

How to establish business process management with employee's help?

A new methodology

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Abstract: By understanding the importance and achievements of managing business processes in practice, the desire and consequently the demand for guidance, guidelines, and a roadmap to guide organizations in this direction to have an integrated and unified set increases. The concept of business process management methodology is explicitly presented to address this issue. This article reviews and compares existing methodologies. Also, it includes evaluating the usability and actual use of the new methodology and then reviewing and evaluating the new methodology (D & R¹ BPM² METHODOLOGY) through interaction with a large group of managers and consultants with experience working in this field. Our findings show that this group of people is very welcome in the proposed methodology and consider it more comprehensive and complete than other methodologies. It should also be noted that our first proposal for such a methodology is based on the experience we have encountered from a large number of business process management projects over the past 12 years, from 2007 to the present. In summary, we have proposed 6 phases that apply to each organization and company. This methodology has already been used in more than 30 projects to deploy business process management.

In this paper we have some part:

Context(explain about how organized paper), 2. Objective and Theoretical Background (view objects and different issues), 3. Method (quantitative questionnaire containing), 4. Results and 5. Conclusions (the benefit of using the D & R Methodology).

Keywords: D & R Methodology - Business Process Management – BPM Methodology – BPM Establishment

Introduction

1. Context

In the recent years Business Process Management (BPM) is increasingly becoming a “Way of life” or even a “daily routine” for more and more companies interested in optimizing processes, regardless their field of activity. General statistics show plenty of positive results for organizations that succeed to properly implement BPM techniques and principles. (Dumitriu, 2017).

The selected benefits from the BPM concept give us an overview of the objectives of this concept in the organizations where it is used. Some of these objectives which are in the end the benefits of using BPM concept represent the results of the knowledge management concept when it is applied in an organization. The similarities between these two concepts are important to be mentioned, because one concept does not exclude the other concept. (Sorina Plesaa, 2018)

More than three decades ago, manufacturing companies and other enterprises' business environment saw the beginning of attention to improving quality indicators in doing things. Since the

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² Business Process Management

'90s, various institutions' time and speed have become significant as an essential competitive indicator. On the other hand, achieving this important thing in doing things has required paying attention to business processes and proper management. When the concept of business process reengineering was introduced more than two decades ago, experiences of dramatic improvement in the leading companies of the time came to the fore, with the knowledge of successful companies of the time as clear examples of business success in process reengineering and achieving Significant productivity is still discussed in academic and business management professions. Business process management has always been the focus of organizational and information technology issues. However, the importance of business processes for managers of organizations may not be well understood yet. This is related to the evolution of organizational structure and how things are done in an organizational transformation plan.

This transformation can lead to transforming a task-oriented organization into a process-oriented organization to operate more efficiently. In the present age, institutions are increasingly moving towards process-oriented integration and coherence. This has led employees to find new responsibilities and predefined cross-sectoral processes defined along with different task areas, rather than performing specific tasks in separate functional areas. In addition to this process-oriented business environment, managers can find more time to address strategic aspects and fundamental improvements in the organization under their management instead of spending direct time on executive oversight.

What has been said is a fundamental change in the whole enterprise. Therefore, paying attention to the new business laws and the new processes that arise from them is also essential to pay attention to the enterprise's principle of survival and its growth path. The importance of paying attention to business process management in the last century and the contemporary era while promoting the type and variety of products and services offered to customers in today's highly competitive business environment has doubled.

The emergence of the enabling role of information technology is one of the critical factors in this fundamental change in the way things are done in different institutions. The concept of the fourth industrial revolution has been introduced along with the fundamental change in business laws and modern technologies' role. Following the change in the basic rules, we have witnessed a change in business models; one of these change's components is a change in organizational processes. If once attention to process management was defined only in terms of productivity, it has found a key and vital role in its strategic aspects. Leading businesses are now well aware that not paying attention to how processes are designed and optimally designed, and properly managed can lead to a loss of competitive position in the market and out of the competition. Establishing process management systems in any organization requires a proper understanding of management and strong support for implementation and preparation.

Therefore, studying the concepts, models, methodologies, and methods of implementing this category is recommended for different management and expertise levels of institutions and organizations. Raising the level of awareness in this field and achieving a common language in designing and reviewing the various steps of implementing this important will be one of the conditions for establishing proper and efficient business processes in organizations. So far, various methodologies have been introduced, and their articles and books have been published. One of the notable features of the present methodology is that in addition to introducing conventional methodologies for managing business processes, the description of a specific method for their establishment has been considered. Expressing the steps step by step and introducing the process modeling standards, and designing the required tools are other distinct aspects of the methodology that have been written according to the author's practical experiences. This article's study has been useful for consultants and experts involved in the design of organizational systems and process improvement and for managers of enterprises and those who study in various fields related to business management. In the following, we first need to reach a common understanding of process definition and process management.

