

## **Business Process Management As a Strategy to Implement Organizational Innovation**

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### **Abstract**

Nowadays companies need to innovate products and services in order to create value for customers, reduce costs and improve business performance. An initial analysis of the organizational structure is essential, ensuring the adjustment to market needs through the redefinition and monitoring of business processes. Innovation is not only technological or digital, but also organizational. In fact the concept of technology can be interpreted more broadly, recognizing that “technology” is incorporated in all activities of the business system. To realize an organizational innovation, a winner strategy can be adopted to secure the survival of companies, in terms of productivity growth and cost reductions. Business Process Management is a methodology that provides an approach to process improvement, making it possible to pass from an uncooperative to a synergy strategy. Thanks to the adoption of Business Process Management methods, supported by specific software tools and the use of new ICT technologies, it is possible to streamline the operations management, identify risk indicators and performance and ensure the rapid adoption of corrective policies and improvements. This paper provides academic support by focusing on the approach of improvement, from an integrated and comparative perspective, with the methodology of Reengineering; this has emerged from the literature as a significant number of studies pay more attention on the Reengineering approach. From a practical point of view, this paper aims to provide an effective contribution by proposing an example of business process management analysis according to a perspective of improvement, demonstrating the usefulness and potential of this method.

**Keywords:** Business Process, Management, Improvement, Organizational Innovation.

**JEL classification:** M31.

### **1. Introduction**

Nowadays businesses operate in a context in which it is essential to innovate products and services in order to create value for customers and manage the business complexity.

In order to do so, an analysis of the organizational structure must be made through an intense redefinition and monitoring of business processes in order to implement continuous improvement while ensuring its adoption to market needs. Many researchers have been investigating workflow techniques to improve business processes, managing critical situations in advance (Wang e Wang, 2006).

Most companies continue to take a functional organization, historical model based on the specialization of labor: employees perform the same activities, operate within the same department, focus on single function results and los global goals.

This kind of approach is surpassed by the process approach, with an overall and transversal point of view, which makes it possible to continuously monitor the operations and ensure the

implementation of effective and efficient actions.

The integrated management of processes occurs through the use of new Information and Communication Technologies and specific business management software in order to simplify, speed up and optimize processes, identifying risk indicators and performance.

Generally, the introduction of innovations within organizations is the result of a complex process that starts from the outside, by a consulting firm (Vargas Sánchez, 2012) that promotes the use of integration tools, sharing the information at all business levels.

From a practical point of view, Business Process Management is a methodology for improving the process, considered as a winner strategy, which secures the survival of companies in terms of productivity growth and cost cutting from an uncooperative to a synergistic strategy.

## **2. Technological and organizational innovations to support business improvement**

The advent of ICT has increased the effectiveness of organizational systems, improving communication and sharing information at all levels.

As a consequence there is a huge transformation in goods and services, production systems and activities, and business organization: processes become more efficient and timely, offering a wide range of innovations and causing structural changes (Di Carlo & Santarelli, 2011).

In this context, digital innovations have a key role in growth, innovation and employment. With reference to the “Digital Economy Outlook 2015” (The report on the digital economy (2015) of the Organisation for Economic Co-operation and Development (OECD) published by the Committee on Digital Economy Policies, concerns the role of the digital economy as an engine for innovation and growth; the aim is to present the measures thanks to which the OECD countries can maximize the potential of the digital economy), Italy is defined as a country in which the use of digital technologies is limited, there is a strong need to change the managerial logic and develop digital skills (such as the digitization of the flows and processes).

The adjustment to the evolution of digital markets is a necessary step in order to survive: the “Digital Transformation” is affecting all sectors, bringing with it the rapid rethinking of business models and processes.

As a result, innovation is not just technological or digital, but also organizational. In fact technology should be interpreted more broadly, recognizing that it is incorporated in all activities of the business system (Silvestrelli, 2014).

