
Process Definitions - Critical Literature Review

Submitted 17/05/21, 1st revision 10/06/21, 2nd revision 30/07/21, accepted 25/08/21

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Abstract:

Purpose: The article aimed to identify the definition of a process and define a proposal of one's concept of a process in order to improve the organization's strategy in the scope of the process approach implementation.

Design/Methodology/Approach: In the research process, to achieve the assumed research goals, it was decided to use the following research methods, desk studies and tag cloud.

Findings: As a result of the research, process definitions were established, a semantic analysis of the most popular forty process definitions was made, and the analysis was carried out on three levels.

Practical Implications: More and more organizations use the Business Process Management concept, but the process definition is ambiguous. It is essential to standardize the process definition because business process management implementation depends on precise definitions.

Originality/Value: The paper's originality is the use of tag cloud to analyze the process definitions. The study presents a new approach to the process in the context of the proprietary model.

Keywords: Process management, process, tag cloud.

JEL codes: M10, M14, M20.

Paper type: Research article.

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1. Introduction

Organizations that aim to grow and succeed need an efficient process management system. It provides the organization with improvement through effective management of various resources of the organization, implemented activities, relations with individual stakeholders. By taking continuous and systematic activities related to planning and monitoring the implementation of a given process, achieving goals in the organization, and delivering value to customers and stakeholders is possible. The implementation of process orientation is related to the identification of processes in the organization. All processes must be adequately defined to achieve this, and the relationship between them must be analyzed. Only such action will allow for the proper determination of the contractors of the relevant activities, identification of the necessary resources for their implementation, and determination of the effects of the processes. The study presents various approaches to the term “process,” indicating different definitions presented in the literature. The analysis of literature sources showed many definitions of the process, but there is no holistic approach.

The study decided to propose its definition that comprehensively presents this issue. The definition presented is of particular importance for organizations that implement various solutions in management systems and are obliged to implement the process approach. The definition of ISO standards is very general, and its development can be beneficial for organizations that manage many aspects, including quality, environment, occupational health and safety, information security, and many others.

2. Literature Review

Currently, the concept of a process seems to be extremely universal and applies to many areas of life. However, the most frequently indicated process perspectives are:

- engineering perspective - structured process;
- economic perspective - goal-oriented economic methodology;
- management perspective - a complex human-centered social engineering structure (Vergidis and Turner, 2008).

This universality also causes the ambiguity of this concept. When it comes to management systems, it should be noted that the concept of a process went through all phases of the process orientation evolution, as it was presented in chapter one. The development of the process definition was also influenced by the priorities visible decades in most Western countries:

- focus on productivity - the 60s;
- focus on cost reduction -the 70s;
- focus on quality - the 80s;
- focus on speed - the 90s mean shortening the implementation time;
- focus on added value - the turn of the 20th and 21st centuries (Lindsay, Downs and Lunn, 2003).

Today, after the first decade of the 21st century, a few more factors can be added that will shape the concept of a process in the years to come:

- focus on mobility,
- focus on community,
- focus on simplification,
- focus on trans-organizational cooperation,
- focus on virtualization,
- focus on the “cloud”,
- focus on experience.

As the process orientation developed, the noun process was started with a business adjective. It can be concluded that this emphasizes the belief that only those processes that are needed in an organization (business) and contribute to the achievement of its goals are justified (Glabiszewski, 1904).

The earliest description of the process comes from the most eminent eighteenth-century economist, Adam Smith: “One worker drew the wire, another straightened it, the third cut it, the fourth cut the tip, and the fifth, sixth, and seventh cut the head. The head took three separate operations: placing the head on a pin is one operation; polishing a pin is another... . In this way, the production of pins is broken down into about eighteen different operations, which in some manufactories are performed by different people, although sometimes the same man performs two or three of these operations (Smith, 2013)”.

Adam Smith’s work entitled “The Wealth of Nations” is fundamental to the concept of procedural orientation in yet other respects. From the pin production process discussed above, he concluded that introducing the division of labor allowed the plant’s productivity to increase by 24,000%; that is, with the same number of employees, it was possible to produce 240 times more pins than before. Another aspect that Adam Smith raised was the sequence of activities one after the other. He believed that is not only specialization necessary in production, but also the method of production. This concept was not developed immediately, however, as at that time, specialization was more acceptable as it provided more immediate benefits. It was only later that specialized work became less attractive to employees, boring and, consequently, depressing. Only then did research on the reorganization of processes, flexible breaks from work, and other aspects that could increase work efficiency began to develop. Perhaps the most famous research from this period was the research conducted in 1924 at Hawthorne Works. Based on these studies, Elton Mayo and Fritz Roethlisberger formulated the concept of the “Hawthorne effect.”

