

## **Manufacturers and the use of the Internet to support sales and marketing**

**[004-0355]**

ALEXANDRE REIS GRAEML, Centro Universitário Positivo (UnicenP) – Brazil  
e-mail: [graeml@fulbrightweb.org](mailto:graeml@fulbrightweb.org) phone/fax number: 55 41 352-4424

JOÃO MÁRIO CSILLAG, Escola de Adm. de Empresas de São Paulo (FGV-EAESP) – Brazil  
e-mail: [csillag@fgvsp.br](mailto:csillag@fgvsp.br) phone number: 55 11 3281-7780

## Manufacturers and the use of the Internet to support sales and marketing

Abstract: A lot has been said about the use of the Internet as a retail sales' tool, in its relationship with end customers. Less attention has been paid to the way manufacturers organize themselves to benefit from the resources provided by the Web in their sales' efforts. This paper describes the results of a survey that was carried out with Brazilian industrial companies, which intended, among other things, to identify the intensity of use of the Internet for marketing purposes. The results show that there is still much to be done, but manufacturers have already realized the potential of the new channel for their interaction with customers and also with end customers, i.e., the consumers of their products.

Key-words: e-business, Internet, manufacturing industry, marketing

### 1 INTRODUCTION

The number of Internet users increases day after day in the world and the profile of those surfing the Web is changing along the time. Therefore, it is important for companies that intend to have any sort of presence in the virtual market, even if they just want to advertise their products or gather customers' feedback, to dedicate some time to understanding the peculiarities of this new electronic media.

According to IBOPE/NetRatings (*apud*, MARKETING PLACE, 2004), the universe of Internet home users in Brazil comprised 20.5 million people, in February, 2004<sup>1</sup>. However, only a small fraction of them are e-consumers<sup>2</sup>, who were estimated to be 2.75 million, in August 2004 (E-BIT, 2004).

Taking into account just the Brazilian e-consumers, not all the Internet users, only 6% of them earn less than R\$1,000.00 (approx. US\$ 470.00) a month, which contrasts with the last national survey on family income carried out by IBGE<sup>3</sup>, in 2002, mentioned by Felipini (2003), where it was found that 54% of the Brazilian households have a monthly income of less than R\$720.00 (US\$335.00). Felipini highlights the fact that, on the other hand, 43% of the e-consumers in the country earn more than R\$3,000.00 a month (US\$ 1,400.00), an income that is only earned by 2.5% of the Brazilian families. The Web shoppers' survey (E-BIT, 2004), carried out in the first semester of 2004 with customers of the 450 largest virtual retailers in the country, confirms the fact that Web consumption in Brazil is highly concentrated in the upper classes (see data in Table 1). According to that survey, the average income of the Brazilian web consumer is R\$3,900.00 (US\$1,810.00), therefore, more than 5 times higher than the average income of the usual Brazilian family, pointed out by IBGE.

Table 1 Family income and consumption in the Brazilian web retail (data for 2004)

Family income (US\$ /month)	Percentage of e-consumers
< 470.00	5%
> 470.00 and < 1,400.00	31%
> 1,400.00 and < 3720.00	37%
> 3,720.00	9%
didn't answer	19%

Source: adapted from E-bit (2004).

Supporting the fact that the average web consumer is much richer than the average Brazilian, according to IDG-Now (2003), more than 90% of the Internet users belong to the two highest social classes of the IBGE's classification (A and B), as can be seen in Table 2.

Table 2 Segregation of Internet users according to their social class

Social class	Percentage of the population	Percentage of Internet users
A	5%	42%
B	19%	48.7%
C	32%	9%
D	42%	
E	2%	

Source: adapted from IDG-Now (2003).

The Web shoppers survey also shows that the majority of the e-consumers in Brazil are male (60%) and have a high level of schooling (57% have finished university), if compared to the profile of the whole population (E-BIT, 2004).

It is important to take the profile of the e-consumers into consideration, when a company intends to define a marketing strategy for its presence in the Internet. E-consumers are still different from the average consumer of traditional retailers. This probably results from the fact that, in order to become an e-consumer, it is necessary to have a computer and a connection to the Web, things that are still out of the reach of most of the population in the country. One just needs to compare some Brazilian figures with those of the United States, for example, about the use of computers and the Internet, in order to understand how different the two realities are. According to IDG-Now (2003):

- in Brazil, there are 7.27 Internet users for every 100 inhabitants, while in the US there are 65 Internet users for every 100 inhabitants.
- in Brazil, there are 6.26 personal computers for every 100 inhabitants, while in the US, that figure is almost 10 times larger: there are 60 PCs for every 100 inhabitants.

Digital inclusion initiatives, as well as the reduction of the price of the technologies involved in electronic commerce are changing this picture, little by little<sup>4</sup>. Even so, it is important to know the "demographics" of the Web, in order to develop realistic plans for its use in business, particularly when a company intends to sell products directly to consumers.

Having the profile of Internet users and e-consumers in Brazil been presented, with the purpose of setting the scenario for which marketing strategies need to be developed, the following sections will focus on discussing the opportunities ahead of manufacturing companies intending to offer their products directly to consumers or, at least, to establish closer relationships with end customers, with the purpose of improving the alignment of its products to market needs. Attention should be called to the fact that, although e-consumers do not represent the average population of consumers of manufactured goods, for now, considering the figures that were presented above, one should keep in mind that richer customers are more demanding with respect to quality issues, delivery lead times etc. Thus, if a company is able to set up an Internet operation that meets the strict requirements of this segment of customers, it will not find it

difficult to please the legion of new customers who are joining in, as the Web gets accessible to the remaining of the population.

Section 2 presents possibilities of use of the Internet to support or perform marketing activities by manufacturing companies that were captured from the literature or just observed by the authors in the field, which can help others achieve better performance in the use of the new technologies for marketing purposes.

The research project described in this paper was based on data collected by means of an electronic survey. Section 3 presents the methodology that was used to gather information and to analyze the data.

Section 4 presents the data and the analysis that was carried out by the authors.

At last, there is a section on the managerial implications of the use of the Internet for marketing purposes by manufacturing companies, in which the authors summarize the results of the research project and present their thoughts and conclusions about the issue.

## **2 POSSIBILITIES OF USE OF THE INTERNET FOR MARKETING PURPOSES, BY MANUFACTURING COMPANIES**

This section presents possible advances and examples of organizations that are benefiting from Internet based marketing initiatives that put them in advantage in the market. Particular emphasis is given to the use of the Web in order to achieve better understanding of the consumer. The authors believe that there are good lessons for manufacturing companies to learn from other organizations and from the literature, which may help them to improve the integration of Internet efforts with their traditional processes and to replace some obsolete practices by new ones.

