

## Process management implementation level. A case study from Cantabria.

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**Abstract.** Nowadays companies need to efficiently and quickly allocate their resources in order to be competitive and survive. Process management is one of the mechanisms that arise to meet these new needs, giving the company the flexibility to develop their business in today's competitive environment. However, despite companies are aware of the importance of process management, a high percentage of process management initiatives fail. Therefore more research should be done. In this study, the implementation level achieved by companies when implementing process management will be analysed. Results show that the Operations area is the one with most processes defined. Additionally, it may be concluded that it exists an unequal development of process management depending on the functional area.

### 1. Introduction

Nowadays due to the current business environment, characterised by a severe competition, companies need to efficiently and quickly allocate their resources in order to be competitive and survive. Therefore the choice and implementation of an appropriate management system is a key decision.

As a result of the changes in the business environment, the traditional functional structures, which were first developed in the early twentieth century, have become obsolete. These structures, which are still present in many companies, are characterised by being organised into departments, which contain highly specialized homogeneous functions. They are based on hierarchy, control, formalism, bureaucracy and this is why they are not flexible [1]. These features are just the opposite of those needed. Currently, flexible flat structures (with few hierarchical levels), which promote interdepartmental communication, comprising polyvalent professionals and customer-oriented are needed.

Process management is one of the mechanisms that arise to meet these new needs, giving the company the flexibility to develop their business in today's competitive environment. In addition, process management is also present on the management systems that emerged in the last decades of the twentieth century such as Lean Management [2,3] and Theory of Constraints [4]. Both of them opt for a more horizontal management orientation and for a continuous improvement philosophy. Equally, some authors argue that process management is an important part of Total Quality Management [5,6,7,8]. Additionally, the ISO 9000, the EFQM model and the Malcom Baldrige Quality Award devote an entire section to this management philosophy which is included as a requirement.

Overall, managers are aware of the importance of process management and many academic papers are based on the experience of those companies [9, 10]. However, several authors affirm that a high percentage of process management initiatives fail [11, 12, 13, 14]. Therefore more research focused on the implementation of process management initiatives should be done. Specifically, in this study, the implementation level achieved by companies when implementing process management will be analysed. Results will help to understand this phenomenon better.

Taking this into consideration, the structure of the paper is as follows: in the second section the theoretical framework is briefly introduced. First some definitions of process management are summarised, then the existing evolutionary models are identified and finally a new proposal is included. Methodology is described in the third section, results are described in the fourth one and conclusions and future lines are included in section five.

## 2. Theoretical framework

**Process management.** Process management has been widely studied along literature, however, there is not a unique and commonly accepted definition. Nonetheless, it must be highlighted that all definitions have several characteristics in common. In the following lines some definitions are included.

Davenport and Short [15] defined process management as a *set of logically related tasks performed to achieve a defined business outcome*. Armistead and Rowland [16] defined it from a wider perspective, they understood process management as *the management of the organisation by the consideration of their business processes*. More recently, Smith and Fingar [17] went one step further and highlighted that *not only does process management encompass the discovery, design and deployment of business processes, but also the executive, administrative and supervisory control over them to ensure that they remain compliant with business objectives for the delight of customers*.

Based on these definitions, process management may be understood as a way of understanding the company reality which is aimed at simultaneously, increasing internal efficiency and satisfying the customer by focusing on the processes of the company [18].

**Process management implementation: evolutionary models.** Each company implements process management in a different way. It is true however that along literature several implementation methodologies have been proposed in order to guide companies during the process [18]. Due to each company follows its own path, results are different in each case and each company achieves a different level of implementation depending on the methodology used and their specific characteristics.

In an attempt to homogeneously analyse the implementation level achieved by companies, some authors proposed different evolutionary models. Those models are useful as they allow companies to do a benchmark analysis, identifying their position with respect to their competitors. In Table 1 the four evolutionary models found in literature and their stages are chronologically included.