Studying the literature on the subject, from Adam Smith or Frederick Taylor to the 1980s, it can be concluded that the concept of process did not develop too intensively during this period.

At the beginning of the reengineering era, the authors of various management trends attempted to define the process. Below, three definitions from the end of the 20th century are quoted that, in the author’s opinion, shaped the literature on the subject to the greatest extent:

- Pall G.A stated that a business process is a logical organization of people, materials, energy, equipment and procedures in an organization’s activities, designed to achieve a specific end result (Pall, 1987).
- Davenport T.H. defined a business process as an organized, measurable set of activities aimed at producing a specific output for a specific customer or market. The business process puts a lot of pressure on how work is done within an organization as opposed to a product-centric emphasis. A process is therefore a specific order of activities defined in time and space, with a definite beginning and end on clearly specified inputs and outputs: the structure of the action. A process approach means that the organization adopts the customer’s point of view. Processes are the structures by which an organization does what is necessary to create value for its customers (Davenport, 1993).
- Hammer M. and Champy J. define a business process as a set of activities that have one or more types of inputs and create an output that provides value to the customer. A business process has a purpose, it depends on events in the outside world or in other processes (Hammer, Champy, 1993).

A review of literature from, among others, the following indexes: Google Scholar, Cambridge Journals Online - Cambridge University Press, Directory of Open Access Journals (DOAJ), EBSCOhost - Academic Search Complete, EBSCOhost - Business Source Complete, EBSCOhost - Environment Complete, Emerald, Free Access Journals (High-Wire), ibuk.pl, PLoS Journals, ScienceDirect/Elsevier/ICM, ScienceDirect/Springer/ICM, Wiley Online Library, made it possible to compile different process definitions (Table 1).

Table 1. Review of selected definitions of processes (business processes)⁵

Author	Year	Definition content
Merriam Webster Dictionary	2020	a series of actions or operations conducting to an end
Merriam Webster Dictionary	2020	a natural phenomenon marked by gradual changes that lead toward a particular result
Computer Hope	2020	process refers to a set of predetermined rules in place that must be followed
Wikipedia Dictionary	2019	a series or set of activities that interact to produce a result; it may occur once-only or be recurrent or periodic
Agile Enterprise Architecture	2019	activities that produce a specific service or product for customers

⁵ All definitions were re-translated from the source texts, with careful maintenance of the conceptual apparatus of the scope of the process management trend.

APBPMP	2018	“business process” is defined as end-to-end work which delivers value to customers. The notion of end-to-end work is critical as it involves all of the work, crossing any functional boundaries, necessary to completely deliver customer value.
Cambridge Dictionary	2018	a method of producing goods in a factory by treating natural substances
APBPMP	2018	A “process”, in this context, is a defined set of activities or behaviors performed by humans or machines to achieve one or more goal. Processes are triggered by specific events and have one or more outcome that may result in the termination of the process or a handoff to another process. Processes are composed of a collection of interrelated tasks or activities which solve a particular issue. In the context of business process management
	2016	A process is a series of steps and decisions involved in the way work is completed
Earl, P.	2016	lateral or horizontal form, that encapsulates the interdependence of tasks, roles, people, departments and functions required to provide a customer with a product or service
Brennan, K.	2016	Processes are a sequence of repeatable activities executed within an organization. Processes can be simple (involving one person and a system) or complex (involving many people, departments, organizations and systems). Processes describe who and what has to be involved in fully responding to an event, or how people in the enterprise collaborate to achieve a goal. Processes are normally described in Process models, although useful information may also be captured in organization model, state diagrams or use cases.
Cambridge Dictionary	2015	a series of actions that you take in order to achieve a result
Harmon, P.	2014	a make-to-order environment adds value to products through mixing, separating, forming, machining, and chemical processes.
Cambridge Dictionary	2015	a series of changes that happen naturally
Helin, J.	2014	is how process does
BPTrends	2013	At its most generic, any set of activities performed by a business that is initiated by an event, transforms information, materials or business commitments, and produces an output. Value chains and large-scale business processes produce outputs that are valued by customers. Other processes generate outputs that are valued by other processes.
Ferrie, J.	2013	definable set of activities which from a known starting-point achieve a measurable output to satisfy an agreed customer need
OMG	2011	A defined set of business activities that represent the steps required to achieve a business objective. It includes the flow and use of information and resources.
Harmon, P.	2010	A business process describes how an organization does the work necessary to produce valuable outputs. Specific business processes may have been carefully designed, or they may have simply evolved over the years.
Harmon, P.	2010	business process is one or more activities that transform an initial set of inputs into one or more outputs that are valued by an organization.

