The Panorama of Innovation in Brazil: Local Dynamic and Business Behaviour

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Abstract
Various studies on innovation practices worldwide have provided evidence of the increased investments in research and development (R&D), of partnerships between universities and companies. Nevertheless, it can be perceived that in spite of the increase of investments in innovation in Brazil being similar to that in the rest of the world, the development of new business, technological, products and services models is still a long way from the demands of the market. In this sense, this study has the objective of replying to the following questions: (i) what does a review of the literature tell us about the panorama of innovation in Brazil? And (ii) what is the local dynamic and the business behaviour? To answer these 2 (two) questions, innovation in the Brazilian context is analyzed through the research conducted by General Electric (GE), Insead and data from the Innovation and Entrepreneurship Centre of the Fundação Dom Cabral. The methodology proposed is qualitative, the result of research from the above-cited sources. It is suggested that the Brazilian business dynamic for innovation still takes us back to the improvement in current products and services, the development of new business solutions still being encountered at a basic level, as the pressure for short-term results has been considerable. The present study may be broken down into new publications for various sectors of interest to the economy and with distinct results.

Key words: innovation, local dynamic, business behaviour

INTRODUCTION
Several studies on innovation practices in the world have provided evidence of the increase of investments in research and development (R&D), of partnerships between businesses and universities and in the search for qualified professionals for the development of new business, technological, product and process models. Nevertheless, recent Brazilian experience suggests that in spite of the economic stability that started in the 90s, the investments in innovation have been growing, according to data from Pintec, but effective results in gains in competitiveness, productivity and new technologies are still low, Pintec (2003).

Investments in innovation usually consider the resources intended for R&D activities, in accordance with Aalbers, Shestalova and Kocsis (2012). In recent years, average Brazilian investment in R&D has been 1% of GDP, led by the participation of the public sector, in which the greater part of the resources is intended for Federal Universities and the allocation of funds for isolated research in technical departments. From this perspective, it is suggested that a closer relationship between companies and universities is not being promoted, and is the object of numerous other studies and analyses, citing especially Ford and Paladino (2013).

Historically, innovation may be understood as a set of activities related to R&D, measuring its efficiency by means of public and private expenditure in relation to the GDP. However, recent studies have identified that innovation practices may be associated with improvements in business models, citing Burgelman, Christensen and Wheel-Wright (2004). Specifically regarding this theme, Bowers and Knorakias (2014) combine different theories, such as the analyses related to the proposal of organizational value and its impact as regards the perception of clients, cost management, distribution channels and access to new markets. The results suggest an integrated analysis of the market demands, as a positive aspect for the practices of innovation, influencing positively the net economic viability of companies. However, would this be a panorama of innovation in Brazil?

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For this reason the objectives of this study are: a) to analyse the innovation practices in Brazil, using data published in bases such as that of General Electric (GE), Insead (traditional business school in Switzerland) and of the Innovation and Entrepreneurship Centre of the Fundação Dom Cabral; b) to analyse the variables that impact positively on innovation in Brazil and c) interpret the results of items “a” and “b”.

This article differs from other publications related to innovation, for three reasons. The first, because the study utilizes the databases of GE, Insead and the Innovation and Entrepreneurship Centre of the Fundação Dom Cabral, considered to be consistent and up-to-date. Secondly, the number of up-to-date and relevant data are considered, estimating the effects of innovation on business behaviour and thirdly, interpretations and suggestions are made regarding the impacts of innovation on the business reputation of Brazilian companies.

This study is divided into 5 (five) sections: the first being the introduction, the second describing the review of the literature, the third the methodology, the fourth, the results and the conclusion at the end.

**THEORY**

The first research using data on innovation in Brazil was undertaken in the 90s. This research contemplated variables that theoretically reflect the conditions of practices of innovation in the Brazilian context and its impact on the economy. The data were related to the investment in research in federal universities, the number of patents, participation of investments and innovation in the GDP, among others. The results obtained indicated that, in general, investments in innovation in Brazil were low, compared to the richer countries in the world, and did not even make an impact on the business environment.

De Negri (2005) suggests that the debate on innovation in Brazil cannot be associated only with the investment in research, but also with company performance. There was the need to advance with the theme towards a greater relationship with the private market, in technological and economic development. For Galia and Legros (2004), innovation should be understood also as a strategic business option, in which processes and projects can be structured to reach new markets.

Bessant (2003) advances the proposed debate, suggesting that it is not enough to establish innovation as a strategic option. It would be necessary to stimulate a culture favourable to it, in which the selection of high performance teams would become primordial, flexibility in decision-taking being something essential for the generation of new ideas.

