

**Is the career in radical innovation management well stimulated in companies? Empirical evidences**

**PRYSCILLA APARECIDA VAZ DE OLIVEIRA**  
ESCOLA POLITECNICA DA USP  
pryvaz@gmail.com

**MARIO SERGIO SALERNO**  
ESCOLA POLITECNICA DA USP  
msalerno@usp.br

# IS THE CAREER IN RADICAL INNOVATION MANAGEMENT WELL STIMULATED IN COMPANIES? EMPIRICAL EVIDENCES

## 1. Introduction

Innovation is related to the maintenance of competitive advantage, performance (Seeck and Diehl, 2016) and creation of economic value (Pisano, 2015) of companies. Radical or breakthrough innovation is associated to the leap in performance and leadership of companies and, according to Marvel et al. (2007), the core of long-term wealth creation.

Radical innovation (RI) is defined by O'Connor e McDermott (2004) as the one that creates a new line of business, relative to products and processes, both for the company and the market. It is distinguished by the rewards it can offer, but also the risks and uncertainties that accompanies it and characterized to be long-term projects with high levels of uncertainty. The importance of RI nowadays is such that O'Connor et al. (2008) believe that it is an emerging organizational function, similar to what happened to marketing and quality before.

RI in large companies evolved, according to O'Connor et al. (2008), from the persistency of a talented champion, which made its occurrence infrequent and unpredictable, to different structured innovation approaches with a variety of people with diversified roles and skills in order to increase the fulfillment of these projects in a regular basis.

Seeck and Diehl (2016) claim that an organization's capacity to innovate is closely related to the employees' capabilities and motivation, as their output is needed to develop and implement innovations. Kelley et al. (2011) argues that the individuals' commitment to innovation is more responsible for a greater number of RIs than the organization's engagement.

According to O'Connor e McDermott (2004), individuals with entrepreneur skills, who thrive on great uncertainty circumstances, can prosper in large companies as they aim for the availability of enriching relationships, access to physical and financial resources, the legitimacy associated with the company's name and its reputation across the market. They are driven to participate in innovation activities by the will to be involved in nurturing new business and bringing value to the market (O'Connor et al., 2008) and to the world (Leifer et al., 2000).

Despite of the importance given to RI projects in large companies nowadays, and the relevance of individuals for the accomplishment of these projects, O'Connor e McDermott (2004) pointed in their study a high rate of frustration across RI key team members, based on the number of dismissals and alienated the careers.

Human resource (HR) management practices, according to Beugelsdijk (2008), may enhance the company's performance when they match the competitive requirements of the firm's strategic intent. But, Seeck and Diehl (2016) point that HR' strategy can vary significantly for incremental and radical innovations.

Therefore, motivating individuals that work with RI, for Marvel et al. (2007), can be problematic from a HR perspective as these employees claim for a personalized support that can be seen as an inequity within the company. Thus, the study of the HR management for RI managers is essential to avoid such problems that inhibit RI.

Despite the importance of the subject, scholars have given little attention to HR management policies on the activities of innovation management, an issue of utmost importance for organizations to gather and stimulate the best talents to engage on this career. In addition, Seeck and Diehl (2016) pointed that, surprisingly, in their literature review relating HR management and innovation, studies have paid limited attention to the distinction between radical and incremental innovation for the HR management.

## **2. Research problem and objective**

This study aims to identify the existence of CEOs experienced in areas related to innovation in large companies and highlight the importance of the HR management practices for innovation career development. Therefore, the research question will guide this research is: Is the innovation management an attractive field for career growth in company?

## **3. Theoretical foundation**

Initially, according to O'Connor et al. (2008), the majority of RI projects was originated and progressed based on the persistency of a talented champion, supported by a senior management sponsor. The dependency of an individual champion, the lack of a strategic intent for RI in the company or the focus on one RI project a time, made the occurrence of RI projects infrequent, irregular and unpredictable. Then, companies started to develop a capability for RI to ensure it would occur frequently and created different innovation approaches to increase the fulfilment of these projects in a regular basis.

As a consequence, the importance of managers who support and secure resources for innovation projects increased. Kelley et al. (2011) pointed many aspects of the managerial role for innovation. As they have a wider perspective of the organization, and access to information and resources, they can provide advice and connections for project leaders in order to overcome barriers and ensure the alignment of the project with the organization's strategic intent. Another aspect of the managerial position is to identify individuals who have the necessary skills to lead innovation projects, provide encouragement, reinforce the organization's objective, and promote collective understanding and interpersonal trust, and, as a consequence, outline an innovative culture and raise the receptiveness for innovation in the organization. Therefore, managers can make RI be at the core of the organization's activities.

