

dr hab. Aneta Wysokińska-Senkus¹

Akademia Sztuki Wojennej, Wydział Zarządzania I Dowodzenia

dr hab. Piotr Senkus, prof. UPH

Uniwersytet Przyrodniczo Humanistyczny w Siedlcach

Wydział Nauk Ekonomicznych i Prawnych

doc. dr Jonas Čėsna

Aleksandras Stulginskis University, Faculty of Agricultural Engineering

The process orientation. The roots and scale of use in the world

Orientacja procesowa. Korzenie i skala stosowania na świecie

Abstract: *The following paper provides an overview of the concept of the process orientation and its popularity and use in the different regions of the world. The main methods to collect the information was desk research of scientific papers, reports or research data and results from scientific institutions around the world, particularly those that do research on the process orientation, such as: Aalborg University, Graz University of Technology, Eindhoven University of Technology, Queensland University of Technology, University of Potsdam, University of Innsbruck, Institute of Databases and Information Systems, Ulm University, Hochschule Ravensburg-Weingarten, Nanyang Technological University, Singapore, Singapore Institute of Manufacturing Technology and companies such as Capgemini, Gartner, BPM & O Academy, BPTrends. Literature studies have been enriched by the analysis made using analytic tools Google Trends.*

Key words: managing by values, interdisciplinary team, the process of implementing change, reluctance to change, leadership, workshop

Streszczenie: *W artykule przedstawiono koncepcję orientacji procesowej oraz jej popularność i zastosowanie w różnych regionach świata. Materiał do opracowania stanowią źródła literaturowe, szczególnie te przygotowywane w ośrodkach naukowych, które zajmują się badaniami nad rozwojem orientacji procesowej, takich jak: Aalborg University, Graz University of Technology, Eindhoven University of Technology, Queensland University of Technology, University of Potsdam, University of Innsbruck, Institute of Databases and Information Systems, Ulm University, Hochschule Ravensburg-Weingarten, Nanyang Technological University, Singapore, Singapore Institute of Manufacturing Technology, oraz raporty takich firm, jak: Capgemini, Gartner, BPM&O Akademii, BPTrends. Studia literaturowe zostały wzbogacone przez analizy wykonane przy wykorzystaniu narzędzia analitycznego Google Trends.*

Słowa kluczowe: zarządzanie przez wartości, interdyscyplinarny zespół, proces wdrażania zmian, niechęć do zmian, przywództwo, warsztat

Introduction

The process orientation and definition of processes in any organization is required by many of the contemporary management tools and concepts like Total Quality Management, Activity Based Management, Time Based Management, Balanced Scorecard, Activity Based Costing, Activity Based Budgeting, Target

¹ Adres do korespondencji: aneta@gsenkus.info; piotr@senkus.info

Costing, Lean Management, Kaizen. That is why the popularity of process orientation is growing in the different regions of the world. But the significant thing is that the concept of process orientation and definitions related to that concept have grown in the branches of science like space science or astronomy, life science, management, logic, mathematics, theoretical computer science. That is why the authors have decided to do research to investigate the evolution of the concept and related definitions. The main methods of collecting the information was desk research of scientific papers, reports or research data and results from scientific institutions around the world, particularly those that do research on the process orientation, such as: Aalborg University, Graz University of Technology, Eindhoven University of Technology, Queensland University of Technology, University of Potsdam, University of Innsbruck, Institute of Databases and Information Systems, Ulm University, Hochschule Ravensburg-Weingarten, Nanyang Technological University, Singapore, Singapore Institute of Manufacturing Technology and companies such as Capgemini, Gartner, BPM & O Academy, BPtrends. Literature studies have been enriched by the analysis made using analytic tools Google Trends.

General search popularity of the selected management improvement tools

Google Inc. provides two very useful tools for researchers, one is Google Trends and another Google Books Ngram Viewer. In the Google Trends one could discover how the popularity of certain search queries in the Google Search have been changed over a certain period of time. The Google Books Ngram Viewer

The results of the Google Trends analysis could be treated as representative on a global scale, because Google Search is in first place regarding market share among all Internet search engines (80.3%), before Bing (9.4%), Yahoo (7.1%), AOL (1.8%) and Ask (1.5%)². Google Trends itself has become a research tool recognized in the scientific society³.