### **2.1 Possibility to establish direct contact with the consumer**

For Kanter (1998), in the digital era, more companies, of several different fields, will ignore their traditional distribution channels in order to sell directly to consumers. She argues that the business environment doesn't allow for sequential processes, anymore. The speed required by the market demands simultaneity. In that sense, direct contact with the consumer is essential, in order to achieve better understanding of the customers' needs and to ensure that the product remains relevant.

Just to have an idea of the advances towards that, only in the first six months of 2003, Ford sold more than 20 thousand cars on the Internet, in the Brazilian market, which represents 30% of the total sales of Fiesta and Ka in the country (JOVANELI, 2003). Renault, a company that was still trying to consolidate its position in the national market, sold over 17 thousand cars through the web, in that same year, most of which were its cheaper models Clio Hatch and Clio Sedan (IDG-NOW, 2004).

The reason for car assemblers to intensify their sales through the Web is not just that they want to take for themselves the share of the business that used to be the car dealers'. They can't think of that, at least for now, because car dealers are still responsible for most of their sales and it would be a disaster for the manufacturer if dealers turned their backs to it in case of a channel conflict.

The main objective of manufacturers that attempt to establish direct contact with consumers, using the new communication channel that is made available by the Internet, is to better understand consumers' needs. This was something unthinkable until just a few years ago. Retailers and other intermediaries performed as filters, preventing the information to flow in due time and with good quality from the consumer to the manufacturer and vice-versa.

#### 2.1.1 Possibility of customization of the company's product

One of the ways manufacturing companies can sell directly to the consumer, reducing the possibility of conflicts with their traditional sales channels is by offering, through their web sites, the possibility of customization of the product, directly to the end customer. When the company offers a *made to order* product, it is different to the products it sells through its regular distribution channels, involving distributors, wholesalers and retailers, thus, it avoids direct competition with its traditional business partners.

Some companies already attempted the use of production systems that were capable of manufacturing customized products, adjusted to specific needs of individual customers, without giving up the advantages of scale production, as early as the beginning of the 1990's. Levi's even conceived a business model, in which the customer visited a department store, took its measures, chose the cloth, paid for the product and went home, to wait for the pair of jeans to be delivered to his/her address within two weeks. The retail employee was able to transmit the required information for the production of the "almost" tailor-made product from a computer terminal in the store directly to Levi's production line, allowing for "pulled" production of the item, according to the demand (MCKENNA, 1995; PEPPERS, 1998). Unfortunately, Levi's ended up abandoning the project, because it was not able to manage the conflict of interests that appeared with the retailers (as discussed above), who felt threatened by the new trading model adopted by the company, which could exclude department stores from the deal, in the future.

Working with a direct sales model, Internet operations such as North-American Land's End and Brazilian shirt shop Closet.com.br are rescuing the tailor-made (customized) clothes production, in large scales. Differently to Levi's, those companies didn't face problems with distribution channels, simply because they didn't exist. Land's End specialized in catalog sales, a system that is easily adapted to the Internet, as there aren't any intermediaries, and Closet was created specially to operate in the Web environment.

The clothing industry is just one of the sectors in which the Internet promises to animate the sale of customized products, produced in scale. There are many web sites today that allow customers to configure the product and trigger the production process from the comfort of their homes. Some examples are car assemblers (GM's Celta operation in Brazil was designed to assemble cars to be sold primarily through the Web), computer assemblers (Dell's expertise with direct sales was easily converted to the new media), bicycle factories (sevencycles.com asks all sorts of questions about the buyer's cycling style and ergonomics, in order to specify the right product to the customer), shoe manufacturers (nike.com and other competitors allow the customer to customize the product, which is then made to order and delivered to the customer's home), doll manufacturers (MyTwinn.com customizes dolls to resemble the owner's looks) and even candy shops (M&Ms allows Internet customers to choose colors and even text to be written on the chocolate candies it produces).

### 2.1.2 Possibility to establish and follow up virtual communities of consumers

For those companies that definitively do not want to risk getting involved in conflict of interests with their traditional sales channels, but still want to gain direct access to the consumers of their products, in order to better understand their needs and wishes, according to what was said before, another alternative that is made available by the Internet are the virtual communities of consumers.

Virtual communities developed by the company or sponsored by it are a precious resource for obtaining information and for the generation of new ideas (ARMSTRONG and HAGEL III, 1996; VENKATRAMAN and HENDERSON, 1998).

Usually, when people are invited to express their opinions and participate in the development of a new project with their ideas, they feel as if they were part of the development team. Even the acceptance of the product that results from such effort, after it is made available to the market, is faster and the level of commitment with the brand increases (MCKENNA, 1995).

Venkatraman and Henderson (1998) consider that the formation of a community, in which customers can interact with one another and with the company, is an important stage in the virtualization of a venture. The virtual community should bind the customers and the company, establishing a two way communication channel for information to be captured and converted in knowledge that can be used to improve the company's products.

Albertin (1999) considers that, when companies create virtual communities, they contribute to new levels of customers' loyalty, and consequently they generate higher levels of income. Steil and Barcia agree. For them,

virtual communities can increase customers' loyalty to the product and the company and allow for a direct communication channel with the organization to be settled, which uses customers information to add value to the products (1999, p. 7).

Rheingold (2000) believes that only a few large companies will be able to generate profit directly from the "social cyber-spaces" they create and sponsor. Most organizations will use virtual communities to generate value for their employees, customers, suppliers and other business partners. For him, the most significant impacts of virtual communities on the companies that create them are internal. Companies that generated deep internal changes along the last few years, creating intranets that spread throughout the organization, will amplify the utility of their internal on-line communities, taking advantage of their intellectual capital and the good-will of the employees.

## 2.2 Possibility to capture and make use of information about the consumers

Companies like Amazon.com developed very complex (and complete) information systems, capable of storing all relevant information related to previous experiences of each customer with the web site. Such information, together with information about the interaction of other customers with similar profiles, is used in a dynamic way, in order to determine the content to be presented to the Internet customer, the next time s/he visits the web-site. Thus, the fact that the consumer acquired books about a specific topic, in a previous visit to the virtual store, will help the company reconfigure its "virtual shelves" and make other similar books easily accessible in the

next visit<sup>5</sup>. In addition to that, books that were bought by other customers with similar interests may also be assigned higher priority for presentation to the customer in the company's web page. That means that the site is dynamically configured to present personalized content to each visitor, according to his/her preferences and purchase profile. And that is not all. The site is full of summaries and comments about books, which were provided by other readers. They help the customer make up his/her mind about a specific item, as if the system were a knowledgeable seller, giving advice in a traditional brick and mortar store. As such comments represent the opinions of other readers, and not the editor's or the book seller's, they have greater impact on the consumer's purchasing decision, due to a higher level of exemption.

