



PECULIARITIES OF THE BUSINESS PROCESS MANAGEMENT LIFECYCLE AT DIFFERENT MATURITY LEVELS: THE BANKING SECTOR'S CASE

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Received 3 May 2012; accepted 14 June 2012

Abstract. *This article analyses the concepts of the Business Process Management lifecycle and maturity. Depending on the author, a different level of detail and structure is distinguished within the cycle, but one that maintains the optimal structure size and has been developed by practitioners in the Business Process Management field is the Association of Business Process Management Professionals model. Numerous Business Process Management maturity models that evaluate one or more factors' dimensions are created, as the Rosemann and Bruin model has been chosen as a supporting model for this area, which allows not only to evaluate strengths and weaknesses of the current situation, but also to create improvement guidelines and make a comparison with other organizations or processes. In order to identify Business Process Management lifecycle and maturity models' dependability of features, an empirical research was carried out in Lithuania's commercial banks sector by conducting an anonymous survey of owners and participants of the main processes (sales, customer service, risk management, IT and quality control). The article reveals summarised Business Process Management maturity assessment results and an analysis of all participating banks. According to research data, the Business Process Management lifecycle and maturity models have been integrated, and guidelines for application of the models have been prepared using the continuous improvement concept. The article also covers the Business Process Management maturity house model created by the authors.*

Keywords: business process management, business process maturity, business process lifecycle, business process maturity in the banking sector.

Reference: Ruževičius, J.; Milinavičiūtė, I.; Klimas, D. (2012). Peculiarities of the business process management lifecycle at different maturity levels: The banking sector's case. *Issues of Business and Law*, 4, 69–85.

Introduction

The main reasons why organizations choose the Business Process Management (BPM) are the need to constantly develop and improve organization of work as well as improvement of work itself, which is necessitated by competitive conditions in which companies operate. External

regulations, such as ISO standards, the SOX (Sarbanes Oxley) Act and the ITIL (Information Technology Infrastructure Library) approach in the field of IT, are no less important.

In general, the term “maturity” has been offered in other management subjects as a way to assess “the state of completeness, perfection or preparation” and “completeness and perfection of growth or development” (Rosemann, Bruin, 2005a; Rosemann, Bruin, 2005b; Rosemann *et al.*, 2004; Rosemann, Dumas, 2007; Ruževičius, Klimas, 2009).

Since the creation of the famous Capability Maturity Model, CMM in 1980, designed for evaluation of the software development process (Rosemann, Bruin, 2005a; Rosemann, Bruin, 2005b), numerous BPM maturity models have been created that claimed to be able to take organizations through the process of increasing maturity, whilst establishing competitive advantage. However, most models are focused on only just one BPM evaluation dimension, and only a few have gained popularity in practice. There are just a few BPM maturity models that are designed specifically to include a wider range of factors, namely, the Business Process Management Maturity (BPMM) model by the OMG group (2008), Hammer’s (2007) Process Audit model, the maturity models developed by Melenovsky and Sinur (2006) and Rosemann and Bruin (2005). None of the above models directly include the BPM lifecycle as a factor in maturity evaluation, although it is an important aspect in analyzing organizations’ BPM. According to McCormack (2009), the concept of the BPM or the process orientation adaptation within an organization arises from the understanding that processes have lifecycles or, in other words, development stages that can be clearly defined, managed, measured and controlled in time.

Creating a new BPM maturity model that would take this aspect into account would be one way to resolve this problem, but creation of a new maturity model is a complex, expensive and time-consuming project (Wolf *et al.*, 2010). This problem can be solved by choosing one of the existing BPM maturity models and integrating the BPM lifecycle model into it.

The purpose of this article is to reveal the research results of how a BPM maturity level affects BPM lifecycle and to reveal the integrated model of these concepts, as well as to provide its application guidelines.

Article objectives:

1. To choose the most suitable BPM lifecycle and maturity models.
2. To carry out a study of BPM maturity assessment in organizations and to identify changes in the BPM lifecycle depending on the BPM maturity level.
3. To integrate the BPM lifecycle into a chosen BPM maturity model and to provide guidance on its application.

The object of this research is the lifecycle and maturity of core business processes management in the banking sector.

Research methods. Systematic and comparative analysis of scientific articles and monographs, modelling, benchmarking, survey.

1. BPM lifecycle model

The main task of the BPM is striking a balance between individual process components – outputs, inputs, resources, logical structure of project execution, objectives – and their management according to the Plan-Do-Check-Act principle and procedural interaction. If such an alignment is achieved, results created by processes within an organization should improve the aspects of process quality as well as quantity, thus improving the efficiency of the entire organization. Balance is sometimes achieved through a single initiative, but the iterative approach forms a repetitive process management lifecycle, which helps organizations to achieve, sustain and improve the quality of processes. In order to simplify the analysis of this approach, a lifecycle describing the change of the management process from start to finish and a

cycle meaning a continuous process (zurMuehlen *et al.*, 2004; zurMuehlen *et al.*, 2006) are is used.

The concept of the BPM lifecycle is relatively new, the first such models were introduced at the end of the last decade; Smith and Fingar (2003) are considered to have provided the initial model.

Several other models that are conceptually similar, but have a different level of detail and structure have been developed by using it. A summary and comparison of the BPM lifecycle concept according to the models designed by Smith and Fingar (2003), zurMuehlen *et al.* (2005), Netjes *et al.* (2006) and the Association of Business Process Management Professionals (ABPMP) (2009) are presented in Table 1.

