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## **Innovation Management in the Postal Sector: What Are the Internal Factors Influencing Postal Operator's Innovation Management?**

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### *Abstract*

Since the past decades, the postal sector is undergoing profound reform (liberalization). The major motivation for such reform processes was and still is the belief that liberalization and deregulation stimulates, among others, product and process innovations, both of which are important vehicles for productivity and economic growth. Against the background of such reform processes, postal operators need to increase their performance through innovation in order to gain competitive advantage and to ensure profitability and growth. Therefore, postal companies have to adapt their innovation management to the changing environment. Until today, there is little research on the adaption of postal operator's innovation management. In this paper, we aim to describe the internal factors that influence postal operators' innovation management. The goals of this article are 1) to illustrate the internal factors that are influencing an organization's ability to manage innovation and 2) to analyze these factors for the particular setting of the postal industry.

### *Keywords*

Postal Sector, Innovation Management, Influencing Factors, Internal Factors

## **1. Introduction**

Since the past decades, the postal sector is undergoing profound reform (liberalization). The changes are largely brought about by growing competition, changing customer demands, and the more widespread use of the information and communication technologies. Furthermore, governments are expecting higher returns and increased productivity. The major motivation for such reform processes was and still is the belief that liberalization and deregulation stimulates, among others, product and process innovations, both of which are important vehicles for productivity and economic growth. The ability of any company to create and sustain competitive advantages over the long term will depend on how well the firm deals with changes in its environment and manages to exhibit innovative behavior. Against the background of such reform processes, postal operators need to increase their performance through innovation in order to gain competitive advantage and to ensure profitability and growth. Therefore, postal companies have to adapt their innovation management to the changing environment.

Considering the fact that there is little research on these adaption processes within postal companies, we aim to identify the factors that influence postal operators' innovation management. In this paper, we focus on the internal factors (e.g., leadership, organizational structures and processes, innovation culture, etc.) and their impact on postal operators' innovative behavior. The goals of this article are 1) to illustrate the factors that are influencing an organization's ability to manage innovation and 2) to analyze these factors for the particular setting of the postal industry. To make our explanations more explicit, we use the example of Swiss Post.

## **2. Theoretical Foundations**

### **2.1. Adaption of a Company's Innovation Management**

To gain competitive advantage and to increase their performance, companies rethink their innovation management and adapt their resources and capabilities. These adaptation processes requires decisions on strategy and execution from the company's management (e.g. Porter 1996). The study of Bloom and Dorgan et al. (2002) points out that the same practices used in one company may lead to somewhat different results in another company. Therefore, the challenges for companies that are adapting their innovation management are two-fold. First, they have to analyze the factors that are influencing their decisions in general and their innovation management in particular (strategy). Second, an individual analysis of these influencing factors is essential for every company (execution). The literature often points out that the effect of external factors (e.g., industry characteristics) on the firm's innovation performance is not totally exogenous, but depends on the internal capacities of the organization (Vega-Jurado et al. 2008). Hence, companies, adapting their innovation management, have to take into consideration the internal factors that influence their ability to innovate.

### **2.2. Internal Factors that Influence an Organization's Ability to Manage Innovation**

Until today, a wide body of literature has arisen that identifies the common factors shared by innovative organizations and the factors that impact a company's ability to manage innovation (Smith et al. 2008). Nevertheless, there is no consistent theory related to the factors that determine the innovative performance of the firm. Some authors highlight the methodological differences between studies, related to the nature of innovation (radical vs. incremental), the technological intensity of industrial sector (low vs. high tech), the characteristics of the firm (small and medium size vs. big enterprise) and even geographical region, as reasons for the diversity of the results (Souitaris 1999).

Many of the investigations done so far adopt the *resource-based view* (RBV), which highlights the heterogeneity of firms and the role played by internal attributes in business strategy (Wernerfelt 1984). In this perspective, each firm possesses a unique set of resources and capacities, tangible and intangible, which have been acquired and developed over time. Following this approach, researchers have evaluated a considerable number of organizational characteristics as possible determinants of innovation, which in turn have been classified

within the broader category of “basic competences” (e.g., Leonard-Barton 1992). These basic competences include (Vega-Jurado et al. 2008):

- Technology competences, generally measured by R&D intensity
- Human resources competences, which include, among other things, a firm’s knowledge and skills accumulated either through the training of its workforce or as a result of the experience acquired over time
- Organizational competences, which are related to administrative styles, the formalization of internal communication systems and the interdependence of work teams

