

THE TECHNOLOGICAL INFORMATION INCUBATED COMPANIES AND THE IMPORTANCE OF MARKET ORIENTATION

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This work presents a study along with graduated companies of a technological based incubator. Based on affirmatives of some authors like Formica (2000) the technological entrepreneur suffers of a marketing gap, which compromises the innovation sales, and according to the research of the International Association of Science Parks – IASP (1998), that says it is hard to find a marketing support to technological entrepreneurship, it is intended here to verify how marketing contributes to the performance and survival of incubated companies housed in the Software Technology Business Incubator (Incubadora de Empresas de Tecnologia em Software – INETEC). The activities that aim to satisfy customers' needs and are market oriented have an important role to minimize the marketing deficiencies of these companies. The research problem is to verify the intensity of market orientation of companies in this incubator and how this orientation has contributed to their survival. This work is based on a survey made with the owners or managers of the Technological Information Companies that were incubated until 2004 in INETEC. The general objective of this work is to verify the impact of market orientation in the survival of the incubated companies from INETEC, and as a way to accomplish this study, a scale that measures the orientation market level was used. The main conclusion of this study was that there is a sensible market orientation in the decision making of the incubated companies from INETEC. Besides that, it was verified that the surviving companies were those that achieved the highest level of Market Orientation. This way, this work contributes to the incubator managers as it shows the importance of market orientation to a better performance and how it can be used in marketing training.

Keywords: Market Orientation, Technology Information, Business Incubator, Marketing Training.

INTRODUCTION

The marketing aspects have been the main difficult for the technology-based businesses in business incubators, which compromises the market insertion, the growth, and their survival. Dornelas (2002) states that technology-based businesses are those whose products, processes and services are generated by researches in which technology represents a high aggregated value.

We can define a business incubator like a facility designed to assist businesses to become established and profitable during their start-up phase. They do this by providing shared premises, business advice, business services, networking, mentoring, and a full time manager. The incubation period for an individual business is normally from one to three years. US statistics show that business incubators increase the success rate of start-ups from 20% to 87%. (www.nzte.govt.nz, 2006).

In general, technological enterprises arise from researches and high technical qualification. Meanwhile, some entrepreneurs said that the technology is not all for the success, and alone is difficult to sell a product. It is necessary a marketing planning to reach the desired consumer. Formica (2000) argues that, differently that one thinks the technology creativity is far to ability the entrepreneur to get the opportunities that change the present. The technology vision needs to be enriched with creativity in the production planning and marketing. Then, the technological entrepreneur needs to change his/her attitude to help the customers to take advantage of the technological changes.

According to Morita, the Sony enterprise founder (*apud* Formica, 2000), “we cannot forget the creativity in marketing. If you have high technology in new or substantially superior products, services, or processes, you only will be success if the market is well informed about to accept it”. In the walkman case, for example, the success comes after a product planning and the marketing action. With this same point of view, Formica (2000) points out that even the best technology doesn't sell by itself, and the technological entrepreneur suffers a lack of skill in marketing and selling that difficult the inventions commercialization.

According the above-mentioned about the marketing importance, we recognize that the simple exercise of creativity and entrepreneur innovation to develop new technologies, without the market orientation, is not enough. The entrepreneur not only need to introduce new product or service, but also need to create or changes the market condition within which the product or service is sold. He/she needs to satisfy the customers necessities and desires.

Deshpandé and Farley (1998) define Market Orientation (MO) as “the set of cross-functional processes and activities directed at creating and satisfying customers through continuous needs-assessment”.

Based on the importance of this issue, at the end of nineties, some authors suggested some scales to measure market orientation. After that, Deshpandé and Farley (1998) proposed a market orientation scale that synthesized the three other

scales proposed by Narver and Slater (1990), Kohli and Jaworski (1993) and Deshpandé, Farley and Webster (1993). This synthesized scale was adopted by this work as a way to achieve its objectives.

In this work, we study the Technological Information enterprises that finished their incubating process in the Incubadora de Empresas de Tecnologia em Software – INETEC (Software Technology Business Incubator). The INETEC was inaugurated in 1998, in Uberlândia, Minas Gerais State, Brazil.