However, the analysis of RI with focus on human interface, executed by O'Connor and McDermott (2004), pointed that there are several aspects to be addressed to increase the humanness of RI in order to develop this capability in established firms. (1) There is a range of specific roles needed in RI projects. However, there is a lack of coordination and connection between them. (2) The composition of RI teams differs significantly from incremental innovation teams. The formation of RI teams is normally based on volunteerism and informal recruitment, according to personal relationships and desire to make part of something big. (3) There is a need to nurture and use internal and external informal social networks to access leading edge technical information and building alliances to facilitate RI. (4) Moreover, there is a strong mismatch between the risks and rewards that occurs for members of RI teams.

The creation or existence of an innovative culture in organizations is, for Leifer et al. (2000), one of the biggest contributions from an executive to make RI more natural, accepted and valued. Sommer et al. (2016), adds that an innovative culture is the most attractive factor in companies for young graduates, along with an innovation products portfolio.

RI projects require great commitment and implicate hard work, but, given the low probability of success and the low frequency in which RI occur, the risk engaging in a RI career is high. Thus, companies need a way to ensure that people are continuously engaged. O'Connor and McDermott (2004) verified that the lack of a different compensation for RI teams. Side-lined careers were caused by unsuccessful projects and rewards were dependent on project success. Nevertheless, Hebda et al. (2012) argue that if the reward system is not well implemented, will likely lead to discouragement and resentment, hindering innovation.

Rewards play an important role in finding the motivation to innovate, as they affect the willingness to compromise in various activities, according to Cavagnoli (2011). Hebda et al. (2012) mention incentives, rewards and corporate recognition as the traditional focus of HR to motivate employees.

For Cavagnoli (2011), rewards can range from security, esteem, opportunities, autonomy, work demands, work control to general conditions of life outside the workplace. Therefore, rewards play an important role in finding the motivation to innovate, as they affect the willingness to compromise in various activities. Hebda et al. (2012) mention incentives, rewards and corporate recognition as the traditional focus of human resources to motivate employees. To them, among the rewards are salary; individual financial award; group financial award; company professional awards and recognition; and promotions and formal career development processes.

Marvel et al.'s (2007) work states that HR managers and individuals that are responsible for RI in firms agree to consider rewards and recognition as the most motivating category of HR mechanisms. Nevertheless, RI team members acknowledge that intrinsic motivation as an important motivator in their career, differently from the human resources managers' vision.

O'Connor and McDermott (2004) and Leifer et al. (2000) identified some examples of HR management policies designed to promote and maintain RI career in large companies: the guaranteed continuity on staff and financial incentives, such as participation in the financial success of the products from the projects in which they participated. Inversely, the relation between HR practices and innovativeness, studied by Beugelsdijk (2008), showed that job autonomy and flexibility in working hours is positively related to RI and standby contracts and performance-based pay may have a negative effect on RI.

Some papers suggested mechanisms to improve the career attractiveness in RI in large companies. Leifer et al. (2000) pointed (1) the creation of an entrepreneurial mind-set for innovators, so that they are able to justify the project in market terms when it's needed; (2) the establishment and nurture of internal networks to promote rapid access to information and resources; (3) the creation of supervision boards in order to maintain the continuity of projects in case of personnel changes; (4) the recruitment of individuals with the right skills for each role of the RI team; (5) the promotion of career development and rewards for potential RI team members, beyond the awards linked to the success of the project, it is necessary to reward the effort and perseverance; and (6) the establishment of a culture that enhances and promotes the RI. Concerning the internal networks, Cavagnoli (2011) believes that this informal contact can reduce the probability of failure in RI projects. However, Hebda et al. (2012) mention that reward mechanisms sought by RI team members are: awards for innovation; awards for patent; salary increases on merit; and peer recognition.

#### **4. Methodology**

At first, a systematic literature review was made. The review was based on the academic databases Web of Science and Scopus using the terms “human resource management” and (“radical innovation” or “breakthrough innovation”). It was complemented by a snowball search to identify the papers that are citing the most important papers detected in the first search. With this approach, we aimed to identify the relevant literature to support the analysis. Initial searches have shown few papers on our subject.

The literature analysis is the key to build a sound conceptual framework. However, it must be complemented by empirical investigation. Therefore, the research question was approached by an empirical investigation on the career paths of 200 CEOs from worldwide and Brazilian-based innovative companies. In order to ascertain the origin of CEOs, the lists “The World's Most Innovative Companies” 2016 from Forbes Magazine and “The 100 Most Innovative Companies” from the Brazilian magazine *Valor* were used.