In line with this view, Cohen and Levinthal (1990) proposed the concept of *absorptive capacity*, defined as “the ability of a firm to recognize the value of new external information, assimilate it and apply it to commercial ends” (p. 128). This concept, in common with the RBV and the *core competency perspective* (Prahalad and Hammel 1990), acknowledges that internal capacities are a key element in a firm’s innovation development, and highlights their dynamic and cumulative nature. It is the resources and competencies of a company that offer the potential to consistently distinguish itself from the competitors and thus generate decisive competitive advantages. However, a company’s competitive advantage can quickly erode in its dynamic and turbulent environment. To achieve a sustained competitive advantage, companies have to alter their resource base and renew their competencies again and again, in order to achieve congruence with their changing environment and to match the modified requirements. Therefore, companies have to be able to build, adapt, integrate, reconfigure, and release competencies (Herrmann et al. 2007). This ability, allowing companies to achieve new and innovative forms of competitive advantage, is what Teece et al. (1997) as well as Eisenhardt and Martin (2000) call *dynamic capabilities*.

The concepts of resource-based-view, absorptive capacity, core competency perspective, and dynamic capabilities have in common that they identify various factors that influence a firm’s innovation management. In this paper, we use the framework of Smith et al. (2008) on factors influencing an organization’s ability to manage innovation as a fundament for our analysis. Based on a literature review, Smith et al. (2008) identify nine “generic” factors that impact both the strategy and the execution of a firm’s innovation management. These include (p. 659-661):

**Technology:** Technology is often discussed as an output of innovation, but it also plays its role as both an external and an internal influencing factor: technology as an external driver for innovation and technology as a tool to facilitate innovation and innovative behavior within and among organizations.

**Innovation Processes:** Innovation processes relate to the generation, development, and implementation of innovations. It includes idea generation processes, selection and evaluation techniques and implementation mechanism.

**Corporate Strategy:** Strategy refers to aspects of the corporate and innovation strategies of the organization and how they impact the innovation management. It also refers to the dissemination of the strategic vision throughout the organization.

**Organizational Structure:** Organizational structure has received much attention in the general management literature (e.g., Mintzberg, 1992) and often covers more than the simple configuration of the organization. Organizational structure relates to the way the various parts of an organization are configured and how this impacts on an organization's ability to manage innovation.

**Organizational Culture:** Organizational culture relates to the values and beliefs of the organization and how these impact the ability to manage innovation within the organization. It takes into consideration the organization's approach to collaboration, communication, and risk. Scholars and practitioners argue that organizational culture has a strong impact on innovation and innovation success. An important sub-culture is the firm's or business unit's innovation culture. Innovation culture is a broad construct, which includes aspects such as entrepreneurship, organizational learning, risk taking, openness to new ideas, and technology as well as informal communication (Hermann et al. 2007).

**Employees:** Employees refers to the non-management employees of the organization and the role they play in affecting innovation management. This factor takes into account the various personal characteristics associated with employees and the motivation of employees to become innovative.

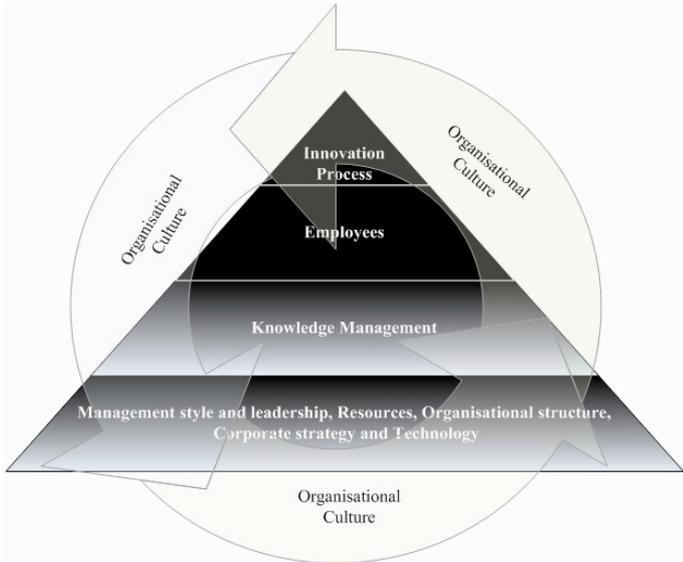
**Resources:** Resources relates to all the resources that the organization has – human, financial, and physical – and how resources are managed to impact an organization's ability to manage innovation.