Alegre-Vidal, Lapiedra-Alcamí and Chiva-Gomez (2004) include autonomy in decision-making as an important factor for innovation to have a high business value, as in their studies an excess of hierarchy and projects rigid in their conception would not favour innovation. In all the above-mentioned cases, the existence of complementarity between investments in innovation, research, strategy, processes and high performance teams, can be seen.

For Hornsby, Kuratko, Holt and Wales (2012), the development of an innovation directorate would be vital in economic environments in which the results presented are incipient, and management maturity low. Another important point is the partnerships with universities and science and technology institutes. That is, the lower the interaction with the market, the greater will be the intentions for the initial centralization of innovation activities in a team of high performance managers.

The central position of innovation in business and economic growth is recognized by all the sources surveyed for this study. Nevertheless, Brazil still has lower rates of investment in the theme and various companies have been restructuring their teams, because they have still not managed to measure the return on the investment, for example and in accordance with the Global Innovation Index (2012).

The results of this study are associated with the period between 2012 and 2013, in which analyses on the strategic importance of innovation, and the factors that have been driving its growth, the priorities established by the companies, their management processes and partnerships are analysed. In the same way, the period mentioned is associated with the reports of GE, Insead and the Innovation and Entrepreneurship Centre of the Fundação Dom Cabral.

The behaviour of innovation in Brazil, as the theme chosen for the study, arises from the few public current data in Brazil and the analyses on the impact of the subject for the companies and not only for
economic questions. The methodology of analysis on innovation in Brazil presents two important points: (1) innovation in companies presents connections with economic behaviour and (2) generates impacts on the economy and its growth.

METHODOLOGY
The present study is a qualitative piece of research consisting of a review of the specialized literature, undertaken between October 2013 and July 2014, in which international periodicals were consulted such as Enterprise and Innovation, European Journal of Innovation Management, Innovation and Development, International Journal of Entrepreneurship and Innovation Management, International Journal of Innovation and Sustainable Development, International Journal of Innovation Management, Journal of Technology Management & Innovation and The Journal of Product Innovation Management, in accordance with Figure 01. The use of these periodicals attests to the search for up-to-date theoretical references and aspects related to their applicability to the organizational environment. Following this, it was sought to study and comprehend the principle parameters and manner of application of the studies of GE, Insead and the Innovation and Entrepreneurship Centre of the Fundação Dom Cabral, these being relevant for innovation practices in Brazil, considering that the current economic environment can be restrictive and affect the practices of innovation considerably.

![Figure 01 – Review of the Literature](image)

Source: the authors

RESULTS
Innovation and business strategy
According to the studies produced by Johannessen, Olsen and Lumpkin (2001), innovation should reflect the desires of business strategy, being broken down into projects suitable for its execution by the
managers and operational levels. In this sense, Graph 01 examines the importance of innovation in the Brazilian context, highlighting its importance for organizational strategy.

The results of Graph 01 show that innovation is a theme of high business priority in Brazil, with approximately 60% importance, above the global average, around 40%. When the priority is managerial, Brazil shows a result lower than the global average, in the same way as operational priority. It is suggested that innovation is still a theme for top management, and has not yet been successful in filtering down to the other levels of business structure. The results of Graph 01 are furthermore favourable to other analyses: would the establishment for a directorate and teams specifically focusing on innovation be necessary to stimulate the innovation process?

The creation of a directorate and teams for innovation could be theoretically explained, by the fact that its strategic importance would increase company productivity minimally, starting from new processes and value proposal, according to Martins and Terblanche, (2003). In the same way, the initial centralization of innovation activities in the directorate is justified by the stage of initial maturity of Brazilian companies, which is different from the stage prevailing worldwide, more advanced and which has produced tangible results.

To explain the highly strategic priority of innovation, Graph 02 gives the variables that drive innovation in Brazil.

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**Graph 01** - Innovation and Strategic Business Priority
*Source: the Authors (2014)*

**Graph 02** - Aspects Driving Innovation
*Source: adapted from GE (2013)*
The factors utilized to evaluate what drives innovation in Brazil were: the development of products and services, the development of new products and services to increase profit, the development of sustainable new products or services, the development of new services and the development of customized products for local demands. Within this group one should highlight, the development of current products and services and those focusing on increasing profit. The Brazilian average is lower as regards the development of customized products for local demand. The results of Graph 02 suggest a short-term agenda, concentrating on the current portfolio of products, services and profit. In this sense, Graph 03 seeks to investigate which factors will determine the future behaviour of innovation in Brazil.

