

RESEARCH ON KEY FACTORS IMPACTING PROCESS SUSTAINABILITY IN GLOBAL COMPANIES

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Abstract

Processes are part of the infrastructure of every company and are an essential component in the analysis of corporate performance when it comes to business sustainability. Process design and process management have to consider the top impacting factors that ensure sustainable processes.

The objective of the paper is to identify the key criteria that affect process sustainability, but also to research on the degree of process sustainability in global companies. The methodology used involves interviews with managers and process specialists from 15 global companies in order to gather information about 56 processes that are analysed from sustainability point of view. All gathered key criteria are applied in a case study in order to propose a method of analysing processes and determining the level of sustainability.

Results show which are the weakest, but also strongest links when designing sustainable processes and highlights concerns related to possible impacting risks. Authors also show how prepared are each of the investigated departments when it comes to sustainable processes. Finally, the study indicates the interviewees' thoughts on the important factors that ensure that there are no process failures or interruptions.

The proposed framework is also intended to bring an important contribution for business analysts in order to determine the degree of process sustainability and the related company risks.

Keywords

process sustainability, process management, key factors on sustainability, process design, process monitoring and control

JEL Classification

M10

Introduction

Economic development has been determined by global competitive pressure and an increasing complexity of business models for many years. According to Mateescu et al. (2015) in the context of a changing energy environment, enterprises have to react to the changing conditions simply in order to survive. Furthermore international companies but also local ones have started using new management tools and methods (Mateescu et al.,

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2015) and have started focusing on differentiating themselves from the competitors by adapting to the customers' needs and providing high quality services. In this situation, the requirements for sustainable business processes increased tremendously. Consequently, the companies have to be in a position to create integrated business processes which are flexible and adaptable to all changes (internal or external) (Müller, 2011).

To cope with this task, the attention increased regarding process management, risks related to processes and criteria that ensure the required sustainability.

Process management is corresponding of the organization, planning, management and control of the value or value chain of a company with consideration of individual business goals (Wirtschaftslexikon24.com, 2015).

The intention of the article is to accentuate the compatibility and influence of theoretical process with regard to sustainability. Therefore, the authors aim to research the applicability of a theoretical approach into practice and thus to determine which are the key success factors when focusing on the sustainability of the processes.

In order to create a sustainable process all specific characteristics must be clearly defined and marked, all steps of the process management must be documented and shared with all involved parties and all risks related to the process must be identified and analyzed.

The authors have investigated the main criteria that affect process sustainability and also the existing degree of sustainability when it comes to business processes. Therefore, the results of this paper might share insights that help managers focus on the researched key indicators that affect business processes in terms of sustainability.

Theoretical aspects

1. Processes – Definition and types

Mateescu, Lange and Heinemann (2015) suggest that at the core of any organizational objectives are a number of business processes that determine the success rate of the company's goals. It can be stated, that processes exist in every company and its departments and not just to make physical goods (Harvard, 2010). Porter (2014) describes a process as follows: "Every company is a collection of activities designed by the product, manufactured, distributed, delivered and supported. All these activities can be represented in a value chain." (Porter, 2014, p.65). Further, different types of processes exist within the company – i.a. depending on the (directly) extent of integration in the creation of customer value or the organization's structure, an operative- or strategic process as well a primary and secondary business process (Karavul, 2015). Generalized and as elementary summarization, it can be stated that a business process receive an initiating input and ends with achievement of the process objective. Processes exist detached from the enterprise organization, whereby process orientation might cross barriers of structural departments.

The classification of types of processes is based on process-oriented thinking and analytical approach. According to literature findings, orientation towards processes may facilitate the reduction of costs and achievement of goals (Fischer et al., 2006).