OBJECTIVES

The research problem of this paper is to verify the intensity of Market Orientation between the INETEC's enterprises, and how this orientation has contributed to their survival. This work is based on a survey made with the owners or managers of all Technological Information Companies that were incubated until 2004 in INETEC incubator.

The general objective of this work is to verify the impact of market orientation in the survival of the incubated companies from INETEC, and as a way to accomplish this study, a scale that measures the orientation market level was used, and other questions concerning to the specific objectives proposed here were added. The specific objectives are to verify if the survived enterprises presented higher market orientation level than the enterprises that do not survived. For this, was verified the performance in terms of client's acquisition, the medium annual revenue range, and the status of the companies, in terms of their survival or not.

THE BRAZILIAN BUSINESS INCUBATORS

In function of the growth of the competitiveness, the small and medium enterprises (SMEs) have some difficulties to maintain in the market, like the low capital for investments and low power to negotiate with supplier and clients.

Moreover, we know that the small and medium enterprises are important for many countries. The studies by the Brazilian government agency for SMEs (Sebrae) show that the Brazilian SMEs represent 98% of the number of existing enterprises; 60% of the employs; 42% of the wages; 72% of the sales in commerce; 56% of the services enterprises; 25% of the Gross Domestic Production, and 21% of the exportations (Sebrae, 2004).

However, despite of the importance and the great number of SMEs, there was a long way to go for the small and medium size companies in Brazil. Surveys concluded the mortality between the SMEs is high. According to Sebrae (2004), the mortality rates in Brazil were 59.9% in year 2000, 56.4% in year 2001, and 49.4% in 2002. That is it, almost half of the Brazilian SMEs shut down on their first year of operation.

To professionalize the start-up SMEs and increase their survival chances, the business incubators have the primary mission to accelerate the start-up and growth rates of technology-based businesses. Managed by governmental organism, universities, foundations, entrepreneur associations, etc., the business incubators are responsible for innovative businesses (Fonseca & Kruglianskas, 2000). In Brazil, according to Nascimento & Souza (2003), the first step in direction of the parks and incubators experiences happens with the Technologic and Innovation Program (Programa de Inovação Tecnológica) of the Brazilian state funding agency CNPq. Created in 1982, this program had the objective to approximate the academy with the entrepreneurs. The program created thirteen Technologic and Innovation Nucleus in educational institutions.

The incubation process is made in three phases: the first, named pre-incubation, focus in the project idea, with duration of six months. The second is the start-up phase, and the incubation period for an individual business is normally one to three years. The third phase is the pos-incubation that improves the interaction of the business with the market, with a six-month period (Filártiga; Guedes & Medeiros, 1999).

Bermudez (2000) points out that it is necessary a synergy not only between the incubated companies, but also among them and the local community to generate employs and earnings, and this is a requisite to develop the Brazilian incubators program. The shared premises, business advice, business services, networking, mentoring, and a full time manager offered by incubators can reduce the risks of SMEs, arise employs, and contribute to reduce the social inequality.

According to Bermudez and Guedes (1997), the main Brazilians incubators difficulties are: family tradition lack; business inexperience of the entrepreneurs; credit access difficulties caused by the country politics; lack of venture capital sources; inexperience in marketing and technologies transference; few courses about entrepreneurship in the universities; lack of joint venture and strategic partnership between small and big companies; and at the end, lack of entrepreneurial culture in the Brazilian society. The Globo Online (2006) published that two thirds of new businesses invest less than 4,500 dollars and 22% applied less than 870 dollars. In addition, the difficulties to open a business are lack of money, lack of adequate public politics that reduce taxes and bureaucracy (the governor try to reduce the poverty but does not valorize the entrepreneurship), and lack of infrastructure access.

To this research work, the survival is considered the main success indicator of an incubated enterprise. Then, this study accomplishes the relationship between the business enterprise survival and the decision-making on market orientation.

MEASURING MARKET ORIENTATION

While there are some inherent differences among the five models, several similarities reflect a general agreement as to what constitutes the foundation of market orientation. There are four general areas of agreement in five perspectives,

including: (1) the emphasis on customers; (2) the importance of shared knowledge (information); (3) interfunctional coordination of marketing activities and relationships; and (4) being responsive to market activities by taking the appropriate action.

