marketing, micro marketing and relationship marketing, it is necessary to identify the customers when they visit the site and to store their profiles. Databases and database marketing can be used for example to identify the best customers, to acquire new customers, to reinforce consumer purchase decisions, to improve delivery of sales promotion, to conduct marketing research, to personalize customer service, to provide synergy and integration of marketing programs.

Database management systems (DBMS) fall into the three general categories of hierarchical, inverted file and relational. Hierarchical database management systems (DBMS) are designed for efficiency in high-volume transaction environments, but their structure can often limit the types of ad hoc queries that marketing end users normally need. Many companies are using them to support customer service or airline reservation. Inverted file database management systems (DBMS) are well suited for marketing applications because they are good at providing quick counts of records that meet specified conditions (or queries), by creating indexed versions of the data stored in the files without really reading the actual record content. Finally, relational database management systems are usually a little inefficient for marketing and especially direct marketing operations, nevertheless they are very much used in this field. This is mainly due to two reasons: their structure is very similar to how the marketers view their data; it is easy to extract the desired data from the numerous other elements (Shepard Associates, 1995).

Databases can be organized into datawarehouses. Datawarehouses can be seen as big marketing repositories, that consist of the logical and physical structure of the

warehouse database plus the services required to operate and maintain them (Wheldon, 1997).

Finally, data mining is an intensive search for new information and new combinations pursuing defined paths of inquiry and allowing unexpected results to generate new lines of analysis and further exploration (Watterson, 95). Data mining implies the use of analytical tools such as intelligent agents, more traditional querying and reporting tools, multidimensional analysis (MDA) tools and on-line analytical processing (OLAP) tools to find patterns in the data collected interactively about the customers and stored in databases. Data mining for example can be used to analyze customer preferences and buying patterns, to better target the customers with products and promotional offerings from the data collected and stored in the databases.

Profile Matching

Another technology that is very useful in on-line marketing is profile matching. Each user has a personal profile that resides on her computer or on the central server (better if it is a client computer). This is a file indicating users' interests and parameters for customized interaction. The personal profile regulates alerting the user about new material as it arrives in the system. This alerting is accomplished by e-mail messages to the customer.

Push and Pull Technology

Push technology should deliver proactively the customized information needed, when needed, directly to the user computer, thus avoiding the lengthy searches for information that often characterize the online retrieval and sale processes (Cortese, 1997). Push technology works in such a way that the client software and its server counterpart negotiate a delivery based on some preset parameters or preferences (Andrews, 1997). Push technology is used for example by Pointcast to deliver specialized information to the desktop, picking its content from general interest and specific media. Pull technology means that a user pulls information to its PC through a search. This is basically how the web works today: a user with a web browser "pulls" information, usually in the form of Hypertext Markup Language pages, to his or her own PC from a Web server, where the information is stored.

5. Conclusions and Future Trends

This working paper has argued that, while presently online marketing is identified mainly with advertising on the Internet, a more radical approach needs to be taken to online marketing, by considering for implementation on Internet as many processes of the marketing activity as possible. This is considered here necessary since the logic of the product, the logic of marketing (Brannback, 1997) and the logic of space (Rayport and Sviokla, 1994) are changing with Internet. Moreover, also Hoffman and Novak (2000) when talking about online marketing state that results-oriented marketing tends to focus management's attention on the development of a long term strategy, as opposed to short-term tactical investments in advertising. This working paper has focused on the processes of advertising, market research, promotion and pricing models and tried to show how they are changing on the electronic marketplace. It has also been argued that the exploration of complementarities about these processes would increase the likelihood of success of online marketing. This is due to the importance of understanding

complementarities between different variables when implementing business strategies and business models. In fact, as Lee et Al. (2000) shows, if two or more variables are complementary, an unfavorable value of one can affect the result of the other one and vice-versa a favorable result in one can positively influence the result of a complementary variable. Moreover, Kim and Mauborgne (1999) also show how for example Borders and Barnes and Nobles, two bookstores chains, have substantially increased their market share by looking across complementary products and services in order to establish a new value curve in book retailing. In the specific case of marketing, for example, complementarities could be expected to exist between an online advertising campaign and the market research data collected on Internet, since these data can help to better identify the online consumers' habits and characteristics. Also complementarities might be expected to exist between the online pricing strategy, the online market research and the online advertising program. This is because through the data collected with online market research it should be possible to monitor to what extent the online pricing strategy or the advertising strategy are giving positive or negative results on the sales of a product. All of this requires though full commitment from corporations to implement a complete marketing program online, but maybe the time is not mature yet, despite the fact that as showed in the introduction the total online advertising expenditures are increasing year after year. It might require, in fact, too many resources, both in terms of financial and human capital and physical resources (for example computers, software programs etc.), while the result is still uncertain. However some outstanding companies in implementing online marketing are starting emerging, as for example CDNOW (Hoffman and Novak, 2000).

Finally, there are no doubts that Internet is here to stay, and that the search for new business models of electronic commerce in general and online marketing in particular is still at the very beginning. In online marketing, further research is necessary to understand not only the emerging online communication and advertising concepts, but also to study how market research, promotions and publicity, and pricing models on the world wide web are concretely being implemented or could be implemented. Further research should be conducted also on the complementary relationships between these processes, and to do this, analogy from synergies between the activities of the traditional marketing mix could be used. Interesting research could also be conducted to investigate whether it is better for a corporation to start developing online marketing in house or to delegate the task to the new breed of electronic intermediaries that are emerging as for example Doubleclick Inc. Finally we should say that the online marketing strategy is only one part of the broader technology strategy that a company should develop when it wants to enter the electronic commerce field.

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