Table 1. Comparison of BPM lifecycle models

(source: designed by the authors on the basis of Scheithauer *et al.*, 2008; Smith *et al.*, 2003; zurMuehlen *et al.*, 2005; Netjes *et al.*, 2006; ABPMP, 2009)

Phase Name	Author	Smith and Fingar	Netjes <i>et al.</i>	zur Muehlen <i>et al.</i>	ABPMP
Planning/Strategic Analysis		+	+	+	+
Process Analysis					+
Process Design		+	+	+	+
Process Model		+	+		+
Process Implementation		+		+	
Process Execution		+	+	+	
Process Control		+	+	+	+
Process Improvement/Transformation		+		+	+

*Lifecycle phases identified in separate models are marked with the plus sign

Eight main BPM lifecycle phases have been identified while analysing scientific literature, but each model has different combinations and the level of detail. A Planning/Strategic Analysis is identified in all analyzed models, as it is an essential step in introducing the BPM, when the current organizational strategy and its goals are analysed. The results of the Strategic Analysis are considered, and a process-oriented strategy and an organization's plan to implement it are developed. These processes should contribute to the implementation of the organizational strategy, and individual goals of such processes should accommodate strategic organizational goals.

A Process Analysis is identified only in the model developed by the ABPMP (2009), which focuses on the analysis of each individual process – a general understanding of the current state of processes and their conformity to specified business objectives.

Depending on the results of the Strategic Analysis and the Process Analysis, objectives and strategies are transformed into business level process diagrams during the process design stage. This phase is usually carried out using graphical standards, such as Flow Diagram, Petri Nets or Business Process Modelling Notation (BPMN).

Process modelling is the next step; it includes steps to develop an existing or desired business process model. Transforming the designed process model to a business model is a crucial step to ensure the success of the BPM, as discrepancies between the designing and modelling phases often arise. Such errors occur when it is not understood that the objective of the process design phase differs from that of the modelling phase. The models developed by

Smith and Fingar (2003) and zurMuehlen (2005) focus on the BPM not only as a management concept, but also allow to couple it with information technologies, hence the process implementation phase is identified, during which an infrastructure necessary to support the business process is developed, and the designed process is integrated into existing information systems.

Process execution is not usually identified in the BPM lifecycle or is identified in parallel with process control, as control usually starts at the very beginning of process execution. The point of the BPM complete lifecycle is that decisions are made and processes are improved or transformed according to cycle results.

After a comparison of the lifecycle of BPM models, the model suggested by the ABPMP is used for the purposes of further research as a supporting one, since it contains the main lifecycle phases, maintains the optimal structure size and has been developed by practitioners in the BPM field.

The lifecycle model as produced by the Association of ABPMP (2009) contains the following main business process management lifecycle phases:

1. Planning.
2. Analysis.
3. Design.
4. Modelling.
5. Measurement and control.
6. Transformation.

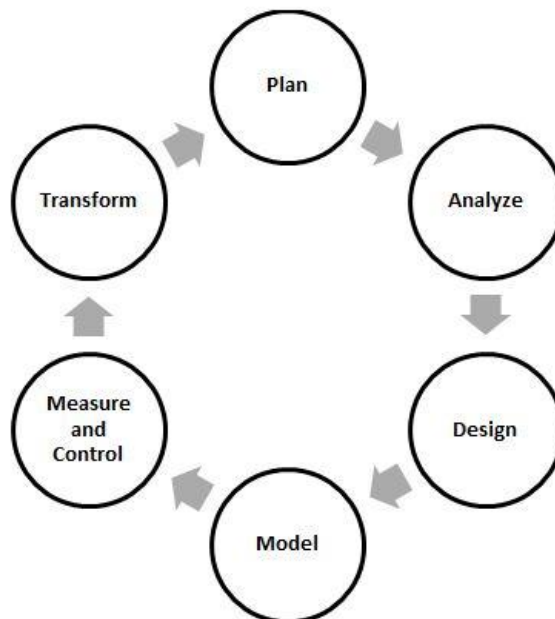


Figure 1. Business Process Management lifecycle

(source: ABPMP, 2009)

Figure 1 demonstrates that, based on the lifecycle of the chosen Business Process Management, developing a process-oriented strategy and an organizational plan is the starting point; the first phase of the cycle is completed by the transforming and developing processes, and the cycle is repeated continuously.

2. BPM maturity models

Literature analysis has shown that the maturity models offered by the OMG (2008) group, Melenovsky and Sinur (2006), Hammer (2007) and Rosemann and Bruin (2005a; 2005b) are the best known and contain more than one dimension to assessment.

Gartner has developed a BPM maturity model containing six phases. Its advantages, as compared to other models, are that it provides not only an abstract division of phases, but also details typical actions following which an organization shifts from one phase to another, the critical success factors of each phase, the necessary competencies, and possible challenges (Melenovsky and Sinur, 2006).

One of the most recent BPM maturity assessment models appeared in the article “Process and enterprise maturity model (PEMM)” by Michael Hammer in the Harvard Business Review magazine in 2007. This Process and Enterprise Maturity Model combines a number of existing maturity model ideas and produces individual process and organization maturity models that can be applied together or as separate maturity assessment models. One of the main ideas of the model is that a certain degree of process maturity can only be reached once an organization has reached a sufficient level of maturity, so it is impossible to make a detailed and correct process maturity evaluation if the organizational maturity level is not known.

The Rosemann and Bruin model has been chosen as a supporting one in this study, since it has been developed using both theoretical and practical research and is seen as the most complex and widest BPM maturity models of this approach. Moreover, the model is widely accessible and free of charge.