Hult and Lafferty (1999) proposed a synthesis of the five contemporary market orientation perspectives, as presented in Figure 1.

and uses information from customers will determine the level of market orientation of that organization. Finally, in the conceptualization of market orientation by Deshpande et al. (1993), they discuss the idea that even though a focus on information about the needs of customers is important in a customer oriented firm, it is inadequate without consideration of the values that permeate that organization and which help to define the customer focus (p.10).

Interfunctional Coordination. The third area of agreement in the models is the interfunctional coordination.

In the conceptualization by Shapiro (1988), the importance of this cooperative orientation is evident in all three of the characteristics he specifies that define a market-driven firm. Not only does he state that information should permeate the entire firm but that strategic and tactical decisions should be made and executed interfunctionally. The second key element in the definition of market orientation by Kohli and Jaworski (1990) specifically addresses intelligence dissemination interdepartmentally and the necessity of this step to ensure concerted action by the different departments. Narver and Slater (1990) single out interfunctional coordination as a key element in the conceptualization of Market Orientation and indicate that it is an equally important element as customer and competitor orientation. Ruekert (1992) also agrees with the need for interfunctional coordination in order to deliver customer value, and Deshpande et al. (1993) acknowledge that interfunctional coordination is consistent with a customer orientation and should be part of its meaning (p.11).

Taking Action. The fourth area of agreement in the models is the action taken by the firm.

The fourth area of agreement among four of the five models is the action taken by the firm. Whether it is phrased as executing well-coordinated decisions with a sense of commitment (Shapiro, 1988), corporate wide responsiveness to market intelligence (Kohli and Jaworski, 1990), utilizing company resources to deliver value to its customers (Narver and Slater, 1990), or implementing and executing corporate strategy by being responsive to the needs and wants of the marketplace (Ruekert, 1992). It is clear that implementation of a customer orientation is a critical ingredient in the definition of market orientation.

According to these definitions above, it is possible to conclude that a market-oriented company is the one that presents four aspects: emphasis on customer, importance in information, interfunctional coordination, and taking action. This conclusion or definition was used to measure the level of market orientation of the incubated companies.

RESEARCH METHOD

During January of 2006 was implemented a survey with all the owners or managers of INETEC incubated companies, which totalized fourteen interviews, including companies that survived or not at the market. It was used a quantitative approach in a descriptive research. The scale used in the construct of this research is at the Appendix I, which was proposed by Deshpandé and Farley (1998) and complemented by the authors of this paper with questions that considered the local reality of the companies and the definition proposed here to market orientation.

This way, the scale in this research measured the market orientation level of the INETEC incubated companies, considering the four aspects: emphasis on customer, importance in information, interfunctional coordination, and taking action

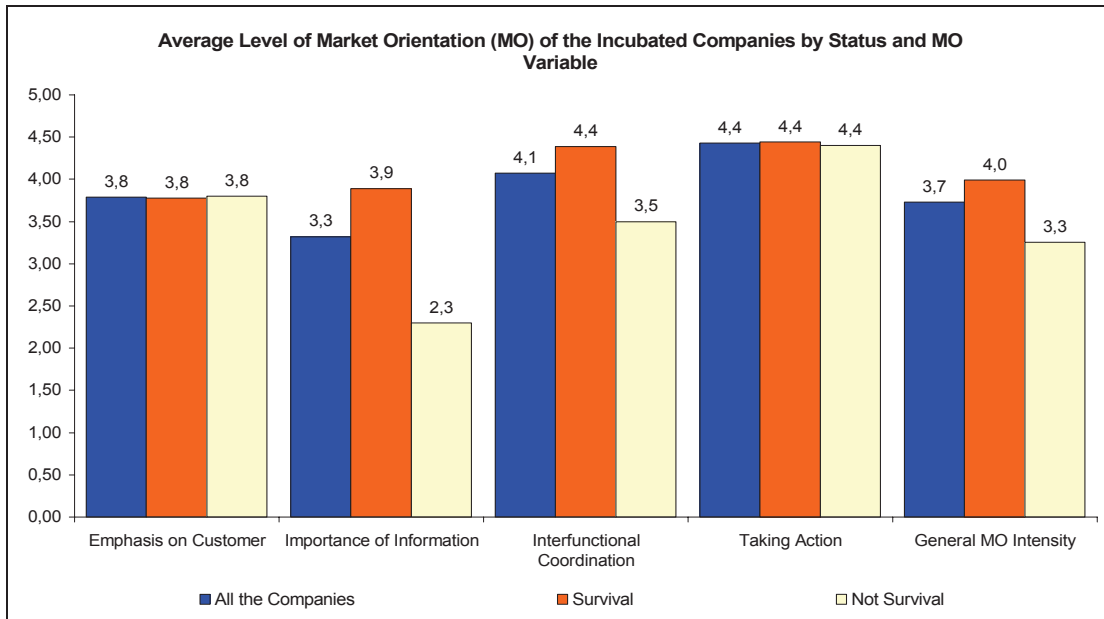
As the enterprises of the studied universe in this research were interviewed, the results accomplished here do not present any statistical error margin, when it comes to take conclusions of the INETEC incubated companies. It is important to mention that, it was not the intention of this work to surpass the INETEC scope to make any conclusion about other companies that are not in that incubator.