**Knowledge Management:** Knowledge management refers to the management and utilization of knowledge for innovation management. This covers all aspects of knowledge, both internal and external to the organization. This factor will also take organizational learning into consideration as it plays a key role in innovation and knowledge management.

**Management Style and Leadership:** Management style and leadership refers to the employees that have responsibility for the management of the organization. It takes into account the management style within the organization and how management can motivate employees to become more innovative.

The nine “generic” factors are not independent but related and, therefore, influencing each other. Smith et al. (2008) examined in their research the commonly cited relationships between these nine “generic” factors:

Figure 1: Factors of Innovation Pyramid



Smith et al. (2008)

This figure shows that the innovation process is the factor that is impacted in some way by all other factors which can be deemed as the pinnacle factor that needs to be in place for organizations to successfully manage innovation. Looking at the model in figure 1, it can be observed that a number of factors are exogenous which means they are not impacted by other factors within the model; these factors group together to impact on knowledge management, employees and the innovation process. Therefore, these factors are condensed into one group. The exogenous factors are grouped together and form the base of the pyramid. This shows

that they are the foundation factors that define an organization, such as the organizational structure and corporate strategy. Knowledge management and employees are the conduit between the organization and the innovation process. It is the employee that “feed” the innovation process with ideas. The innovation process is placed at the top of the pyramid as this is the only endogenous factor within the model. The role of organizational culture is one that is continuously developing and evolving. As changes are made in the levels of the pyramid, the organizational culture also changes and provides a virtuous circle of culture that endangers innovation (Smith et al. 2008).

### **3. The Postal Sector: Trend Towards More Innovative Behavior**

Liberalization processes as a political external factor influence postal operators’ innovation management. Industrial economics argue that the increased innovativeness of postal operators is mainly caused by such political factors: the perspective of full market opening allows governments and owners to tighten their request for profitability. Moreover, claims for consistent development of relevant technologies and for a new quality of services let postal operators reengineer their business and develop new services (Jaag, Maegli, & Schaad 2007). Another important driver for the increasing innovativeness of postal operators is the diminishing profits in the core business through the substitution of traditional products through virtual solutions (i.e. decreasing volume of physical mail). This trend is strongly affected by the emergence of new and ubiquitous available information and communication technologies allowing for the convergence of classic and electronic mail services, leading to the introduction of innovative products (Jaag 2008). Furthermore, customer lifestyles and demands have profoundly evolved within the last decades, also in a significant part due to the development of information and communication technologies. Customers today prefer tailored services that take into account their differentiated needs and they ask for ubiquitous, interactive, and flexible services (Sund 2008). Competition as an economical external factor and encouraged by customers and regulators who want to open up national markets, is currently low in the postal market; but there are signs that with the full market opening in 2011-2013 this scenario will considerably change (Felisberto 2008) in various countries. Research shows that the importance of innovation is in general positively associated with environmental uncertainty and the literature often suggests that competition fosters innovation as it pressures managers to look for superior alternatives to their current methods (Drechsler & Natter 2008).

Based on these explanations, we conclude that there are, among others, political factors (e.g., liberalization processes), economical factors (e.g., competition), and technological factors (e.g., the emergence of new and ubiquitous available information and communication technologies) that influence postal operators' innovation management from outside and enforce such companies to become more innovative. In this context, postal operators have to adapt their innovation management to the changed challenges. In the next paragraph, we analyze the influence of the previously mentioned internal factors on postal operators' innovation management. To make our analysis of these factors and their influence more explicit, we use the example of Swiss Post.

#### **4. Internal Factors That Influence Postal Operators' Innovation Management**

Postal operators are large and established companies that are of vital importance for the economy. They provide a public or basic service and are characterized by strongly increasing returns of scale, their size and the diversified offer of products and services (e.g., logistics, mail, finance). Such firms tend to stick to both their existing competencies and markets, because they are reluctant to cannibalize the investments they made to build these competencies and to serve the markets (Chandy and Tellis 1998). Moreover, in periods of relatively stability and incremental innovation, their focus is mainly on process innovation, driving down costs, and adding features, resulting in both structural and cultural inertia (Tushman and O'Reilly 1996). But today, the changing environment of the postal sector requires dynamic organizational capabilities to manage these changes. Thus, postal operators have to rethink their innovation management and dynamically adapt their resources, because they can no longer rely on their existing capabilities.