Unlike other BPM maturity models, the Rosemann and Bruin BPM maturity model can be used as a descriptive tool (allowing to establish the strengths and the weaknesses of the current “as-is” situation), a normative tool (creating guidelines for development) and a reference tool (allows to compare and evaluate an organization according to the standards in the business field and other organizations). A multidimensional model that combines different components (factors, stages and scope) has been developed in order to meet these requirements (Rosemann, Bruin, 2005a; Rosemann, Bruin, 2005b). The factors are independent variables (strategic alignment, leadership and culture, people, governance, techniques, information technology), where the success of the BPM is a dependent variable.

BPM maturity stages in this model have been chosen on the basis of the Capability Maturity Model (Paulk, 2002), and there are five of them: initial, repeated, defined, managed and sustained. During the initial stage, an organization does not take any or takes only unstructured and uncoordinated action of Business Process Management. The first documented processes appear during the repeated stage, the management and staff involvement increases, and attempts are made to structure the methodology and to find common standards. A wider use of technology in BPM communication, organizing comprehensive and formal BPM training sessions appear during the defined stage. During the managed stage, organizations have established Process Governance Improvement Centres, combine business and IT during process governance and have formal process governance positions and responsible staff members appointed. During the sustained stage, the organization maintains a strong process governance position not only at the strategic level, but also in operational management (Rosemann, Bruin, 2005). It is not crucial for the organization to reach the last phase of maturity, but organizations should aim for the phase that is suitable and adequate for the set goals. It is advisable to achieve at least the third stage of Business Process Management maturity for process-oriented organizations.

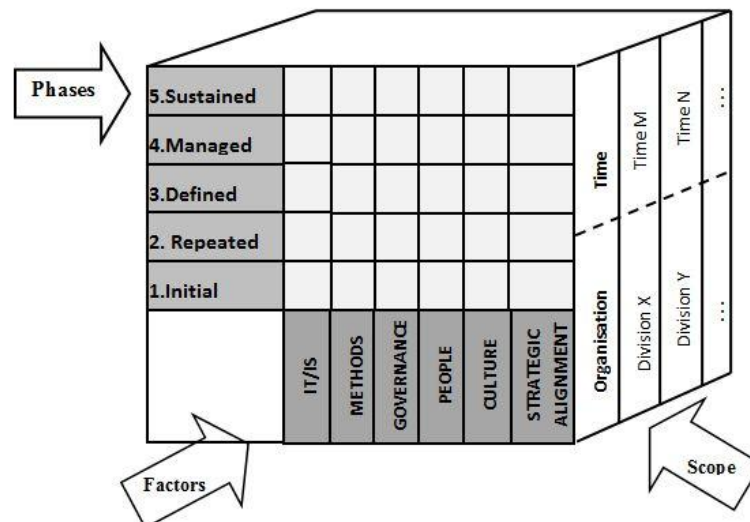


Figure 2. BPM maturity model by Rosemann and Bruin
(source: Rosemann, Bruin, 2005a; Rosemann, Bruin, 2005b)

After several extensive empirical and theoretical studies, Rosemann and Bruin (2005a) produced a final multidimensional BPM maturity model shown in Figure 2. Unlike other models, this one contains an additional dimension of model scope consisting of two factors: organizational unit and time. An organizational unit indicates what the model is applied to and what is analyzed – the entire organization or specific departments/processes. This segmentation is particularly relevant, as different departments have reached different BPM maturity in many organizations, and in order to analyze the organization in detail, the contribution of each department must be taken into consideration.

As mentioned earlier, a comparative analysis is one of the BPM maturity model's objectives; as a result, the time dimension has been added to this model, where a particular moment in time when the analysis is carried out is recorded.

3. Research methodology

An empirical study was carried out in January-March 2012. An anonymous online questionnaire was used for the study, and the method of convenience sampling was selected. The questions were formulated to accommodate the study's objective and individual tasks. A short explanation of assessment criteria and models selected preceded the main part of the questionnaire. The main part of the questionnaire consisted of seven parts – the first six parts were designed to research each individual BPM maturity factor in an organization using the Rosemann and Bruin model, and the last part was designated to identify the phases of the BPM lifecycle. The Likert scale with values from 1 to 5 was used in these parts, and data were processed using the Likert method, with the answers of one respondent summed to all statements relating to one criterion in order to obtain an average criteria rating of BPM maturity. General questions related to processes were asked in the last part of the questionnaire in order to establish the number of process participants, the presence of the obvious owner and the responder's role in a process; Nominal and Ordinal scales were used.

According to the BPM maturity research performed by IDS Scheer, in which more than 1,000 companies from Europe and the United States of America took part, the highest BPM maturity level measured in a sector is reached by car manufacturers; the banking and insurance sectors come second with nearly the same result. As the car manufacturing sector is practically

non-existent in Lithuania, the commercial banking sector has been selected to perform the empirical study.

It is very important that the selected respondents would represent the population when conducting the survey. Since the population studied is less than 50,000 units, the number of respondents is calculated using the following formula (Dikčius, 2005):

$$n = \frac{p(1-p)}{\left(\frac{e}{z}\right)^2 + \frac{p(1-p)}{N}}, \quad (1)$$

where n is the sample size; z is the units of standard error extent in normal distribution that will match the degree of desired reliability (it is noted that variable $z=1.96$ to obtain 95% reliability; $z=2.58$ to obtain 99% reliability); p is the proportion of the population that matches the desired characteristics; e is the selection error (this error always exists when only a part of the population and not the entire population is researched); N is the number of members forming the population.