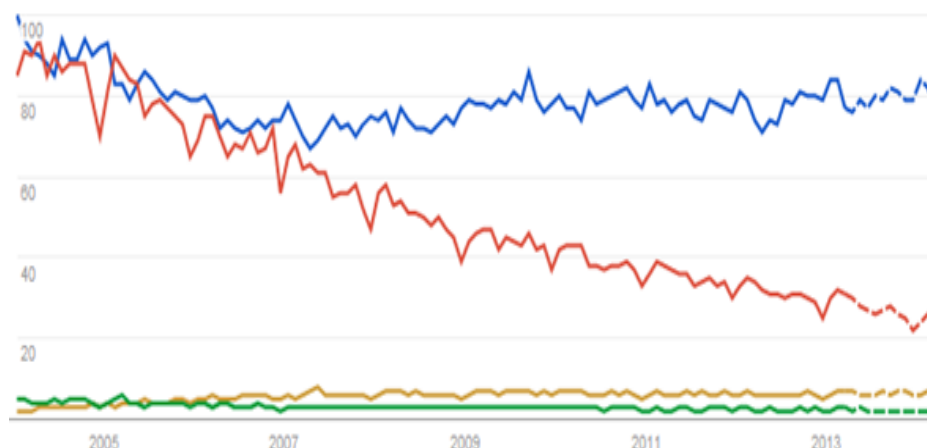
Using Google Trends, a comparison search popularity of the selected terms: "BPM", "Six Sigma", "Lean Six Sigma" and "Business Architecture" over the years 2004-2014 in the world, Japan, the United States of America, Germany, the United Kingdom, Australia and Poland. The search popularity of the term "BPM" (Business Process Management) was the highest in the world among all of the selected search terms, and relatively constant over the 2004-2014 period of time. That popularity persists over the whole period of time despite the economic crisis, that continues since 2008. Meanwhile, the search popularity of the "Six Sigma" in the world fell by 60% over the examined period from the same base level as BPM in 2004. In contrast, the search popularity of the terms "lean six sigma" and "business architecture" was a niche (Fig. 1).

In the United States of America the United Kingdom and Australia, the search popularity of BPM has continued to grow, that may indicate that in these countries the BPM concept is considered as an effective solution even in times of crisis. In Japan, after a sharp rise in the search popularity of the BPM concept, since 2010 it has continued to fall. This could mean that in Japan after the implementation of the concept in the most significant units, it is not so popular. In addition it should be

² R & R Web Design LLC, <http://r-rwebdesign.com/blog/?p=353>, access 2014.

³ H. Choi, H. Varian, *Predicting the present with google trend*, Economic Record, 2012, 88(s1), p. 2–9.

noted that Japan has been struggling with an internal crisis for about a decade and what is probably more important, the new management concepts have still been developed in Japan based on the knowledge of the experiences of companies like Toyota, Nissan or other organizations with a long operation tradition.

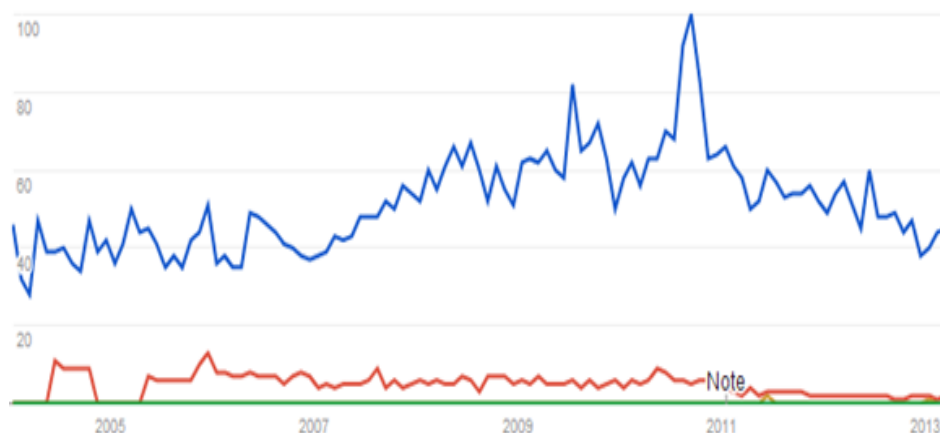


From the top - 2014:

- 1 Bpm
- 2 six sigma
- 3 lean six sigma
- 4 business architecture

Fig. 1. Popularity various management concepts in the world

Source: Google Trends, 2016.