Harmon, P.	2010	Process or processing typically describes the act of taking something through an established and usually routine set of procedures to convert it from one form to another, as a manufacturing or administrative procedure, such as processing milk into cheese, or processing paperwork to grant a mortgage loan, or converting computer data from one form to another.
Kubiak, T., Benbow, K.	2009	Process - a series of interrelated steps consisting of resources and activities that transform inputs into outputs and work together to a common end. A process can be graphically represented using a flowchart. A process may or may not add value.
Wang, M., Wang, H.	2005	Business process is defined as a set of business rules that control tasks through explicit representation of process knowledge.
Ould, M.	2005	Process as a coherent set of activities carried out by a collaborating group to achieve a goal, where the “chunking” (his word) of organizational activity into processes must be driven by an understanding of the business the organization is in.
Smith, H., Fingar, A.	2005	the complete and dynamically coordinated set of collaborative and transactional activities that deliver value to customers
Castellanos, M., Casati, F., Umeshwar, D., Ming-Chien, S.	2004	The term business process is used to denote a set of activities that collectively achieve certain business goal. Examples of these processes are the hiring of a new employee or the processing of an order.
Irani, Z., Hlupic, V., Giaglis, G.	2002	A business process is a dynamic ordering of work activities across time and place, with a beginning, an end, and clearly identified inputs and outputs.
Gunasekaran, A., Kobu, B.	2002	A group of related tasks that together create value for a customer is called a business process.
Stock, J., Lambert, D.	2001	A business process can be viewed as a structure of activities designed for action with focus on the end customer and the dynamic management of flows involving products, information, cash, knowledge and ideas.
Stohr, E., Zhao, J.	2001	A business process consists of a sequence of activities. It has distinct inputs and outputs and serves a meaningful purpose within an organization or between organizations.
Eriksson, H., Penker, M.	2000	A business process has an explicit goal, a set of input objects and a set of output objects. The input objects are resources that are transformed or consumed as part of the process, such as raw material in a manufacturing process.
Volkner, P., Werners, B.	2000	Business process is defined as a sequence of states, which result from the execution of activities in organizations to reach a certain objective.
Ågerfalk, P., Goldkuhl, G., Cronholm, S.	1999	A business process consists of activities ordered in a structured way with the purpose of providing valuable results to the customer.
Workflow Management Coalition (WfMC)	1999	Business process is a set of one or more linked procedures or activities which collectively realise a business objective or policy goal, normally within the context of an organizational structure defining functional roles and relationships.
The BPR on-line learning centre	1998	“business processes are simply a set of activities that transform a set of inputs into a set of outputs (goods or services) for another person or process using people and tools
Soliman, F.	1998	Business process may be considered as a complex network of activities connected together.

Harrington, J., Esseling, E., Nimwegen, H.	1997	A process is a logical, related, sequential (connected) set of activities that takes an input from a supplier, adds value to it, and produces an output to a customer.
Rummler, G., Brache, A.	1995	a business process is a series of steps designed to produce a product or service.
Jacobson, I.	1995	The set of internal activities performer to serve a customer.
Hammer, M., Champy, J.	1993	A business process is a collection of activities that takes one or more kinds of inputs and creates an output that is of value to the customer. A business process has a goal and is affected by events occurring in the external world or in other processes.
Johansson, H., McHugh, P., Pendlebury, J., Wheeler, W.	1993	A business process is a set of linked activities that takes an input and it transforms it to create an output. It should add value to the input and create an output that is more useful and effective to the recipient.
Davenport, T.	1993	Business process is defined as the chain of activities whose final aim is the production of a specific output for a particular customer or market.
Davenport, T., Short, J.	1990	Business process is a set of logically related tasks performed to achieve a defined business outcome.
Pall, G.A	1987	Business process is the logical organisation of people, materials, energy, equipment, and procedures into work activities designed to produce a specified end result.

Source: Own creation.

3. Research Methodology

The article aimed to identify the definition of the process and define the proposition of one's process concept to improve the organization's strategy in terms of the process approach. In the research process, to achieve the assumed research goals, it was decided to use the following research methods, desk studies and tag cloud.

The tag cloud is often referred to as a weighted visual list. It is an increasingly widely used method of visualizing the meaning of text data, particularly keywords (so-called tags) on websites. Tags are usually single words whose meaning is indicated by font size and color, such a form of presenting the importance and meaning of individual concepts is helpful for the quick perception of the essential concepts and showing their relative meaning against the background of others. Even though tag clouds are widely used on websites, science is just discovering them.