In this research, the rest of the content is organized as follows:

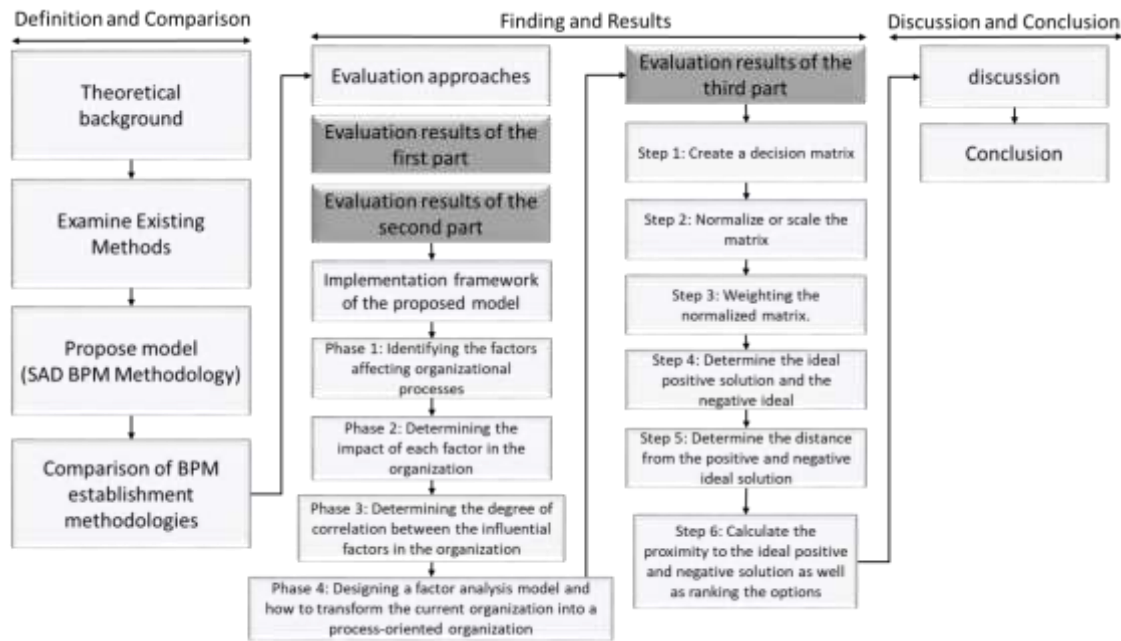


Figure 1 – Research Framework

2. Objectives and Theoretical Background

We pursue the following objectives in this research:

- What is D & R Methodology position compared to other BPM methodologies?
- Does D & R Methodology enables optimization of ease of use, application in deployment, and popularity?
- Does Proposed Model includes different dimensions and indicators.
- Does D & R Methodology provides all executive details and complete road map.

2.1. What is Process?

It has been roughly fifty years since organizations first started leveraging a process approach to managing and

Controlling the way they do business that this discipline evolved into what we now call as Business Process

Management (BPM) (Lusk, 2005). Process means receiving the requirements and needs of the customer (internal or external) and performing a set of responsible activities, each of which adds value to its previous actions to give one or more inputs to a specific output, i.e., product or Convert the customer's desired service, whether the customer is inside the organization or outside the organization.

The standard costing allocates all overheads to the product and these overheads relate to the amount of labor required to make the product. Some products appear to cost more than they really do and other products appear to cost less. These costs mislead people and cause them to make wrong decisions relating to pricing, profitability, make/ buy and others. (Rastislav Rajnoha, 2012).

2.2. What is Business Process Management?

Business process management has a systematic approach to identifying, designing, executing, documenting, monitoring, and measuring automated and non-automated business processes. This

approach is to achieve consistent and targeted operational outcomes that align resources with the organization's strategic goals. A business process (BP) refers to a set of activities carried out by humans to achieve one or more business goals. (Asma Hassania, 2017)

2.3. The most popular process management methodologies

This research begins by reviewing previous methods relating to the BPM cycle life. The BPM solutions are most frequently used to handle processes related to the document flow in companies. Therefore, the systems are successfully implemented in both the public sector and commercial sectors. (H. Jonkers, 1996) Applying the right method or methodology is one of the most important factors in the business process management project's success. A methodology is an organized set of procedures, techniques, and tools developed to guide a project and reduce problems during the project. There are four well-known methodologies for deploying BPM in the world, which are:

1. Chang methodology
2. Weske methodology
3. ARIS methodology
4. Jeston-Nellis methodology
5. Principles and fundamentals of process management.

2.3.1.Chang methodology

James Chang is the founder and CEO of Ivy Consulting. He has extensive ERP experience for five hundred Fortune companies. Chang's methodology generally has a top-down approach. It first involves the organization's upper levels in the project and then deals with the lower classes. The changes that this methodology brings to the organization are fundamental.

In the commitment phase, the organization commits to process management. When an organization decides to implement BPM, all organization elements must be committed to that decision. What usually happens is that the project team is formed to implement the initial business improvements, and this team is responsible for all stages of the BPM project from start to finish. Such an approach may be appropriate in organizations with structures that are familiar with Chang ; but in organizations that do not readily accept change, it may significantly increase the risk. It can be said that there will be resistance to change in almost all organizations. You can see the cycle of this methodology in Figure 2 (Chang, 2006)

