NEW TIMES, NEW STRATEGIES: PROPOSAL FOR AN ADDITIONAL DIMENSION TO THE 4 P'S FOR E-COMMERCE DOT-COM

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ABSTRACT

Proper marketing management is fundamental to any business endeavor, including dot-coms. However, to date, as identified in a review of the International Journal of Electronic Commerce (IJEC) production and the last 10 years of EnANPAD (EnANPAD is the annual Brazilian Academy of Management conference). There are no works on the applicability of the 4P's to e-commerce, a gap in the literature that this study proposes to fill. It uses a qualitative approach methodology, investigating several empirical studies about digital commerce, and comparing it with the mainstream strategic marketing literature. Inferences were developed, pushing further the theory boundaries of this field. Both the classical works as those from Borden (1964) and Mccarthy (1960) and many other contemporaries are evaluated. The present research utilizes these works as a source of information and data. Using a process of comparison with the marketing mix model, it searches for a possible lack of fit between the related empirical environments and such a model. The results identify several key variables in each of the P's related to security in electronic commerce. This dimension seems to be the key in shaping the perception of customer value, thus supporting its inclusion as a fifth dimension along with the 4P's.

Keywords: e-commerce, e-tailing, dot-com, electronic retail, marketing strategy, marketing mix.

1. INTRODUCTION

The structural reality of the new markets, driven by information technology, progressively imposes a need for adaptation by organizations into their relation to markets and stakeholders. Regarding this demand, Katsikeas, Robson and Hulbert (2004) and Roberts and Adams (2010) highlight Digital Marketing and emerging new technologies as themes of interest to marketers. The increasing role of e-business in an organization's net profit also promotes this trend (E-COMMERCE, 2009). EITO 2010

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estimated the value of the global Information Technology and Communication market to be €2.3 trillion (Euros) (EITO, 2010). The U.S. Department of Commerce Economics and Statistics Administration reported $3.371 billion in e-commerce in the U.S.A. in 2009, including both Business to Business (B2B) and Business to Consumer (B2C) transactions (E-STATS, 2011).

It is important to align academic interests with those of practitioners. Bharati and Tarasewich stated that "e-commerce as a research field is still in its infancy" (Bharati and Tarasewich, 2002) which suggests that a considerable knowledge gap still exists. Due to the significant growth of the Internet as a new stratum for business, marketers are required to achieve results in this environment. It presents a duality, since the fertile, but unique business environment requires specific tools and techniques, but still lacks a mature theoretical body. One of the underlying questions is whether it is plausible to assume the applicability of traditional marketing strategy methods in this new social-cultural-economic paradigm.

Stemming from this question, the marketing mix enters the spotlight. The works of Mccarthy in the sixties are still a consistent framework for marketers. But with the emergence of e-commerce as a powerful environment to do business, questions about its reliability were raised. Schultz, (1999), by analyzing the speech of Peter Sealey, a retired vice president of Coca-Cola, made the observation that the 'p' in promotion and 'p' in place would disappear, and that the obsolescence of marketing and communication would come only when consumers ceased to shop in brick and mortar stores. However, since the publication of his article, there have been great technological developments. Mobile phones with Internet access, free wireless networks, popular laptops, readers and countless other devices with browsers that before were accessible to only a select few are a reality for a large portion of the population. Despite these changes, traditional trade has not ended, and probably never will as long as we are relational beings, but it is undeniable that e-commerce has gained representative space as a business model.

In Brazil, the virtual world gains new followers every day, as shown by the level of mobile and Internet access as reported by Instituto Brasileiro de Geografia e Estatística – IBGE (2009) in the 2008 Supplement to the National Survey by Household Sampling (PNAD) about internet access and possession of cellular telephones for personal use. This study showed a clear trend of strong growth in internet use, including an increase of 75.3% between 2005 and 2008 for Brazilians over 10 years old, a total population of 56 million users. It seems beyond doubt that the 'virtual environment' has been consolidated.

Numbers aside, the virtual environment offers other interesting dynamics, such as a reduction in information asymmetry, connectivity between consumers and even the assumption of a market that is closer to perfection. Within this environment with its own rules, human creativity is gaining ground in terms of innovation and enterprise.

Organizations, business models, and the dot-com companies emerge based exclusively on the virtual environment, with the underlying concept of not having an extension into the offline world. In other words, they generally do not have a tangible structure for interacting directly with the consumer. Some of these enterprises even operate without the need for physical distribution of products; such as digital service providers, software developers and any vendors of intellectual capital. Regarding tangible products, it is possible to carry out only their distribution. Major retailers such

as Amazon.com, e-Bay, Alibaba, and Submarino are examples of this type of company.