DISCUSSION OF RESULTS

Concerning the general objective of this work, to verify the impact of Market Orientation in the survival of the incubated companies from INETEC, it was possible to verify a positive impact, considering the companies more market oriented achieved a greater number of customers and medium annual revenue range, and their own survival at the competitive Technological Information market place.

The Graphic 1 shows de level of Market Orientation of the interviewed companies, which indicates a higher Market Orientation in companies that were opened during the research. This superior orientation of the survival companies is noticed by the 'General Market Orientation Intensity', which presents an average level of 4 points, in a scale where the maximum is 5, being above de general average of 'all companies', which average is 3.7 points.

Graphic 1



It can be observed yet, that the not survival companies presented a Market Orientation level below the average, with 3.3 points. This also shows that the managers/owners of these companies seemed to be more neutral to the affirmations of the ideal practices or market orientation presented in the research construct.

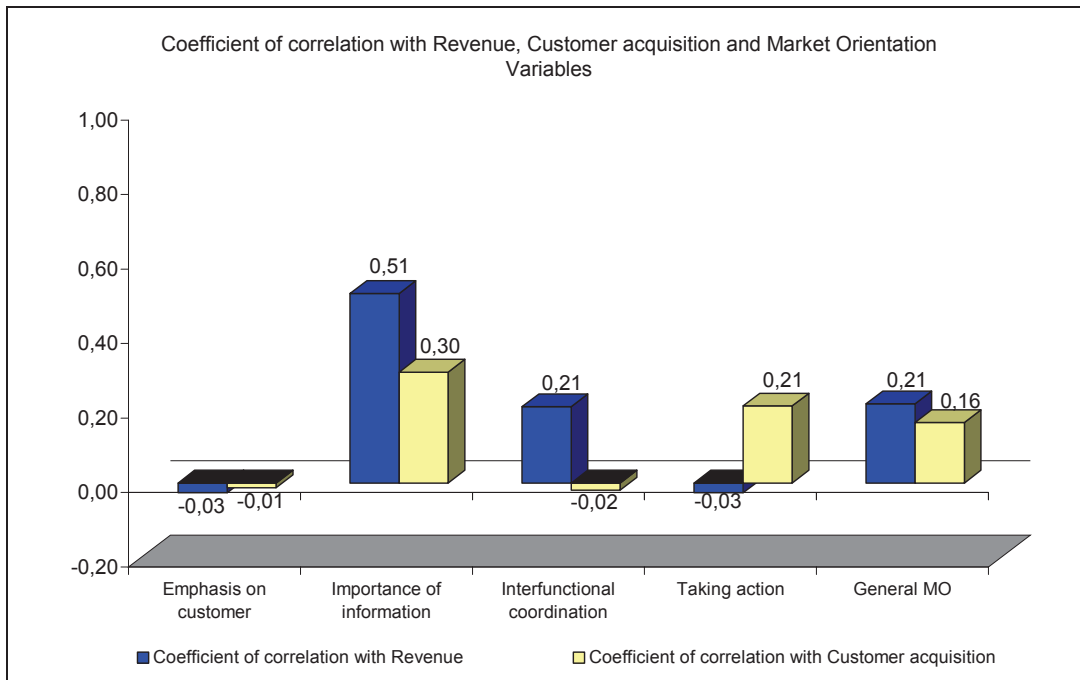
It is also possible to affirm that Market Orientation had a positive relation to the INETEC companies' survival, which presented other evidences that they not only achieved the market survival but better results.