### 2.2.1 Possibility of use of dynamic pricing

There are several reasons that justify the adoption of variable prices for the company's product, that go from differences in perception of product value (which is distinct for each customer) to supply  $x$  demand issues.

Bichler (2002) reminds us that, although the Internet reduced customers' effort in order to obtain information on products and prices of different suppliers, it also reduced the costs for companies to communicate and change their prices. That increases the importance of price definition strategies, which tend to be more dynamic in the future.

Different customers are willing to pay different prices for the same products, because their perception of value is different. That is one reason for the seller to change its prices. Another reason is to get protection against cost changes. Regardless of the reason, Coffee (2002) alerts to the fact that retailers that don't start using flexible pricing strategies will lose money, from now on.

In a traditional store, it is difficult to charge different prices to different customers, without generating dissatisfaction. It is usually also not practical to make little price adjustments that affect all customers. The cost of changing price labels may be higher than the additional gain obtained from selling the product for a slightly higher price.

In the Internet, on the other hand, it is easy to carry on a policy of dynamic pricing, i.e., buy and sell goods in markets where prices change quickly, adjusting to the floatation of supply and demand (JAYARAMAN and BAKER, 2003) or to the characteristics of a specific deal.

Differently to what happens in the traditional market, where price changes are slow, due to information delay, in the Internet, changes may take place almost instantly, and at a much lower cost than that incurred by brick and mortar stores. For that reason, dynamic pricing will become a frequent strategy used by virtual operations.

Having so much information about the customers, virtual stores like Amazon could even use its databases to decide if it is suitable to give a discount, in order to trigger an impulse sale. Prices could, actually, be determined on an individual basis for each customer, depending on his/her profile.

There is no evidence that Amazon uses that kind of strategy in its virtual store, but the possibility to do so is real. Some sites like CNET's (<http://shopper.cnet.com>) have attempted to use a simpler technique to sell to different customers at different rates: the web-site asks the customer if s/he

would like to be informed when there is a reduction in the price of a specific product. If so, the potential customer is invited to tell the price below which s/he would like the web-site to send him/her a “*price drop alert*”. Well, after having provided the site with that information, the customer, in practice, told the company how much s/he is willing to pay for the product. It wouldn't be a surprise if, 5 minutes later, s/he received an e-mail message from the company telling him/her that the product was momentarily available for the price that was set by the customer him/herself, as a promotion. The company would only need to check if the price was higher than the production cost, providing it with a profit margin it considered satisfactory.

### 2.2.2 Possibility to establish virtual intimacy with consumers

Analyzing the actions of companies that attempt to use all the information they have access to in order to provide each customer with a unique experience with its web-site and products, configuring and dynamically customizing the web-site and the products, many researchers agree with the idea that companies should try to establish some sort of virtual intimacy with customers, getting to know their individual needs, in order to provide offers that are better fit to their demands.

It should be highlighted, though, that many civil rights agents, particularly in the United States, are starting to oppose to on-line marketing assertiveness, arguing that companies are becoming too invasive of their customers' privacy, without their awareness and authorization (TEIXEIRA JÚNIOR, 2000). Discriminated transaction records, such as those obtained by credit card companies, but also by supermarkets and companies that sell their products over the Web, specially when they refer to items of differentiated consumption<sup>6</sup>, may be taken almost as if they were notes on a person's personal diary, to which the retailer has access, as reminded by Cameron, Ferguson and Zabin (2004).

### 2.2.3 Possibility to control "non-significant" events

Brick and mortar stores many times find it difficult to notice and register situations that are not actual purchases. Thus, if a shoe store were visited by several customers, all of whom had their attention caught by the same pair of shoes, which they didn't buy, because the size was not right, for example, at the end of the month, the manager could refuse to receive more shoes of that model, alleging that they don't sell well. Had that happened in a virtual store, it would have been able to capture and store all the clicks of potential buyers, even those that didn't convert into actual transactions. Those "almost" purchases are what Wasserman, Khermouch and Green (2000) call non-events. Records of people who just clicked on an item but didn't buy it can be kept and used at least in order to analyze possible reasons for the situation, collaborating to different decisions than those one would make without such information.

As the information related to virtual operations is already in a digital format, suitable for easy storage, the only thing companies have to do is getting organized to capture it, treating it and use it more efficiently in decision making. Moe and Fader (2001) remind us of the fact that the visit of a customer to a web-site leaves a track, which can be used by the company to better understand that specific customer and to establish useful generalizations that can be used to improve the relationship with all other visitors. According to Moe and Fader, web-logs are a rich source of information that should not be overseen and wasted.

As the amount of information obtained from Web operations tends to increase rapidly, it is important to develop suitable database infrastructure, including data warehouses, data mining



mechanisms and customer relationship management systems in order to make good use of the accumulated data.

#### 2.2.4 Possibility to use data mining

In the opinion of Forrester's Frank Gillett, quoted by Teixeira Júnior (2000), the capability of extracting valuable information from the company's own database is one of the only areas of business on which investments provide tangible competitive return.

It is relatively easy to monitor what happens during the visits of customers to the company's web-site, storing that information. The visitors don't need to perform any additional effort for their actions to be recorded during their browsing through the site and that information can be used to offer content that is sensitive to the context. Based on the behavior of the visitor, as well as the history of previous visits, a commercial site may present different screens to the customer and define promotions and prices that are suitable to his/her profile, according to what was discussed in item 2.2. Thus, the Web offers the possibility of converting virtual stores, with the most different products, into personalized sites, capable of developing virtual intimacy with each of its visitors.

But the computational logic required to capture the information, analyze it and make decisions on content and prices is not trivial. In order to allow for the treatment of large amounts of data stored in transaction files and web logs, sophisticated programs are being developed, which involve advanced statistics, artificial intelligence and neural network concepts, to "mine" patterns of information that, otherwise, would not be noticed by human analysts (SWARTZ, 2003).

The key process to achieve success in the attempt to offer the right message and product to the right customer and at the right time, based on the available information, relies on the recognition of patterns, according to Cameron, Ferguson and Zabin (2004). For those authors, the right moment to act is when a pattern changes. The detection and acknowledgment of change, by data mining programs, may be used to trigger a specific marketing action, using decision making technologies based on rules that are created for the most different situations.