Forbes used the index “Innovation Premium” to rank the companies. The magazine explains the calculation of the index by “it is calculated first by projecting a company’s income (cash flows, in this case) from its existing businesses and look at the net present value (NPV) of those cash flows. We compare this base value of the existing business with the current Enterprise Value (EV): Companies with an EV above the base value have an innovation premium built into their stock price.”

*Valor*’s performs the rank along with the Strategy& - Brazil, from PwC. Their methodology defines innovation as “the generation and structured development of new ideas in regular basis that generates significant value for companies.” and evaluates the companies qualitatively by the following criteria: intention to innovate, effort to effectuate the innovation, obtained results and market evaluation. The methodology emphasizes that the intention and efforts to innovate must be primarily located in Brazil.

The information used from the lists were Company’s Name, Sector and CEO, this last one was only provided on Forbes’ list. Given that, the career path from each CEO was searched on Google. From Forbes’ list the terms used on the search were, “*name of the CEO*” *career* or “*name of the CEO*” *career* “*company’s name*”. The majority of the results was a biography or profile of the person published on websites as Bloomberg, Reuters, LinkedIn, the company’s website and business magazines. And from *Valor*’s list the terms *President* “*company’s name*” or *President* “*company’s name*” *Brazil*, when it was a multinational company, were used in Portuguese language. Most results were an announcement about the designation of the person for the given position, including a profile of his/her career, published on the company’s website, business magazines and LinkedIn. From these profiles, it was taken the named positions that were under a specific area as marketing, operations, R&D or sales, for example, on the current or previous company. Then, the background of the CEOs career was assorted into the categories presented in Table 1. When the CEO could be selected in two or more categories, the most recent was considered.

Category	Background areas
<b>Entrepreneur</b>	The CEO was the founder of the company
<b>Innovation</b>	Research Product Development

<b>Commercial</b>	Marketing Sales Purchase
<b>Financial</b>	Financial
<b>Operations</b>	Operations Supply chain Production
<b>Product</b>	Product
<b>Human Resource</b>	Human Resource
<b>Legal Affairs</b>	Legal Affairs
<b>Strategy</b>	Strategy
<b>Quality</b>	Quality
<b>Consultancy</b>	Consultancy
<b>Family Business</b>	The CEO was an heir of the company's founder
<b>Assorted</b>	The CEO's career could not be found.

Table 1 – Categories of CEOs and background areas.

The search methods differ for each list. Figure 1 shows the method used for Forbes' list, and Figure 2 for *Valor's* list. There are two reasons for the need for a different method: *Valor's* list didn't give the CEO's name information; and some of the companies from *Valor's* list were multinationals, thus, the Brazilian subsidiary was led by the Brazilian or Latin America president of the company.

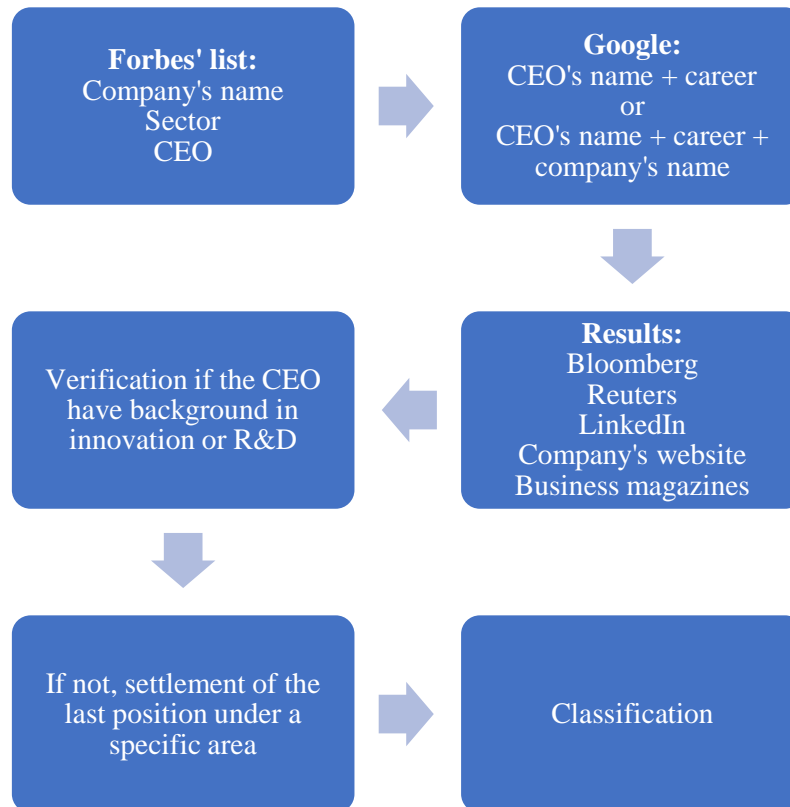


Figure 1: Search method of the CEOs career from Forbes' list.

