



PROJECTS AS TOOL FOR PROCESS IMPROVEMENT

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Abstract

In the lookout for new sources of increasing business efficiency and in response to dynamic changes occurring in the business environment, companies pay increasingly more attention to process improvement. Literature review on the subject along with a detailed observation of business practice lead to the conclusion that it occurs most often through the implementation of more or less complex process improvement projects. They are related to introducing changes to already existing processes as well as to new process design. In practice, their implementation faces various problems. The paper is of theoretical and empirical nature. Its aim is to present the project as a tool for process improvement and to specify the types of projects. It attempts to indicate the features that distinguish such projects and to present the difficulties faced by the implementers of improvement projects. To achieve such goal, the author conducted literature review focused on issues related to the improvement of processes in organizations and the essence of improvement projects. The results presented in extant literature as well as findings from author's own studies in organizations operating in Poland were analyzed. The considerations made in the study enable to state that process-improvement projects are distinguished by high priority of implementation, focus on quick, noticeable effects, connection with a larger program of changes and a relatively low budget for implementation. Improvement with the use of projects requires considering the entire complexity and scope of the improvement subject, and above all coordination with various concepts and methods of management such as Lean Management, Kaizen, Six Sigma or Lean Six Sigma and BPM. Implementation of process-improvement projects in Poland is in many cases in the initial phase of experiments. For this reason, more attention should be paid to their effective and efficient running, among other things minimizing the failures that accompany their implementation.

Key words: *Process Management, Process Improvement, Continuous Improvement, Process-Improvement Projects*

JEL code: M 19

Introduction

When seeking new sources of improving the efficiency of conducted activities, as well as when responding to dynamic changes in the environment, organizations pay more and more attention to the improvement of processes. Literature review on the subject (Breyfogle, 2010; Harmon, 2010; Jeston and Nelis, 2014; Rosemann and vom Brocke, 2015) along with a detailed observation of business practice lead to the conclusion that it occurs most often through the implementation of more or less complex process improvement projects. They are connected with introduction of changes in the already existing processes and design of new processes. Continuous improvement of processes has become important for many contemporary organizations, since - as noticed by Rummier and Brache (2000) - organization is only as effective as its processes. The introduction of changes in the processes implemented by the company as well as improving their effectiveness and efficiency corresponds to BPM and other management concepts, such as Lean Management, ISO 9000, Six Sigma, Kaizen, Lean Six Sigma, TQM, Agile Management, Process Excellence. These concepts have many common features; they are linked through the motto stating that a process can always be improved, and



the faith in the strength and creativity of employees as the performers of processes (Gershon, 2010).

Process improvement takes place through the implementation of process-improvement projects. Two types of such projects may be distinguished: breakthrough projects, defined as radical, focused on redefining the existing processes, and projects consisting of implementation of incremental innovations, carried out by employees within the existing processes. Examples of the former are reengineering projects or implementation of new processes and/or products using the DFSS methodology (Design for Six Sigma). On the other hand, the latter type of process improvement projects consists of projects such as Kaizen, TPM, Lean, Six Sigma (using the DMAIC methodology), or Lean Six Sigma. The object of examination in the present study covers the former ones. Their implementation requires ensuring proper support, supervision, structure, communication, and conscious management. In practice, they face various problems. The very identification of their goals may be difficult, since - on the one hand - these goals should take account of increase in the value for the customer, the recipient of the process results, and - on the other hand - improvement in the results of the organization. In practice, these goals are sometimes in opposition to each other since the pressure to improve the performance does not always correspond to the delivery of high quality.

The article is theoretical and empirical in nature, with the aim to present project as a tool of process improvement and to characterize process improvement projects. It attempts to indicate distinctive features of such projects and present difficulties faced by people implementing process-improvement projects. To achieve this goal, literature review was conducted covering issues related to improving processes in organizations and the essence of process improvement projects. The analysis was based on findings from the extant literature, and the author's own study among organizations running operations in Poland.