Table 1. Process management evolutionary models

AUTHOR	DEFINED LEVELS OR STAGES
Kettinger et al. [19]	<ol style="list-style-type: none"> <li>1. Process improvement</li> <li>2. Process reengineering</li> <li>3. Radical process reengineering</li> </ol>
Goncalves [20]	<ol style="list-style-type: none"> <li>1. <b>Stage A:</b> The company has not taken a decision about whether to implement process management or not yet.</li> <li>2. <b>Stage B:</b> Companies in this level have already identified some processes and subprocesses.</li> <li>3. <b>Stage C:</b> despite the main processes are already defined, the influence of the functional structure still exists.</li> <li>4. <b>Stage D:</b> Resources are allocated to processes and each process has a unique manager.</li> </ol>

	5. <b>Stage E:</b> Companies in this level are completely focused on their processes and have started a new era, forgetting the old structure.
Lockamy and McCormack [21]	<ol style="list-style-type: none"> <li>1. “Ad hoc” processes</li> <li>2. Defined processes</li> <li>3. Linked processes</li> <li>4. Integrated processes</li> <li>5. Extended process</li> </ol>
Reijers [22]	<ol style="list-style-type: none"> <li>1. Green companies</li> <li>2. Yellow companies</li> <li>3. Red companies</li> </ol>

Source: Authors

**Kettinger et al. evolutionary model [19].** This evolutionary model is micro-orientated as the process is the unit of analysis, not the company. It distinguishes three stages:

1. Process improvement
2. Process reengineering
3. Radical process reengineering

The company is moving from an initial stage where improvements are small to a last stage where improvements are radical.

**Goncalves evolutionary model [20].** Goncalves’ model identifies five stages:

1. Stage A. The company has not taken a decision about whether to implement process management or not yet. The company may have already implemented process management in production processes, and managers may doubt about the effectiveness of process management. Anyway, in those cases, there are very few possibilities of change.
2. Stage B. Companies in this level have already identified some processes and subprocesses. However, functional areas still influence strongly their structure. They should be focused on identifying and designing the key processes of the company clearly.
3. Stage C. Despite the main processes are already defined, the influence of the functional structure still exists. Power and responsibilities are still structured according to functional areas. At best, these companies have already started to work with processes by removing those activities that do not add value.
4. Stage D. Resources are allocated to processes and each process has a unique manager. Process orientation is remarkable, however success is achieved in individual processes not as a whole. New mechanisms should be designed in order to create a new kind company.
5. Stage E. Companies in this level are completely focused on their processes and have started a new era, forgetting the old structure. Their objective should be continuous improvement and the adaptation of processes to the needs of each moment, as if the company were a living organism.

**Lockamy and McCormack evolutionary model [21].** Five stages are defined in this model:

1. “Ad hoc” processes: processes are unstructured, ill-defined and there are no indicators. It is a traditional structure based on functions.
2. Defined processes: key processes are defined and documented. Although process orientation exists, companies are still organised in functional areas.
3. Linked processes: process management becomes a strategic decision. Key processes cross functional areas and are independently managed. Cooperation is done through interdisciplinary working groups that share objectives and indicators.

4. Integrated processes: companies cooperate through processes and functional areas start to disappear. Process management and the measurement system are strongly rooted in the culture. Advance process management tools are used.

5. Extended processes: A horizontal, customer-focused, collaborative culture is firmly in place.

**Reijers evolutionary model [22].** The aim of this evolutionary model radically differs from previous models. This model is focused on establishing the level of process development just before implementing a process management system per se. The usefulness of this model stems from the fact that the previous level of process orientation within a company has been traditionally known as an enabler to implement process management systems. Thus, the author establishes the initial stage of the company distinguishing three kind of companies:

1. Green companies: companies show a sufficient level of process orientation to go ahead with implementation.
2. Yellow companies: companies that may expect some implementation problems.
3. Red companies. In this case, the lack of process orientation may jeopardize a successful implementation.