In addition to the possibility of offering personalized content, based on information that is "mined" from hidden transactional data, which contributes to the retention of current customers and the acquisition of new ones, data mining promises several other benefits, including fraud detection and changes in the business scenario, according to Inhoff (2004).

Although data mining success cases are still not frequent in the literature (also because companies that develop competitive advantages based on the use of it don't go around advertising it!), it is a technology that deserves attention, if not for the practical results it shows, at least for the attractiveness of its promises for the future.

#### 2.2.5 Possibility to use Customer Relationship Management (CRM) systems

The purpose of CRM is to identify, acquire, serve, extract value and retain profitable customers, allowing for a thorough and integrated relationship with them, in which all contact points between the company and the customer are used effectively: marketing, sales and services (via e-mail, face to face, through regular mail, on the telephone, via web-site etc.).

The adoption of CRM practices is even more important in Internet times. A much larger amount of data is available in digital format, allowing for automated processing of customer needs in

order to provide "personalized" services. For Vrechopoulos (2004), the enormous capacity of managing information in the scenario of the Internet retail, now-a-days, provides a challenging opportunity for research, with clear managerial implications for the suppliers and retailers.

For Peppers and Rogers (2001), a good CRM system should provide incentive for the increase of the company's relationship with its current customers, not the market as a whole. Executives should be stimulated to look for new products and services that they could offer to the already existing customers, ensuring the development of those accounts along the time. In order to do that, it is necessary to know the customers individually and in detail, which may demand some effort to gather relevant information that can be used to establish virtual intimacy with customers (see item 2.2.2). It is also important to be able to recognize the customers, regardless of the point of contact of the operation that they reach<sup>7</sup>, which is only possible and viable, today, by means of intensive use of technology.

### **2.3 Possibility of adoption of loyalty programs (lock-in)**

The company's operation on the Web can easily be coupled to other information systems that allow the implementation of customers' loyalty systems. In general, such programs stimulate successive purchases by means of prizes for customers that develop some volume of business with the company, within a specific period of time.

Brick and mortar stores may find it difficult to keep the required controls to implement loyalty programs, mainly if they don't have a computer-based order system. In the case of on-line operations, on the other hand, the implementation of loyalty systems is simple and it can be useful to "lock in" customers to the company's products and services. Graeml and Graeml (2002) argue that, in some situations, customers may discover that the cost to change suppliers is so high that the change is unconceivable.

## **3 METHODOLOGICAL APPROACH**

Companies that participated in the survey were contacted by means of an e-mail message, which contained an attached MS Word form. The electronic questionnaire in that form had *check-boxes* and *drop-down* menus with possible answers to be chosen. A scale was used that was inspired in Likert's scale and could be filled in by clicking the mouse on top of an alternative answer. That contributed to reduce the time required to complete the questionnaire. Ray and Tabor (2003) argue that, although *radio button* or *check box* questions make a questionnaire clearer, a list of alternatives in a *drop-down* menu reduces the physical size of the questionnaire, considering that the menu is only presented while the question is being answered. Figure 1 shows an example of a *drop-down* menu that was used in the survey, precisely with the intention of reducing the number of pages of the questionnaire, which could have a positive psychological effect on the respondents.

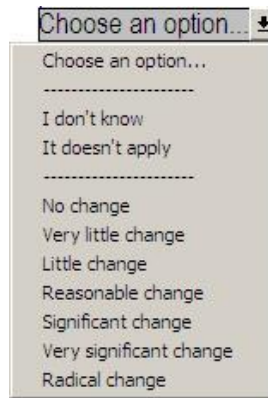


Figure 1 *Drop-down* menu used for questions about the level of change related to several value adding activities, resulting from the use of the Internet

The electronic questionnaire was sent to all industrial companies contained in FIESP's database<sup>8</sup> that had a valid e-mail address, which resulted in 655 filled in questionnaires being returned to the researchers, corresponding to a return rate of ca. 8%. The participants of the survey represented a convenience sample, as a result of the methodological approach that was used, which restricts the possibility to assume that results that are obtained for the sample are also valid for the whole population. However, the authors carried out comparisons of the existing demographic data for the companies that took part in the study and those comprising the population and didn't detect any evidence that the sample doesn't fit the population. On the contrary,  $\chi^2$  tests for the location of the companies and their size were very favorable.

#### 4 ANALYSIS OF THE RESULTS

Companies that participated in the survey were separated according to their size. They were considered large companies when they had more than 500 employees, mid-size companies when the number of employees was higher than 100 and small, otherwise. This distinction is important because it was soon noticed that the adoption of the use of the Internet is influenced by this factor. Then, graphs were generated showing the behavior of each of the variables that were studied, taking into account the size of the company. Most graphs relate to the perception of the participants with respect to the current level of use of the Internet to support several marketing activities, as well as the expectation for the next 3 years (one should keep in mind that the survey was applied late in 2003 and early in 2004).

Figures 2 to 8 present separate stack-bars for large, mid-size and small companies. Inside each rectangle that forms a vertical bar, appears the number of companies, in absolute terms, which provided a specific answer to the proposed question (according to the legend next to the graph). The vertical axis of the several graphs presents a percentage scale, used in order to provide a "relative" value for the absolute figures contained inside the rectangles. This scale is also useful to aggregate answers. For example, Figure 2 shows that 18.2% of the large companies consider that the change that was caused by the Internet and other IT, along the last 3 years, was at least significant when the matter is product configuration/customization, along the last 3 years (this is the aggregate percentage for the 1 large company that considers that change was very significant plus the 4 that consider it was significant).

## 4.1 Establishing direct contact with the consumer

Brazilian manufacturers still use their web-sites primarily to advertise products and the company, itself. More than 80% of the participants in the survey claimed they did that by means of their web-sites. The interaction with customers, regardless of them being other links in the supply chain or the end customers (consumers) is still not very intense. Only about 13% of the companies said that they use their web-sites to support B2B<sup>9</sup> activities and even fewer (ca. 9%) use them for B2C<sup>10</sup> interaction.

Next, we will analyze the use manufacturers make of the Internet to customize products to be made to order, according to what was discussed in item 2.1.1, and the creation and support to virtual communities (see item 2.1.2), which are ways for the manufacturers to establish direct contact with the consumers of their products.