Process improvement in contemporary organizations

It is claimed that processes implemented in organizations fully reflect their functioning, moreover, they are inseparably related to company's activities, which, in consequence, makes it necessary to focus on the methods of their improvement (Boulton, Libert, Samek, 2000). The importance of process orientation has been pointed out in literature and in management practice for approximately 25 years. Some of the first promoters of this concept were Davenport and Short (1990), as well as Hammer and Champy (1993). Studies conducted at the end of the 1990s By Frei et al. (1999) showed the positive effects of process orientation. McCormack (2001) provided evidence to prove that process orientation and process improvement help companies improve their business performance and reduce conflicts between functional areas. At the same time, strong association between effective processes and increase in customer satisfaction were indicated in the research carried out in Sweden by Gustafsson and Nilsson (2003). The above associations were confirmed by the results of further studies (Raschke, 2010; Dijkman, Lammers and Jong, 2015). Company's profitability is highly dependable on its processes (Lientz and Rea, 2001), and solving the process problems can lead to the increase of customer satisfaction, and reduction of lead time and cost (Madison, 2005). Business process improvement is a good basis for business enhancement (Siha and Saad, 2008). Improvement in the field of process management aims to increase the effectiveness of the performed activities and entire processes, and, as a consequence, contributes to greater competitiveness of companies. Business dictionary states that this is a "systematic approach to closing of process or system performance gaps through streamlining and cycle time reduction, and identification and elimination of causes of below specifications quality, process variation, and non-value-adding activities" (businessdictionary.com).

It has a strategic dimension, but is carried out at the operational level, in the places of process implementation. It may consist of: elimination of activities that do not contribute value for the customer, introduction of activities increasing the quality of results and customer



satisfaction as well as improving communication between the process participants, introduction of control activities so as to minimize repetition of errors in subsequent processes or actions preventing generation of defects or mistakes. Improving actions may be reactive and proactive. Therefore, companies may use an analytical-diagnostic approach and a prognostic-synthetic approach. Process improvement may take place by way of radical (so-called revolutionary) and/or incremental (so-called evolutionary) transformations. In the first case, we are dealing with restructuring (reengineering) of business processes of the organization, understood as a change in the structure and/or implementation of processes, sometimes connected with a change in the business model. The previous ("old") processes are reconfigured, redesigned, new processes are also designed, and also process outsourcing is used and technological changes are introduced (Horvath & Partners 2005). Thorough process changes are a derivative of changes in the business model (strategy of the company) or they can be associated with customers' demands.

On the other hand, evolutionary changes made in processes are identified with their optimization. As opposed to reengineering, they concern particular components of business processes. When introducing them, the "bottom-up" approach is used. This type of improvement is focused on the inside of the company, which requires significant participation of employees and their familiarity with the present condition of processes. Its aim is to search for compromises in simultaneous improvement of all basic attributes of business processes (time, punctuality, quality, cost, customer satisfaction), which bears signs of optimization of business processes (Horvath & Partners 2005). The aforementioned methods use different tools. Restructuring of processes corresponds to the business process reengineering method (BPR) or kaikaku, whereas optimization - with methods such as Kaizen, Lean Management or Six Sigma.

The division between radical and evolutionary approach to process improvement is also reflected in the ISO 9001:2015 standard, where reference is made to:

- breakthrough projects that lead to a radical change, usually carried out by teams of employees outside of their routine activities,
- regular, small-scale changes introduced in the existing processes by employees in the course of their everyday work.

The aforementioned methods of improvement are not mutually exclusive, on the contrary - they complement each other. Minor improvements help solidify fundamental breakthrough changes.

In further parts of the study, the author will focus on continuous, regular improvement of processes; the concept of reengineering will not be discussed.