Due to this scenario, marketing professionals are facing a new situation triggered by the Internet and technology as a whole when performing their activities. While planning and analyzing marketing strategies, they face questions like: Should the pragmatic model of marketing mix, i.e., the 4 P's, be applied to dot-com businesses? Do all of its dimensions match the reality of e-commerce? Or is a new approach necessary?

Through the literature review of previous works that have mainly explored analysis of organizational performance in the virtual environment, this study aims to answer the above questions. Only empirical works published in major journals were adopted as raw material to improve the study's consistency. The theme of these papers addressed issues at e-commerce in a retail perspective. Adopting this base of information, the present research used the qualitative approach as a methodology to investigate such empirical conclusions, data, and present literature to evaluate the fit with the current marketing mix model. Within this approach, it was possible to reach a theoretical conclusion.

We searched scientific publications for any studies addressing the applicability of the marketing mix to e-commerce. Surprisingly, out of the last 10 EnANPAD conferences (EnANPAD is the annual Brazilian Academy of Management conference) and the entire production of the International Journal of Electronic Commerce (IJEC one of the most respected journal in the field of e-commerce) no work considered the topic. This paper's relevance is found in trying to answer if the existing theory is sufficient to meet the challenges of this new environment or if there is a need for a new conceptual perspective of the operational tactics of marketing strategy. Also considering that "academic research is not contributing enough to the development of technologically sophisticated marketing strategies" (Katsikeas, Robson and Hulbert, 2004, p.573], studying the applicability of traditional marketing techniques in virtual business can be fruitful for both companies and academics.

The understanding of best practices and correct frameworks to operate e-commerce business is mandatory for practitioners as well. Within the increasing relevance of virtual commerce in company portfolios and the massive adoption of mobile devices by consumers, competitiveness in the virtual world can be directly related to business success. This scenario impels marketers to acquire the necessary knowledge to take appropriate actions in their business.

Briefly, this paper presents a diagnosis of the marketing management paradigm from the perspective of dot-com businesses. It develops a compelling analysis that culminates in proposing an expansion of the marketing mix, offering a better structure for operating digital marketing strategies. This also opens the door for discussing the strategic marketing management methodology in greater depth, given an e-commerce perspective. We begin with a theoretical review of the marketing mix and then of e-consumers. This is followed by a transposition of the marketing mix into the virtual environment, with a proposal for adaptation. The article finishes with limitations to this current investigation and proposals for future research.

2. MARKETING MIX

Webster (1992)states that marketing strategy involves market segmentation (S), targeting (T) and positioning (P) of a company in a market, or simply STP. These settings are directly related to the level of strategic business units (SBU - Strategic Business Unit) and are part of the corporate strategy. Still, in each business unit there are tactical strategies, which are strategies that correspond to the marketing mix (4 P's). The same methodology is highlighted by Kotler (2009), where marketing management is described as a process that begins with research, followed by strategic definitions (STP), with further development of the four marketing mix elements (4P's) guided by initial results. Plans are then implemented and subject to control. This process formally uses the 4P's as facilitators of marketing strategy operationalization, representing a company's final outputs (Yanaze, 2006).

While STP addresses the direction that the company will take, the marketing mix is concerned with how to operationalize such a strategy. Each of the four dimensions must be carefully and jointly planned with the others and aligned with corporate strategy, Webster (1992). In all, the company must structure a web of interactions that are inherent to or necessary for its value proposition to make sense and, thus, to reach its goals with consumers.

Regarding value perceived by clients, Neal (2002) proposes an interesting breakdown involving the sum of the product (Product), channel (Placement), and brand (Promotion) benefits, while subtracting the cost (Price). Thus, formulating the product price while considering marketing, distribution and product features follows marketing strategy precepts aimed at delivering value to consumers, which is the final goal of marketing as stated by AMA (2013).

Briefly, the marketing mix can be viewed as an action plan that will operationalize company functions, so that it can be delivered upon its strategic plan and, consequently, achieve corporate objectives.

Product, Price, Placement and Promotion have been elements consolidated in the area literature since the mid-twentieth century. Even though the overall concept has been the target of numerous efforts by academics seeking to 'expand' or 'upgrade' its elements, they have remained consistent (Dominici, 2009). They have been used for more than 50 years as the ideal model in marketing management. However, there are two distinct fields concerned with studying the contemporary model. Both have compelling arguments, exposing an ambivalence that foreshadows the longevity of a heated debate. The so-called revisionists criticize McCarthy's model as too internally focused, which ignores the consumer (Dominici, 2009), and thus discounts the customer orientation from the current marketing paradigm (Webster, 1988). On the other hand, conservationists seek to adapt the model to the supposed new reality (Dominici, 2009).