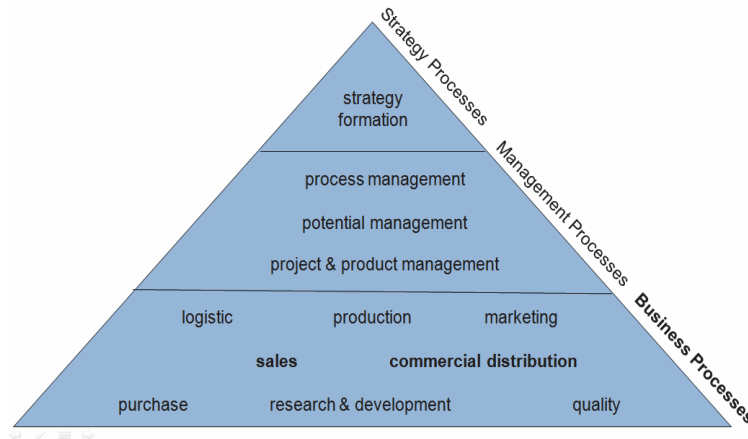


Fig. no. 1 Classification of process types
Source: authors' design based on Porter (1990)

The different process types may be visualized as a process pyramid (fig. no. 1). The development of corporate strategies is part of the top level, while the conceptual orientation of processes is classified at the management level. The operational implementation and realization of overarching strategic goals is part of the (execution) business processes. It can be generally said, that business processes link people, technology and information to create valuable outputs and thereby constitute enterprise activities to carry out its mission, archive the goals set and measure the business performance (Harvard et al.,2010). There are two types of business processes: primary and support processes. The classification depends on whether a process is directly involved in the creation of customer value or concerned with the organization's internal activities. Within the context of this model, *primary activities* of enterprises are e.g. logistics, marketing and sales. In general primary processes within the value chain (Porter, 1985) are those, which are directly involved in the creation of value by producing goods or services – as this, primary business processes are characterized by serving benefits directly for customers. The remaining processes have a supportive function and are termed in the literature as *secondary activities or processes*. As examples for these activities i.a. procuring, controlling and human resources can be named. Generalized can be stated, that secondary business processes provide the primary business processes with support and service provision.

2. Criteria related to process sustainability

Regarding the *characteristics of the processes* various approaches are named in literature. This paper focuses on the criteria that impact the sustainability of the business processes. A sustainable process involves a detailed and precise *description of business processes* by identifying the following criteria for each particular process (Brocke et al., 2014): requirements of (internal) customers, inputs & (demanded) results, service production & creation of value, process owner & persons involved, objectives & measurements to control and improvement the process performance. The *degree of formality* can be one of the aspects that affect process performance over time. “Informal” means that the enterprise has not documented its processes as set of steps which should be executed under certain conditions. In order to achieve sustainability processes

should be (highly) formalized to gain awareness and knowledge, as well as to enhance a common understanding. Processes might be visualized with a flowchart as a sequence of activities with interleaving decision points. The process matrix as a sequence of activities with relevance rules based on data in the process might be another form of representation for formality of business processes. Occasionally, processes might be an informal procedure, before the enterprise increase the degree of formality by documentation and / or description (Harvard et al., 2010).

Other characteristics are the distinction according to the *level of involvement* in the procedure and *transfer of information*. The responsibility and knowledge of the process owners, access to information for all involves parties, but also communication can be factors that influence process performance and determine its sustainability.

Business processes might be cross-functional and therefore range over several business functions, but are embedded in the overall value chain and as this in the organizational structure (Rummler et al., 1995). Thus, it can be stated that one of the main criteria that determines the degree of sustainability is *risk management at each process junction: interaction between two processes, between two steps of a process or between two parties involved in the process*.

Monitoring, control and optimization of the process are highly important for ensuring a sustainable process. Process owners and other assigned responsible employees have to constantly observe any deviation from the process protocol including all activities, time frames, involved parties and outputs (results).

Methodology

As a prerequisite for the practical research, 15 global companies are investigated (Table no. 1). The investigations were performed during interviews with managers or process specialists in order to determine the degree of sustainability in 3-5 processes of each company, but also to highlight the interviewees' opinion on the main factors that affect process sustainability. The interviews involved 18 questions related to the key factors that affect process sustainability and one question regarding the interviewee's opinion on the success criteria that influence sustainable processes.

Between November 2015 and February 2016 the authors have analyzed a number of 56 processes from the following lines of business: operational/core processes (production, sales), support processes (purchasing, human resources, accounting).