Introduction of regular, gradual changes in process implementation is connected with the idea of continuous improvement (CI), introduced many years ago by W.E. Deming. It is based on the PDCA cycle and it closely resembles the Japanese outlook on the possibilities of improving the quality of processes and products. Deming pointed out that all business processes had to be considered and that they all needed feedback loops in order to improve (Singh, Singh 2015). Today, particular emphasis in this type of activities is put on process improvement initiatives yielding benefits both for the company itself, as well as for its customers and other parties concerned (stakeholders). M.L. Frigo (2003) refers to this, stating that a "company may improve its processes and thus operate more effectively, but these actions are worthless if their final result does not impress the customers". Many researchers define Continuous Improvement (CI) more generally as a culture of sustained improvement targeting the elimination of waste in all systems and processes of an organization (Singh, Singh, 2015). Table 1 contains a review of definitions of the notion of Continuous Improvement.

Table 1

Review of definitions of Continuous Improvement

Author	Definition
Deming (1986)	Continuous and never-ending improvement of the production process and services that causes improvement in



	the quality, productivity, and reduction in costs.
Imai (1997)	Progressive improvement involving all employees of the company.
Caffyn (1999)	Process implemented in the whole company, focused on continuous incremental innovations.
Caffyn, Bessant, Gallagher (2001)	Particular package of procedures that can help the organization improve what it currently does.
Dahlgaard, Kristensen, Kanji (2002)	Small continuous changes for the better.
Brunet, New (2003)	Omnipresent and continuous actions, beyond the normally specified roles of the participants, for the purpose of identification and achievement of results that contribute to achieving organizational objectives.
Boer, Gertsen (2003)	Planned, organized and regular process of permanent, incremental changes in the existing practices, covering the whole company, aiming at improvement in company operations.
Bhuyan and Baghel (2005)	It is a company-wide process of focused and continuous incremental innovation
Chang (2005)	Continuous improvement implemented in a cycle of establishing customer requirements, implementing these requirements, measuring accomplishments and continuing the identification of customer requirements in order to find areas where improvements can be made.
Kirner et al. (2005)	It is an approach in management, where - through continuous changes - the quality of products and businesses processes is improved, and thus, consequently, its competitive position is improved.
Blazey (2006)	This is an ongoing improvement of products, programs, services, or processes.
Bhuyan et al. (2006)	Culture of sustainable improvement, the goal of which is to eliminate losses in all organizational systems and processes, covering all their participants.
Manos (2007)	Subtle and gradual improvements that are implemented all the time.
Garcia et al. (2008)	Small incremental changes in productive processes or in working practices that allow for an improvement in some indicators of performance.
Singh, Singh (2015)	The phrase “CI” is associated with a variety of organizational developments including the adoption of “lean manufacturing” techniques, total quality management (TQM), employee involvement programs, customer service initiatives, and waste reduction campaigns.

Source: author's literature review

The analysis of various definitions of continuous process improvement makes it possible to state that it is a purposeful action, assuming slow but systematic and progressive positive change in selected process parameters (time, cost, quality), in the mutual connection between



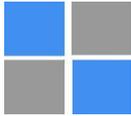
these parameters. The mutual connection of process parameters, with simultaneous consideration of mutual dependences between processes, guarantees adopting a system approach to processes and allows for defining continuous process improvement as optimization. This kind of improvement involves building upon the capabilities found in the currently held potential and introduction of changes that, even if they are only small incremental changes, may bring improvement in the quality of functioning of a given organization and increase customer satisfaction. Introduction of continuous process improvement into the management practice means implementation of an entire range of various projects, usually with a small scope and relatively short time of implementation. This corresponds with the assumptions of the Japanese Kaizen philosophy, where employees must demonstrate strong involvement in identification of problems and in seeking opportunities for improvement of process implementation. Kaizen is a kind of thinking and management practise. It is a philosophy used not only in management field but also in everyday life in Japan. It means gradual and continuous progress, increase of value, intensification, and improvement (Karkoszka and Szewieczet, 2007). Kaizen depends mainly on human efforts to improve results, and this requires process improvement. According to Imai (1997), a process-oriented approach, referred to as the “plan-do-check-act” (PDCA) cycle is used for process improvement. Plan refers to setting a target for improvement; do is implementing the plan; check is controlling for effective performance of the plan; and act refers to standardizing the new (improved) process and setting targets for a new improvement cycle. This cycle is described as “improving cycle”. The main rule of Kaizen is as follows: Kaizen is process-oriented, i.e. before results can be improved; processes must be improved, as opposed to result-orientation where outcomes are all that counts (Imai, 1997). The principle has at least two practical consequences for the improvement process. First, management’s main responsibility is to stimulate and support the effort of organizational members to improve processes. At the same time, employees must demonstrate a strong commitment to identifying problems and looking for opportunities to improve the implementation of processes. It is also necessary to keep in mind that Kaizen is based on a low-cost and common-sense approach to introduction of changes.