Using the first formula, it is obtained that in order to conduct a representative survey, the size of a sample is five commercial banks. Where the size of the population is 8 commercial banks that hold a licence from the Bank of Lithuania (Bank of Lithuania, 2011); a reliability of 95% is chosen by making an assumption that the population's proportions are equally divided (i.e., $p=50\%$, because multiplying p and $(1-p)$ within such proportions produces the maximum product) and empirical research is carried out with a sampling accuracy of 3%. It was aspired to get one owner or participant from each main process (Sales, Customer Service, IT, Risk Management and Quality Control) to take part in the survey. 25 questionnaires have been used in total to obtain the survey's results.

4. Research results

Cronbach's Alpha coefficient was used to determine the alignment of the Likert scales'; in all cases, it was higher than 0.7, which indicates that the scales used were consistent.

In order to establish a correlation between BPM maturity and lifecycle, Pearson's correlation coefficient was used. The results showed that a statistically significant correlation existed, as the Sig. (2-tailed) was less than 0.05 and was equal to 0.006. The strength of the correlation is on average positive, because Pearson's correlation coefficient equals 0.532, i.e., between 0.4 and 0.6. An analysis of the study results revealed that the correlation of each BPM lifecycle and its maturity was statistically significant, as the significance coefficient of the Paired-Samples T test is always less than or equal to 0.05.

Almost an equal number of process owners and participants took part in the study, suggesting that all further assessments should be reflected objectively. Repartition of the respondents in such a way allows to partly eliminate one of the risks of the study, where the process owners are often inclined to evaluate the process better and more favourably than the rest of the participants.

According to the Rosemann and Bruin model, the maturity of BPM equals the average rating of all individual maturity criteria. Before analyzing the results, the alignment of the scales used was tested taking into consideration each maturity factor and lifecycle. Cronbach's Alpha coefficient was higher than 0.7 in every case, which indicates that the scales used were consistent. The study results are produced below, identifying the BPM maturity level of each bank that took part in the survey. As the study was anonymous, the banks are identified by the letters A-E in order to protect data. The maturity of all core BPM processes is in the range of the

second (repeated) maturity level to the fourth (managed) maturity level. According to the guidelines of the authors of the BPM maturity model, BPM maturity in an organization equals the lowest process BPM maturity – in this case, the maturity of the banks is in the range of the repeated phase to the managed phase.

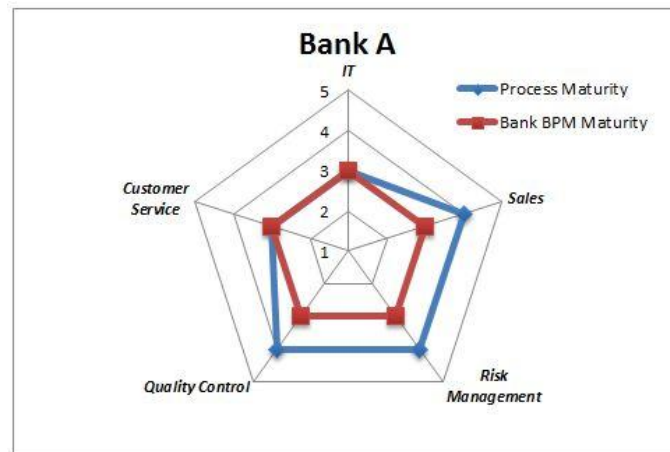


Figure 3. BPM maturity of the core processes and overall maturity in Bank A
(source: designed by the authors)

The evaluation of BPM maturity of core processes in Bank A revealed that overall BPM maturity in the Bank reached level 3, i.e., it is equal to the minimum value in the assessment of individual processes. Some of the processes are at levels 3 and 4 of maturity, i.e., at the defined and managed levels. Figure 3 demonstrates that the bank's IT and Customer Service processes are weaker, and this determines the bank's overall BPM maturity, which has reached the third and not the fourth level. The Bank could improve its overall BPM maturity level by focusing more on Customer Service and IT process initiatives, e.g., by improving existing customer service business systems that would enable to serve customers faster and to provide a better quality service; another solution could be to identify responsible process staff members in both processes.

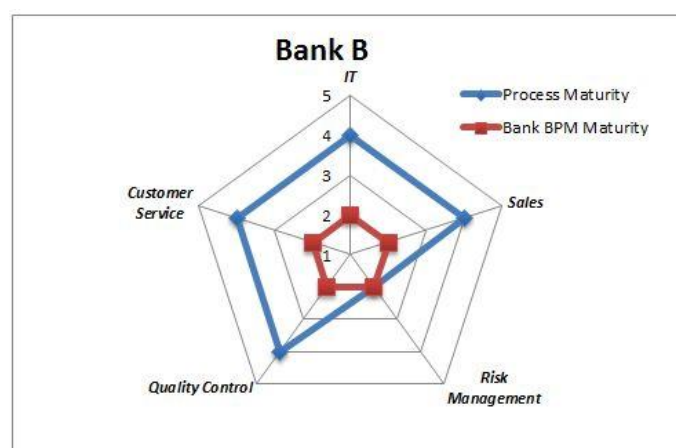


Figure 4. BPM maturity of the core processes and overall maturity in Bank B
(source: designed by the authors)

Figure 4 demonstrates that the overall BPM maturity of the second bank reached only repeated level, which is due to the risk management process that lags behind other processes and

has only reached level 2, whilst the rest of the processes have reached the managed level. In this case, Bank B should seriously consider critical success factors of the risk management process and to focus more on overall management aspects and management aspects of the process' IT, culture, participants, existing methods and strategic alignment. The risk management process is extremely relevant in the banking industry and should be managed in the best possible way, because, as experience shows, unmanaged risk can lead to the bankruptcy of a bank. Therefore, in order to balance business processes, the bank needs to increase the maturity of risk management process to the defined or managed level and to maintain the existing situation of other processes.