Evaluating the applicability of the 4P's to today's organizations has become an obsession for many authors, with many criticizing that the "P's" focus is on the process and not on the consumer. In contrast, the 4P concept has an uncanny adaptability. Since each dimension's sub variables are not fully defined, they provide for a framework with multiple possibilities. The great power of "P's" rests in how they are not exhaustive but adaptive. This is probably why revisionists have difficulty introducing a new a paradigm.

When Borden (1964) developed the twelve elements that McCarthy (1960) would later rearrange into the four P's, he said: "The list of items I used in my classes and my work as a consultant cover the main areas of marketing activities that require a management decision [...] I understand that others may build a different list " (Borden, 1964, p. 9).

With this attitude, the forefather of what would become the marketing paradigm took an open position regarding the elements' construction, demonstrating the concept's inherent flexibility. This same point is raised by Grönroos (1994) when criticizing McCarthy's 4P's as rigid, not customer-focused and limiting Borden's initial idea about the marketing mix. This was probably why Borden had no intention of creating a fixed list. Even though this last discussion is important and needs to be mentioned, the central proposal of this article does not include debating the current marketing paradigm's conceptual sphere, but rather focuses on its operation within the virtual environment.

3. THE VIRTUAL CONSUMER

During the first decade of this century it became apparent that online consumers, despite being essentially the same as people who patronize traditional stores, demonstrate unexpected behavior, since they do not face the same restrictions in time, space or money (Torres, 2009). Online shopping uses electronic payments and does not require paper money, which is easier, especially when considering international transactions. Concurrently, a new phenomenon began with the so-called Web 2.0. In this scenario consumers have been empowered through a reduction in information asymmetry in the market. Today, all companies, both traditional and dot-com, are faced with a different context. In the 12 years following the Internet "bubble", e-commerce in the United States grew dramatically (Table 01).

Year	Volume in US$ (billions)	Growth
2000	27.763	
2001	34.930	25.81%
2002	45.212	29.44%
2003	58.157	28.63%
2004	74.175	27.54%
2005	92.804	25.11%
2006	114.912	23.82%
2007	138.145	20.22%
2008	142.281	2.99%
2009	145.214	2.06%

Table 1: B2C transactions in the U.S.A. (E-STATS, 2011)

It would be natural to assume that the Internet's commercial potential results in a market demand for technical guidance, but apparently researchers' interest in this area is still incipient, reflected in the small number of articles on the topic at EnANPAD conferences over the past 11 years (Table 02). Internationally, there are many papers devoted to e-commerce (Bharati and Tarasewich, 2002), many of which have been published in IJEC. However, there are apparently no articles anywhere in its history (1996 to 2011) that specifically address the theme of the marketing mix. Thus, the major components of the marketing mix do not seem to be getting the attention deserved by researchers.

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
Number of Articles	4	5	6	4	6	4	5	9	9	7	8	68

Table 2: Number of Internet related publications at EnANPAD conferences

Source: Prepared by authors from ENANPADs publications from 2001 to 2011.

This context does not eliminate the market's need to operationalize these variables. This need could possibly motivate professionals who have personal experience with the development of digital marketing tactics to document their tacit knowledge. One example is the recent "Bible of Digital Marketing" (original in Portuguese: A Bíblia do Marketing Digital) (Torres, 2009), produced by a market professional and graduate school professor, who apparently used only his personal empirical experience to write the book. Other authors with a similar profile are Adolpho (2011), who authored "The 8P's of Digital Marketing" (original in Portuguese: Os 8P´s do Marketing Digital), and Gabriel (2010) who authored "Marketing in the Digital Era" (original in Portuguese: Marketing na Era Digital). The last one is even considered a best seller. This interesting phenomenon is a reflection of marketing's early history, when early practitioners began documenting tacit knowledge that then aroused the interest of the academia (Bartels, 1988). There are initiatives to produce knowledge on Digital Marketing, but research on the topic is still incipient.

4. THE 4P'S

Several authors have suggested adding new variables to the Marketing Mix as used in traditional business models. Judd (1987) proposes the addition of People, while Kotler (1986) adds Formation of Public Opinion and Political Power. Booms and Bitner (1982) bring the perspective of services by adding Participants, Physical Evidence and Process. Finally, Baumgartner (1991) presents the most extensive model to date, the 15P's, adding: Politics, Public Relations, Probe, Partition, Prioritization, Profit, Plan, Performance, and Positive Implementations.

The list of attempts to modify the 4P's does not stop with these authors. Goldsmith (1999) adds an eighth 'P' of Personalization to Booms and Bitner's

proposal (1982). Melewar and Saunders (2000) add Publications, considering the areaof Corporate Visual Identity Systems - CVIS.