In spite of the past, companies have been continuously innovating strategies, structures, operational mechanisms, business models and accounting and management tools: these changes can be defined as organizational innovation (Riccaboni & Giovannoni, 2006) and the focus is the continuous improvement of performance in order to achieve effectiveness and efficiency.

From a management point of view the “value chain” refers to the value-added activities connected to each other and it is necessary to identify “bottlenecks” in order to reduce waste, inefficiencies, and negative results.

Therefore, the opportunity to remove organizational weaknesses, identify the causal factors and implement corrective actions is seen as continuous improvement.

### **2.1. Improvement measures**

Once companies decide to adopt an organization for processes, they need to be managed. Managing the processes means acting on them in order to achieve improvements in efficiency through the reduction of costs and waiting times, making them fast and lean and of higher quality, by creating value through integrated actions.

The interventions to achieve improvement are divided into two categories: Business Process Reengineering and Business Process Improvement.

The aim of the former approach is to reconsider processes, executing a big bang action, bringing about a dramatic and radical rethinking of the company. The origin of this intervention dates back to the 90s, when Michael Hammer and James Champy popularized this radical model in their book “Reengineering the Corporation: A Manifesto for Business Revolution” where, for the first time, there was talk of a radical redesign of business processes to achieve dramatic improvements (Hammer & Champy, 1993).

Professor Hammer argued that through a review of non-value added processes it is possible to identify and eliminate “no-core” activities, ensuring a reduction in costs and improvement in quality (Serrano Gómez & Ortiz Pimiento, 2012). In the following years, Champy (1993) defined Reengineering as a way to achieve radical improvements in quality and productivity (O’Neill & Sohal, 1999) while other authors defined it as a way to obtain substantial improvements in methods, techniques, procedures and organizational models (Maraschi, 2011).

It is essentially a traumatic change for the company, which changes its objectives, normal mode of operation, its vision and mission, the allocation of human resources, enterprise and organizational culture, metrics, analysis and the use of technologies (Kettinger et al., 1997). Since this approach requires a substantial investment, time and risk, generating discontinuities in management, it is only used with a declared criticality.

It is necessary to promote an improvement approach, without waiting for the occurrence of criticality but anticipating it with dynamic management, as a priority.

The latter approach, the Business Process Improvement model, does not require a radical rethinking of the company but it is a more flexible and less invasive approach than BPR (Paul et al., 2010) with the introduction of gradual changes, in order to prevent, manage and remove criticality through measurement and monitoring of performance.

The improvement model makes it possible to anticipate the needs of customers, increasing the performance through the removal of unproductive activity, waste, lead-time, and operating costs, by providing less bureaucratic organizational structures that are more flexible and more responsive to meeting the demands of customers (Cook, 1996).

Moreover, the performance levels decrease over time. Consequently a company that does not improve is probably surpassed by competitors who are able to meet the demand of its customers faster (Andersen, 2007).

A company must be able to improve its operations, focusing on the improvement of the processes. The problem of companies is not the quality of their products or services, but the level of quality of the processes, which is the consequence of the first (Brajer-Marczak, 2014). As result a new discipline, known as “Business Process Management”, emerged and focused on making a company’s business effective and efficient. Its main objective is to define, optimize, monitor and integrate business processes in order to create organizational processes. The use of ICT and specific BPM software is necessary to streamline the operations management, model processes to business needs, identify risk and performance indicators and implement the improvement of policies more quickly.

Interest in BPM is growing, both in practice and in research (Manfreda et al., 2014). This approach represents a necessary step for companies, especially for small and medium-sized Italian companies. It could be used in times of economic crisis to effect a “change in management”, implementing a recovery strategy in order to be competitive in the domestic and international markets.

Hammer (1996) states that the customer is not interested in our organizational structure, strategic plans or financial conditions but in the value that we offer. For any organization it is necessary to know how to manage the change, to understand how the components of the organization are related to each other, to recognize the wishes of the internal and external

customers, measuring organizational performance (Van Rensburg, 1998). Therefore the organization needs to be governed and improved through the analysis of some indicators, which represent an essential information tool for the company in order to achieve the objectives previously established.