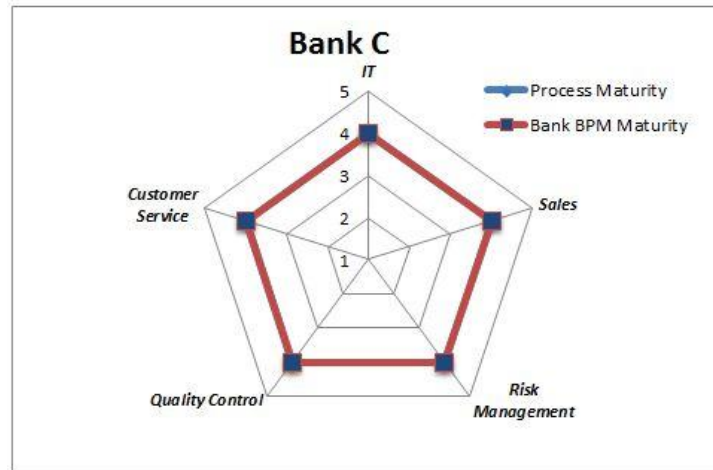


Figure 5. BPM maturity of the core processes and overall maturity in Bank C
(source: designed by the authors)

BPM maturity in Bank C is well-balanced, as all the core processes have reached the same managed maturity level. The bank should start BPM initiatives in all core processes if reaching the sustained maturity level is desired. In that case, in order to successfully achieve the sustained level, Bank C should make a strategic decision to improve BPM, as changes would affect the entire organization. The required tangible and intangible investment should also be assessed against the future benefit.

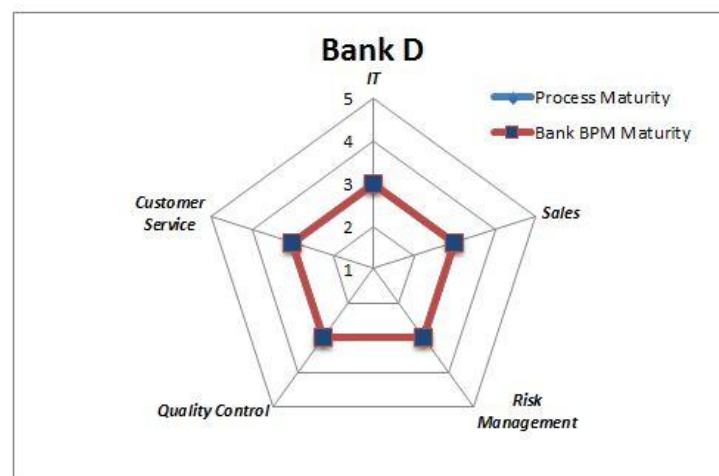


Figure 6. BPM maturity of the core processes and overall maturity in Bank D
(source: designed by the authors)

The assessment of BPM maturity in Bank D reveals that, just as in the case of Bank C, its business processes are well-balanced and they reached the defined level. At this level, most of the employees are involved in BPM initiative; however, the lack of strategic-level decisions as well as organizational consolidation and definition of common objectives of processes can be observed.

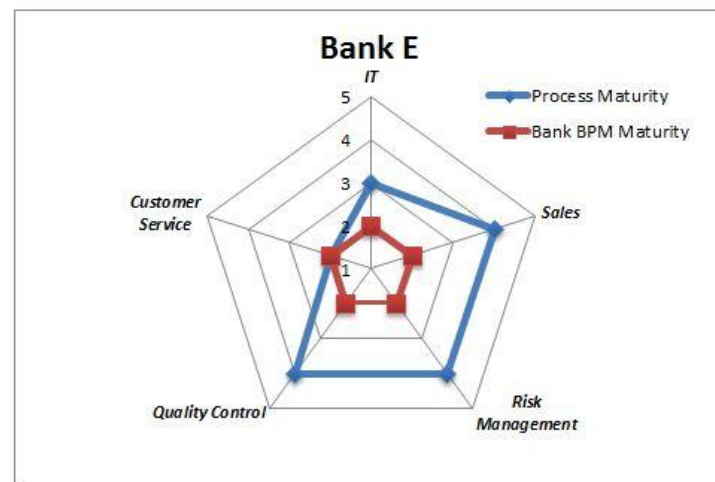


Figure 7. *BPM maturity of the core processes and overall maturity in Bank E*
(source: designed by the authors)

Figure 7 shows that BPM processes maturity levels in the last bank, Bank E, have the highest amplitude. The Customer Service process has reached only the second (repeated) level; the IT process has reached the defined level whilst Risk Management and Quality Control have reached the managed level. Such an irregularity between BPM maturity of different processes suggests that Bank E lacks the alignment of its goals at the strategic level and a united processes vision. The analysis of critical success factors of the Customer Service process and identifying actions is necessary to achieve at least the defined level that would improve the current situation. To start with, even improving the Customer Service process would enable Bank E to shift from the repeated level to the defined level.

According to the survey, 40% of the surveyed banks have reached the second (repeated) phase, where the first documented processes occur, the management and responsible employees' involvement in BPM initiative increases, attempts are made to structure the methodology and to find common standards. The equal share of banks has reached the third (defined) phase, where BPM initiative is expanded by a wider use of technology in BPM communications and by organizing comprehensive and formal BPM training sessions. Only one third of banks has reached the fourth BPM maturity phase, where organizations have Process Governance Improvement Centres established, combine business and IT in process management and have formal process management positions and responsible staff members appointed. Thus, BPM maturity in the majority of commercial banks in Lithuania is between level 2 and level 3, which suggests that the banks are attempting to apply BPM, but the attempts are not yet widely spread at the organizational level.