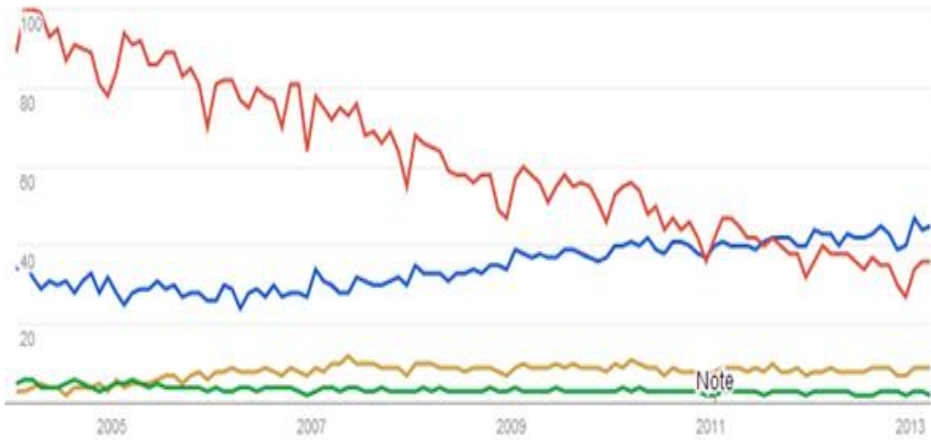


From the top - 2014:

- 1 Bpm
- 2 six sigma
- 3 lean six sigma
- 4 business architecture

Fig. 2. Popularity various management concepts in Japan

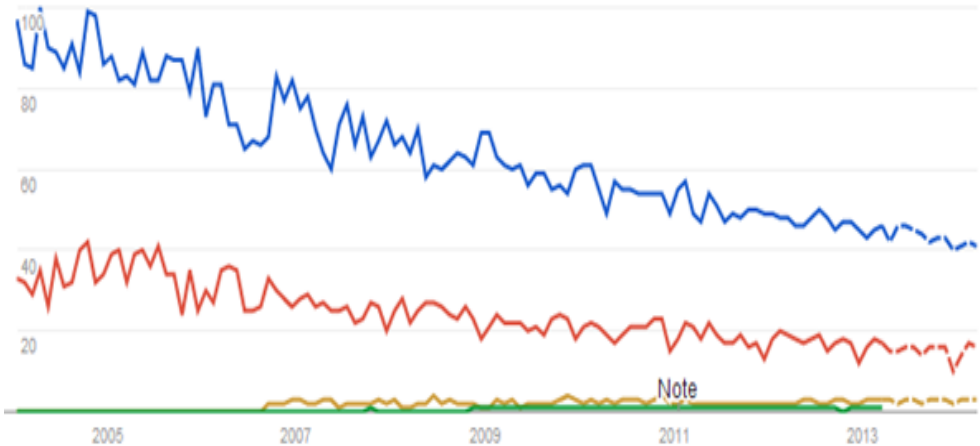
Source: Google Trends, 2016.



From the top - 2014:

- 1 Bpm
- 2 six sigma
- 3 lean six sigma
- 4 business architecture

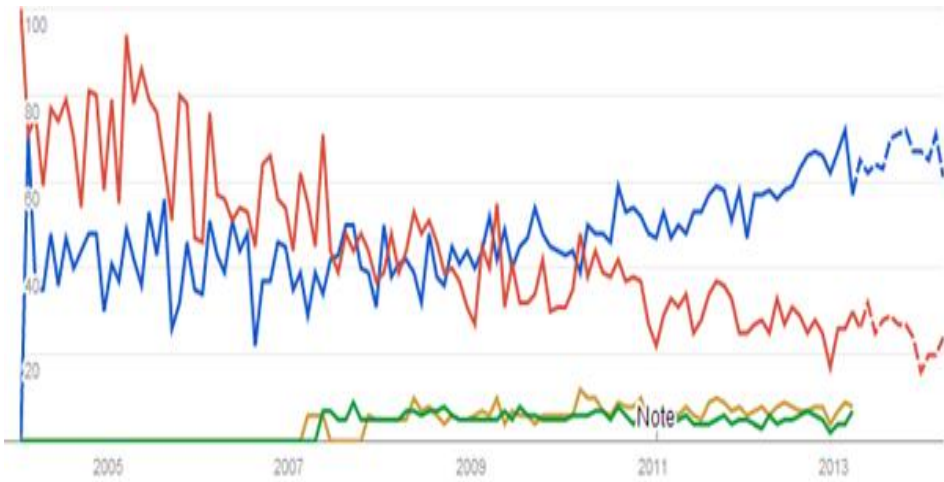
Fig. 3. Popularity various management concepts in the United States of America
Source: Google Trends, 2016.