Focusing exclusively on the digital market, "Cybermarketing", by Karsaklian (2001), apparently the first Brazilian publication dealing with this subject, dates from the turn of the century). This book examined the four P's of marketing within the online business model context proposing additions (Database and Dialogue). However, the "D's" were not embraced by the market. It is unknown whether any study has examined the ineffectiveness of Karsaklian's model, but a superficial assessment sheds light on its deficiencies.

A database system, from Karsaklian's viewpoint, is an important variable for companies, not consumers. Looking at business strategy, correct management of data in order to produce competitive information can represent a significant increase in strategic sustainability. However, this variable means little to the consumer since there is not a direct impact on the purchasing process, so from client perspective it has little value.

Dialogue is an important variable for consumers because it represents the ability to communicate with the company. However, it can and should be framed within the component "Place", as it relates to interface with consumers. Thus, it is not strong enough to be deployed as a new dimension.

Gabriel (2010) disagrees with the concept of Digital Marketing as a new field, having its own body of knowledge. Her perspective brings the assumption of the existence of only one type of Marketing, which should be applied to any business endeavor. She argues that principles and applications are the same as 4P's.

Adolpho (2011) suggests using an extended marketing mix: Research, Production, Planning, Publication, Promotion, Propagation, Precision and Customization. As this is a current proposal focused exclusively on the electronic market, it deserves a more detailed analysis. Out of the eight variables, promotion is the only one framed in the traditional model.

The research element refers to how well a company understands its clients. The author suggests that the company needs to gather information about its customers. This element should not be framed in the marketing mix since it is part of the Marketing Management process as defined by Kotler (2009).

Planning would be the customization of digital marketing for a certain company. This is equally untenable as a dimension, since the definition of the strategic process itself includes planning.

Propagation is related to social networking about a website in order to attract more users and generate a viral logic. Again, the author is referring to a good communication tactic. This will not impact the consumer buying process as defined in the marketing literature, so it does not represent an obstacle for the consumer.

Publication would fall within the domain of content management, paying attention to the search engines. This variable could be easily absorbed by the place dimension, which addresses the element of user interface.

Accuracy studies a site's performance indices, evaluating the number of hits, length of stay, etc. This element is in fact a management support tool, and does not have a place in the tactical framework of the Marketing Mix, as again, it doesn't impact directly in the consumer buying process as a barrier.

Production is the ability to generate internal and external content. Another element that can be characterized as a variable dimension in Promotion, as traditionally defined in the marketing mix.

Finally, the item customization, which is usually deemed as the Holy Grail of customer relationship, generates the ability to interact with individual customers in a more effective way. Despite being viewed as applicable to all of the 4P's, it is clearly not an element that inhibits the purchase process. That is, its use can improve users' experience, but its absence is not an impediment to the buying process.

Thus, Adolpho's proposal (2011) may have value for general management as a map for some relevant points, but it is a rudimentary attempt to supplant the traditional elements of the marketing mix in the Strategic Marketing level.

It is interesting to note that for all of the additional P's proposed, whether for digital or traditional market, these authors primarily take into account the organizational perspective; i.e., variables that are important to keep a company's status quo and competitiveness in the markets it serves. However, none of these additional variables has as direct impact on the buying process from a consumer perspective as traditional 4P's do. For example, if the store is inaccessible to the consumer, they will not complete the purchase process. Similarly, if the product does not meet their needs, the price is inconsistent, or the client is not aware of the existence of the offer, the purchase will be unlikely. It can be said that the 4P's represent variables that can become obstacles to the consumption process. This perspective is where all the other dimensions proposed so far lose their meaning as new elements of the Marketing Mix.Can the 4P's be used as a tool for Digital Marketing? This question leads to a more detailed assessment of factors related to the marketing mix.

Despite the youth of Digital Marketing as a discipline, many variables and characteristics have been studied by researchers and practitioners and can be highlighted. Each of the P's from the marketing mix can be defined from the digital perspective, based on variables highlighted in academic articles and contextualized by empirical observations whenever possible, in order to offer a critical overview of how it differs from the traditional context. The goal is not to form an exhaustive list, which is beyond the scope of this work, but to offer a guide, which can directly impact the development of Digital Marketing plans.