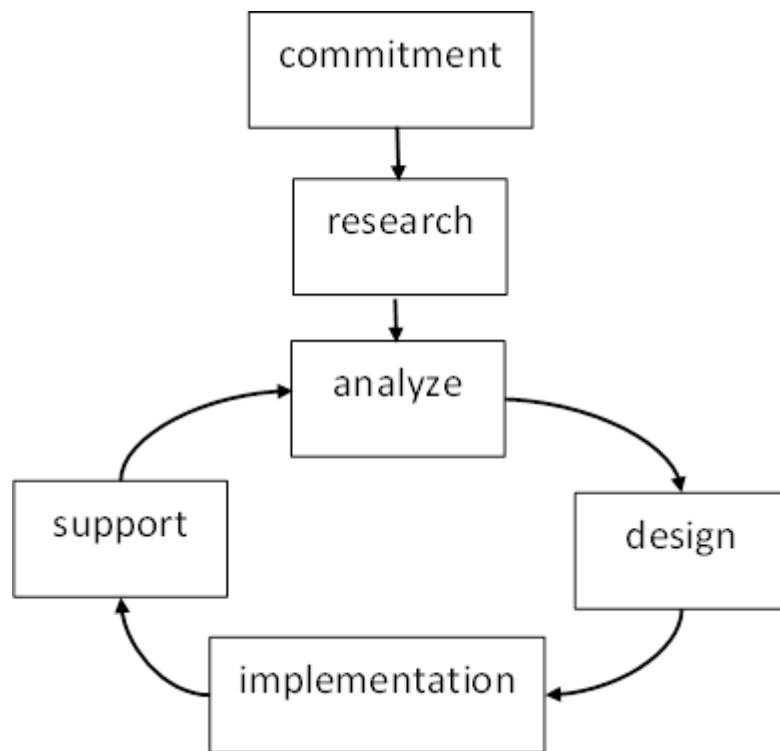


Figure 2 - Chang Methodology

In the research phase, the organization identifies current business processes. At this stage, James Chang divides the work into three main parts: first, preparing the organization for change, which can be done through education and other methods of culture-building; Second, determining the current business processes that determine the current state of the organization from this perspective, and finally creating the appropriate context and infrastructure for process management technology that will lead to the selection of the right platform.

In this step, the business process management system and the toolbox are selected.

The next four stages form a repetitive cycle.

The analysis phase includes the formation of the project team, the project charter, and the identification of current process efficiency criteria. In this stage, the analysis of project processes is done. The analysis is usually based on the process modeling stage indicators and in the process description. At this stage, the selected processes for improvement are identified.

In the design phase, the to-be process is optimized and architected. In this step, the following three steps must be performed:

Step 1: Optimal business process design

The process can be run in a test environment before running in the factual background, using the simulation option.

Step 2: Build a process template.

Step 3: Complete the process design Update the organizational structure with revised plans and responsibilities. Design all possible paths and scenarios for the process.

In the implementation phase, the technical design documentation is completed. The program is tested, and the training documentation and user guide are finalized.

From a process point of view, the support phase does not stop. BPMS will continuously monitor the new process. At this stage, a support office is set up and takes the necessary steps. Once implemented, activities are taken out of project management and performed in the support office.

2.3.2. Weske Methodology

Matthias Weske introduced this methodology in 2007. This methodology has a simultaneous top-down and bottom-up approach. This approach covers all stages of the BPM cycle and is, therefore, a comprehensive methodology (Weske, 2012) Business Process Management: Concepts, Languages, Architectures. This methodology is limited to generalities, and its steps lack sufficient details to implement it. These steps have led to methodological flexibility, but it increases the risk of using it. You can see the cycle of this methodology in Figure 3.

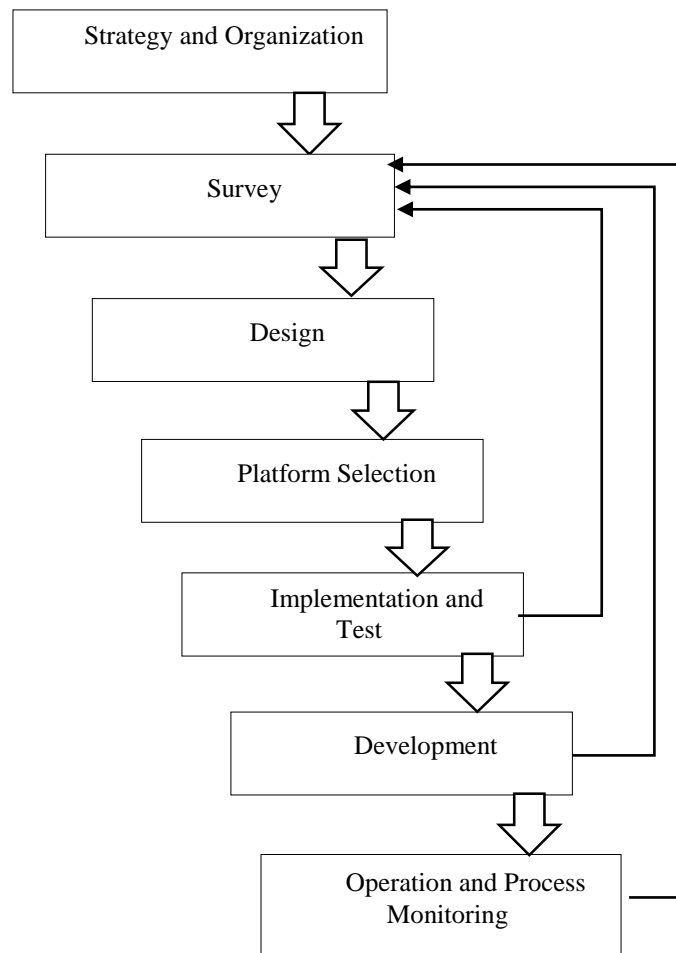


Figure 3 - Weske methodology

2.3.2.1. Strategy and Organization

The first stage of this methodology is the strategy and organization stage. This stage is independent of the business's operational processes; it deals with identifying the overall business strategy and related goals. Strategic goals, such as practical goals, mission, vision, etc., are determined. The organization is structured in such a way that business processes can be successfully implemented in the organization. Therefore, understanding business strategy is essential to understanding and improving processes. (Weske, 2012)