**A new proposal to measure the level of process management achieved.** In contrast with the opinion of the aboved-mentioned evolutionary models, some authors affirm that functional areas never disappear completely; thus, processes and functions live together. Therefore, the final aim is to find a balance among them [23]. In this point it should be highlighted that it is not the aim of this study to analyse the arguments for and against this idea.

Taking this into account, we consider that an alternative measurement system should be proposed. This new system may measure the level of process management development taking into account the different functional areas of the company. Consequently, in this study, companies were asked about the percentage of processes identified in each of their functional areas. The Porter Value Chain was used to define the different functional areas. Specifically the following question was asked: *“In each of the following areas, which percentage of processes was identified and defined?”* (Table 2).

Tabla 2. Proposed methodology to measure process management level

	NONE	50% OR LESS	MORE THAN 50%	ALL
Inbound logistics				
Operations				
Outbound logistics				
Marketing and sales				
Service				
Procurement				
Technology				
Human resource management				
Firm infrastructure				

Source: Authors

### 3. Methodology

As it was previously mentioned, the aim of this study is to analyse the implementation level achieved by companies when implementing process management. The scope of the study was limited to Cantabria (a region in the north of Spain). Therefore, the target population was limited to companies from Cantabria over 20 employees that practised process management.

First, a questionnaire was sent to determine the number of companies with more than 20 employees that practised process management. They were identified using the directory offered by the Cantabrian Institute for Statistics. The research technical record is shown in Table 3.

Tabla 3. Technical record

<b>Characteristics</b>	<b>Survey</b>
<b>Population</b>	Cantabrian companies with more than 20 employees (808)
<b>Geographical scope</b>	Autonomous Community of Cantabria
<b>Unit of analysis</b>	Company
<b>Response rate</b>	37% (299 responses)

Finally, 299 responses were received, which represents a response rate of 37%. It is a slightly higher percentage than the 32% established as the average response rate in operations management studies [24].

After receiving these answers, a second questionnaire was sent to all the companies that affirmed practising process management (168). This second questionnaire asked companies about different aspects of process management initiatives: barriers, enablers, benefits... This study is focused on one of the questions, the one related with process management implementation level (Table 2). Finally, 96 responses were obtained.

### 4. Results

Results are summarised in Table 4. In addition to the four response categories, another one was added in order to measure the number of companies which did not value the area (NR- No response). There may be two reasons why companies did not value certain areas: whether they do not know the percentage of defined processes in the area, or they do not have this functional area in the company. In the majority of cases the second reason predominates, due to several companies indicated "do not apply". This must be included as an improvement in future research, "Do not apply" must be added as a new response category.

Table 4. Number of companies that have chosen each option

	None	50% or less	More than 50%	All	NR	Total
Inbound logistics	4	11	27	53	1	96
Operations	3	10	24	55	4	96
Outbound logistics	6	10	29	41	10	96
Marketing and sales	14	17	28	24	13	96
Service	12	15	21	32	16	96
Procurement	9	11	23	36	17	96
Technology	24	14	22	16	20	96
Human resource management	5	11	34	42	4	96
Firm infrastructure	5	9	32	45	5	96

Source: Authors

Figure 1 represents the number of identified and defined processes in each functional area. In order to calculate that percentage, the number of companies that valued that area were taking into account, excluding those classified as NR. Thus, for instance, in the inbound logistics area 95 companies were taken into account or 76 in the technology area.