Each interview was structured in order to gather information regarding: company profile and structure (A), main core and support processes (B), process description (C), degree of formality (D), level of involvement (E), transfer of information (F), risk management at process junctions (G), monitoring, control and optimization of the process (H).

The description of each process was made by identifying Brocke's criteria mentioned above (Brocke et al., 2014). The results of the interviews were calculated by counting each answer "YES" for each question. Each question was used for each of the investigated processes within each company. In order to present a sample of the applied methodology, one of the case studies is presented with regard to the purchasing process within one of the companies. The process is shown using the value chain method also revealing the more detailed daily accurate representation for each step of the process.

Table no. 1 Investigation on global companies from process sustainability point of view

Nr. crt.	No. companies	No. processes	Total no. processes	Departments
1	7	3	21	production
				sales
				accounting
2	5	4	20	production
				purchasing
				sales
				human resources
3	3	5	15	production
				purchasing
				sales
				human resources
Total no.	15		56	accounting

Source: authors

Case study

A. Company profile and structure: The company of investigation is a global enterprise with multiple factories and subsidiaries. Its commercial activity is geared toward profitable growth and a sustained increase in value to secure company's long-term future. The company is perceived by its customers, suppliers and the society as a competent and reliable partner along the entire value chain.

Due to changes of markets, products and customer requirements, the company's organization has to be flexible in order not just to react to these changes but to anticipate them. Therefore the company strives for success and sustainability – also in process design.

B. Main core and support processes: production, sales and logistics are the main core processes, while purchasing, accounting, IT and human resources are supporting the company's activity.

C. Process description: The process begins with the planning and construction phase, followed by the request phase, offer phase and the hearing. Finally there the supplier is chosen which completes the process.

A detailed description of business processes requires a number of criteria that need to be identified for the process before a sustainable business process can be created. These criteria are identified in the theoretical part of this paper and can used for the analysis of the procurement process now. Here, each of the five criteria used and analysed individually:

1) Requirements of (internal) customers

In this part a detailed presentation of the purchasing process involving one or more suppliers is mandatory. In addition, it is ensured that all employees involved in the process have also obtained detailed information on this process. Furthermore, a training tool is in place for new employees. These requirements are met in the preparation of the process.

Moreover, the sustainability and a future-oriented use of the process are guaranteed by a continuous monitoring and process optimisation.

2) Inputs & (needed) results

The present process provides an added value in the field of transactions. In addition, a regulated flow is ensured with temporal milestones and detailed steps. This means that a long-term use of the process for all persons in the purchasing department is reliably secured by accurate process detection and level of detail. This also includes employees who have no previous knowledge in purchasing.

3) Service production & creation of value

The process serves each person as a source of information. Furthermore, it is ensured that even uninformed employees can procure products from a supplier by using the available documentation. This means the document is to provide added value in the implementation of the process by facilitating and ensuring constant process performance independent of manual-input. In addition, access is created through the process database on the intranet for every person and thus is given a company-wide long-term value.

4) Process owner & persons involved

The process owner for this process is the head of the department. This ensures a comprehensive and specialized perspective. In addition, the quality of the process can be enhanced by the personnel's experience in the quality department. Besides these above mentioned squads all purchasing staff can be seen as involved people. The proof for this is that all purchasing employees constantly use documentation and bring signification contribution to the process.

5) Objectives & measurements to control and improvement the process performance

The aim of the process is to achieve long-term procurement efficiency without compromising quality of service. Nevertheless, it is important to perform a continuous review and optimisation of the process in order to achieve sustainability.

D. Degree of formality: The purchasing process is well documented, all steps of the process as well as the sequence of activities are clearly defined.

E. Level of involvement: The process owner is the head of the purchasing department, however there is no backup in case the employee is on vacation or takes a sick leave. Using the training tool would require a two weeks long on boarding process.

F. Transfer of information: Information is gathered within one standard operating manual (intranet database). Information can be gathered by the impacted or interested departments by interacting with the purchasing department's employees.