### **3. Technological and organizational innovation to support business improvement**

Business Process Management is a way to make a strategy of synergy operational: with the help of new computer technologies it is possible to represent business processes, ensuring the traceability of all the resources and their interaction.

The BPMN language (Business Process Modeling Notation) is a standard notation for the mapping and modeling of business processes that permits the definition of a set of rules to interpret and represent diagrams and processes in a unique way.

The primary purpose of BPMN is to create a link between the business process modeling notation and execution languages, providing a notation that is understandable to all business users, such as analysts, technicians and managers, avoiding incorrect interpretations and inconsistencies.

Business process mapping represents the decomposition of management flows through the identification of the connecting points between the different activities, highlighting interactions, interdependencies, responsibilities, identifying activities that generate slowdowns or delays and introducing constructive changes and eliminating any bottlenecks.

This activity is also used to monitor the company's allocation of human, material or technological resources used in the business and to carry out a thorough cost-benefit analysis of economic activities (for example, whether to produce internally or to outsource), to identify and eventually eliminate the processes or activities that are inefficient, redundant or unnecessary, without added value.

From a practical point of view, this approach can be useful for companies in order to measure and overcome inefficiencies. The process mapping is divided into a series of consequential phases: the identification of business processes in order to distinguish the different components (input, output, objectives, customers, suppliers, resources, constraints and rules); the identification of "core" and "non-core" processes; the collection of information to describe the process, consulting quality and operating manuals, business documents, interviews or questionnaires to senior management; the modeling of the process using graphic representations. Once the inefficiencies are identified, business improvements must be applied in three different phases: as-is analysis, to-be analysis and choice of the better solution.

During the "As-Is" analysis, the processes are considered in their current state, including the inefficiencies. The identification of non-value added steps and description of reality, related to the acquisition of data on the cost of human, material and instrumental resources, help to identify gaps that can be solved with appropriate solutions, using the "to-be" analysis (how the company should be and how it should operate).

By comparing both perspectives, the differences which require intervention by implementing corrective actions become clear. A detailed "Gap Analysis" allows gaps to be identified, as well as the causes and the solutions needed to make an improvement, optimizing results in terms of cost and time, thanks to a dynamic control.

After the gaps have been identified, the actions to be taken and the objectives to achieve need to be quantified by measuring current and future performance and determining the order of priority to achieve the desired situation in a rapid way.

Interventions often involve the clear definition of roles, greater sharing of information, eliminating unnecessary and redundant activities and introducing technological innovation.

It is fundamental not only to make an improvement but to repeat it over time to achieve

excellent results. In this context, specialized software is required to create simulations, to choose the better allocation of resources (material, intangible, personal and financial), saving costs and time. Anticipating the changes in technologies, the structure of demand and consumer preferences, companies would not realize the Structure - Conduct – Performance paradigm, but the Performance - Conduct – Structure one: this is the performance measurement to influence corporate behavior and thus the structure of the company and, in general, the sector.

In the process of strategic planning it is necessary to consider the following aspects: to invest in internal staff training activities with continuous technical and professional updates; to use information tools for sharing business information; the use of management systems based on ISO standards in order to apply the business rules and respect their conformity (quality, ethics, 231model, environment, safety, etc.).

Moreover, companies should take the Resources - Competencies - Capacity paradigm into consideration to ensure an efficient allocation of material and immaterial resources in the departments, considering also the skills and ability of staff in order to achieve efficient management.

#### **4. Case study: Business Process Management in the financial sector**

##### **4.1 Case description**

The case study method helps researchers to examine a “concrete case” in a “real life” situation (Yin, 2014). Thanks to the case study approach it is possible to investigate a phenomenon in a truthful context and make use of a variety of different instruments of data (Yin, 2012).