Price - consumers have enormous power in comparing prices and finding information, creating a tendency to eliminate the asymmetry of information; some even would argue that this is the principle of a perfect market (Kuttner, 1998). Bertrand's (1883) classical model of competition highlights product homogeneity, zero search costs and consumers that are perfectly informed about prices as factors characterizing an economy based purely on sale at the lowest price. However, Brynjolfsson and Smith (2000) point out that other factors also influence consumer choice, and highlight trust as an important element. There are Brazilian websites devoted to comparing prices, such as "Buscapé" and "Bomdefaro", which offer the service free of charge and display the price of products for sale in different shops on the Internet. In addition, consumers can access a vast amount of information on product characteristics. A traditional search that could take days in the real world, an effort that many consumers would not be willing to undertake, is simple and comfortable in the digital environment. However, analysis of this dimension should not be summed up using merely the economic logic of classical competition, as other variables ranging from

each client's motivational particularities when performing a search to the subjective aspects that affect consumer behavior ultimately influence the price search process.

Place - with online shopping, switching stores only requires a few clicks. A customer can go virtually anywhere in the world, and is not limited by geography. Buyers do not face inconveniences, traffic, parking, queuing, or any other problematic characteristics found in the traditional buying process. However, customer satisfaction and their overall purchasing experience are important to attracting and retaining clients, and should be taken quite seriously, since online customers can more easily change stores. From a business perspective, another big change that the Internet has made possible is the strategy of offering rare, low demand, or micro-targeted products, since it allows access to specific consumers in a large scale, as related to the long-tail concept (Anderson, 2006).

An observer without much experience might infer that Place in e-commerce has the same function as in traditional commerce. This is a common error coming from inexperienced observers, believing that business products should be delivered solely by physical means. Although many virtual businesses offer products that need to be handled, there are others who do not. Some offers demand solely virtual distribution. This includes software development projects (web sites, engineering schematics, technical plans, etc.), pictures, music, advertising materials, remote computer maintenance services, publishing services and others.

Product – experience products have a lower probability of success in e-commerce than search products (Morgado, 2003). Products with extensive sensorial aspects that need to be handled, tested, and proven end up with a disproportionate disadvantage compared to traditional sales channels. This limitation does not exert much influence on functional products, which do not require great interaction with consumers seeking specific features, functions, attributes, or patterns that are relatively easily quantified. The challenge to understanding the perspective consumers have of products inserted in the digital environment might be one of the watersheds between success and failure of an e-commerce.

Promotion - communication on the Internet has a feature it shares with the Price element. It allows interaction and can be manipulated or customized by the user. Advertising obtains a whole new world of possibilities with different mechanics, which means a careful analysis of viability in order to adapt any work to the digital environment (Torres, 2009). In this channel there is a plethora of possibilities that can be exploited for digital communication that are only limited by available technological resources and marketers' imaginations. In developing Internet promotions, it is important to consider end user accessibility, since different devices can generate different experiences, not all necessarily satisfactory.

But what really defines the digital market? One of the first concepts that must be consolidated in a strategist's mind is that the planner is not just a company website, but the seller. "In the context of the Internet, the seller is replaced by a website" (Lohse and Spliller, 1998, cited in Jarvenpaa and Tractinsky, 1999).

This concept shows an important logic of e-commerce, since the point of interaction in a traditional store is the seller and in the virtual one the website. In other words, this interface should provide an experience and value as close as theoretically possible to that a client receives in a physical store. Many electronic stores invest in technology to try to maximize the customer experience through customization. Amazon.com uses sophisticated algorithms and data analysis to provide information

and promotions for each visitor, based on their individual navigation, products of interest and other multidimensional analysis.

It could be said that the care that exists in traditional patterns of trade can be transferred in large part to a virtual store. However, regarding some characteristics of the marketing mix in the digital market, there are limitations. For example, the consumer will probably not have direct contact with a vendor, and in most cases will receive support that is not necessarily in real time. Most often, they will have to make self-service purchases where they cannot handle products, payments are electronic and there are delivery deadlines for receiving the goods. If there is a problem in a transaction, customers must use virtual channels to try to solve it or even return the product, probably at their own expense. Clearly in all these stages there is an inherent risk that is considered and assumed by the client.

In conclusion, the three goals of the first phase of marketing strategy advocated by Webster (1992) are: check market attractiveness in terms of consumer desires and needs and competitive offerings; promote customer orientation; and finally offer a value proposition consistent with the previous ones. In the author's view, it is possible to shift the focus from a transaction-oriented perspective to that of an ongoing relationship. These three values would be developed as part of strategy and operationalized through the marketing mix. Also in the virtual world, it is assumed that the four dimensions of the marketing mix individually preserve different aspects of a strategic composition that must be carefully studied to be attractive to consumers.