G. Risk management at process junctions: This process offers information for other primary business processes such as logistics, marketing, sales support and service. A risk management process is in place at company level, but does not monitor all communications between the purchasing department and other departments. Also, there are high impacting risks regarding knowledge transfer in case an employee leaves the company - no consolidated database for process documentation.

H. Monitoring, control and optimization of the process are carried out by the department's personnel.

I. The interviewee's opinion on the key criteria affecting process sustainability: solid process documentation, involved staff, communication between departments.

Results

The interviews with the managers and process specialists showed that when it comes to ensuring sustainability only 71,74% of the companies are well prepared (see Table 1).

Process definition is one of the weakest links when it comes to ensuring sustainability, the main reason being that only 33,33% of the companies have a back-up plan described in the documentation. 66,67% of the companies have a suitable database with information clear for all employees.

Personnel is highly involved, unfortunately results regarding communication between departments are not satisfying – 24% of all information is not transmitted correctly or is lost leading to high risks for the companies' activities.

Table no. 2 Questionnaire and results

Nr. crt.	Process sustainability criteria (PSC)	Interview question	Companies (% answer YES)	Overall result/ PSC
A	Process description	Is the process defined completely and correctly?	80,00%	55,56 %
		Is the time frame clear for each of the process steps/activities?	53,33%	
		Is there a back-up plan in place in case of the process steps fails?	33,33%	
B	Degree of formality	Is the process fully documented in a database?	60,00%	66,67 %
		Is the sequence of activities clear for all employees?	73,33%	
C	Level of involvement	Is the process owner specialized for all operations required for the process?	86,67%	75,56 %
		Is there a back-up employee in case the process owner takes a sick leave or is on vacation?	53,33%	
		Does the process owner have any experience with quality management?	86,67%	
D	Transfer of information	Is all detailed information available for the involved employees?	86,67%	76,00 %
		Do all involved personnel have the right access level for the process?	80,00%	
		Is all information available in case of personnel change?	86,67%	
		Is the process performance independent of manual input?	53,33%	
		Is there a secured database in place for all information?	73,33%	
E	Risk management at process junctions	Is there a risk management process in place for all process interactions?	80,00%	76,67 %
		Are process-related risks identified being monitored and controlled?	73,33%	

F	Monitoring, control and optimization of the process	Are all steps of the process constantly optimized?	80,00%	80,00 %
		Is the process permanently monitored?	86,67%	
		Does the review of the process consider both quantitative and qualitative evaluation methods?	73,33%	
Average result process sustainability/company			71,74%	

Source: authors

Risk management is linked to monitoring and controlling, so that 76,67% of the companies a risk management process in place in order to identify, analyze and handle risks related to processes. A satisfying result is that 80% of the companies are focused on monitoring, control and optimization of the process.

Figure 2 shows results for each of the departments investigated – these are also calculated based on the answers “YES”. The average result shows how prepared are the indicated departments when it comes to process sustainability. The results are similar, accounting scoring the best results especially because 78% of the departments manage to perform correct and complete information transfers. It is reinsuring that companies started focusing on risk management for all accounting processes, so that in case of 95% of these processes risks are being monitored and controlled.