Process improvement projects

Processes require continuous improvement for various reasons. These may be: the pressure to reduce costs of implementation, the need to shorten their duration, growing competition, growing customer requirements, individualization of their needs, etc. Meeting these requirements involves not only organizational and technical solutions, but also affects personal aspects. This results in growing requirements for employees, who "take on" the customer requirements. It is also necessary to note that the improvement of processes becomes more significant the more the management wants to increase the company efficiency. According to Nair et. al. (2011), process-improvement projects are an important cornerstone for continued business success.

Over the years, initiatives regarding process improvement have evolved from projects aiming at improvement in production processes, focused on improving quality, decreasing waste, etc. towards introducing them throughout the organization, also with regard to administrative, office and service processes. Improvement projects may concern reorganization of entire processes, as well as aim at solving specific problems emerging in their performance. They may also support a larger program, related e.g. to introduction of various management systems to the company. Literature review on the subject allows for stating that currently the most often implemented process improvement projects are projects based on Lean, Six Sigma and Lean Six Sigma methodology (Spector, 2006; Näslund, 2008, Chakravorty, 2010, Nair, 2011).

Process improvement projects can be classified differently, e.g. from the point of view of the subject, the area of impact, the time of implementation, the scope, the role of process competence center in the project, the way the project is organized, etc. The subject criterion



enables division of projects into those, which aim at reorganization of processes, and projects, which focus on process optimization. At the heart of those projects lies a specified problem, which is so apparent that it requires a solution. When it comes to the impact area, it can be stated that the effects of completed projects may be detectable only within the given process, but may also affect performance of other processes, as well as improvement projects. Bearing in mind the mutual impact of implemented processes, the effects of many improvement projects spread onto other processes. Due to the implementation time, we can refer to projects with a longer and shorter time perspective, but these are, by assumption, usually projects lasting 6-8 weeks. The time perspective is associated with the scope of the project; the greater it is the more it automatically extends the implementation time. Different time will be required for a project concerning introduction of many changes in the process and for a project related to introduction of minor improvements. Implementing the BPM initiative, either as a project or as a program, it is essential to individually adjust the scope and to have different BPM flavors in different areas of the organization (Rosemann and vom Brocke, 2015, p. 106). The last criterion refers to the way a project is organized, namely the division of work between the project participants and laying down the principles of decision-making, communication and cooperation. At times, process-improvement projects may require an adaptive problem-solving approach rather than a hierarchically driven structured method, especially when complexity and uncertainty are present (Pavlak, 2004). An important role here is played by the entity initiating the project and the process competence center, which - at the stage of intensive development of process orientation - may play an important role and in a natural way initiate and support implementation of improvement projects.