The challenges for companies adopting their innovation management to the changed environment involve strategic decisions and goals as well as sustaining internal commitment over sufficient time to realize benefits. Hence, organizational **strategy** is an important influencing factor that forms the base of a company's innovation management. Postal operators have to adapt their corporate and innovation strategies and to disseminate the strategic goals throughout the company. Swiss Post's top management, for instance, defined in June 2008 strategic principles for innovation. The most important strategic principle is (Swiss Post 2008):

“Innovation is a strategic factor for success: Swiss Post has to stay flexible to compensate the disadvantages of a small postal operator in liberalized markets and to ensure existence. Swiss Post understands the systematic facilitation of innovations as a strategic factor for success and economic independence.”

Because most postal operators are large and diversified companies, the implementation and diffusion of the organizational strategy in the organization is a challenging mission. It requires strong senior management support and an adequate leadership style. In Sund’s survey on innovation in the postal sector (2008), the respondents identify the top-management as the most important stakeholder in encouraging innovation within a postal operator. In fact, studies have shown clearly that leadership and senior management support for innovative ideas and new product development is crucial for the performance of the innovative process. Managing style, techniques and behavior often reflect the culture of the organization. A move away from an autocratic management style to a more participatory and democratic style of management reflects a culture that is focused on stimulating innovation. Some authors maintain that a change in management attitude and approach can actually engender a culture that encourages and supports innovation. Changes in management characteristics can impact on the ability of organizations to manage innovation (Smith et al. 2008). **Management style and leadership** are basic factors on which a company’s whole innovation management builds on. Hence, postal operators need to adapt their management style and leadership in an adequate manner.

To discuss the **organizational structure** that is conducive for an organization's effective innovation management is difficult and strongly influenced by various firm-specific factors like a company’s age or size. The contingency literature considers that larger companies are generally more difficult to manage (Naranjo-Gil 2009). Such firms are prone to the forces of bureaucratic inertia (Tornatzky and Fleischer 1990) and a key factor that contributes to such inertia is the number of employees that work in large firms. The numbers of employees make it difficult to manage large firms, so these firms develop layers of administrative staff and formal rules of communication to adapt to this situation leading to an increased formality. Moreover, large organizations involve more levels of screening and group decision making (Chandy & Tellis 2000), reducing the speed of the innovation processes and hindering the employees’ willingness to take risk.

Postal companies are often organized as conglomerates offering products in mail, logistics, financial services or even transportation of passengers (e.g. Swiss Post's PostBus). Thus, the organization of these firms is strongly decentralized and department-specific: even though postal operators have centralized organizational units like finance or human resource management, they are mainly locally organized (e.g., because of the postal network). Therefore, the postal companies' innovation management is also organized in a decentralized way. This organizational structure is significantly influencing postal operators' innovation management. Apart from the challenges that large companies are facing in managing innovation, they can profit from sufficient financial and technology **resources** as well as economies of scope to spread the risks of the innovation projects. The planning and the management of the financial and human resources in order to disseminate its strategies, to implement an innovation-enhancing management style and leadership and to adapt the organizational structure are crucial for postal operators' ability to innovate.

The resource-based view points out that its most important characteristics is that it is information based and thus develops over time (Wernerfelt 1984). In order to facilitate innovation in a rapidly changing environment, traditional ways of creating, sharing, and controlling information must also be changed. Information, used in the past as a limited resource in a tightly controlled way, as a means of exercising power, has to become a more effective instrument of knowledge exchange to be extended throughout the entire organization and made available electronically (Daft & Lewin 1993). The new information and communication **technologies** (ICT) have raised communication processes to a new dimension, facilitating faster communication and collaborating processes (Cabello Medina et al. 2005). Technology is often used in a supportive role to alleviate various stages of the innovation process, e.g., for the "fuzzy" front end of the innovation process. This is the stage of the innovation process where ideas are generated and that is difficult to capture and explain, hence the use of technology facilitates useful idea generation (Smith et al. 2008). Swiss Post, for example, uses ICT to virtually manage the innovative ideas of Swiss Post's employees on the internal idea management platform Postidea. In the future, the usability of this platform will be extended to a more interactive tool, allowing employees the collaboratively work on an idea during the generation and development of ideas. Through the use of new information and communication technologies, postal companies can increase their innovativeness. Technology as a tool to facilitate innovation and innovative behavior within

and among organizations is not an influencing factor that is not determining for a successful innovation management, but it supports a company's ability to innovate.