2.3.2.2. Survey

The review phase is the first step that directly understands the processes. The overall purpose of this step is to review, collect, and organize information related to all aspects of business process management. At this stage, project objectives are identified, the project team is formed, and information about the business process environment is collected. Experimental studies are conducted based on interview and analytical techniques from available documentation. As the activities at this stage are centralized in the business area, the technical environment for implementing the business process is also examined; because it can require an understanding of business processes. The required technical infrastructure and possible problems and limitations in this area are identified. Given the life cycle of the business process, the review phase can be seen as a kind of preparation phase for the BPM life cycle analysis and design phase. (Weske, 2012)

2.3.2.3. Design

In the design phase, the collected information is analyzed and merged. The most important activity at this stage is identifying processes and modeling them. These business process models are used as a communication base for various stakeholders to improve processes and, as a result, to understand the implementation goals set in the strategy phase. This step is related to the design and analysis phase. This step includes process modeling techniques, as well as validation, simulation, and validation techniques. (Weske, 2012)

2.3.2.4. Platform selection

The platform selection stage uses business process models and information about the business process's organizational and technical environments to select the appropriate technical context on which the business process is run. (Weske, 2012)

2.3.2.5. Implementation and test

Implementation should include the development of a prototype model and feedback from expert design staff. Depending on the particular technology used, definitive definitions of the data type are established, just as control flows between activities. The technical understanding of activities is established by integrating existing user systems. Extensive testing is required to ensure that the technical solution effectively covers the business process. It is also essential to study non-functional aspects of the process, such as efficiency and power, so that problems related to them do not appear after system development. (Weske, 2012)

2.3.2.6. development

During the development phase, the implementation of the business process in the target environment expands. Technical and software aspects must be considered to ensure that processes and the organization do not run into problems during development. Organizational aspects must also be considered. For example, we can mention the training and education of qualified staff. Depending on the specific implementation environment of the process and the staff's skills and experiences, these activities should be initiated at an earlier stage, possibly after the first sustainable model implementation model is available. (Weske, 2012)

2.3.2.7. Operation and Process Monitoring

In this methodology's operation and monitoring phase, the business process is used in the target environment. Valuable executive information is collected that is used to improve the process in the path of gradual evolution. This stage is related to the implementation stage of the business process life cycle. (Weske, 2012)

2.3.3. ARIS Methodology

The methodology proposed by ARIS for SAP in 1999 is called AVE. ARIS provides this methodology based on the company's business process methodology, called ARIS Home. This methodology is a kind of holistic modeling method.

The ARIS methodology is based on the methodology described and is also based on the ARIS life cycle. The image below shows the ARIS life cycle and its components. The ARIS life cycle consists of four stages: strategy, design, implementation, and control. You can see the cycle of this methodology in Figure 4. (Scheer, 2000)

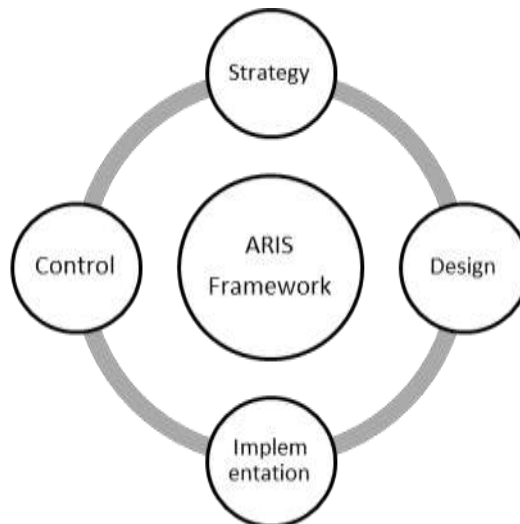


Figure 4 - Aris methodology

2.3.3.1. Strategy

At the beginning of each project, it is necessary to analyze the organization's strategy briefly. The development strategy phase's primary goal is to have an initial and top-down map of the processes. The process map provides an overview of the organization in terms of business processes and outlines the starting point for any business process optimization. (Scheer, 2000)

2.3.3.2. Design

This step is done after the strategy stage, and process optimization in this stage is defined based on the process map and the goals of the map processes. This step's vital goal is to analyze existing business processes to find a starting point for optimization. This starting point can also be found in process structures or derived from "process time, customer satisfaction, error rate, etc." Alternatives to activities are identified and implemented, and planned. At this stage, the critical criterion is to focus on identifying and defining target variables to derive profit and loss analysis or capital return rates. (Scheer, 2000)

2.3.3.3. Implementation

The implementation phase is implemented immediately after the design phase. One of the essential things that can be done is establishing new organizational processes based on the goals. On the one hand, this step includes aligning the organizational structure with the processes and tasks related to the processes. On the other hand, it includes ensuring the optimal support of the information system for new processes and goals. (Scheer, 2000)

Information technology is very important as a tool for the implementation and optimization of processes. The steps that will be implemented in the implementation phase are the same steps agreed upon in the design phase by the project executive team and the organization's managers. This step aims to focus on the goals and CSFs of each part of the organization to create a dynamic and efficient process-oriented organizational structure. (Scheer, 2000)

2.3.3.4. Control

The success of the organization, which is ultimately determined by the documentation of accounting and financial indicators, results from creating value in the organization's business processes. Therefore, controlling and managing the performance of the organization's processes is essential. The organization's core processes need to be effectively designed based on cost, time, and quality constraints. (Scheer, 2000)

Internally, this will reduce costs and employee satisfaction. Outside the organization, efficient processes guarantee customer satisfaction and increase the company's market share or even lead to the creation of a new market. Process efficiency must be evaluated regularly and effectively. Therefore, any obstacle can be identified in the early stages, and appropriate measures can be taken to remove it. The purpose of the control phase is to continuously review and evaluate business processes to create a tool for greater organizational efficiency. (Scheer, 2000)