According to Sinclair and Cardew-Hall (2008) creating a tag cloud is about transforming the concepts of folksonomy as a social visualization tool. Folksonomy means social classification, social indexing, or social tagging, it means the practice of categorizing content using freely chosen keywords. So, it is a kind of use of the so-called "wisdom of the crowd." Since the people involved in tagging information are usually those using it, followers of folksonomy believe that it produces results that better reflect the model of information in the community.

In the following study, a specific modification of the tag cloud - data cloud was also used. A data cloud is a type of data visualization that uses font size or color to indicate

20 most frequently used words); Figure 3 Semantic analysis - Process concept tag cloud (level 3 - 10 most common words).

Figure 2. Semantic analysis - Process concept tag cloud (level 2 - 20 most common words)



Source: Own study 2020.

Figure 3. Semantic analysis - Process concept tag cloud (level 3 - 10 most common words)



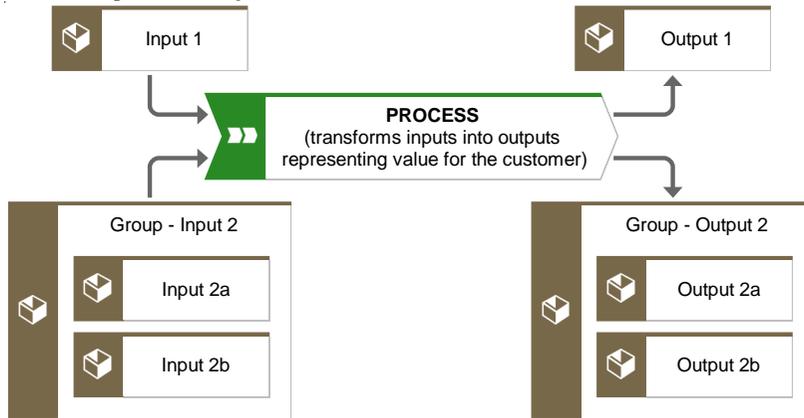
Source: Own study 2020.

The following levels of the process definition analysis consist of leaving the 20 most frequently appearing words in the definitions on the 2nd level and on the 3rd level 10. The analysis carried out in this way reveals the so-called core of the process definition. Based on these 10, left-over from elimination keywords, one could build the following definition: “A process can be understood as a set of related activities to achieve a predetermined goal. It is done by converting the input into a predetermined customer value on the output.”

The definition generated in this way seems to be sufficient at the operational level but very insufficient at the strategic level. Therefore, there is a need to formulate a definition at the strategic level.

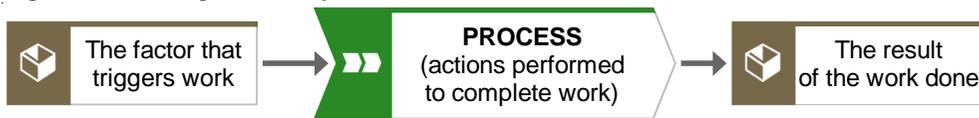
As the old Chinese proverb says, "One picture is worth more than a thousand words," that is why processes began to be visualized. Such visualizations of processes can be found, among others, in Paul Harmon in his book: "Business process change: a manager's guide to improving, redesigning, and automating processes" or on his portal devoted to the issue of business process management, <http://www.bptrends.com/> (Figure 4 and Figure 5).

Figure 4. Visual process definition - Version 1



Source: Own study 2020, based on Paul Harmon, <http://www.bptrends.com/>, 2020.

Figure 4. Visual process definition - Version 2



Source: Own study 2020, based on Paul Harmon, <http://www.bptrends.com/>, 2020.