### 4.1.1 Customization of the company's product

Among large companies, 18.2% consider that the impact of the Internet and other IT on the configuration/customization of products was at least reasonable, along the last 3 years (see Figure 2). This percentage is slightly smaller for mid-size companies (17.1%) and, curiously, a little higher for small ones (20.8%). Originally, the authors thought that, maybe, smaller companies were benefiting from the opportunity to offer better suited products to individual needs, assuming that they are more dependent of their customers, individually, and, therefore, need to pay more attention to their specific needs. This reasoning doesn't survive the analysis of the current use of production customization by the participants, though, which is shown in Figure 3. Companies that claimed they made the most intense use of customization were the mid-size ones (Figure 3), precisely those that stated that there was the least change in customization along the last 3 years. Mid-size companies that use customization at least to a moderate extent represent 32.6% of the sample. For large companies, that percentage was 26.3% and for small ones, 23.3%. It was not possible to identify the reasons for this apparent inconsistency between the data in Figure 2 and Figure 3, which is an interesting topic for future work with specific interest in that matter.

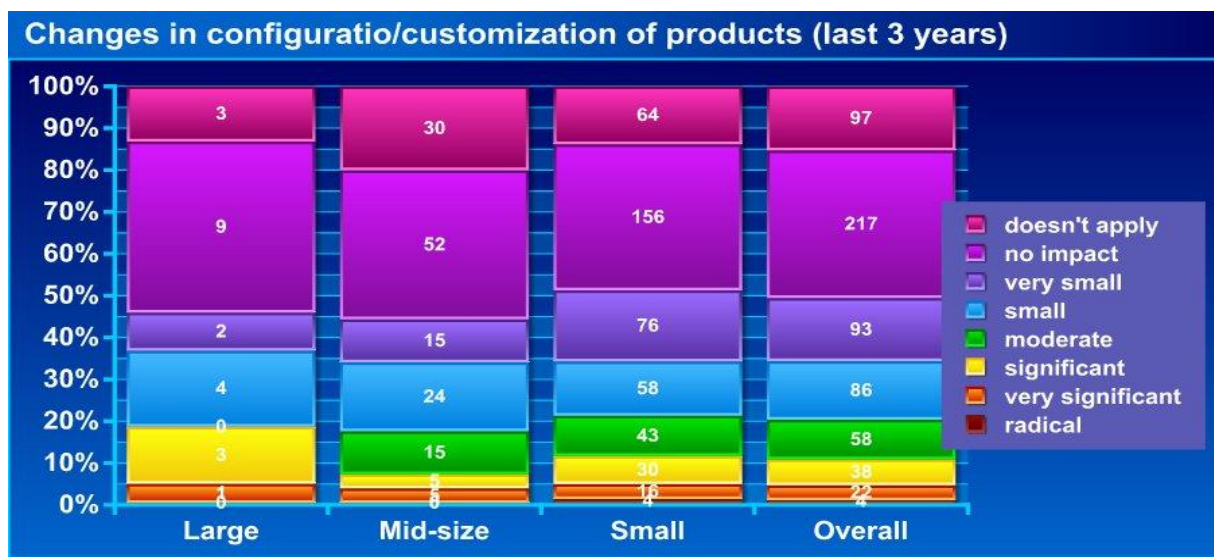


Figure 2 Internet's impact on product configuration/customization along the last 3 years, according to the manufacturer's size



Figure 3 Current use of customization and perspective of future use, according to the manufacturer's size

#### 4.1.2 Establishing and following up virtual communities of consumers

The manufacturers' interest in establishing virtual communities of customers (see item 2.1.2) was small. Only 10.0% of large companies, 4.0% of mid-size ones and 3.4% of small ones stimulate the formation of virtual communities of customers in a level they consider at least moderate. 25.0% of large companies, 18.5% of mid-size companies and 21.8% of small ones intend to start virtual communities in the next 3 years. However, the number of companies that don't intend to use the Internet for that purpose in the near future, or that consider that it doesn't apply to their businesses is high, particularly among small and mid-size companies: 73.4% and 67.9%, respectively. Among large companies, it falls to 35% (see Figure 4).



Figure 4 Current use of virtual communities and perspective of future use, according to the manufacturer's size

## 4.2 Capturing and making use of information about the consumers

### 4.2.1 Use of dynamic pricing

Small and mid-size companies, in general, don't see any advantage in developing a strategy of dynamic price definition, taking into account specific characteristics of the market or customer, as discussed in item 2.2.1. Among mid-size and small companies, 77.2% and 74.3%, respectively, do not intend to use this type of procedure within the next 3 years. Those percentages contrast with the much lower percentage of large companies that share the same opinion: 31.6%. There is also a contrasting situation when one compares the proportion of companies that already use any sort of flexible pricing scheme at least to a moderate extent (they are 21.1% of large companies, 9.6% of mid-size ones and 6.5% of small ones) or those who intend to use it within the next 3 years (31.6% of large companies, 7.9% of mid-size ones and 13.6% of small ones). Figure 5 shows that.



Figure 5 Current use of dynamic pricing and perspective of future use, according to the manufacturer's size

### 4.2.2 Establishing virtual intimacy with consumers

For 22.2% of large companies, the use of the Internet and other IT for establishing "virtual intimacy" with the consumers (see item 2.2.2) is at least moderate, something that only happens for 5.6% of mid-size companies and 8.2% of small ones. Some 44.4% of large companies intend to start using the Internet with that purpose along the next 3 years. The same happens with 37.1% of mid-size companies and 33.3% of small ones. However, 22.2% of large companies, 44.4% of mid-size ones and 46.4% of small ones say that they do not intend to use this possibility in the near future, or they don't think it is important for their businesses, as can be seen on Figure 6.