Because of shorter innovation cycles and dynamically changing customer needs, **knowledge management** is an essential factor for postal operators. Furthermore, decentralized organizational structures ask for an integrative knowledge management. Both external and internal knowledge need to be connected, managed, and implemented into the culture and the systems of the company. There are three major tasks in knowledge management: knowledge acquisition (make or buy), knowledge integration (integrate or relate), and knowledge exploitation (keep or sell) (Fredberg, Elmquist & Ollila 2008). Thus, knowledge management includes the management of basic conditions supporting the accumulation of knowledge and all information, communication, and learning processes that increase the innovativeness of companies (Grizelj 2006).

An open innovation culture and the facilitation of knowledge communities (e.g. communities of practice) are important conditions for an efficient and effective knowledge management (Kleinaltemkamp & Frauendorf 2006). Nowadays, the notion of extended and networked enterprises is often discussed in the general management field and a culture that supports collaboration means that networking can become a reality. Networking with other organizations, whether long-term or short-term, can result in an organization's attitude to innovation changing. This is because the organization becomes open to new ways of thinking and doing, and learns from the experience of other organizations or external partners (Smith et al. 2008). In its strategic principles, Swiss Post defined open innovation processes as an option to increase the firm's innovativeness (Swiss Post 2008):

“There are certain premises needed to increase the potential for innovations: Swiss Post commits itself to the use of open innovation models. Innovations occur with partners (customers, universities, suppliers, and other partners). The opening of the innovation process and the selective linking of internal and external knowledge increase the innovative strength of Swiss Post.”

Therefore, they established in 2008 PostLab as an incubator at EPFL (Ecole Polytechnique Fédéral de Lausanne). The goals of the PostLab are to build up strong connections between Swiss Post and external innovation partners in order to integrate external knowledge and resources into the innovation processes of Swiss Post. The PostLab initializes innovation

projects with suppliers, universities, customer, or other institutions and therefore supports the business units of Swiss Post to achieve their innovation goals.

Postal operators as (formerly) state-owned companies that acted in monopolized markets have to adapt their capabilities to a more competitive and learning oriented corporate culture. They should strive for a learning organization as “an organization skilled at creating, acquiring, and transferring knowledge and modifying its behavior to reflect new knowledge and insights” (Garvin 1993). Postal operators as large companies offering very labor-intensive services should adapt their innovation management in an integrative and motivating manner, so that every **employee** can support the company’s ability to innovate. The literature supports the view that employees who are empowered and autonomous have a greater degree of control over their work. This degree of control means that employees feel comfortable in their role to be innovative in their own work environment (Smith et al. 2008).

Employees play a central role in developing ideas as inputs into the innovation process, which would not function without them. The literature highlights that the employees of the organization are a potential rich source of ideas and they should be encouraged to take part in the early stages to ensure that a constant supply of ideas is generated (Smith et al. 2008). Swiss Post’s internal idea management tool Postidea is one option to facilitate employee participation in the innovation process. Employees and their integration into the innovation management is a significant factor that postal companies have to consider when they adapt their innovation management, because employees are the conduit between the organizational factors and the innovation process (Smith et al. 2008).

The **innovation process** is the only endogenous factor within the model of Smith et al. (2008), meaning that is derived internally by other factors within the model. It is affected by the employees, the management style and leadership, the corporate strategy, the organizational structure, and the technology used to enable the management of the process. Innovation processes involve the exploration and exploitation of opportunities for new or improved products, processes, or services (Pavitt 2005). In the postal sector, in contrast to the high-technology sector, most companies do not have a centralized innovation management including an R&D department. Such decentralized innovation processes may lead to reduced efficiency and speed. Thus, the organization of the innovation process related to all the

influencing factors like strategy, management style, knowledge management, and employees is a key factor for postal operators' innovation management. Until today, there exists no overall structure for innovation processes at Swiss Post. But Swiss Post set up a corporate innovation process for high-potential innovation projects financed by a fixed part of the yearly profit. The creation of this centralized innovation process with an innovation jury allows rapid decisions on innovation projects, leading to shortened development processes and an increased number of both product and process innovation.

**Organizational culture** is the most commonly discussed factor relating to an organization's ability to manage innovation. Organizational culture as the values and beliefs of the organization takes into consideration the organization's approach to collaboration, communication, and risk. Firms with an innovative culture create an atmosphere where entrepreneurship and risk taking are encouraged and rewarded, i.e. individuals or teams are not punished inadvertently when new products or services do not achieve expected results. A climate of openness and informal communication is typical in such firms. Literature on new product development provides ample research-based evidence that a strong innovation culture has a positive impact on expected results (De Brentani & Kleinschmidt 2004).