5. THE MARKETING MIX IN THE VIRTUAL ENVIRONMENT: ANALYSIS AND PROPOSITION

As discussed, the elements of the marketing mix have structures apparently applicable to Digital Marketing. The logic of dot-com stores follows primarily the same principles as traditional stores since they also demand a process for analyzing price, product, promotion and place, and the same marketing goal - delivering customer value. Supposedly the Marketing Mix should also be used to operationalize marketing strategy. On a more theoretical perspective, meta-analysis of the concepts already presented suggests that these aspects were defined due to relevance of generalized critical points to the significant majority of enterprises as a way of addressing the operationalization of Marketing Strategy. However, the virtual world presents new problems that must be considered. Among them, security stands out, identified as a key element in virtual shopping for generating the confidence needed to make the virtual buying process happen. (Akin and Singh, 2005, Barbosa et al., 2009, Benbasat and Kim, 2010, Cristóbal et al, 2011, Featherman and Pavlou, 2003, Jarvenpaa, Tractinsky, 1999, Johnston and Warkentin 2004, Kaur, 2005, Koyuncu and Lien, 2003, Kulbupar, 2005, Ling et al, 2011, Lohse, Bellman and Johnson, 2000, Monsuwé, Dellaert and Ruyter 2004, Nilash et al, 2011, Oliveira, 2007, Torres, 2009). Security is also relevant to other types of digital commerce, such as m-commerce or pervasive e-commerce, accomplished through various electronic devices such as cell phones, PDA's, tablets and mobile devices in general (Joubert and Belle, 2009).

In summary, it can be said that security concerns can directly or indirectly cause an inhibition to electronic shopping. In addition, each of the 4P's must be evaluated for e-commerce to outline the relevance of the security dimension to each.

Place - security is important to creating the environment of a stable store, which requires a good Information Technology infrastructure [Cristóbal, 2011, Ferreira, et al 2008, Kulbupar, 2005, Oliveira, 2007, Tung, Kun, 2011). Consumers need the serenity to navigate the website without worrying about any system "crashes" or "bugs". There is also a need for security involving the product being shipped as specified and received in perfect condition (Kovacs and Farias, 2001).

Product - consumers need to obtain what they examined and purchased in the online store. This represents the need to be sure that customers will receive what they choose, with appropriate specifications and expected performance and quality without unpleasant surprises (Barbosa, et al 2009, Featherman and Pavlou, 2003, Ferreira, et al 2008, Jarvenpaa and Tractinsky, 1999, Kaur, 2005, Kim and Benbasat, 2010, Kovacs and Farias, 2001, Monsuwé, Dellaert and Ruyter 2004) the subsequent consumption and disposal of products are also valued, just like traditional products sold in physical stores. This last point should be supported by electronic commerce whenever appropriate.

Price, perhaps the most easily "contextualizable" dimension, because of the importance of payment security. The virtual environment is known to be vulnerable due to the large number of frauds committed, so consumers are particularly sensitive to payment security (Barbosa, et al 2009, Benbasat and Kim, 2010, Kailani and Kumar, 2011, Kaur, 2005, Kovacs and Farias, 2001, Koyuncu and Lien, 2003, Ling et al, 2011, Monsuwé, Dellaert and Ruyter 2004).

Promotion - even cyber promotion has a security perspective. In the case of advertising, due to numerous phishing attempts to acquire information from Internet users by using spam e-mail, spyware or even cookies to track behavior; many anti-virus tools block sites in an attempt to protect consumers (Torres, 2009). More experienced Internet users distrust suspicious deals, which inhibits involvement due to the fear of being cheated, even if the opportunity is real. Additionally there are traditional viruses spread by email (such as worms), making safety also important to various forms of digital communications.

As noted, each of the P's has security-related elements. However, there are other variables linked to this dimension that are not necessarily steeped in the traditional marketing mix elements. Given the importance of Security in e-commerce, it is plausible to adde it to the model as a dimension of a Digital Marketing Mix, as a tool to guide managers in the implementation of Strategic Marketing.

Additionally, the inherent virtual nature and magnitude (in the sense of range) of e-commerce are incompatible with traditional dimensions, as they are ambiguous in terms of value and risk, especially when they comes from an exclusively online store. The media has widely publicized the various problems for virtual consumers. Some studies suggest that brand trust has the ability to minimize this effect (Hernandez, 2001), by increasing the perception of a consumer guarantee. This inherent risk is not a recently discovered feature, but it was identified at the end of the twentieth century as a major problem of buying electronics. Consumers who first contact a virtual store are uncertain if it is legitimate or not, whether it is a website created by a hacker in a remote region of the world or if it is a real company. This weakness inherent to virtuality demands legitimacy, and places great importance on security in e-commerce.