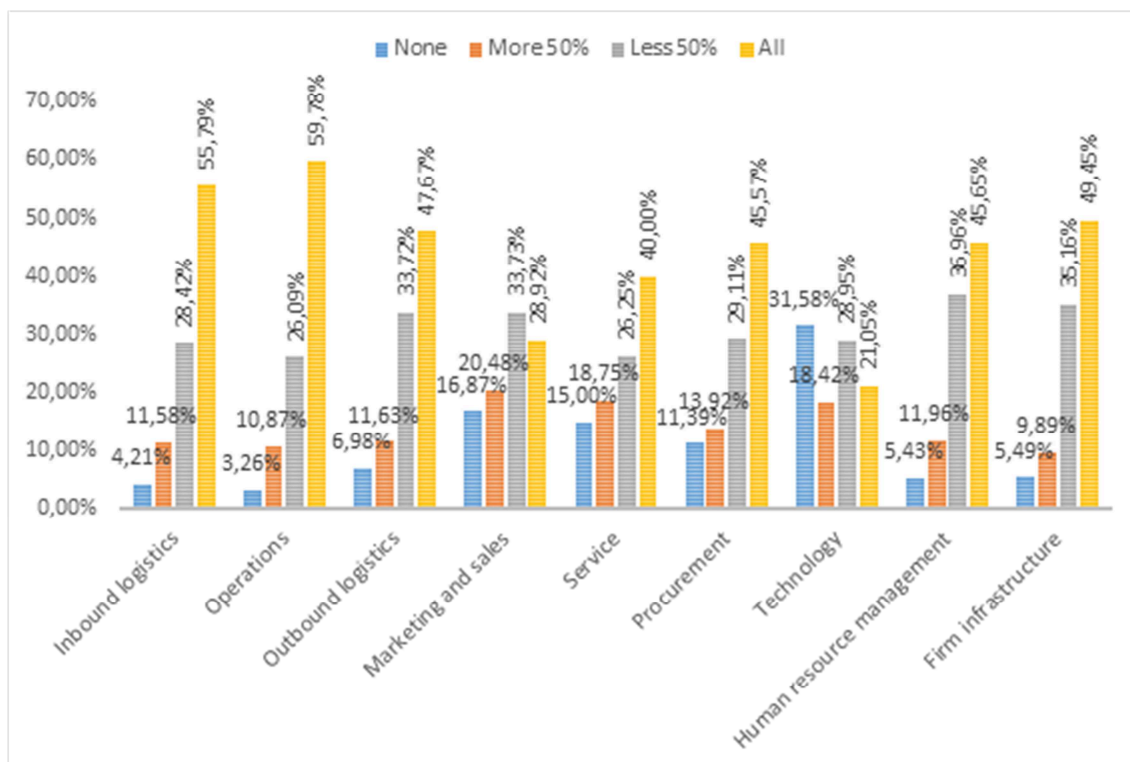


Figure 1. Percentage of processes per area  
Source: Authors

## 5. Conclusion and future lines

The relevance of process management philosophy has been constantly increasing along the last decades. Companies are aware of this, and many of them have tried to implement it. However the percentage of failures is still quite high. Therefore, more research on this respect is needed. As a result, this study is aimed at analysing the implementation level achieved by companies when implementing process management.

After doing a conscious literature review and identifying four evolutionary models, a new one is proposed. This new measurement tries to combine process management orientation with traditional functional structures. In order to define the functional areas the Porter's Value Chain is used.

Results show that the Operations area is the one with most processes defined. Some authors say that process management and control were initially developed in operations and production areas. In fact, process management has been sometimes wrongly reduced to the identification of processes in the production area [25]. On the opposite side, the technology area is the one in which most companies selected "none".

It may be concluded that it exists an unequal development of process management depending on the functional area. However, it is also true that process management is practiced (in different levels) in all the areas. In fact, if the percentage of companies that selected "all" is summed up with those companies that selected "more than 50%", the total is higher than 50% in all the areas, except in the technological one.

In future studies, it would be interesting to analyse whether the percentage of processes in each area increases over time, as well as the number of companies practising process management.

Due to the geographical scope of the study, we consider it interesting to replicate the study in other regions and countries so that it could be analysed whether this distribution is repeated in other countries or, due to culture, the implementation evolves differently.

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