“Yin presented at least four applications for a case study model:

1. To explain complex causal links in real-life interventions
2. To describe the real-life context in which the intervention has occurred
3. To describe the intervention itself
4. To explore those situations in which the intervention being evaluated has no clear set of outcomes” (Tellis, 1997, 3).

In order to demonstrate how process innovation leads to better management efficiency results, a practical example of analysis, detection and management of business process criticality is presented, with an improvement perspective.

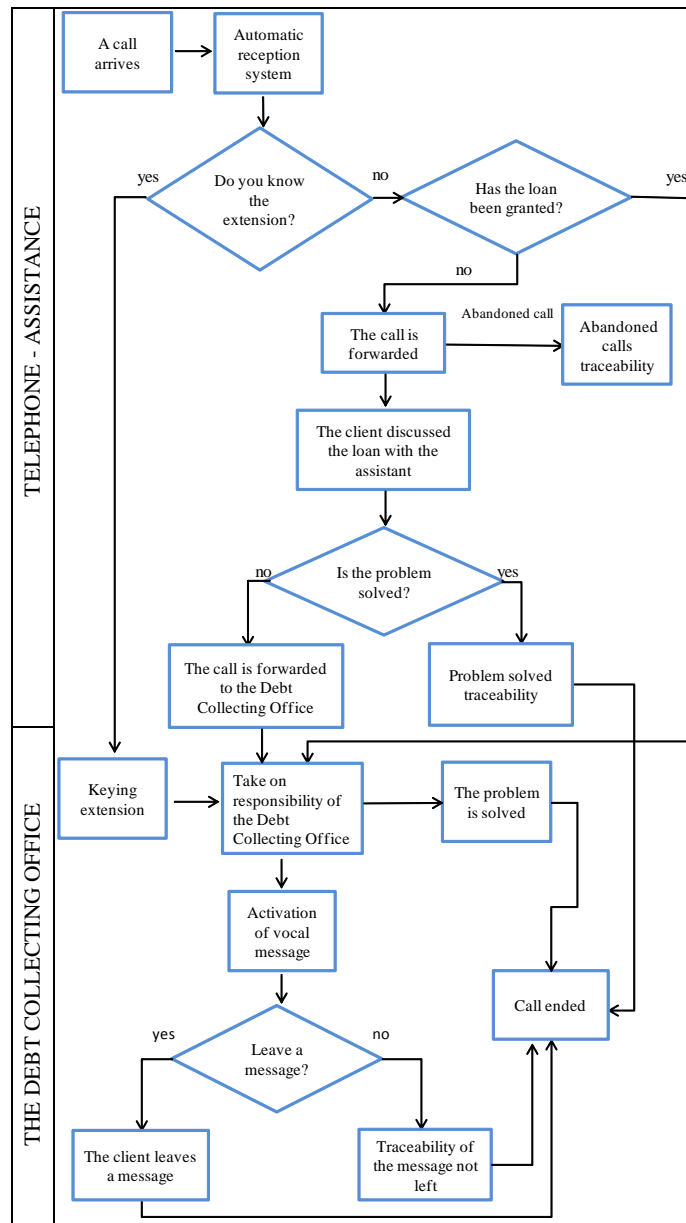
This analysis has been separated into three research questions: are a comprehensive view of processes and performance measurement the starting point for making operational change improvements, involving benefits for the single problem and achieving a result of better overall efficiency? Through the right allocation of resources is it possible to contain waste and reinvest resources in a more efficient way? Is it possible, through the application of dynamic models, to manage unpredictable situations?

The case study described deals with the examination of business problems in a banking institution with a strong organizational impact: the introduction of a new legal provision regarding the taxation of financial income created an unsettling situation for customers, who subsequently stormed the telephone helplines for information on the impact the taxation would have on existing or new financial positions.

From an analysis of the results, the company identified weaknesses that questioned its current way of operating. By looking at a growing number of calls to the customer services line, the Bank wanted to know how to manage requests in the future, once the provision was implemented. The problem, which was due to a sudden rise in the number of calls to the telephone helplines, and the long average duration of calls given the increased need for information by customers, exposed the Bank to the risk of customer dissatisfaction.