Security begins to reflect its importance empirically by the emergence of companies like Paypal, PagSeguro and e-Bit, which offer financial transactions through a to payment gateway on their websites. This symbolically conveys greater credibility to visitors and facilitates payment security. Projects like the Google '+1' button and antivirus tools like Norton Internet Security, Avast, Kaspersky, and Bitdefender, among others, are trying to create a community of secure websites by assigning scores that rate security and/or warnings that users can reference during navigation. However, this question remains open because it has not completely eliminated the possibility of fraud, which naturally leads consumers to keep a defensive posture. Similar fear is found when it comes to personal data and privacy (Rohm and Milne, 1998). In some countries like Brazil, this problem is compounded by a lack of any legal regulation involving the misuse of personal data, which in this case is not considered a crime punishable by imprisonment.

The importance of security in e-commerce has been highlighted by several studies as cited herein. These studies reveal that security is present in each of the four pillars of the e-commerce marketing mix perspective. Such a fact strengthens a critical view of this variable's relevance in the marketing mix pillars and also exposes a secondary role of security, as it is, for use in digital commerce.

In principle, the security issue does not invalidate the 4P's structure for use in digital marketing, since in each dimension it supposedly addresses key elements of tactical relevance for a virtual store's strategy. However, because of the 4P's structure they end up by being subdued to a key issue in e-commerce: the security variable. (as the 4P's are, the structure ends subduing a key issue in e-commerce: the security variable.)

Considering the elements of security within the traditional format of the Marketing Mix, in other words using the 4P's without modification, it assumes the use of conservationist logic (Dominici, 2009). This means the new variable would lose relevance in any analysis.

However the issue of security in the virtual environment goes beyond the four dimensions and has a higher level of tactical relevance as part of the value perceived by the customer impacting directly on the shopping analysis, representing a strong barrier to the buying process. Thus, without security, users are unlikely to make purchases. Like all 4P's, security is a critical variable of the consumer perspective that enables the buying process to be complete.

Again, recalling that customers usually pay close attention to security aspects when making online purchases, we suggest that this dimension should be represented as a variable in the equation of perceived value, because security improves the attractiveness of online stores from customers' perspectives, thus leveraging perceived value. The use of security as a guiding element can direct the creation of virtual stores with better service structures, more stable technological environments, more reliable logistic structures and processes, as well as more comprehensive customer support.

Furthermore, the inclusion of security in a store's value proposition needs to be assessed against marketing objectives in the pursuit, creation, development and delivery of customer value (Rust, Zeithmal and Lemon, 2001). Thus, the fact that Marketing Strategy aims to deliver value and Marketing Mix in turn operationalizes it deserves attention. The Digital Marketing Mix, ultimately, must be correctly aligned with the same strategic objective: maximizing value from the customer's perspective.

As already mentioned, the Marketing Mix operationalizes key elements that must be addressed, representing the dimensions that make a difference in practical application. They are critical factors for successful marketing. That said, one wonders whether it would be reasonable to consider if the 4P's alone are able to guide Digital Marketing management without underestimating the relevance of Security.

Without going into the conservationists or revisionist merits, the full effectiveness of this tool in e-commerce should continue to be as relevant as it has been in traditional marketing. Observing the Internet scenario and all the considerations made so far, it is clear that security is a crucial element due to its relevance in enabling effective electronic retailing, for being a variable that enters customer perceived value, for being present throughout the other P's, and also for being a strong barrier to electronic consumption.

It is logical that using traditional Marketing Mix elements in Digital Marketing requires the inclusion of a security variable. This implies a fifth dimension, or "S" of Security that would absorb all variables related to safety, presently divided among the other dimensions or simply ignored. The introduction of the fifth element is completely justified in view of the virtual environment, since it is a key dimension for success in e-commerce from a consumer perspective that must be correctly structured by practitioners.

According to Neal (2002), an offer's value is equal to the product's benefits (Product) + channel benefits (Square) + brand benefits (Promotion) - cost (price); i.e., the Marketing mix. At first glance, the delivery of value in the digital environment follows this principle. So for the Digital Marketing Mix to continue representing the final value from the customer perspective it needs an update that includes the Security value equation (Figure 01). In this equation the variable can assume a positive value when perceived by the customer, or negative in its absence.

$$ {}_{...}\Sigma\text{-}\Sigma\text{-}\Sigma\text{-}\Sigma{}_{...} $$

Figure 1 - Equation for calculation of Perceived Value in Digital Marketing based on Neal (2002). BP1 = Product Benefits; BP2 = Channel Benefits; BP3 = Brand Benefits; S = Perception of Safety; P = Price. Source: Prepared by the authors.

A highlighted Security analysis can create the necessary emphasis for managers to apply this element so that a company can deliver the best value to consumers. As an example, some of the aspects that need to be addressed in such a security dimension include:

- Infrastructure/Hardware: Assessing infrastructure issues involves the correct planning and installation of equipment that will operate the website in terms of hardware, supporting the system demand without a bottleneck in a way that the user experience is not compromised. Contingency plans and backup operations should also be part of them. SLA (Service Level Agreement) services and planning scalability for equipment are imperative for monitoring business growth over time.