From the top - 2014:

- 1 Bpm
- 2 six sigma
- 3 lean six sigma
- 4 business architecture

Fig. 4. Popularity various management concepts in Germany
Source: Google Trends, 2016.

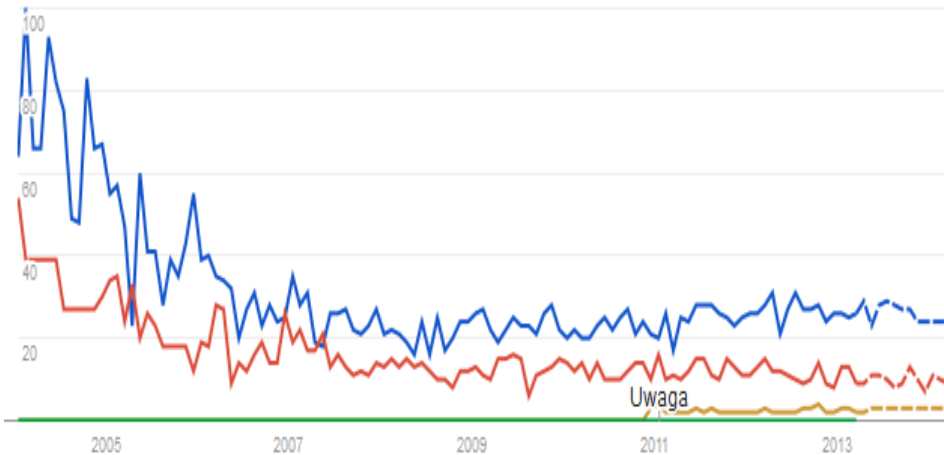


From the top - 2014:

- 1 Bpm 2 six sigma 3 lean six sigma 4 business architecture

Fig. 6. Popularity various management concepts in Australia

Source: Google Trends, 2016.



From the top - 2014:

- 1 Bpm 2 six sigma 3 lean six sigma 4 business architecture

Fig. 7. Popularity various management concepts in Poland

Source: Google Trends, 2016.

The other significant fact is, that in Poland, the search popularity of each individual terms "BPM", "Six Sigma", "Lean Six Sigma" and "Business Architecture" was relatively lower than in the other countries that were considered in that analysis, but like in the other countries the "BPM" concept was the most popular.

It should be especially indicated that the Process Orientation, particularly the Business Process Management concept was the most popular management improvement concept in the United States of America, where Six Sigma and Lean Six Sigma were created. The results of the analysis based on Google Trends seem to be very similar to results of the studies and reports presented by well-known management consultant companies. For example KPMG in their Business Process Management Survey indicates that from 2006 Business Process Management would have been the most popular management concept in the world (fig. 8)⁴.

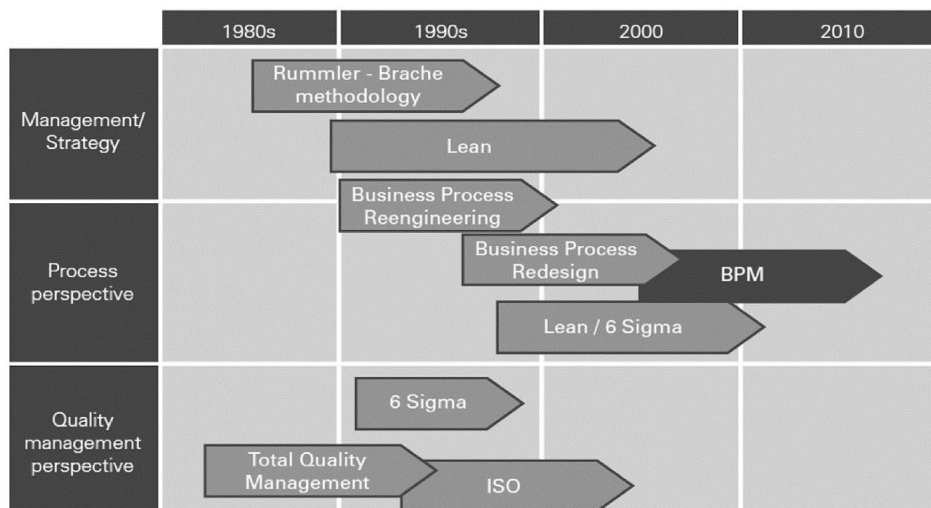


Fig. 8. Popularity of the different concepts of management improvement concepts according to KPMG

Source: KPMG, Business Process Management Survey 2008: ADVISORY, KPMG, 2008.