2.3.4. Jeston and Nellis Methodology

One of the implementation methodologies of BPM projects was presented by John Jeston and Johann Nellis in 2008. John Jeston has been active in business and IT for over 30 years. Business process management, business process reengineering, and project management are specialized areas or areas. He has been a consultant to many organizations in the field of strategy and implementation of process-oriented projects. Johannes Nellis also has extensive experience around the world as a business process management consultant. He specializes in adapting processes to strategy, business goals, and IT. (Nellis, 2006)

The 7FE in Jeston and Nellis Methodology refers to four F with ten-stage grouping and three E like a necessity. The four Fs are the foundations, the findings, and the solution, the realization, and the future. The steps of the 7FE methodology are grouped into ten steps. You can see the cycle of this methodology in

Figure 5. (Jeston, 2018)

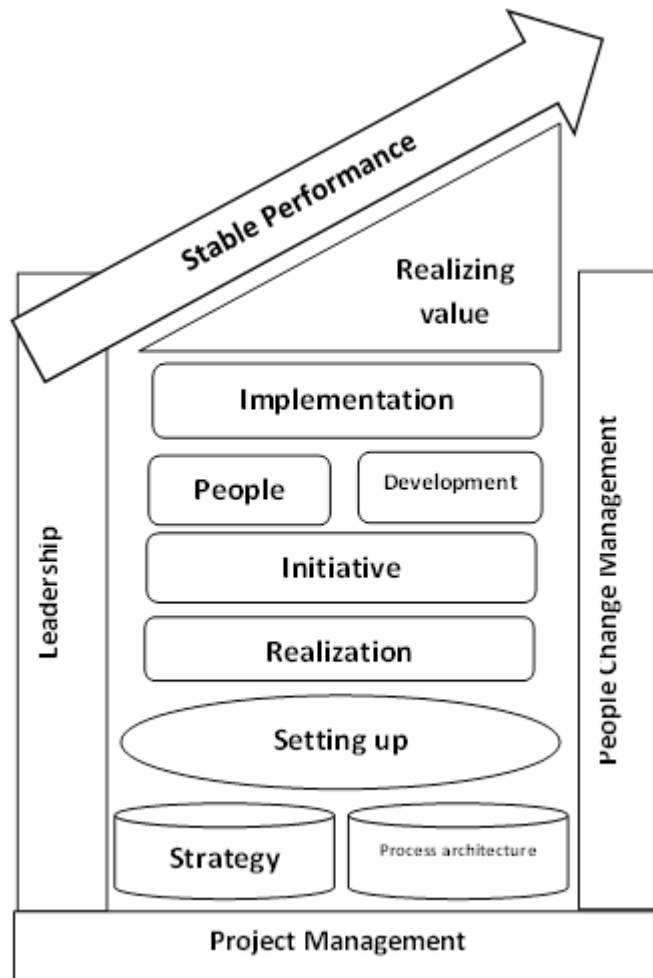


Figure 5 - Jeston and Nellis methodology

1. Basics: The type of BPM project will determine how much planning is needed for alignment and strategy and attention to process architecture in the organization, but most projects start at the start-up stage. The foundation of any project consists of these three stages. (Jeston, 2018)

2. Findings and solutions: The analysis of the process and the results and findings obtained from it are done in the understanding stage, which is appropriate for the initial stage's solutions. (Jeston, 2018)

3. Realization (implementation): Solutions are implemented and developed. At this stage, people (employees) are also involved. (Jeston, 2018)

4. Future or future dimension: The project should change from project status to common business activities. These activities are done by performing the steps of realizing the value and sustainable performance. These two stages guarantee the reproducibility and institutionalization of process projects and process improvement in the organization.

2.3.4.1. 7FE methodology steps

1. Organization strategy

What do stakeholders and the CEO of the organization understand and expect from the project implementation? Are they looking for short-term results or long-term profits?

BPM project team members must have a thorough understanding of its strategy, mission, goals, and policies. They need to know what the organization's strategic goals are so that they can implement the project in line with the organization's orientation. The strategy is implemented through processes

and by employing people inside and outside the organization. Organizations usually formulate the right strategies; But they have problems in implementation, so that according to research, only 10% of the developed strategies are implemented. A vital tool is needed to implement strategies. These tools are the processes of the organization. (Jeston, 2018)

2. Process architecture

Organization process architecture is a methodology that uses some principles and guidelines and modeling signs to align all activities and elements of the organization with the organization's strategy. In process architecture, by designing a map of the organization's strategy, people, processes, information technology, data flow, and other dimensions and characteristics of the organization are aligned to achieve the organization's goals. (Jeston, 2018)

3. Setting Up

Setting up involves three main steps:

- a. Determine the starting point. The most challenging part of the job is determining the starting point for which unique mechanisms must be used.
- b. Select processes and determine agreed process objectives. Prioritization criteria are of particular importance for process selection. Therefore, more care needs to be taken in selecting process prioritization indicators. Process goals must be aligned with the organization's strategy and process architecture to ensure that they aim to improve or add value to the organization.
- c. Start the project and establish the selected process. This step determines the project's structure, the scope of work, the benefits and benefits of business and equity.