The not survival companies, whose Market Orientation average was 3.3 points, presented an inexpressive revenue or, even, "insignificant", as suggested by some managers interviewed. On the other hand, 56% of the survival companies achieved an annual average revenue of 100.000 dollars, which was, significantly, superior to the not survival companies.

As a way to verify the correlation between 'Market Orientation average level' and 'revenue range' it was used correlation analysis that shown an coefficient (r) of 0,21, which proved an positive correlation, as shown in Graphic 2.

In terms of getting new customers, it was verified that the companies more market oriented presented a better result. It explains why Market Orientation companies presented higher levels of annual revenue. The coefficient of correlation (r) found among the variables "customers' acquisition" and "Market Orientation level" was 0.16, which was sensible low but positive, confirming the correlation between this two variables.

Graphic 1: Coefficient of correlation with Revenue, Customer Acquisition and Market Orientation Variables and Market Orientation in general:



The Graphic 2 shows us the correlations of the Revenue and Customers Acquisition between the General Market Orientation and its four variables like the Emphasis on Customer; Importance of Information, Interfunctional Coordinator and Taking Action.

In relation of the Revenue, we observed that the more significant items were the Importance of Information, Interfunctional Coordination, and General Market Orientation. The variables Emphasis on Customer, and Taking Action were not significant correlation.

In relation of Customer Acquisition, we observed that the more significant items were the Importance of Information, Taking Action and General Market Orientation. The variables Emphasis on Customer, and Interfunctional Coordination were not significant correlation.

All of the Market Orientation variables worked jointly had a positive and significant result for Revenue and for Customer Acquisition. Then, beyond the Importance of Information, the Market Orientation was important for all entrepreneurs interviewed. Therefore, it's confirmed the positive impact of Market Orientation over the INETEC incubated companies, which means that the higher the Market Orientation level the more it's supposed to be the chances of survival and achieving better results, in terms of Customers' Acquisition and Revenue.

Concerning the products portfolio of the incubated companies, there was a concentration of "management systems", considering all the fourteen companies, which reveals, at least, a fragility in the definition of the ideal products portfolio, once 86% of the companies focused on the same market.

We also noticed that 64% of the enterprises survived until the moment of this research, which represents a success rate above the average of the Brazilian

market, obtained by the Sebrae's research, showed above, that 50.1% of small companies have no more than two years of existence.

The nine survival companies analyzed here have more than 2 years of market. However, analyzing ANPROTEC (2005) data about the mortality of incubated companies, it has noticed that INETEC mortality rate of 36% is superior than 7% rate of the Brazilians incubated companies. Although, it must be considered that the average provided by ANPROTEC is composed by many Brazilian market segments and the rate found at INETEC represents only the technological based enterprises.

CONCLUSIONS

Although it was not the objective of this work to analyze INETEC incubator, but its companies, it must be noticed that the support received by these firms to develop their businesses had an important contribution so that the survival rate could be above the Brazilian average. This result confirms the ANPROTEC data that demonstrates that the companies which went through incubators have more chances to survive.

Based on the results of this study, we can say that the Market Orientation entailed a positive impact over the INETEC incubated companies, given the general survival rate or given the finding that there is a positive correlation that assure the more the Market Orientation level the more might be the results in terms of customers' acquiring or revenue.

The contribution of this work is to permit the knowledge that the monitoring of the Market Orientation level of incubated companies can contribute to increase their survival rate by taking some preventive actions during the incubation process. Thus, it is expected that it will be possible to do some corrections in the practice of the entrepreneur managerial process after their graduation, period in which they leave the incubator environment and conduct their business by themselves. Besides that, it has believed that, with the Market Orientation, the innovations might be more based on the market needs and information, customer's desires, interfunctional coordinator and action taking, what can increase their survival chances.