A very important role in process-improvement projects is played by the organizational context, understood as the specific, individual conditions of functioning of companies, their opportunities and limitations in the conducted operations. Process-improvement projects typically have somewhat blurred boundaries between the project and the environment (Ekstedt et. al., 1999). For this reason, they require high flexibility in implementation. In the literature on the subject, close attention is paid to strong enthusiasm that accompanies the initial stages of their implementation, but also to the quick loss of motivation and commitment to maintaining the effects of the completed project. For example, the results of conducted research suggest that almost 60% of all corporate Six Sigma initiatives do not yield the desired results (Chakravorty, 2010). Employees involved in the process improvement project in the initial phase gladly undertake all necessary works, engage in collection of data on the process implementation environment. They also identify problems and suggest possible improvements, so as to achieve the planned goal of the project. At this stage, top and middle managers often strongly stress the importance of the project and inform employees of the improvement initiative being the top priority. If the project team achieved the planned purpose, the improvement project is considered a success. Then the phase of maintaining the project effects should take place, however in practice various problems may appear at this stage and often a return to old methods of performing operations in processes may take place. This happens particularly when employees, devoting a lot of attention to the matters of project implementation, neglect their daily responsibilities. Pressured by their direct superiors, who require diligent performance of daily obligations, employees may be prone to returning to old, less effective methods of performing improved processes. Such situations may strongly discourage from implementing subsequent projects, and employees may lose the sense of meaning of the idea of continuous improvement of processes. In practice, in the final stage of the project, team members are often unable or unwilling (for the reasons described above) to face the tasks of re-improvement and they may eventually cease to make efforts towards it. Moreover, this situation is often connected with the lack of reliable evaluation of the obtained results, as well as the lack of incentives to undertake further initiatives.



Research methodology

The present paper is based on a pilot study, whose goal was to explore the kinds of improvement projects introduced by companies when improving business processes. An attempt was made to indicate distinctive features of this type of projects and difficulties that accompany their implementation. These considerations were linked with process maturity of the examined companies and the management concept applied by them.

To assess these issues, an online questionnaire designed by the author was sent directly to desired recipients via e-mail. The selection of the sample was intentional. The recipients were people working in companies that have introduced management systems focused on quality (ISO 9001, Six Sigma), cost reduction (Lean Management) or on these two aspects together (Lean Six Sigma). Process improvement plays the leading role in the assumptions of these management concepts. The author knew the respondents from all kinds of courses/trainings on process management and quality management. To conduct the study, diagnostic survey method was applied in form of questionnaire survey. The survey was divided into two parts. The first part was concerned with diagnosis of process maturity of the examined companies. On the basis of the CMMI model, which is currently one of the most popular models of process maturity (Albliwi et al., 2014), five descriptions pertaining to production, administration (office) and service processes were formulated. They concerned:

- process orientation on the internal and external customer,
- identification and description of processes,
- measurement of processes,
- predictability of process implementation,
- process improvement initiatives,
- ownership of processes (process owner),
- responsibility for implementation of processes,
- availability of resources for implementation of processes.

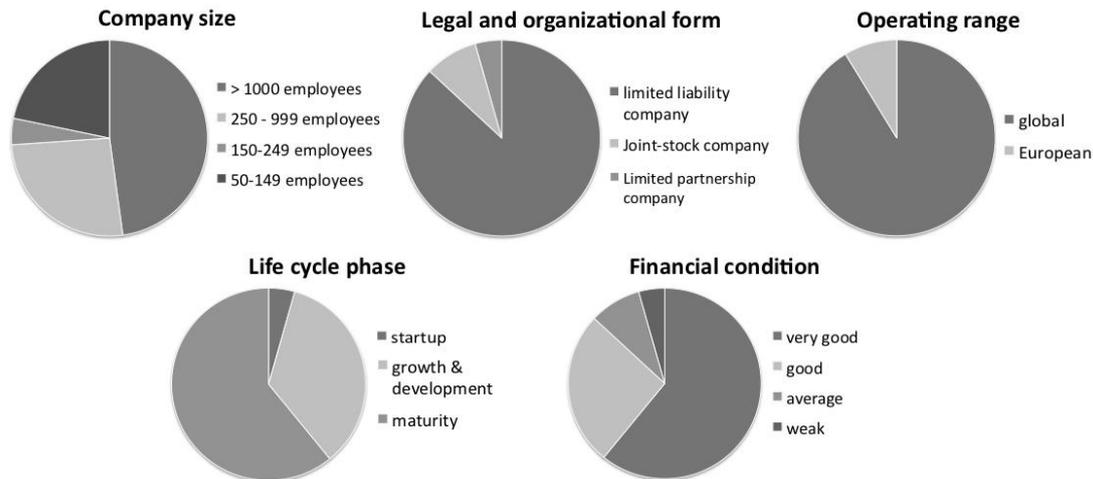
This section of the questionnaire used a 6-point scale of responses, from "absent" to "very much present". The purpose of filling out the survey was to select a situation most corresponding to the reality present in the company they represented.