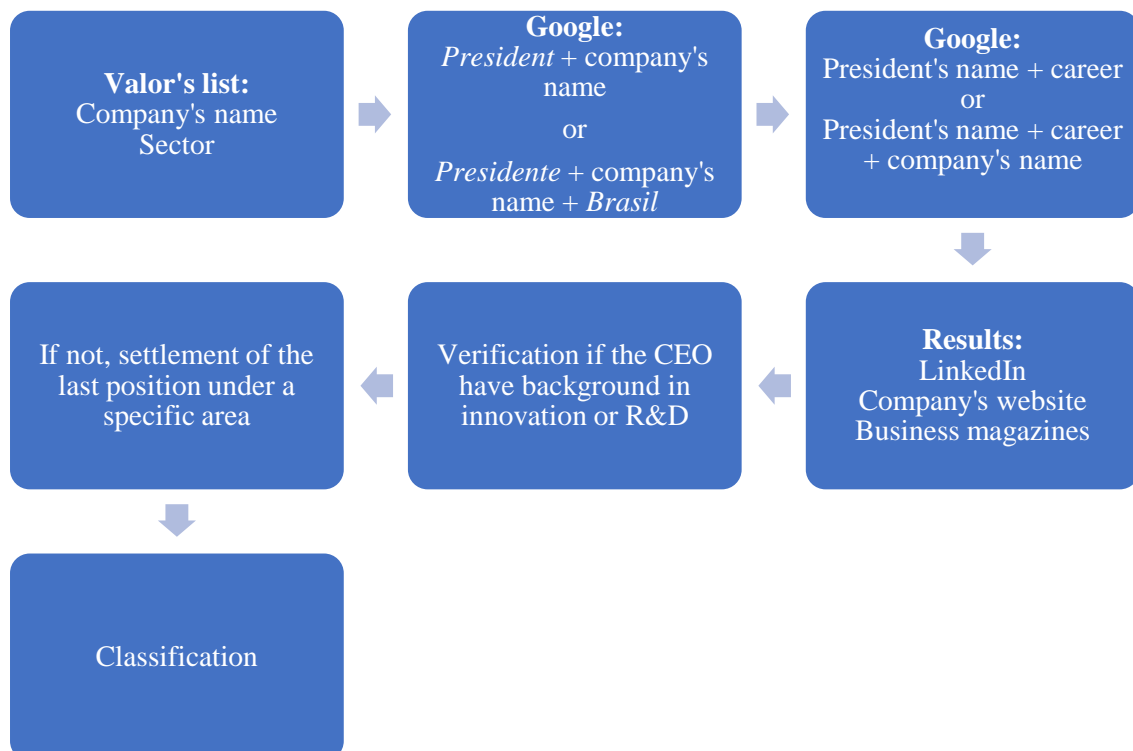


Figure 2: Search method of the CEOs career from Valor's list.

## 5. Results analyses

The analyses of the Forbes and *Valor*'s lists presented, as most relevant background of the CEOs, commercial, operations, financial, entrepreneur, and innovation areas, as shown in Table 2. Most of the CEOs from the lists have a background on operations, commercial, financial, and consultancy areas, which have a focus on short-term results, what is contrary to an innovation mindset, together they are 65% of the CEOs. Entrepreneurs, innovation, and strategy areas were much less relevant, totaling 22% of the CEOs.

Background	World	Brazil	Total
<b>Commercial</b>	21%	32%	<b>27%</b>
<b>Operations</b>	28%	14%	<b>21%</b>
<b>Financial</b>	11%	17%	<b>14%</b>
<b>Entrepreneur</b>	16%	7%	<b>12%</b>
<b>Innovation</b>	9%	7%	<b>8%</b>

Table 2: Most relevant background of CEOs from innovative companies.

There was a low representativeness of CEOs who have innovation as a career background. In companies from the Forbes' list, 9% of the CEOs worked directly with innovation before, and, from *Valor*'s list, it was only 7%. Combining both lists, this percentage was 8%. Once the profile of individuals who seek to work with RI is entrepreneurial, this indicates that innovation career is not attractive for managers who pursue a high management career.

The two lists have different sectors classification. The Forbes' list sector analyses presented that the most significant classification were operations, entrepreneur and innovation; and from *Valor*'s list were commercial, operations and financial.