In fact customers could opt to transfer investments to other credit institutions, causing a negative

impact on business performance. Therefore, the aim was to reduce the number of abandoned calls due to the excessive waiting time required to speak with an operator and the duration of each call. To do this, the company intended to reallocate the activities among the current workers, resorting, if necessary, to the expansion of the existing automatic telephone answering system. The hiring of additional workers could be a solution to the problem, but the Bank did not intend to resort to forms of outsourcing. Through the use of business process management methodologies, it was possible to strategically measure the degree of the problems, thus managing changes in advance and building a solution through hypothetical scenarios while seeking to maintain the efficiency of the services offered to customers.



**Figure 1. Process Mapping**

Source: our elaboration

## 4.2 As-Is Analysis

“As-Is” analysis studies the current operations in a realistic way: there are two departments, the Telephone-Assistance and the Debt Collecting Office, available 8 hours a day from Monday to

Friday, each one with 3 workers. In the first department every employee earns € 25 per hour (€ 35 in case of overtime); in the second one, each employee earns € 50 (€ 75 in case of overtime). With the use of Business Process software it is possible to reproduce the initial situation and simulate it for a predetermined period of time, identifying bottlenecks and no value added activities.

The first experiment shows about 8000 calls per month, more than 1500 are abandoned due to excessive waiting times, with 18% of calls abandoned. The total cost of staff is about € 45.900 per month, more than € 15.400 is attributable to Telephone-Assistance. In this case the process is completed for 46%, with an average duration per call of 5 minutes. Consequently, the aim of the bank is to reduce the number of abandoned calls and the duration of each call.

#### 4.3 To-Be Analysis: Hiring of a new operator

One solution could be the recruitment of a new operator in the first department (which is the bottleneck of the process), so as to spread the number of incoming calls over a larger number of operators. This would significantly reduce the rate of abandoned calls to 3%, lowering the number of dropouts to 210. Consequently, there is an increase in personnel costs: by hiring a new resource the duration of each call is around 5 minutes and the process is completed for 60%, achieving better results of efficiency.

#### 4.4 To-Be Analysis: Introduction of the automatic telephone response system

The third simulation reduces the number of dropouts without increasing personnel costs. By introducing an automatic management phone system it is possible to distinguish between customers who have already obtained credit and potential customers. Therefore the telephone assistance department would spend less time in solving problems that are not its responsibility. Reducing costs and the percentage of abandoned calls to 0% by relocating responsibilities in a better way between the two departments and reducing the waiting time to 3 minutes, means it is possible to improve and maximize the level of efficiency, completing 80% of the processes.

	Sim. 1	Sim. 2	Sim. 3
Total number of calls	8.151	8.151	8.151
Total end well calls	3.778	4.733	6.522
Total minutes to complete the process	5,12	5,30	2,91
Total number of abandoned calls	1.483	210	0
Rate of Abandoned calls	18%	3%	0%

**Table 1. Report of calls**

Source: our elaboration

	Total costs (Sim. 1)	Resources (Sim. 1)	Total costs (Sim. 2)	Resources (Sim. 2)	Total costs (Sim. 3)	Resources (Sim. 3)
Telephone-Assistance	€ 15.355,52	3	€ 20.462,33	4	€ 15.334,76	3
The Debt Collecting Office	€ 30.525,00	3	€ 30.525,00	3	€ 30.525,00	3
Total	€ 45.880,52	6	€ 50.987,33	7	€ 45.859,76	6

**Table 2. Total costs and resources available for each department**

Source: our elaboration

## 5. Conclusions

The business process methodology permits a focus on the changes that lead to substantial improvements in efficiency and quality of services offered. The modeling and simulation phases are necessary to identify the kind of processes in which waste, inefficiency, excessive working hours and duplication of procedures emerge.