5. Integrated BPM maturity model

In order to identify BPM maturity in the course of the empirical research, the Rosemann and Bruin model, which has three dimensions, namely, the maturity phase, critical success factors

and assessment scope, was used as a supporting one. The empirical research highlighted that the BPM lifecycle could be one of the factors in evaluating BPM maturity. Figure 8 demonstrates how the supporting model is improved by adding the fourth dimension of the BPM lifecycle identifying each phase.

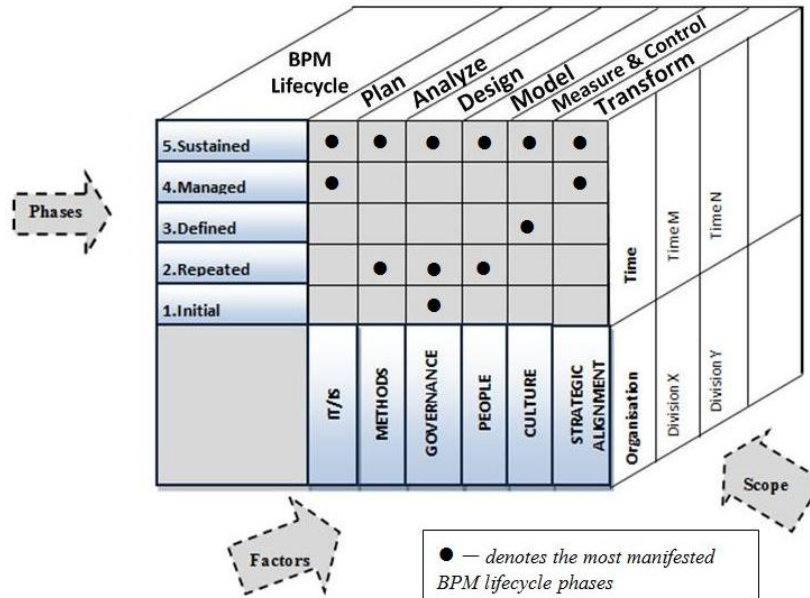


Figure 8. Integrated BPM maturity model

(source: designed by the authors on the basis of Rosemann, Bruin, 2005a; Rosemann, Bruin, 2005b; ABPMN, 2009)

BPM maturity is measured by six critical success factors and the BPM lifecycle when the integrated model is used. Seven factors are assessed in order to determine an organization's BPM maturity, where BPM lifecycle maturity is measured by obtaining the average maturity of all cycle phases. Based on empirical research findings, a sub-model has been added to this model; it identifies the key phases of the BPM lifecycle marked as "●" at each maturity level. Organizations can achieve a higher maturity level by using it.

Organizations that are in the initial BPM maturity stage pay the largest attention to design, as the research suggests. They often do not take any or only take unstructured and one-off steps of process governance during the initial BPM maturity phase. It is therefore often found that individual process owners try to design a process just for the participants to know who needs to do what in many organizations. Process design can often resemble instructions or visually presented job descriptions in this phase. Having process design in place makes it easier for organizations to move to a higher BPM maturity level, as the integrated model provides guidance as to what factors should be taken into account.

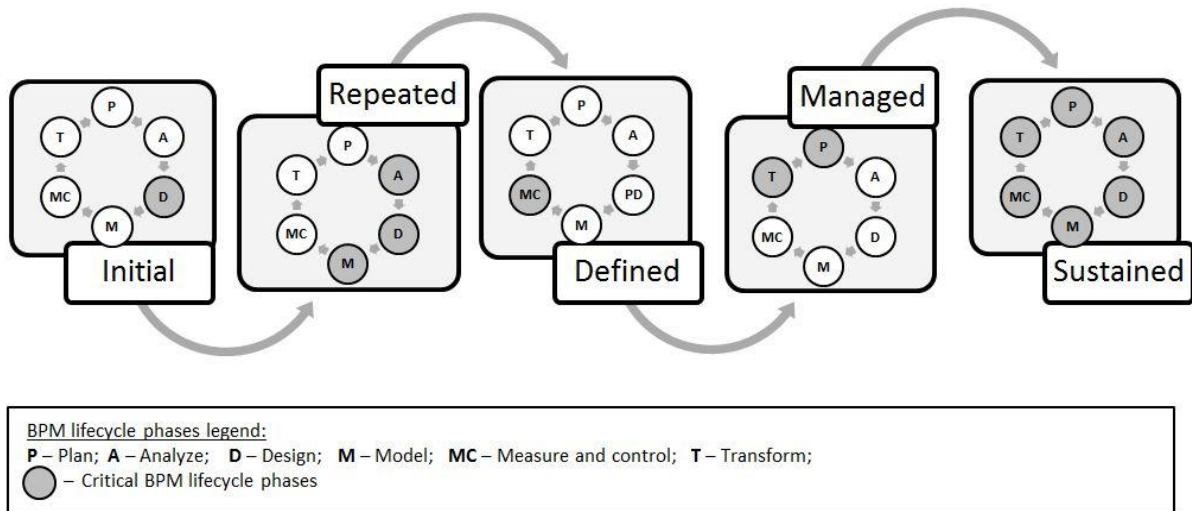


Figure 9. *BPM maturity and lifecycle sub-model*
 (source: designed by the authors)

Figure 9 demonstrates that the organizations which are at level 1 of BPM maturity and wish to move to level 2 should pay more attention to process planning and modelling of already designed processes. Previously designed processes should be re-analyzed, which means that the real-time status of the process (current situation) should be determined, the desired process design should be documented, i.e., the original project has to be updated, then a process visualization model has to be designed using widespread practice standards. Organizations are able to witness what is really going on inside them during the repeated phase, as it is already known how processes should work, who is in charge of what tasks and the first process non-conformities are identified.