Table 3 shows the Forbes' list sector analyses, in which Software & Services; Pharmaceuticals, Biotechnology & Life Sciences; and Retailing sectors were the most relevant between innovative companies. From all the sectors only the Pharmaceuticals, Biotechnology & Life Sciences and Semiconductors & Semiconductor Equipment were leaded mainly by individuals with an innovation background. The CEOs with innovation background of this list were from Pharmaceuticals, Biotechnology & Life Sciences (33%), Software & Services (22%), Telecommunication Services (11%), Materials (11%), and Health Care Equipment & Services (11%).



Table 3: Forbes most relevant sectors of the companies, and its prevalent' CEOs background.

Forbes' list sectors		Most proeminent CEOs background
Software & Services	14%	Operations
Pharmaceuticals, Biotechnology & Life Sciences	11%	Innovation
Capital Goods	10%	Financial
Food, Beverage & Tobacco	10%	Operations
Retailing	10%	Entrepreneur
Health Care Equipment & Services	9%	Diverse
Household & Personal Products	8%	Commercial
Media	6%	Operations
Consumer Services	5%	Diverse
Commercial & Professional Services	4%	Operations
Consumer Durables & Apparel	4%	Operations
Materials	2%	Diverse
Technology Hardware & Equipment	2%	Consultancy
Telecommunication Services	2%	Diverse
Automobiles & Components	1%	Entrepreneur
Food & Staples Retailing	1%	Entrepreneur
Semiconductors & Semiconductor Equipment	1%	Innovation

Valor's list sector analyses, Table 4, presented Chemical Industry; Consumer Goods and Automobiles & Components as the most relevant between innovative companies in Brazil. None of the sectors have innovation as the most prominent background, in fact, only commercial, operations and financial backgrounds outstood. The CEOs with innovation background of this list were from Chemical Industry (38%), Services (13%), Consumer Goods (13%), Retailing (13%), and Automobiles & Components (13%).

Table 4: *Valor* most relevant sectors of the companies, and its prevalent' CEOs background.

Valor's list sectors		Most proeminent CEOs background
Chemical Industry	13%	Commercial
Consumer Goods	10%	Operations
Automobiles & Components	9%	Commercial
Pharmaceuticals & Life Sciences	8%	Diverse
Electrical Energy	7%	Financial

Food & Beverage	6%	Diverse
Services	6%	Operations
Financial Services	6%	Financial
Base Industry & Metallurgy	5%	Diverse
Construction Materials & Decoration	5%	Diverse
Agribusiness	4%	Operations
Capital Goods	4%	Commercial
Retailing	4%	Diverse
Information Technology	4%	Diverse
Engineering & Infrastructure	3%	Diverse
Insurance & Health Insurance	3%	Diverse
Telecommunications	3%	Commercial

## 6. Conclusion

RI has increasingly become an important part of the success of well-established firms. An organization's capacity to innovate is closely related to the employees' capabilities and motivation, but RI career has shown to be risky, given the high number of alienated careers and dismissals.

The bibliographic research showed some practices to incentivize RI managers in large companies: autonomy; awards; career development process and promotions; company and peer's recognition; flexibility in working hours; intrinsic motivation; opportunities; rewards; and security.

However, there was a discordance related to the effect of financial rewards, O'Connor and McDermott (2004) and Hebda et al. (2012) point it as a positive practice, but Beugelsdijk (2008) argue that performance-based pay may have a negative effect on RI. It was also presented by the authors the importance of a careful and proposed recruitment and the existence of a culture for innovation in the companies.

The empiric investigation analyzed the career of 200 CEOs from Brazilian-based and the world's the most innovative companies, in order to verify to which extent they have a background in innovation. The results presented a low representativeness of CEOs with an innovation career background. Once the profile of individuals who seek to work with RI is entrepreneurial, and that RI innovation is crucial for the success and competitiveness of large innovative companies, this indicates that innovation career is not attractive for managers who pursue a high management career.

It's important for companies that aim to use RI to enhance its innovation capacity and long-term growth to be conducted by people who have an innovation understanding and culture to be able to support its projects long-term, high uncertainty and failure rates and ascertain the effectiveness and success of RI projects. Nevertheless, most companies listed as innovative in the used lists, excluding the ones led by entrepreneurs and family business, was managed by individuals who worked in areas that have focus on short-term results, a mindset that is not consistent with RI projects.

The present research must be complemented by a deeper empirical investigation. The interview HR managers and experts, as well as innovation managers, will help to capture

which elements large companies are utilizing to boost the attractiveness of this career in innovative companies.

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