Marketing training can be an indicated way to provide the market knowledge to future entrepreneurs. This course must emphasize the concept of market orientation (emphasis on customer, importance of information, interfunctional coordination, and taking action) and provide the entrepreneurs the indicated marketing tolls so that they can give them more chance to compete in the market place.

For future investigations, it is suggested that this study can be extended to other companies belonged to another incubators, or outside them, so it can become possible to improve their chances to survive and, better than that, to achieve their goals.

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Appendix 1:

The "MORTN" summary scale for Market Orientation synthesized from three existing scales.					
Instructions: The statements below describe norms that operate in business. Please indicate your extent of agreement about how well the statements describe the actual norms in your business. Please answer considering the more comum norms adopted by your company from the period of incubation to nowadays.					
	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
	1	2	3	4	5
QUESTIONS TO CHECK EMPHASIS ON CUSTOMER					
1. Our business objectives are driven primarily by customer satisfaction.					
1.1 (to the answers 1 and 3) Justify:					
1.2 (to the answers 4 and 5) Cite one your business objeive.					
4. Our strategy for competitive advantage is based on our understanding of customers' needs.					
3.1 (to the answers 1 and 3) Justify:					
2.2 (to the answers 4 and 5) Cite one need of your customer.					
7. We are more customer focused than our competitors.					
3.1 (to the answers 1 and 3) Justify:					
2.2 (to the answers 4 and 5) What is the main aspect that defines you more customer focused than your competitors?					
8. I believe this business exists primarily to serve customers.					
3.1 (to the answers 1 and 3) Justify:					
QUESTIONS TO CHECK IMPORTANCE OF INFORMATION					
2. We constantly monitor our level of commitment and orientation to serving customer needs.					
2.1 (to the answers 1 and 3) Justify:					
2.2 (to the answers 4 and 5) What are the kinds of monitorament used by your company for this intention?					
5. We measure customer satisfaction systematically and frequently.					
3.1 (to the answers 1 and 3) Justify:					
2.2 (to the answers 4 and 5) In which frequency is the customer satisfaction measured?					
6. We have routine or regular measures of customer service.					
3.1 (to the answers 1 and 3) Justify:					
2.2 (to the answers 4 and 5) What are the routines or measures used by your company?					
9. We poll end users at least once a year to assess the quality of our products and services.					
3.1 (to the answers 1 and 3) Justify:					
2.2 (to the answers 4 and 5) In which frequency is the end users polled?					
QUESTIONS TO CHECK INTERFUNCIONAL COORDINATION					
10. Data on customer satisfaction are disseminated at all levels in this business					
3.1 (to the answers 1 and 3) Justify:					
3.2 (to the answers 4 and 5) What are the internal means of communication used by your company for this intention?					
3. We freely communicate information about our successful and unsuccessful customer experiences across all business functions.					
3.1 (to the answers 1 and 3) Justify:					
3.2 (to the answers 4 and 5) What are the internal means of communication used by your company for this intention?					
QUESTIONS TO CHECK TAKING ACTION					
11. When we find that customers would like us to modify a product or service, the departments involved make concerted efforts to do so.					
3.1 (to the answers 1 and 3) Justify:					
3.2 (to the answers 4 and 5) Cite the most importante product or service modification made in the last year as a response to customers request.					

Appendix 2:

The "MORTN" summary scale for Market Orientation synthesized from three existing scales.
Instructions: The statements below describe norms that operate in business. Please indicate your extent of agreement about how well the statements describe the actual norms in your business. Please answer in the context of your strategic business unit. (Circle one number for each line.)

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
	1	2	3	4	5
1. Our business objectives are driven primarily by customer satisfaction.					
2. We constantly monitor our level of commitment and orientation to serving customer needs.					
3. We freely communicate information about our successful and unsuccessful customer experiences across all business functions.					
4. Our strategy for competitive advantage is based on our understanding of customers' needs.					
5. We measure customer satisfaction systematically and frequently.					
6. We have routine or regular measures of customer service.					
7. We are more customer focused than our competitors.					
8. I believe this business exists primarily to serve customers.					
9. We poll end users at least once a year to assess the quality of our products and services.					
10. Data on customer satisfaction are disseminated at all levels in this business					