The formal measurement of processes and setting performance indicators enables an organization to move to a higher (defined) maturity level, where measurement and control is one of the most important BPM lifecycle phases. It is important to use information technologies for measurement and control, as they allow to obtain accurate data and facilitate result monitoring.

The process planning and transformation phases become more pronounced during the BPM managed phase. Organizations often dedicate some attention to these phases, but they are usually not focused upon as much as to the operative side of lifecycle, such as design, modelling, measure and control. In order to move from the managed phase to the sustained maturity phase, organizations need to balance the effort throughout all BPM lifecycle phases.

Sustained BPM maturity and lifecycle model enables organizations to see the broader picture of the situation and to perform more accurate assessments.

6. Guidelines for application of the integrated BPM maturity model

Simply knowing that a model allowing improvement of the current BPM situation exists is not enough for the companies wishing to achieve that. Using the model is only one step in the whole journey of improving BPM maturity. One of the best known models for continuous improvement designed by quality guru Walter Shewhart and made popular by Deming, which is known as the Deming Cycle, could be adapted to improve BPM maturity (Ruževičius, 2012).

The Deming Cycle is suitable for improving the BPM maturity process, as organizations need to continuously improve the existing situation in order to achieve a higher maturity level. Thus, the actions relevant to improving BPM maturity supplement each stage of the Deming Cycle. Organizations need to start the planning stage by assessing the existing situation, i.e., by

determining the current BPM maturity level. The BPM maturity and lifecycle model and model's assessment tools are used for this purpose. Assessing the current BPM maturity level allows organizations to identify the weakest critical success factors, the lifecycle phases that are not executed enough and, finally, the weakest organizational processes that determine a lower BPM maturity. Since BPM maturity of organizations is only ever as high as the maturity of the weakest process, it is often seen that there is only one or just a few processes in an organization that reduce the overall BPM maturity. Actions to improve the situation can be easily planned once these processes have been identified. When the BPM process maturity level is known, an integrated BPM maturity sub-model is used; it offers guidelines on which BPM lifecycle phases should be a top priority. A plan identifying the weakest organizational processes, the weakest critical success factors of these processes, the BPM lifecycle phases that need to be focused on more and, finally, the specific actions and initiatives that will strengthen the process should be the outcome of the planning phase. Once the improvement plan is completed, the organization can then move on to implement it.

The Do phase is unique for each organization, when planned initiatives are being implemented. In some cases, it can be IT system improvement or, in other cases, using new methods or aligning the process with strategic organizational goals.

It is advisable to specify a time frame in which improvement actions should be performed. Specifying a time frame allows organizations to govern the improvement process, as it is clearly known when it is time to switch from the doing phase to the checking phase. A repeated BPM maturity assessment at the process level is performed throughout the checking phase and it becomes clear then how the situation has changed and whether the set goals have been met. If the goals are not met, adjusting actions are being taken and further initiatives are being implemented during the Act phase.

The adjusting actions of the Act phase end the first iteration of BPM maturity improvement, but the improvement process is not finished with this step – planning takes place again, as well as doing, checking and acting.