Graph 03 - Aspects that will Drive Innovation
Source: adapted from GE (2013)

Graph 03 confirms the results of Graph 02, that is, the long-term agenda of Brazilian companies regarding innovation will continue to be focused on the development of current products and services and on the search for profit, followed in importance by the development of services focused on the client, sustainable aspects, in new business models and local demands. For Lofsten (2013), the maturity of innovation in Brazil would be associated with the economic development and the stabilization process of public and private investment.

Graph 04 shows what would be the priorities of Brazilian companies to innovate, in accordance with the factors: understanding clients and anticipating the market, attracting and retaining people, developing new technologies, identifying partnerships, creating an environment focusing on innovation, risk management, investing in innovation projects up to attracting investors to innovation projects. As a result, the priority is the anticipation of the market, which may be related to the results of Graphs 01 and 02, whose objective is the development of products and the increase of profits.
The analyses that would support the priorities for innovation are presented in Graph 05, they are: promoting a bank of ideas and an office for innovation projects, promote technological development, promote the financing of research projects, public financing ranging up to the stimulation of the innovation of new products and processes. It can be seen that the stage of innovation practice is still basic, given the priority for the bank of ideas and projects. Recent research produced by the World Bank (2014) suggests that innovation practices in the United States are related to the adoption of risk capital and disruptive innovation, while in developing countries (like Brazil), they are associated with public investments and the initial business stage.
In this sense, the search for partnerships becomes important to help in the development of organizations, where activities to access new technologies, new markets, improvements in current products and services are of greater importance than obtaining patents and new business models, in accordance with Graph 06.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>To access new technology</td>
<td>79%</td>
</tr>
<tr>
<td>To enter new markets</td>
<td>79%</td>
</tr>
<tr>
<td>To improve an existing product or service</td>
<td>75%</td>
</tr>
<tr>
<td>To speed up time to market to invent a new product</td>
<td>72%</td>
</tr>
<tr>
<td>To improve the profitability of an existing offer</td>
<td>70%</td>
</tr>
<tr>
<td>To gain insights and market intelligence</td>
<td>69%</td>
</tr>
<tr>
<td>To scale up</td>
<td>69%</td>
</tr>
<tr>
<td>To benefit from a company’s scales force</td>
<td>58%</td>
</tr>
<tr>
<td>To share costs</td>
<td>56%</td>
</tr>
<tr>
<td>To license patents and technology</td>
<td>54%</td>
</tr>
<tr>
<td>To invent a new business model</td>
<td>54%</td>
</tr>
</tbody>
</table>

Graph 06 – Partnerships that Sustain Innovation
Source: adapted from Insead (2013)

As a result of Graphs 01 to 06, we have tried to analyse the importance of the structuring of innovation teams in Brazilian companies. In this sense, Graph 07 suggests that the implementation of an innovation directorate in Brazilian companies would be a significant action and over the global average. The other results suggest that knowledge spaces, banks of ideas, improvement in the quality of services, products and processes are important guidelines for Brazilian companies.

Graph 07 – Practices that Sustain Innovation
Source: the authors (2014)

Finally, the comparison between Brazil and other developed countries regarding innovation, such as the United States, Israel, China, Russia, and India produces interesting results. Innovation activities of Brazilian companies are related to the search for resources to innovate, followed by market access, support structure, research teams, generation of ideas, knowledge management and business model, similar to other countries, but Brazil being at an inferior stage. The results of Graph 08 indicate that the
moment of the Brazilian companies refers to the search for resources, investments, market and maturity of innovation processes.

Based on the results of the graphs above, suggestions are made for improvement opportunities and innovation advances in Brazil, through new bibliographical research and case studies of the innovation management practices of Brazilian companies, to explain the variables and obtain replies for the current Brazilian environment.

**CONCLUSION**

This article analyzed various studies on the local dynamic and Brazilian business behaviour regarding innovation practice. The results suggest that the practices adopted in innovation are associated with the development of products, process, services and technologies but with incremental solutions. The evidence obtained with the review of the literature and the databases researched suggests that innovation is a strategic theme in the world, with ramifications at the managerial and operational levels. In the meantime, the perception is latent that innovation is a substantial theme, although with low penetration in the other organizational levels of Brazilian companies.

The results obtained show that there exist opportunities for access to new markets, to the development of business models and in the construction of partnerships with clients, suppliers and universities, provided there exists structured processes and personnel for this. The absence of these factors may influence the capacity for innovation negatively.

In conclusion, the short-term business results must be considered. The development, however, of a long-term agenda is still more relevant, as a strategy for organizational survival and longevity. To this end the observation of the environment in countries such as the United States, Israel, China, Russia and India suggest that practices such as market access, management structuring and knowledge management would be more relevant than large volumes of resources for investment.
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REFERENCES