4. Realization

First, there must be a good understanding of the current state and environment of business processes. It is also necessary to determine the indicators of the primary process and to predict the costs. The causes must then be rooted in the analysis and the project's short-term and early achievements identified. Short-term and early project achievements will be the basis for project continuity. By understanding the existing processes of the organization at this stage, the ground for change is created. (Jeston, 2018)

5. Initiative

This phase is creative that involves the project team and internal and external stakeholders. At this stage, the best option is selected by designing appropriate criteria to achieve the fastest possible result. (Jeston, 2018)

6. Development

At this point, we should be ready to implement. All the necessary elements for implementation, software testing, hardware, and infrastructure, including buildings, computer equipment, resources needed to implement the change program, etc., must be prepared. (Jeston, 2018)

7. People (employee)

It must be ensured that people move in the same direction and have the necessary efficiency and effectiveness. The activities, roles, and performance of individuals should align with the organization's strategy and process goals. Therefore, it is necessary to measure individuals' performance during the process and their impact on the achievement of goals. Note that process performance is more critical than process automation. Process performance is the result of the execution of processes by individuals. (Jeston, 2018)

8. Implementation

Now the processes and job descriptions are implemented, and training is given. Performance evaluation and management are done at this stage. After performing this step, two more basic steps remain. (Jeston, 2018)

9. Realizing value

Once implemented, a report should be prepared to ensure that the project's expected results and benefits are achieved. After this organization, it will be possible to make more investments in order to continue the project. Therefore, the commercial interests of the project are determined. (Jeston, 2018)

10. Stable Performance

The organization needs continuous improvement in order always to operate optimally and not be below this level:

- a) Over time, the business environment is continuously changing.
- b) Processes have a life cycle after which they must be continuously improved.

2.3.4.2. The three requirements or principles

a) Project management

The BPM project is complex. Therefore, it is necessary for a person with the same skill and ability to manage it to achieve the desired result. Project management's results and achievements may not be achieved by mere software or the usual business project manager. (Jeston, 2018)

b) Managing people change

One of the reasons for the failure of BPM projects is not paying attention to the principle of managing change. During the project implementation, various stages were completed, and ideas for improvement were designed. Now, if people implement these ideas and improvement plans, the project will fail. At this stage, special attention should be paid to people's beliefs and growth. "Giving an idea is an easy part. It is hard to implement," (Michael Hammer, 2009)

c) Leadership

The support of senior executives is the key to successfully implementing process change. High understanding of successful managers leads to their commitment and exceptional attention to implementing the organization's BPM project. The importance of supporting senior executives is that Kane sees it as more important than the change plan's details.

2.3.5. Methodology Principles and fundamentals of process management

The four primary authors of this methodology are university professors who have considerable operational experience in process management. You can see the cycle of this methodology in Figure 6.

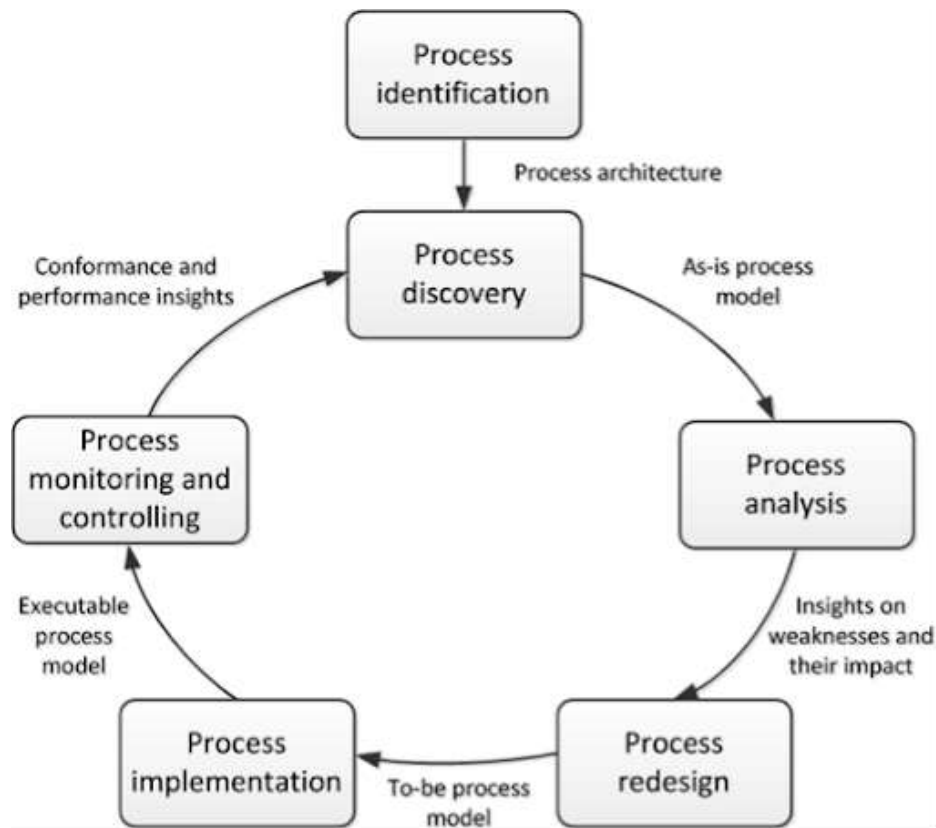


Figure 6 - Principles and fundamentals of process management methodology

2.3.5.1. Identification phase

Process architecture is a conceptual model that shows the organization's processes and describes the relationships between them. These relationships are generally defined in two ways. On the other hand, processes can have a consumer-producer relationship. This means that the output of one process is the input of another process. (Marlon Dumas (Author), 2018)

2.3.5.2. Discovery phase (as-is process modeling)

At this stage, the current state of each of the organization's processes is documented and usually takes the form of one or more as-is process models.