- Checkout: This is a critical stage in the online buying process. Simplified signup, low system response time, payment stability and flexibility are essential in order to provide assurance to users, offering online or telephone support, personalizing the shopping

experience, and obtaining security gateways and certifications. Systems can be strengthened by correctly prioritizing speed, consistency and third-party access to private information.

- Confidential Information: Customers' personal information must be internally controlled and properly managed, to prevent inadequate use or distribution by both employees and third parties with bad-intentions.

- Ambience: Development of partnerships with certifying companies, banks or credit card operators in order to create a better ambience for the virtual store, which signals greater website credibility.

- Ambience Exhibition: Preparing correct product exposure and description maximizes clients' comprehension, to result in a correct expectation of the product in terms of visual function and quality.

- Terms: The client must be concisely and objectively informed about their rights and risks in buying a product and what support is offered by the store after purchase and use.

- Delivery: Product delivery must be monitored to see that it corresponds to what is promoted on the website and that products are in perfect condition after shipping. This includes enabling client to monitor or be informed of delivery progress and evaluating the mechanisms supporting this process so that the buyer feels comfortable and secure with delivery.

- Stocks: Consistency of stock generates credibility with customers. Selling a product and then telling the customer it is under backorder creates uncertainty and dissatisfaction.

- Protection: Protecting the store from any cyber attacks that could affect its credibility or even generate a system crash is paramount, to prevent loss of earnings and value and creating a strong image to customers.

It is important to note that temporality becomes a powerful influencer for the validation of the "s" for security. The current technological, social and legal situation and customers' close scrutiny of security makes it an essential element for any online business. However, this does not necessarily imply that it will remain so in the future, since the cited variables can change, influencing the consumer perception of shopping over the Internet.

6. FINAL THOUGHTS

This study sought to offer a broad theoretical review of critical points related to the construction and subsequent success of Digital Marketing by assessing the applicability of the 4P's. As a result, a fifth dimension representing security aspects was identified that should be added to the marketing mix. This element is more important in client value assessment for virtual stores than brick and mortar stores, and an integral aspect of the purchasing process, making it a key element in the operationalization of Marketing Strategy. The direct applicability of the 4P's is not ideal for marketing managers of online stores, but the additional dimension called "Security" increases the effectiveness of the 4P model.

The real reason for the addition of the fifth dimension in the Digital Marketing Mix is to keep its efficacy as a managerial tool for this environment, because it is the primary guide for the practitioner in structuring digital marketing tactics. This proposition is grounded in the concept of the structural pillars for an endeavor, the absence or failure of which can prevent correct implementation of marketing strategy at the operational level. In Traditional Marketing, an error in one of the four pillars can cause the collapse of a venture; in Digital Marketing, an error in one of the five pillars can have the same effect. Also, proper analysis, planning and execution helps a company achieve success from a competitive perspective.

Expanding the Marketing Mix for e-commerce systematizes the main elements related to security of a virtual store. Such aspects went beyond the primary infrastructure logic to reach more functional aspects of the process, such as product delivery that is in accordance with the purchase order. This enhanced managerial tool provides practitioners with greater strength in planning and executing digital marketing strategy. Consequently there might be gains in operating income, total value proposition and in the longevity and success of the enterprise.

As the proposal was based only on a theoretical review, future studies might empirically assess the validity of the expanding the 4P's into 4PS. This would validate their effectiveness using practical results from market experiences in the management of electronic commerce. A qualitative study with prominent practitioners could generate support for the consolidation of the fifth element "S" as a critical factor in the operationalization of digital strategy.

Limitations of this study include its theoretical nature and that it focuses on analyzing only dot-com companies that operate exclusively on the Internet; it did not consider companies with a real representation in the offline world. Further works should also investigate the model with primary data, producing empirical conclusions. Once it is a theoretical study its assumptions must be taken within the limitations of such a format.

A conclusive research type should be addressed to evaluate the perspective of consumers about the proposed model. Marketing mix is a framework that deals with major issues which could affect the consumers motivation to reach a specific objective, thus it would be an important complement for this paper to investigate the impact of security over consumers buying decision process.

Another relevant point on the agenda in many academic circles is the validity of the current marketing mix and marketing paradigm in today's world. The marketing mix has not been evaluated within a more contemporary holistic perspective that includes certain subjective aspects. Thus, criticism about the internal focus of the marketing mix, as made by revisionists, could also be extended to the proposed 4ps model.

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