The second part concerned process improvement projects. It contained both questions with an option of single and multiple choice, as well as indicating an answer on a proposed scale with the range described above. The respondents were asked for reasons of process improvement, types of process-improvement projects and characteristics of these projects as compared to other projects implemented in the companies, as well as management concepts that accompany the process improvement initiatives. An important part of the questionnaire was constituted by questions on the difficulties in the implementation of improvement processes, the attitudes of employees and the management staff. The questionnaire also contained questions about projects that had not been completed, and the goals of which had not been achieved. Altogether, the survey comprised 30 items.

The study was conducted in the period between 8 January and 8 March 2018. Seventy people were asked to participate in the study, and the surveys were filled out by 23 people, return rate at the level of ca. 33%, full completeness. The group of respondents consisted of both managers of production areas, shift managers, leaders of production processes, as well as lean managers, continuous process improvement engineers, continuous improvement specialists, quality engineers, the chief technologist, and the logistics director and manager.



The examined sample was dominated by large companies with global range of operations. These were mainly limited liability companies with very good financial condition, in the maturity phase. Figure 1 depicts the characteristics of the studied companies.



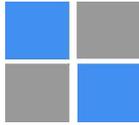
Source: author's work based on author's research

Fig. 1. Characteristics of the studied companies

Research results and discussion

The analysis of the conducted study allows for stating that the examined production companies pursue improvement initiatives in both production as well as administration and service processes. However, when comparing the frequency of their implementation, a clear difference can be noticed between them. Projects improving production processes are often implemented once a month (12 indications) and once a quarter (6 indications). The respondents suggested that they result from the current, still changing needs of the customers. These companies have well functioning employee suggestion systems, encouraging continuous improvement. With regard to administrative processes, the most frequently indicated answers suggest that the processes are either not improved at all (9 responses) or improvement initiatives are undertaken only once a month (10 responses). Few respondents pointed to their improvement once a quarter (2 responses), once every six months (two responses), once a year (1 response), once every two years (1 response).

Yet another frequency of implementation can be noticed in the case of service processes. Responses were to the same degree dominated by the answers: "such projects are not carried out", "they are carried out every month", "they are carried out every six months". Attempts were made to look for a connection between the frequency of process improvement initiatives and the main reasons for process improvement. However, these links are not clear, since - both in the case of production, administration and service processes - the main premise of implementation of process-improvement projects is the pressure to improve the companies' results. However, in the case of administration processes, an additional factor seems to be attributable in recommendations of external auditors and needs reported by the customers. The latter are also visible in the case of service processes. On the other hand, certain relationship can be noticed between introduction of the Lean Management concept in the examined companies and the premises of process improvement and the goals of improvement projects. Lean focuses on improvement in effectiveness of implemented processes, aiming at creation of products and



services at the lowest costs and as quickly as possible (Antony, 2011), which, in turn, goes hand in hand with increasing the obtained results.

The respondents were, first of all, employees from the production field, therefore they usually participated in the following projects:

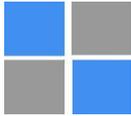
- projects related to introduction of the 5S method, aiming at improvement in work organization on production positions,
- projects concerning fundamental reorganization of production processes,
- Kaizen projects focused on solving qualitative problems and long duration of production processes.

As regards Poland, similar observations were presented by M. Urbaniak (2010), whose research indicates that 5S projects and projects based on the Kaizen philosophy are usually introduced by production companies employing more than 50 people, with international range of operation, offering products for the B2B market.