2.3.5.3. Analysis phase

In today's dynamic business environment, organizations need up-to-date knowledge to execute their business in the best way (Daniel Paschek, 2018). Through the ongoing digitalization and linked communities, companies and businesses, changing parameters as well as varying business framework conditions must be analyzed fast as possible to optimize the processes and gain the best direction for the own company.

This phase is usually based on the indicators that are asked in the previous step, i.e., process modeling, and in the process identification of Domain Experts (those who refer to them for process modeling and have information about business and process). Methods of analysis are divided into two categories:

1. Qualitative methods
2. Quantitative methods

BPM commonly states for business processes management. It identifies a management strategy and includes methods, techniques and tools to support the BP lifecycle, which includes design,

enactment, management and analysis of operational BP³. (A. Meidan, 2016). The qualitative analysis covers the artistic part of business process management and is like a work of art, including a painting. Like cultural activities, qualitative research will lead to results in one way, but several principles and techniques tell us which methods lead to the proper analysis of the process.

2.3.5.4. Redesign phase

This step aims to identify changes in the process to help solve problems identified in previous phases and help the organization achieve its performance goals. Process redesign and analysis are closely related, and new options for proposed changes have already been analyzed using process analysis techniques. Eventually, the most promising change options that are combined will lead to process redesign.

2.3.5.5. Implementation phase

In many organizations, the first steps, process modeling, and discovery are being done. The output of this stage is the documentation that some organizations collect in formats and volumes and put them in the form of process booklets but to achieve BPM's main goals. It is necessary to complete all six steps and implement the processes in the organization. The tool that greatly facilitates and slows down the execution of processes is BPMS software or process management.

2.3.5.6. Monitoring and control phase

When a process runs, related data is collected and analyzed according to performance indicators and objectives to determine performance productivity. Bottlenecks, repeated errors, or deviations from the desired behavior are identified, and corrective actions are taken. New issues may arise in the same or other processes that require the repetition of the BPM cycle. In other words, in this step, we will monitor and measure the implemented processes' performance. These measurements are based on key performance indicators, or KPI⁴s extracted in the modeling phase and documented in the process profile. After proper execution of the BPMS⁵ platform's processes and through the BAM⁶ technology available in BPMS, monitored and improved implemented processes.

3. Propose model (D & R BPM Methodology)

Propose model results from 12 years of experience in the field of processes and review and research on other methodologies. Many years of research and experience have been spent discovering a comprehensive methodology and covering all the activities involved in deploying process management. This methodology was first fully used in one holding company and at the same time in its 18 subsidiaries in 2015, and later in many other businesses and organizations, including the oil and gas industry and the food industry, and science and technology parks by the author as a project manager and manager. Over the past four years, more than 30 organizations have been trained to establish business process management in their organization through Propose model methodology. You can see the cycle of this methodology in Figure 7.

³ Business Process

⁴ Key Performance Indicator

⁵ Business Process Management system

⁶ Business Activity Monitoring

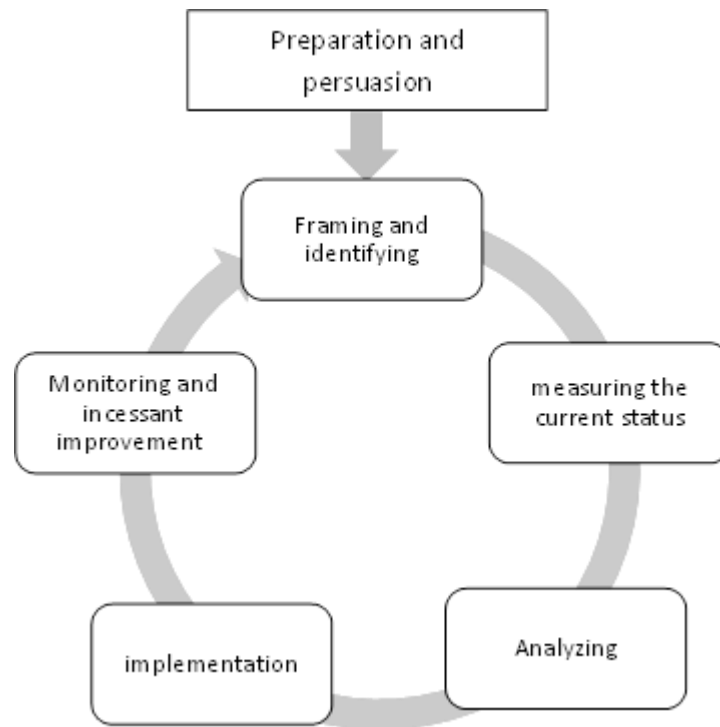


Figure 7 - Propose model (D & R) methodology

3.1. Preparation and persuasion:

Before we start deploying BPM in the organization, we need to prepare the staff and senior managers to use this technique. New approaches and methods that extend BPM are needed to enable building complex adaptive systems that react dynamically to changes and bring order out of the chaos. (Huseyin Kir *, 2020).

The adoption of BPM provides organization-wide transparency and clarity, enabling previously separate business units who are responsible for different sections of work, to understand their shared relationship concerning the business processes. (Becker, 2015) In this phase, we will form executive and steering committees. We will take steps to position BPM in the organization and convince it. We will also select the BPMS tools required for use in the implementation phase in this step. To create a culture in the organization, we will teach, design a contest, design a poster, etc. We will also prepare a BPM charter to determine the scope and requirements, etc.