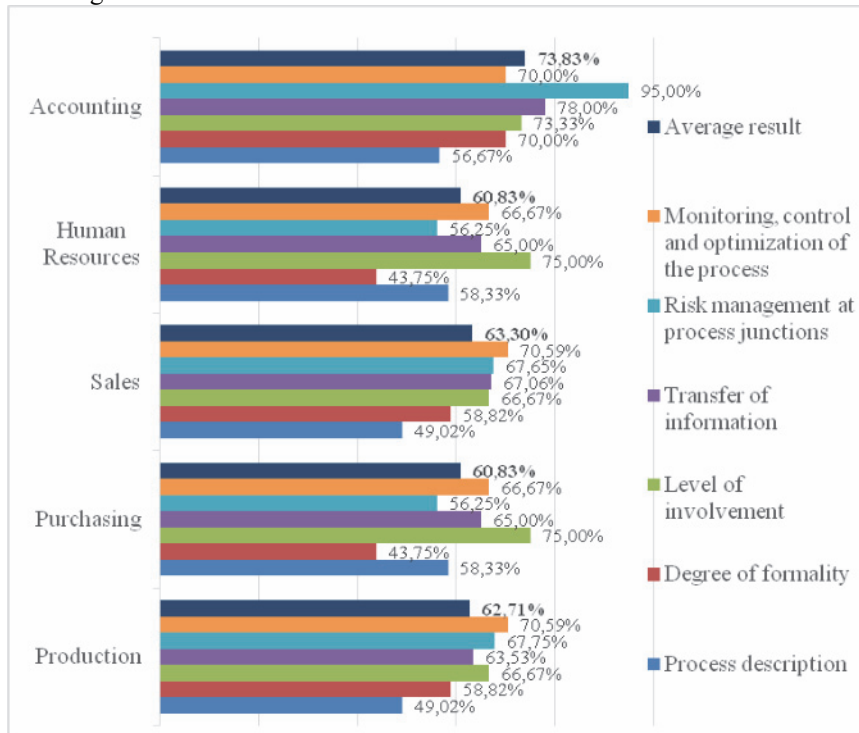


Fig. no. 2 Results of the interviews for each department

Source: authors

During the second phase of the interview the managers and specialists highlighted the key factors that affect process sustainability. The highest percentages were registered in case of monitoring and control of the process, solid process documentation and complete and secure information (see figure no. 3).

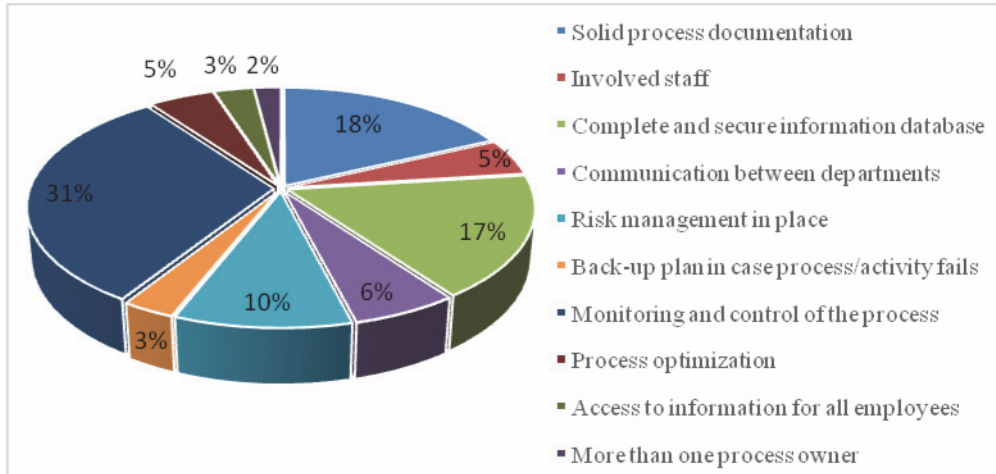


Fig. no. 3 Interview results: key criteria in process sustainability

Source: authors

Conclusions

The performance of the processes depend on each process’ efficiency and effectiveness. However, performance cannot be sustained if processes are not properly defined and controlled. According to Mocan et al. (2015) all processes are designed for resistance. Sustainability plays an important role for the success of a company and should not be disregarded in the process design. Using the author’s method and the selected process example companies are able to determine the degree of sustainability of their processes. The authors research showed that companies are monitoring and controlling processes and have developed risk management processes in order to avoid process failure or interruptions. Transfer of information is also a very important factor, while not neglected by the companies, losing information or incorrectly sharing it within organizations can lead to serious risks for companies. Information regarding a process that is not well defined and documented can also be useless; despite the fact that solid process documentation was the second most rated criteria by the managers, in practice almost half of the companies do not define processes correctly and completely. This is mainly caused by the fact that when defining processes there is no setup of a back-up plan in case of process failure or interruptions; only 3% of the managers considered this setup as of importance for the processes’ sustainability.

This paper highlights the importance of sustainability as a key factor in process design and may offer guidance for further research on process management and sustainability.

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