The study conducted by the author also indicates a very low level of implementation of DMAIC projects (3 people) and DMADV projects (1 person). This, in turn, is currently different on the American market, where the Six Sigma and Lean Six Sigma methods enjoy great popularity among large companies (Chakravorty, 2010; Antony et al., 2011). Data presented in the Aberdeen Group Report indicate that these enterprises take into account the following reasons: operational improvement in implemented processes by limiting costs (75%), improvement in standardization of activities (75%), effective achievement of the assumed goals (72%), decrease in internal non-conformities (32%) (The Six Sigma Report...2006).

The responses obtained in this area may be referred to the management concepts present in the examined companies. They are definitely dominated by Lean Management; twenty-two entities have introduced the principles of this concept and in their everyday operations use such tools as: “5 x why?” method, value stream mapping or Problem Solving. At the same time, next to Lean Management, companies have introduced the quality management system of ISO 9000 series (16 responses) and declared the presence of the Kaizen philosophy (16 responses). To a smaller extent, they pointed to the presence of the Six Sigma method (7 entities) and the Lean Six Sigma concept (8 indications). The small presence of the last two is associated with the low execution of DMAIC and DMAICV projects or a total lack of their execution. On the other hand, the lack of connection between the presence of the Kaizen philosophy in the examined companies and the bottom-up project implementation initiatives may be surprising. The respondents concluded that the main initiators of improvement projects are the management board and department heads, while process performers were indicated only in five cases.

The vast majority of the surveyed held the opinion that improvement projects contribute to the improvement in process results; 18 people concluded that positive associations can be seen between them. However, the study did not attempt to examine how long the effects of the completed project remained and how they affect the results of the whole company, and, as it emphasized by Breyfogle (2010), teams often report achievements incorrectly, i.e. the sense of success is false. For this reason, in order to improve the probability of success of improvement projects, the same author suggests that "however, for long-lasting success process improvement efforts need to be part of an overall enhanced business management system. This structured business system needs to integrate predictive scorecards with targeted strategy creation that blends analytics with innovation, and which leads to the creation of functional goals that pull for the creation of enterprise-as-a-whole-beneficial improvement projects. An enterprise's financials are a result of the integration and interaction of its processes, not of isolated individual procedures. Using a whole-system perspective, one realizes that the output of a system is a function of its weakest link or constraint". This issue is therefore a serious limitation of the conducted study, since in many situations, it is necessary to consider many levels of project success along with integration of many management factors (Shenhar, 2001; Shenhar et al., 2002).



The survey questionnaire also contained a question about the difficulties that had been observed when implementing process improvement projects. The respondents mainly indicated general fear of change of the team members, failure to meet deadlines for implementation (many projects had not been fully implemented - the assumed goals had not been reached - 16 indications), difficulties in access to the required resources, inactivity of the project's sponsor. Various kinds of restrictions in implementation of process improvement projects are pointed out e.g. by Breyfogle (2010), who suggests that, when pursuing this type of projects, we should consider the theory of constraints (TOC).

Pointing out further difficulties in improvement project implementation, it is worth paying attention to the fact that some respondents signaled lack of commitment among project team members, lack of consistency in the objectives of particular team members and their lack of experience.

People implementing process improvement projects also indicated excessive additional workload during project implementations. Consequently, in their opinion, many project activities are taken under time pressure, with no time for a well-thought-out analysis. The same problems were noticed by Chakravorty (2010) in his research, and he compares them to Six Sigma projects currently implemented in many American companies.

In respondents' opinion, there are too few incentives, encouraging to both work on the improvement project and perform daily duties. The support provided to the project team members, in the opinion of the surveyed, is insufficient. They claim that actions in this respect are feigned. Meanwhile, the literature on the subject considers e.g. involvement in leadership, selection of the project's purpose, use of improvement specialists, application of the structural method, psychological safety in process improvement teams as necessary to ensure the planned results of the project (Nair et al., 2011).

From the perspective of other projects being implemented in the company, process improvement projects are distinguished by:

1. high priority of implementation
2. focus on quick, detectable results,
3. connection with a larger program of changes,
4. low budget for implementation.