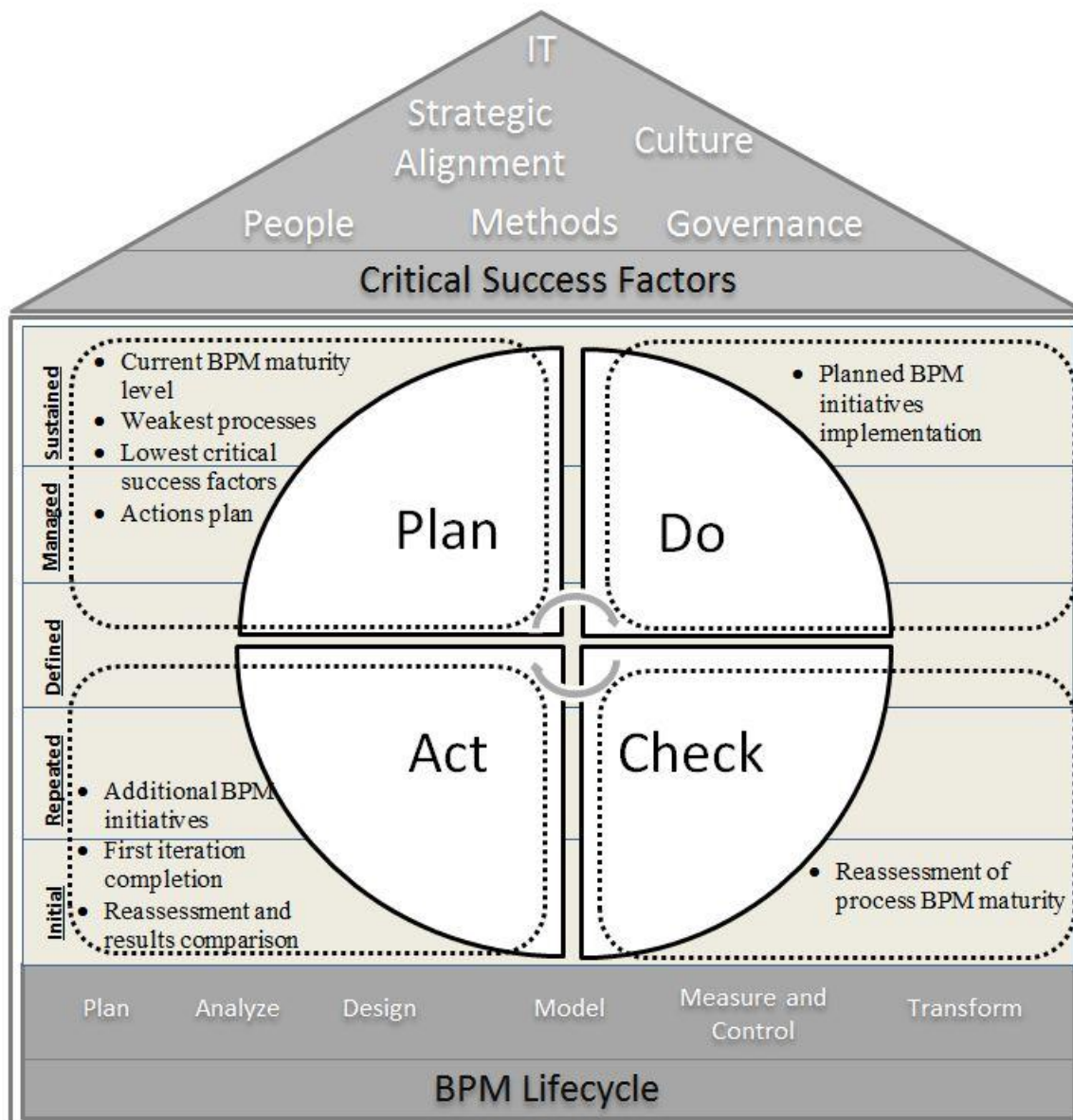


Figure 10. BPM Maturity House model
(source: designed by the authors)

Figure 10 demonstrates how BPM maturity, the lifecycle and Deming continuous improvement cycles have been combined to design a combined BPM Maturity House. This House represents BPM maturity and includes all aspects that an organization needs to consider in order to increase it. The roof of the House is formed from the following critical success factors: IT, strategic alignment, governance, methods, culture, people; the base is formed from the BPM lifecycle consisting of planning, analysis, design, modelling, measure and control and transforming.

The main part of the house represents five phases of BPM maturity: initial, repeated, defined, managed and sustained. The Deming continuous improvement cycle combined with the actions relevant for improving BPM maturity helps an organization to move up the floors.

Conclusions, suggestions and insights

It is recommended to follow an iterate approach, i.e., to design a repeated process governance lifecycle enabling organizations to achieve, sustain and improve process quality in order to ensure the balance between individual business process components (output, inputs, resources, the logical structure of project execution, objectives and their management according to the Plan-Do-Check-Act principle and procedural interaction).

The analysis of BPM lifecycles has revealed that a number of models containing different amount of detail, but often including the same phases have been developed. The model developed by the Association of Business Process Management Professionals (ABPMP, 2009), which contains six main BPM phases (planning, analysis, design, modelling, measure and control and transformation) has been chosen as a supporting BPM lifecycle model. It has been chosen due to its comprehensiveness and wideness as well as a clear practical application.

The analysis of literature has revealed that the maturity models offered by the OMG group, Melenovsky and Sinur, Hammer and Rosemann and Bruin are the best known and contain more than one dimension to assessment. The choice of the Rosemann and Bruin model for BPM maturity evaluation has been determined by the fact that it has been developed using both theoretical and practical research, is one of the most complex ones, but also easy to apply in practice. Moreover, individual factors are identified, allowing to group BPM components and carry out assessments, thus identifying the strengths and weaknesses of organizations.

The empirical study of the commercial banking sector in Lithuania has been carried out in order to determine BPM core processes lifecycle characteristics at different BPM maturity levels. The study results indicate that the majority of the surveyed banks are between phase 2 and phase 3 of BPM maturity. This suggests that the banks are making efforts to apply BPM initiatives, but the attempts are not yet widespread at the organizational level.

The results have revealed that the BPM lifecycle could be one of maturity assessment factors, which leads to designing an integrated BPM maturity model that includes four dimensions: phases, factors, scope and lifecycle. The integrated model could be used for further studies and this would enable to include other business sector experiences and allow to evaluate the differences and characteristics of BPM maturity in different sectors.

The study has found that the main feature of the BPM lifecycle is the importance and relevance of individual lifecycle phases at different maturity levels. This means that the organizations which have reached a certain level of BPM maturity focus on certain BPM lifecycle phases more than on others. Causative factors of this phenomenon were not within the scope of this empirical study and so further qualitative research can be performed in order to identify the connections or factors that determine the importance of lifecycle phases during a certain BPM maturity phase.

The analysis of the findings has revealed that the organizations that are at the initial BPM maturity level need to focus on the Design phase, and those in the second phase – respectively on planning, design and modelling, in the third phase – on measurement and performance indication, in the fourth phase – transformation and planning and in the fifth phase all lifecycle phases are important equally. A sub-model identifying the main BPM lifecycle phases at all maturity levels, allowing organizations to identify the initiatives, necessary to move to a higher maturity level has been developed based on these findings.

Guidelines for a simplified application of the integrated model in practice have been drawn up and take the form of the “BPM Maturity House” model combining the concepts used in the study and the Deming Cycle with the relevant actions in the context of assessing BPM maturity. The authors suggest that the “BPM Maturity House” model could be the object of additional research in order to test in practice the effectiveness of actions identified in different Plan-Do-Check-Act phases, also identifying possible risks in each phase.

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