Roots and evolution of Process Orientation and Business Process Management

In 1776 Adam Smith in his revolutionary book "Wealth of Nations" presented the term *division of work* into single parts that in the nomenclature of the process could be called *functions* or *actions*. To illustrate the problem he used a pin production factory. He was convinced that the actions that are set-up in the proper order could lead to the superior effect of increased productivity and performance⁵.

The interesting thing is that more or less, the idea of a proper setting up of the actions in order to achieve the desired goals has not been changed over years since Adam Smith. Frederick Winslow Taylor and other scientific management pioneers considered the solution for process improvement could be uncovered

⁴ KPMG, Business Process Management Survey 2008: ADVISORY, KPMG, 2008.

⁵ A. Smith, The Wealth of Nations, Modern Library, New York, 1937.

through the scientific approach to human labour, standardization of processes, systematic training, proper hierarchical organization structures that impose all relationships between employees and management.

Over some years the development of the management concepts was rather evolutionary until the “father of quality management” - William Edwards Deming. Edwards Deming and the other representatives of the flow of quality management, both Japanese and Americans insisted on meeting customer expectations, that guaranteed the survival and development of organizations. That means that internal processes that lead to meeting the particular customer expectations had to be subordinated in the quality philosophy^{6, 7, 8}.

While in the United States of America the evolutionary development of management concept still could be noticed the Japanese companies, at least those that went global, have rapidly developed management concepts, tools and systems that have allowed them to deliver an extraordinary level of quality, at the same time, fulfill most of current consumer needs and build their global competitive advantage.

The organizations in the United States of America were developing their evolutionary management concepts until the beginning of the 90's. The turning point in their up-to date approach was the growing competition from Japanese companies and growing bankruptcy rates of domestic companies. For example the number of car producers in the United States of America fell from about 1,800 American companies in 1930 to 3 American companies in 2014⁹. The remaining ones are the Ford Motor Company, General Motors Company (de-facto a new company after the bankruptcy in 2009) and Tesla Motors, Inc. The leftovers from Chrysler after the bankruptcy in 2009 are now owned by Italian Fiat S.p.A. The significant fact is that in 2013 the “Most Trusted Brand” and “Best Value Brand” in Kelley Blue Book's 2013 Brand Image Award study was still the Japanese company Honda¹⁰.

Since the 90's American companies and public, or nonprofit organizations, have begun to develop the right way to optimize their operations, because the first attempts to implement “Japanese management” without cultural and social adjustments were spectacular failures. That was the time when Business Process Reengineering had begun as the first American response to “Japanese management”.

Business Process Reengineering is a business management strategy, originally pioneered in the early 1990s, focusing on the analysis and design of workflows and processes within an organization. Business Process Reengineering aimed to help organizations fundamentally rethink how they do their work in order to dramatically improve customer service, cut operational costs and become world-class competitors. Business Process Reengineering help companies radically restructure their organizations by focusing on the ground-up design of their business

⁶ M. Walton, *Deming Management at Work*, Mercury, 2001.

⁷ H. Obora, *Geneza i rozwój koncepcji kompleksowego zarządzania jakością TQM*, *Management Sciences*, No. 8, 2011, pp. 121–129.

⁸ A. Wysokińska-Senkus, *Doskonalenie systemowego zarządzania w kontekście sustainability*, Difin, Warsaw, 2013.

⁹ Carhistory4u, <http://www.carhistory4u.com/the-last-100-years/car-production>, access 2014.

¹⁰ Kelley Blue Book's 2013 Brand Image Award, 2013, <http://www.kbb.com/car-reviews-and-news/top-10/2013-brand-image-awards/2000009188/>, access 2014.

processes¹¹. At the same time the contemporary definitions of the process itself had begun to appear¹².