The present study was also aimed at determining the process maturity level of the examined entities and confronting it with the implementation of process improvement projects. Among the examined entities, the lowest process maturity level according to CMMI were not indicated by any respondent. The second level was suggested by five respondents, the third level by eight, the fourth level by ten, and the highest fifth level was declared by two respondents. The most common fourth level of process maturity signals that "processes in the organization are measured. A fully-defined measuring system appears. Processes are managed in terms of quantity. Their implementation is monitored, and the causes of variability are analyzed by means of the statistical process control method. Processes have a largely predictable course, are targeted at fulfillment of the customer expectations and accomplishment of strategic objectives. The process management improvement process is applied, using modern tools".

The declared process maturity level corresponds to the opinions of the surveyed, who - pointing out the strengths of the implemented processes - stressed strong and very strong focus on external customer needs and expectations, as well as strong focus on economical consumption of the possessed resources and connection between their implementation and strategic goals. This issue is important, since - as stated by Bessant and Francis (1999) - to develop CI capacity, organizations must transition to the development level, where strategic goals are communicated and implemented, and improvement actions are guided by the process of monitoring and measuring with regard to those strategic goals.

The respondents also noticed the weaknesses in the implementation of processes, among which they indicated high consumption of resources and their uneven distribution. The



description of interrelations between processes also requires improvement. As regards office processes, the respondents emphasized that their greatest weakness is the long implementation time, causing dissatisfaction of internal customers (15 indications). The respondents also provided their opinion on implementation of service processes, where they saw the main weakness in the high cost of their implementation. They also indicated coordination problems in the provision of services between processes. In spite of the indicated difficulties, the obtained results of projects encourage their further implementation, as stated by 16 of the examined people.

Conclusions

The analysis made in the study allow for stating that, in the case of production, administration, as well as office processes, their improvement with the use of projects requires consideration of the entire complexity and scope of the subject matter of the improvement and, above all, coordination of the various management concepts and methods involved in this task, such as Lean Management; Kaizen, Six Sigma or Lean Six Sigma, BPM. It is also necessary to take into consideration the fact that these concepts, in the specific company, may function on different levels of process maturity, which may facilitate or hinder improvement initiatives. If we considered projects to be a proper tool for process improvement, then it is necessary for them (projects and processes) to be able to proceed effectively over time, supporting each other rather than interrupting (Hab and Wagner, 2010). Therefore, it is desired to ensure their interaction (coordination, synchronization). Improvement of single processes must proceed in conjunction with other processes, taking into account the internal chain of connections between them, as well as the theory of constraints. Both quantitative (statistical) and qualitative tools, such as auditing (internal and external) as a method of investigating and discovering the potential for improvement of the system as well as tools for testing and checking the compliance with procedures and rules of conduct can be helpful here. The success of a project implementation involves clearly specified objectives, the best support of the management, competent project manager and team members, sufficient availability of resources, appropriate control mechanisms, appropriate communication channels with possibility of giving feedback and responding to customer needs. These issues, considered to be the key factors of success of projects, have been noticed in the subject literature for a long time (Slevin and Pinto, 1986). By undertaking process improvement initiatives, we can, as a consequence, improve quality, increase flexibility or punctuality of processes to the level expected by customers and, at the same time, reduce costs within the company.

The reasons for undertaking process improvement projects can be divided into several groups. The first premise for the need for process improvement involves growing customer requirements. The second source of the need for improvements involves instability and excessive variability of processes, which are reflected in the lack of implementation of processes required by customers. Adding to this are reasons related to the companies' pursuit of the growth in business effectiveness. In all the above cases, it is necessary to improve processes, so that they would fully meet the basic requirements at the lowest cost possible. In order to be able to ascertain the impact of the project implementation on the process results and the results of the whole company, it is necessary to - already at the initial stage of the project - formulate expectations that customers have for the analyzed process. These requirements are usually imposed in a descriptive manner. To allow for stating the extent to which the examined process meets these requirements before and after the end of the project, it is necessary to introduce measures translating the wishes of customers into clear and unquestionable numeric values.

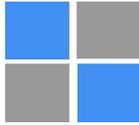
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