A subsequent Business Process Improvement phase has the purpose of introducing changes that allow the company to achieve the desired objectives of increasing the efficiency and utilization of resources, trying to reduce production costs, identifying the points in which bottlenecks occur and the resources that are not exploited. First of all, companies that want to implement a Business Process Management policy should change their vision from a functional to a process one and then choose a method that would enable them to achieve the desired goals.

The first step is the analysis of the existing process. It is then necessary to implement changes that would allow the goal to be achieved, in this case the 8,000 monthly requests from new and existing customers, creating a new process called the “To-Be” process.

The solution is divided into two different choices: one aimed at changing the process and one at maintaining the same production process, but with a better management of resources. In the first solution the objective was reached, but the increase in demand forced the company to employ additional workers to cover the largest number of orders, and to eliminate the bottlenecks created in the process. The second solution facilitates achieving the desired goal maintaining the same number of resources and respecting the conditions imposed by the company. This simulation is the better solution in terms of number of completed transactions, costs, lead-time and it minimizes the risk of losing customers.

This case demonstrates that it is essential for enterprises to undertake mitigating actions to manage risks related to change which, if not analyzed in time, expose the company to problems that are harmful for its survival. Thanks to this strategy it is possible to control workflows, to reduce business risks, make efficient use of resources and improve customer service. This paper contributes to promoting the adoption of this dynamic approach, guaranteeing a clear representation of rules. The trace of resources and the business process are precisely defined and represented. In fact, unlike the static methods, the use of dynamic tools and methods allow the company to analyze the whole process in detail, to map it, measuring the interaction with other processes in terms of time and cost, while respecting the constraints of the business system. Through the help of mathematical algorithms it is also possible to simulate scenarios of improvement, anticipating threats and changes in the market. Therefore, Business Process Management is a method for realizing a winning strategy, moving from an uncooperative to a logical synergy.

This approach is essential in order to achieve organizational improvement using an efficient business model and promoting the integration and the share of information. Consequently, the use of technological and organizational innovation is a crucial factor for the survival of businesses. It presupposes change, the revisiting of existing assumptions, the introduction of new decision-making processes, organizational models and operational mechanisms.

To implement the innovation of products, processes and business models, companies should adopt process measurement techniques which are the only support for Management when reacting to external changes with an incremental approach. Many companies are equipped with Data Warehouse or Business Intelligence systems and believe these can solve the asymmetric information between the different departments. But this is a way to aggregate “polluted” data, because the result of aggregated data could possibly be compromised by errors that are not immediately visible. Instead, the Business Process Management method can anticipate situations by measuring the impact that possible changes may have on the individual process and on the interactions with other processes.



In addition to international standards, European and national regulations are increasingly in favour of this approach to provide homogeneous metrics between companies, not only those in the same industry, but also from various sectors. In European countries there is a lot of interest in the development of flexible and dynamic mechanisms for routing and creating the strategic control of workflow management. This kind of analysis provides the tool to overcome difficulties by identifying the best applicable solution and represents a potential opportunity for expanding business by exploiting the inefficiencies of competitors. This approach is a necessary step for companies, especially for European ones that could use the economic crisis to make a management changes and implement a recovery strategy to compete in the domestic market. The ultimate aim of innovation is to increase the success of the company, making it more competitive in terms of higher quality, lower prices, efficiency in service and times, therefore not only technological and digital innovation need to be introduced but also organizational and process innovations, thus improving the way to do business. There is no doubt that this methodology is essential to perform in speed, costs, flexibility, satisfied relationship and the attention to managing business processes is the key to realize a better efficiency and organizational effectiveness (Armistead et al., 1999). Finally, the success of innovative companies is their ability to move from complexity to risk management, from research to precise knowledge of waste and inefficiency. In managing innovation it is necessary to rethink the allocation of resources to govern uncertainties. To do this, it is fundamental to embed innovation in emerging managerial models, so that these dynamics can be better governed, measured and aligned to business strategies (Denicolai, 2010).

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