Tom Davenport has defined a business process as a set of logically related tasks performed to achieve a defined business outcome¹³. Since Tom Davenport

Tab. 1. The definitions of process

Author	Year	Definition
Pall G.A	1987	A business process is the logical organization of people, materials, energy, equipment and procedures into work activities designed to produce a specified end result.
Davenport T. i Short J.	1990	A business process is a set of logically related tasks performed to achieve a defined business outcome.
Davenport T.	1993	A 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.
Hammer M. and 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 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.
Jacobson I.	1995	The set of internal activities performed to serve a customer.
Rummler G., Brache A.	1995	A business process is a series of steps designed to produce a product or service.
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.
Soliman F.	1998	A business process may be considered as a complex network of activities connected together.
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	A 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.
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	A business process is defined as a sequence of states, which result from the execution of activities in organisations to reach a certain objective.

¹¹ United States General Accounting Office - Accounting and Information Management Division, Business Process Reengineering Assessment Guide, GAO/AIMD-10.1.15, May 1997, Version 3, 1997, <http://www.gao.gov/special.pubs/bprag/bprag.pdf>, access 2014.

¹² P. Senkus, Business Process Management as a way to achieve national economic security, in: K. Raczkowski, F. Schneider (Ed.): The Economic Security of Business Transactions, 2013, pp. 291-312.

¹³ Y. Malhotra, Business process re-design: an overview, IEEE Engineering Management Review, No 26, 1998, pp. 27-31

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 organisation or between organisations.
Gunasekaran A., Kobu, B.	2002	A group of related tasks that together create value for a customer is called a business process.
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.
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 goals. Examples of these processes are the hiring of a new employee or the processing of an order.
Wang M., Wang H.	2005	A business process is defined as a set of business rules that control tasks through explicit representation of process knowledge.
Kubiak T., Benbow	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.
Brennan K.	2009	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 an organization model, state diagrams or use cases.
APBPMP	2009	A “process”, in this context, is a defined set of activities or behaviours performed by humans or machines to achieve one or more goals. Processes are triggered by specific events and have one or more outcomes 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
APBPMP	2010	A “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.
Harmon P. (a)	2010	A 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. (b)	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. (c)	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.
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.
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.

Source: own work, 2016.

Conclusion

Business Process Management is nowadays one of the most popular concepts in the world with continuous growing potential. It is popular all over the world from Japan to Germany, the United Kingdom and the United States of America. The concept could be very helpful in the implementation of any contemporary management concepts, methods and techniques like total quality management, activity based management, time based management, balanced scorecard, activity based costing, activity based budgeting, target costing, lean management or kaizen. Because it was developed from different disciplines like for example: business, engineering or information technology the definition should be clarified as: *Process - a set of related activities to achieve a predetermined goal. This is done by converting the entry to a predetermined value at the output to the stakeholders. Runs in / or between organizations. It can also cross sectors.*

Bibliography

- Carhistory4u, <http://www.carhistory4u.com/the-last-100-years/car-production>, access 2014.
- Choi H., Varian H., *Predicting the present with google trend*, Economic Record, 2012, 88 (s1).
- Kelley Blue Book's 2013 Brand Image Award, 2013, <http://www.kbb.com/car-reviews-and-news/top-10/2013-brand-image-awards/2000009188/>, access 2014.
- KPMG, Business Process Management Survey 2008: ADVISORY, KPMG, 2008
- Malhotra Y., *Business process re-design: an overview*, IEEE Engineering Management Review, No. 26, 1998.
- Obara H., *Geneza i rozwój koncepcji kompleksowego zarządzania jakością TQM*, Management Sciences, No. 8, 2011.
- R & R Web Design LLC, <http://r-rwebdesign.com/blog/?p=353>, access 2014.
- Senkus P., *Business Process Management as a way to achieve national economic security*, [in:] K. Raczkowski, F. Schneider (eds.), *The Economic Security of Business Transactions*, 2013.
- Smith A., *The Wealth of Nations*, Modern Library, New York, 1937.

United States General Accounting Office - Accounting and Information Management Division, Business Process Reengineering Assessment Guide, GAO/AIMD-10.1.15, May 1997, Version 3, 1997, <http://www.gao.gov/special.pubs/bprag/bprag.pdf>, access 2014.

Walton M., *Deming Management at Work*, Mercury, 2001.

Welch J., *Winning znaczy zwyciężać*, Studio Emka, Warszawa 2012.

www.corazlepszafirma.pl, access 2016.

Wysokińska-Senkus A., *Doskonalenie Systemowego zarządzania w kontekście sustainability*, Difin, Warsaw 2013.