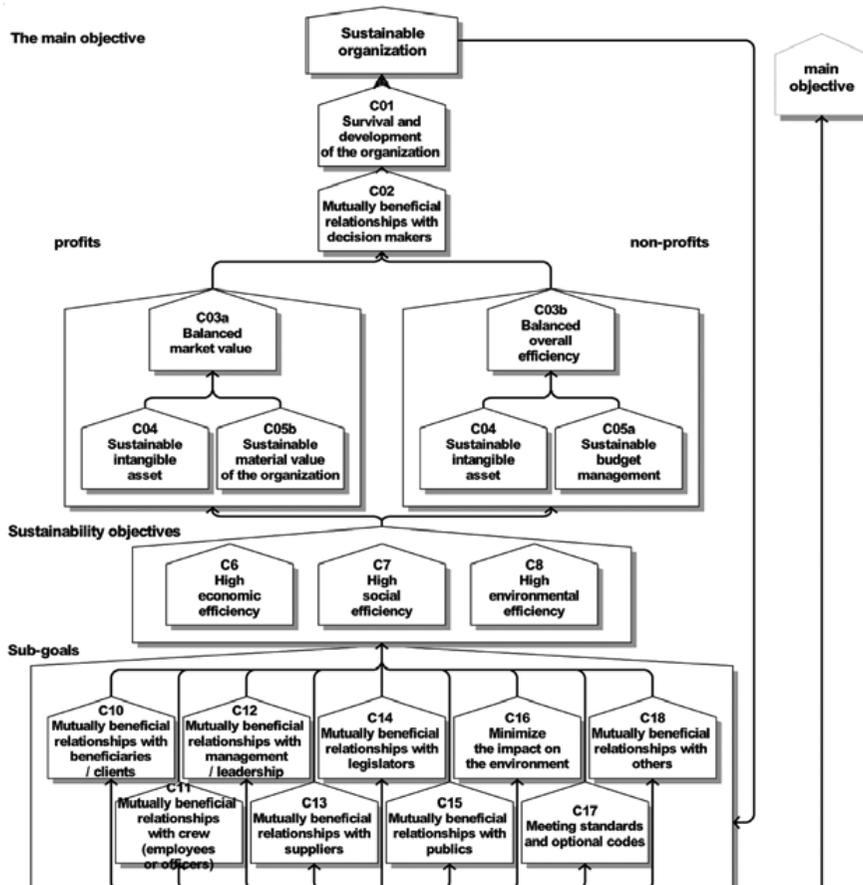
A new approach to the process in the context of the proprietary VITIS model: In technical terms, a short process definition is a sufficient definition, but needs to be completed by a business user. Accordingly, Figure 7 shows a graphical definition of the business process and its context. A process can be understood as a set of related actions to achieve a predetermined goal. It is done by transforming the input into a predetermined stakeholder value on the output.

The processes are characterized by the following features:

- They bring added value to their stakeholders in the same organization, guaranteeing its sustainable development and survival.
- The outputs of the processes are the following goals, the implementation of which provides a specific added value (Figure 7):
 - General goals: sustainable organization:
 - Intermediate goals - supporting (from the most general): C01 Survival and development of the organization; C02 Mutually beneficial relations with decision-makers (owners or government decision-makers, etc.); C03a Sustainable Market Value (for the economic sector); C03b Sustainable Total Efficiency (for the public and non-profit sectors); C04 Balanced intangible asset; C05a Sustainable budget management (for the public and non-profit sectors); C05b Sustainable material value (for the economic sector); Aims of sustainability (C6 High economic efficiency; C7 High social efficiency; C8 High environmental efficiency); C9 High

organizational efficiency; C10 Mutually beneficial relationships with beneficiaries/customers; C11 Mutually beneficial relations with the crew (employees, officials or officers); C12 Mutually beneficial relationship with management /command; C13 Mutually beneficial relationships with suppliers; C14 Mutually beneficial relations with legislators; C15 Mutually beneficial relations with society; C16 Minimizing the impact on the environment; C17 Fulfilling the requirements of optional standards and codes; C18 Mutually beneficial relations with other stakeholders;

Figure 5. Scheme - definition of a business process and its context



Source: Own study 2020, A. Wysokińska-Senkus, *Improving system management in the context of sustainability*, Difin 2013.

- The inputs to the processes are:
 - Expectations and needs of identified stakeholders, such as: Policy makers; Suppliers; Clients / Beneficiaries; Crew/, Employees, Legislators; Society; Other stakeholders;

- Knowledge - as one of the most critical resources;
- Remaining resources;
- Environment (environmental requirements);
- Standards and optional codes.
- Processes can be carried out by both people and machines.
- The components of the processes can be both physical and super-symbolic actions⁶.

5. Conclusion

Process management is a critical issue for both economic practice and management theory. The analysis of the literature and the authors' practical experience show that the benefits of process management are enormous. These include, among others, optimal use of available resources, customer retention, good relations with stakeholders, increasing employee responsibility, identifying sources of non-compliance, clear division of responsibility for the process implemented, continuous improvement of the organization. The authors notice considerable conceptual chaos in defining this issue, which is why an original definition of the process was proposed.

The definition of the process proposed in the study indicates its close relationship with the organization's goals, while the proposed goals are comprehensive, including economic, social, and environmental goals. The proposed definition of the business process considers the broad context of the organization's operation, also considering the organization's stakeholders who impact internal organizational processes.

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