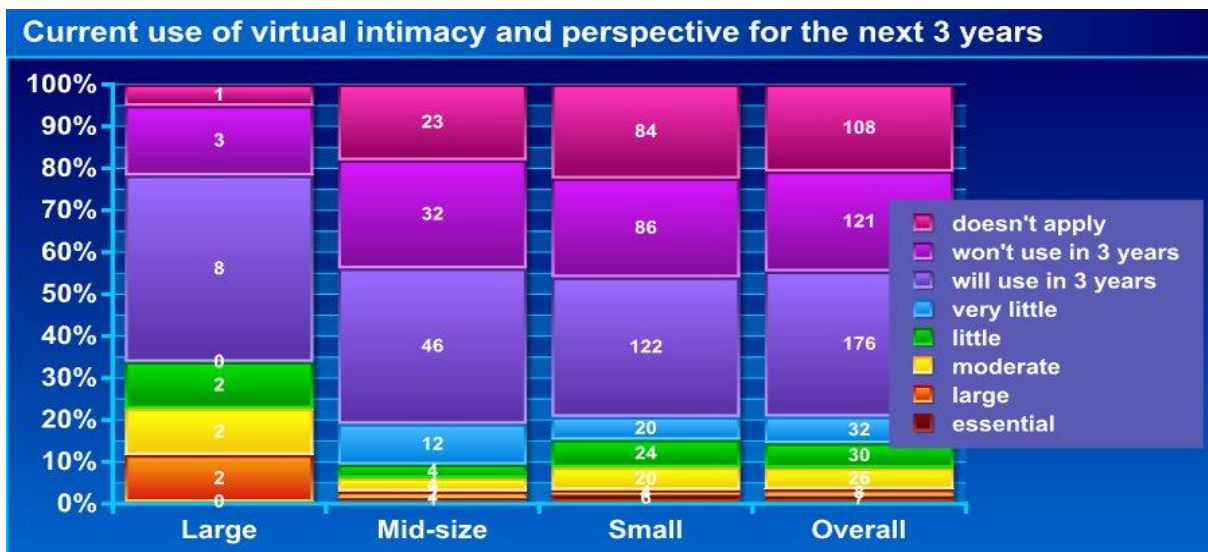


Figure 6 Current use of virtual intimacy and perspective of future use, according to the manufacturer's size

#### 4.2.3 Control of "non-significant" events

According to what was said in item 2.2.3, it is possible to control and track a consumer's browsing through the company's web-site, in order to know the areas that are visited the most and the products that attract more interest, regardless of any sale transaction having taken place. That means "non-events" (or "almost purchases") may be recorded for future analysis and actions on the sense of improving the conversion of visits to the site into effective business that is carried out.

This concept is not very well known. Therefore, it is possible that the respondents didn't understand it when they were filling in the questionnaire, in spite of the explanation that was presented together with the question<sup>11</sup>. As the results didn't seem right, they will not be presented and discussed here. They will be kept for confrontation with the results obtained in future applications of the survey.

#### 4.2.4 Use of data mining

Among large companies, 19.0% claimed that they use data mining at least to a moderate extent. For mid-size companies, that percentage is 11.7% and for small ones, 5.1%. On the other hand, 38.1% of large companies intend to start using the technology within the next three years. That will happen with 24.2% of the mid-size ones and 19.0% of the small ones. Only 14.3% of large companies do not intend to use the technology in the near future, a percentage that is much higher for mid-size and small companies: 50.8% and 65.0%, respectively, as can be seen on Figure 7.

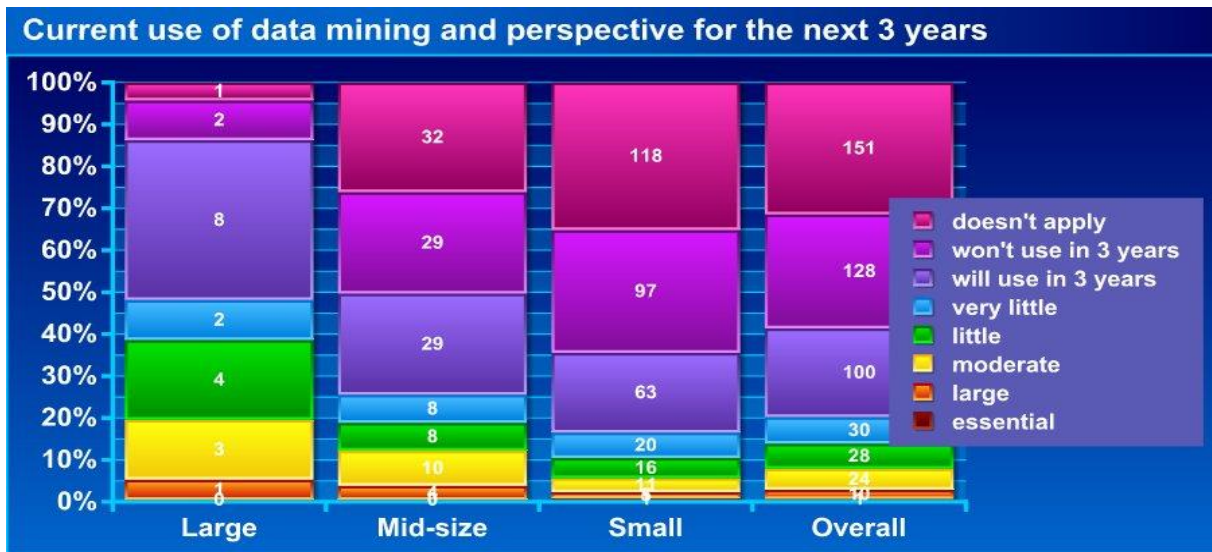


Figure 7 Current use of data mining and perspective of future use, according to the manufacturer's size

It is reasonable that small companies are less interested in the data mining technique than larger ones. In general, they accumulate lower amounts of data on customers, products and transactions and do not need sophisticated tools to extract and treat the required information for decision making, differently to large companies that attempt to make some sense of large volumes of data about its business and customers.

#### 4.2.5 Use Customer Relationship Management (CRM) systems

When questioned about the use of CRM systems (see item 2.2.5), 18.2% of large companies say that they use them, at least to a moderate extent. The same happens with 11.2% of mid-size companies and 11.6% of small ones. Half of large companies, 47.8% of mid-size ones and 38.3% of small ones intend to use the technology within the next 3 years. Only 9.1% of large companies do not intend to do anything about the issue in the near future. For mid-size and small companies, the percentage of those who don't think the technology applies to their business or simply don't intend to implement it within the next 3 years is larger: 26.1% and 38.6%, respectively. Figure 8, below, presents these results.