Organizational culture requires special attention because it impacts an organization's ability to manage innovation and all the other internal influencing factors. One characteristics of the culture of a company is its willingness to take risk. It expresses the extent to which a company is prepared to accept the risks brought about by the high uncertainty of a rapidly changing environment, to view occasional setbacks as normal and to invest sufficient resources in new products even though the changes for success are uncertain. A learning organization is an additional characteristic of organizational culture. It expresses the extent to which a company is a learning organization, encouraging its employees to question the assumptions about the company and its environment, to give up existing knowledge and to find new ways of learning (Herrmann et al. 2007).

The organizational culture is strongly interrelated with a company's strategy. This interrelation between culture and strategy is highly complex and it is often difficult to separate the effects strategy and culture have on each other. The relationship between these two factors is examined within the literature in two ways. First, the culture drives the strategy

adopted (e.g., the impact of a culture that encourages risk will enforce a strategy with higher levels of risk). Second, a strategy defining a shared vision of innovation will translate the strategic goals into the organization's culture. Therefore, it can be seen that an organization's strategy can represent the underlying culture that currently exists but corporate strategy can also drive the culture within the organization (Smith et al. 2008). Because of this delicate relationship between these two factors, strategic change often requires a substantial change in organizational culture (Balogun & Hailey 2004). Swiss Post's strategic principles on innovation also include the innovation culture (2008):

“The innovation culture is essential for a sustainable success of Swiss Post: An innovation culture of openness and flexibility is a main factor for success. To establish an innovation culture, intentional and long-term processes are essential. The aim of these processes is to create simple innovation processes, the early involvement of customers and other partners, fast developed and tested prototypes without the demand for perfection and a consistent implementation of ideas. The willingness to make changes, to accept failures and learn from them is part of the innovation culture of Swiss Post.”

In this paragraph, we described the different internal factors that influence postal operators' innovation management. In times of a changing environment due to growing competition, increased technological dependency and decreasing profits in the core business, postal operators have to continuously adapt their existing resources and capabilities. The corporate strategy, management style, and leadership, and the organizational culture are basic factors for a postal company which need to be adapted and implemented throughout the organization. This is also true for the innovation process as exogenous factor which is influenced by these basic factors as well as by the employees and the company's knowledge management. In addition, postal operators have to rethink the organizational culture as an internal factor that impact all other influencing factors and the company's ability to manage innovation.

## **5. Conclusion**

In this paper we address the processes of reform (liberalization) that the postal sector has been subject to during the last decades. Within this context, any postal operator has to exhibit innovative behavior to create and sustain competitive advantage over the long term. The adaptation of a company's innovation management requires know-how on the factors that influence an organization's ability to innovate. In this paper, we describe general theories on the factors influencing a firm's innovation management and illustrate nine generic internal influencing factors. In addition, we analyze these internal factors and its influence on the innovation management in the particular setting of the postal sector. Based on our analysis, we identify three major conclusions:

1. External drivers enforce postal companies to exhibit a more innovative behavior. Thus, postal operators have to rethink their innovation management and to adapt it to the changing environment. Such adaptation processes require an analysis of the factors that influence a company's ability to innovate.
2. There are nine generic factors that influence an organization's ability to manage innovation: corporate strategy, organizational structure, management style and leadership, technology, resources, knowledge management, employees, innovation process, and organizational culture.
3. All these internal factors influence postal operators' innovation management. Therefore, each postal operator has to analyze these factors and adapt its innovation management accordingly. While corporate strategy, organizational culture, management style and leadership, technology, and resources are basic, exogenous factors, the innovation process is endogenous and strongly influence by all the other factors. The organizational culture acts as a tie between all the internal influencing factors.

We argue that it is crucial for postal companies to analyze their specific influencing factors in order to adapt their innovation management and to gain competitive advantage through a more innovative behavior.

## **6. Limitations and Implications for Future Research**

This present article has two major limitations. First, we do not yet have empirical results on the factors that influence postal operators' innovation management. Second, we are not able

to differentiate the internal factors according to their importance for postal companies. In order to clarify how future research can contribute to an overall perspective on the factors that influence postal operators' innovation management, we formulate the following questions:

- What are the internal factors that are determining for postal operators' innovation management?
- How should postal operators adapt the different internal factors to counteract the current trends in the postal industry in a most effective and efficient way?

The contribution of this type of research will be to give recommendations to postal companies on how they can improve their innovativeness and gain competitive advantage through the adoption of their innovation management.

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