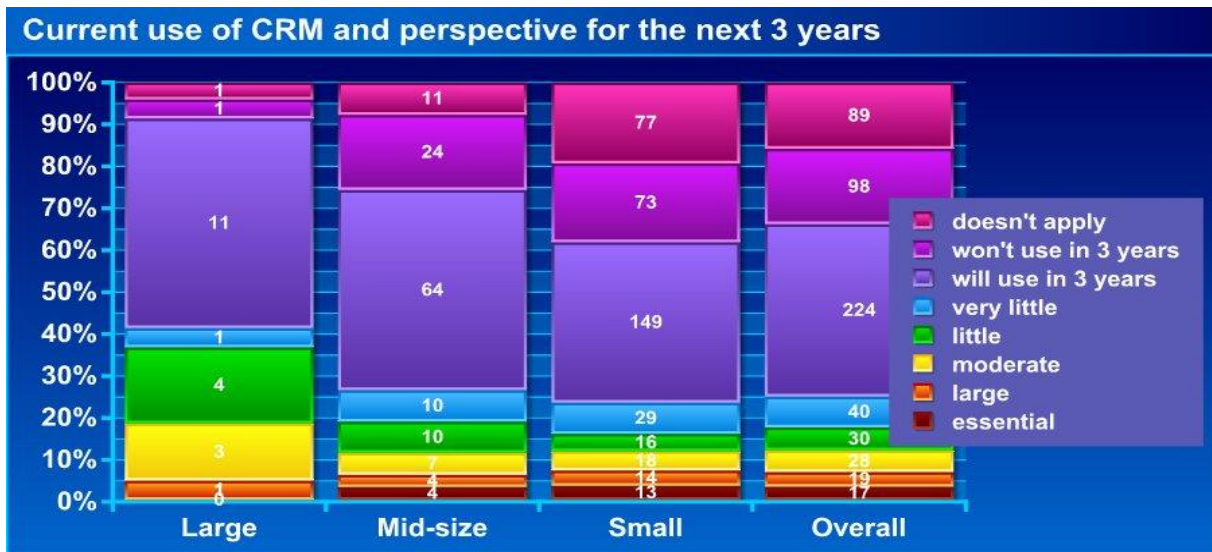


Figure 8 Current use of CRM and perspective of future use, according to the manufacturer's size

### 4.3 Adoption of loyalty programs (lock-in)

Current use of loyalty programs (see item 2.3) by the participants is extremely low. In addition to that, most companies have no intention to include them in their marketing strategy. Among the large companies, 55.6% say that they won't do anything about it in the next three years. The same happens to 74.0% of the mid-size companies and 71.3% of the small ones. Many of them believe that loyalty programs are not compatible with their activities. It will be interesting to follow up the evolution of this scenario, along the next few years, because the Internet makes it easy to record transactions that occur in an electronic environment, as well as the collection of the required data for this kind of incentive, which may help its use to become more popular in the future. Approximately 20% of the participants intend to start using some sort of loyalty program within the next 3 years.

## 5 MANAGERIAL IMPLICATIONS

This paper discussed some possible uses of the Internet to support marketing strategies developed by manufacturing companies. It first presented the Brazilian e-consumers' profile, which is still very influenced by the high cost of the technology involved. Most Brazilians cannot afford a computer and a connection to the Internet (preferably a broad-band connection), which are mandatory for a person to become an on-line consumer. It was said that this is a temporary restriction, though, because computers and Internet provider fees are becoming more accessible to the population and the government is making an effort to "digitally include" citizens. There is even an advantage to those companies that are starting developing Web initiatives now: although current sophisticated (upper class) e-consumers may not allow for large scales, they are demanding with respect to quality and delivery times, which may help companies design operations that will easily cope with the demands of the majority of the population, when it is incorporated to the e-commerce.

The authors believe that selling to consumers shouldn't be the only objective of manufacturing companies aiming to explore the Internet's potential. In fact, possible conflicts of interest with

distribution channels have to be considered. Alternatives exist, that may preserve the relationship with traditional partners, while allowing the manufacturer to get closer to the consumers of its products. One of them is only selling customized items through the Web. Interesting ideas may be obtained from consumers who help the company design personalized products, which can then be transferred to the production of items for the mass market. Another way of establishing contact with consumers, in order to get their impressions and ideas about the company's products, is by sponsoring or, at least, monitoring virtual communities that deal with them.

The amount of data that is made available by an on-line operation may be far greater than the data generated by physical stores. One just has to think that the company can monitor and track all of the customer's actions while s/he is visiting the web-site, regardless of an actual transaction taking place or not. But all that data is worth nothing, if the company doesn't invest in software that can help convert raw data in information, which is, on its turn, used to make decisions. So, the paper also discussed the importance of companies to use whatever technology is available (the survey questioned manufacturers about data mining and CRM, specifically) to make sense of the enormous amount of data virtual enterprises can generate.

As data on transactions is gathered in a very straight-forward manner, when customers buy products through the Web, the authors also considered the possibility of manufacturers developing loyalty programs, which are, historically, associated to retailers. Manufacturers were also questioned about that in the survey.

The participants' answers to the survey show that manufacturers are still far from using the Internet resources to their full potential. In fact, they only seem to be starting to understand that they can go much further than just presenting their company and products in a web site. It will be interesting to apply this same survey in a few years time, in order to evaluate the pace of change.

The survey that was carried out represents a "photograph" of a specific moment. Much more relevant will be to try and capture the movement towards the deployment of all possible Internet uses in order to improve the companies' propositions of value to their customers, which do not restrict to the support to marketing, but also to design, manufacturing, logistics, pre and after-sale activities and so much more!

## 6 REFERENCES

- ALBERTIN, A. L. *Comércio eletrônico: modelo, aspectos e contribuições de sua aplicação*. [Electronic commerce: models, features and contributions of its use] São Paulo: Atlas, 1999.
- ARMSTRONG, A. e HAGEL III, J. The real value of on-line communities. *Harvard Business Review*, v. 74, n. 3, p. 134, May/June, 1996.
- BICHLER, M., *et al.* Applications of flexible pricing in business-to-business electronic commerce. *IBM Systems Journal*, v. 41, n. 2, p. 287-302, 2002.
- CAMERON, G., FERGUSON, W. e ZABIN, J. You are what you buy. *Direct*, v. 16, n. 10, p. 67, 2004.
- COFFEE, P. More 'dynamic pricing' is on the way. *eWeek*, v. 19, n. 37, p. 49, Sep 16, 2002.
- E-BIT. *Web shoppers. 8a. edição*. São Paulo, E-bit / Câmara-e.net. Agosto, 2003.
- \_\_\_\_\_. *Web shoppers. 10a. edição*. São Paulo, E-bit / Câmara-e.net. Agosto, 2004.

FELIPINI, D. É possível vender para pobres na Internet? [Is it possible to sell to the poor over the Web?] São Paulo: GuiaLog, 2003. Available at: <http://www.guiadelogistica.com.br/ARTIGO492.htm>. Access date: 15/March/2004.

GRAEML, A. R. e GRAEML, K. S. A lógica própria do mercado de produtos de informação. [The logic of the market of information products] In: Simpósio de Administração da Produção, Logística e Operações Industriais, 5o., São Paulo. *Anais eletrônicos*. POI-FGV, 2002. p. 1 CD-ROM.

IDG-NOW. Vendas online com cartão de crédito somam R\$ 1,02 bilhão. [On-line sales with credit card add to US\$475 million] São Paulo: IDG, 2003. Available at: <http://idgnow.terra.com.br/idgnow/ecommerce/2003/12/0001>. Access date: 15/March/2004.

\_\_\_\_\_. Renault vendeu mais de 17 mil carros na web em 2003. [Renault sold over 17 thousand cars on the web in 2003] São Paulo: IDG, 2004. Available at: <http://idgnow.terra.com.br/idgnow/ecommerce/2004/02/0002>. Access date: 15/March/2004.

INHOFF, C. A crystal ball for your enterprise. *DM Review*, v. 14, n. 8, p. 24-26, Aug, 2004.

JAYARAMAN, V. e BAKER, T. The Internet as an enabler for dynamic pricing of goods. *IEEE Transactions on Engineering Management*, v. 50, n. 4, p. 470-477, November, 2003.

JOVANELI, R. Ford vende 20 mil carros pela internet no semestre. [Ford sells 20 thousand cars over the web during the first semester] São Paulo: Computer World / IDG-Now, 2003. Available at: <http://idgnow.terra.com.br/idgnow/ecommerce/2003/09/0008>. Access date: 15/March/2004.

KANTER, R. M. Simultaneity. *Forbes*, p. 219-220, Nov 30, 1998, 1998.

MARKETING PLACE. 10 razões para anunciar na Internet [10 reasons to advertise on the Internet], 2004. Available at: [http://gazetaonline.globo.com/narketingplace/artigo\\_print.php?id\\_artigo=31](http://gazetaonline.globo.com/narketingplace/artigo_print.php?id_artigo=31). Access date: 04/September/2004.

MCKENNA, R. Real time marketing. *Harvard Business Review*, Jul/Aug, 1995.

MOE, W. W. e FADER, P. S. Uncovering patterns in cybershopping. *California Management Review*, v. 43, n. 4, Summer, 2001.

PEPPERS, D. A empresa um-a-um. [One-to-one organization] *HSM Management*, p. 6-14, maio/junho, 1998.

PEPPERS, D. e ROGERS, M. *CRM Series – Marketing 1 to 1*. São Paulo: Ed. Makron Books, 2001.

RAY, N. M. e TABOR, S. W. Cyber surveys come of age. *Marketing Research*, p. 32-37, Spring, 2003.

RHEINGOLD, H. *The virtual community: homesteading on the electronic frontier*. Cambridge, Mass.: MIT Press, 2000. 447 p.

STEIL, A. V. e BARCIA, R. M. Aspectos estruturais das organizações virtuais. [Structural characteristics of virtual organizations] In: Encontro da Associação Nacional dos Programas de Pós-Graduação em Administração, 19o., Foz do Iguaçu. *Anais eletrônicos*. ANPAD, 1999. p.1 CD-ROM.

SWARTZ, N. Data-mining initiatives. *Information Management Journal*, v. 37, n. 2, p. 17, 2003.

TEIXEIRA JÚNIOR, S. A mina de ouro debaixo dos bits. [Gold mine under the bits] *Exame*, n. 708, 23/02, 2000.

VENKATRAMAN, N. e HENDERSON, J. C. Real strategies for virtual organizing. *Sloan Management Review*, p. 33-48, Fall, 1998.

VRECHOPOULOS, A. P. Mass customisation challenges in Internet retailing through information management. *International Journal of Information Management*, v. 24, n. 1, p. 59-71, February, 2004.

WASSERMAN, T., KHERMOUCH, G. e GREEN, J. Mining Everyone's Business. *Brandweek*, v. 41, n. 9, p. 32-41, February 28, 2000.

## Notes

---

- <sup>1</sup> This information matches an estimate of IDG-Now (2003), which considers that 149 million Brazilians, of the ca. 170 million inhabitants of the country, i.e. 88%, don't have access to the Internet, which leads one to the conclusion that the remaining 21 million have.
- <sup>2</sup> Those who actually buy goods and services through the web.
- <sup>3</sup> Brazilian Institute for Geography and Statistics.
- <sup>4</sup> According to E-bit (2003; E-BIT, 2004), e-consumers with lower incomes are participating each time in greater proportions of the electronic market, without interfering with the value of the "average ticket", which was 11% higher in 2004 than it was in 2003.
- <sup>5</sup> Amazon's attention to the details, when it stores customers information in its database goes to the extent of asking the customer to say when s/he is buying a book for someone else. Books that are bought for third parties bias the attempt to settle the consumer's own profile. In order to avoid that, Amazon offers special packing for presents, when the customer tells it the books are for someone else. That is a way of obtaining that important information, without giving the impression it is invading the customer's privacy, asking questions that are not of its business.
- <sup>6</sup> Items that can give hints about the consumer's behavior or life style, allowing for inferences about his/her consumption pattern for other items, which can also be offered to him/her.
- <sup>7</sup> Peppers and Rogers (2001) recommend that each new dialog should start where the previous one ended, regardless of how it took place (the customer should never be obliged to say the same thing twice).
- <sup>8</sup> FIESP is the association of manufacturing companies in the state of Sao Paulo, Brazil. FIESP's database (from 2002), which was used in the survey, included 15,279 manufacturing companies. As companies would be contacted via e-mail, only those having an e-mail address in the database would, originally, be invited to participate in the survey. Such companies were 11,838. However, a previous survey that had been carried out by Cohen (2003) the year before, using the same set of data, had already found out that 1,247 of the e-mails in FIESP's database were wrong. Thus, target companies to the survey were reduced to those manufacturing companies contained in FIESP's database that had a valid e-mail account. During the application of the survey, approximately 30% of the messages that were sent didn't reach the addressee, as a result of wrong e-mail addresses. The increase in the number of invalid e-mail addresses from 1,247 to 3,547 was not interpreted as companies giving up the use of e-mail. Although no scientific verification was made for the significant increase of invalid e-mail addresses, the authors speculate that it was the result of Internet provider replacement, or the creation of the company's own domain and, therefore, the change of the e-mail address, in order to use the company's own e-mail server. This suspicion is supported by the great number of companies that, even having received the message in the e-mail address contained in FIESP's database, requested that future contacts took place by means of a different e-mail address.
- <sup>9</sup> B2B = business to business, i.e., electronic commerce with other companies, which are not the consumers of the company's product.
- <sup>10</sup> B2C = business to consumer, i.e., electronic commerce with the consumers of the company's product and not with intermediaries.
- <sup>11</sup> A weird symptom that the data are not reliable is the fact that mid-size and small companies presented levels of use higher than large companies. There is no plausible explanation for that, considering that large companies systematically present higher levels of adoption of new technologies than smaller ones.