Also, in this phase, it is necessary to examine the relationship between BPM and strategy, organizational structure, ISO, and other quality management techniques so that we can understand its place in the organization and establish a coherent and integrated relationship between different methods and by creating a suitable platform, the organization Let us help the Almighty.

In this phase, the following steps will be performed

Table 1 - Preparation and persuasion

PREPARATION AND PERSUASION

1. FIVE STEP TO POSITIONING

- 2. Ten Technique to persuasion
- 3. Forming strategic and executing committee
- 4. Special training for managers

5. Special training of employees
6. Business process management executing method formulation
7. Organization structure and BPM relation investigation
8. Strategy and BPM relation investigation
9. Study of documents and business conditions
10. Methodology investigation
11. BPMS selection
12. Project charter
13. Poster and match design

3.2. Process Framing and Identification:

Enterprise engineering deals with the design of processes which aim to improve the structure and efficiency

Of business organizations. It develops approaches based on modeling techniques, particularly on Business process modeling, to ensure the quality and the global consistency of enterprise strategies and Expectations (Elyes Laminea, 2020)in the first step, the scope of work is precisely defined. Processes are then identified through interviews, and process priorities are provided (process architecture design). By designing the process architecture, we will determine the process list, process hierarchy, and process relationships. Some models, such as APQC⁷-PCF⁸, can be used for this purpose. We then score the list of processes based on the organization's appropriate prioritization indicators and prioritize the processes.

In the next step, the processes are drawn in order of priority, with an interview with an expert and the study of related documents. The BPMN standard will be used to plot the process. (AS IS extraction and modeling). In this step, be sure to design the process architecture and, in the next steps, modify it if necessary by completing the information.

In this phase, the following steps will be performed.

Table 2 - Process framing and identification

FRAMING AND IDENTIFYING THE PROCESSES	1. PROCESS ARCHITECTURE	1.1 PROCESS ARCHITECTURE DESIGN APPROACH INVESTIGATION
		1.2. Process architecture design methodology investigation
		1.3. Business area, Process Group and process, :Process Leveling
		1.4. Business area - classification and process map
		1.5. Reference models investigation and suitable Reference model selection for ours
		1.6. Alignment with the strategy

⁷ American Productivity & Quality Center

⁸ Process Classification Framework

	1.7. N2 chart: Business process relations matrix design
	1.8. Interactive diagram
	1.9. Coding and configuring the processes
	1.10. Prioritizing and determining the key processes
	1.11. Identifying the new suggestive vital processes
2. Measuring the current status maturity	2.1. CMMI ⁹
	2.2. 8 Omega
	2.4. Model Maturity Investigation Synthetic
3. Modeling the current processes	3.1. BPMN ¹⁰
	3.2. DMN ¹¹
	3.3. CMMN ¹²
	3.4. Drawing software selection and Process analysis like Visual paradigm
	3.5. Mechanization coefficient determination
4. Revising after the process current status modeling	4.1. Process architecture
	4.2. Interactive diagram
	4.3.N2 chart: Business process relations matrix design

3.3. Measuring the current situation:

Although business process management is a popular concept, it has not yet been properly theoretically grounded. This leads to problems in identifying both generic and case-specific critical success factors of BPM programs. (Trkman, 2009). A team needs to be formed to measure selected processes' performance by determining key performance indicators (KPIs) (process identification).

In addition to the index, stakeholders, and their requirements, SIPOC¹³, the process description identify the resources required to execute the process, the limitations and facilitators of the process, and the risks of the process.

In this phase, the following steps will be performed

Table 3 - Measuring the current situation

MEASURING THE CURRENT	1. PROCESS AIM SET ALONG WITH THE BUSINESS STRATEGY
	2. Efficient indicators design and process efficiency
	3. Determining the formula and Indicators' measuring time and their utility

⁹ Capability Maturity Model Integration

¹⁰ Business Process Model and Notation

¹¹ Decision Model and Notation

¹² Case Management Model and Notation

¹³ suppliers, inputs, process, outputs

STATUS	place
	4. Determining the needed forms and reports in each process
	5. Needed resources determination like financial, manpower, equipment and infrastructures
	6. Process limiters and facilitators
	7. Beneficiaries analysis
	8. Relation with the strategy
	9. Process risks management
	9.1. Process management execution method preparation ¹⁴
	9.2. FMEA
	9.3. Identifying and rating
9.4. Periodical evaluation	
9.5. Justified strategy with the risks and controls	
9.6. Reformative and preventive steps	
10. SIPOC	

3.4. Analysis:

So far, we have realized what our situation is. Now we have to do two things:

- Determine our distance from the desired condition. This is called gap analysis, which can be done using the modeling technique. It is necessary to analyze the gap and measure the organization's level of maturity to predict the next step or steps of improvement. To do this, we use different maturity models such as eight omega or CMMI.
- Identify process complications and problems. Each process may have issues in terms of time, cost, quality, or flexibility. For this analysis, root cause analysis (RCA¹⁵), value-added, experimental analysis, Lean, 6 Sigma, etc., can be used.

Then we will start designing the solution according to the identified gaps and complications. These strategies will usually lead to removing an activity from a process or adding an action, or improving it in terms of tools and execution methods. In the last stage of this phase, we will design the desired situation based on the specified solutions.

In this phase, the following steps will be performed:

Table 4 - Analysis

ANALYSIS	1. QUANTITATIVE	1.1. LEAN	
		1.2. 6sigma	
		1.3. Queue analysis	
		1.4. Value Flow	
		1.5. Profile	
		1.6. Other needed methods selection	
	2. Qualitative	2.1. RCA	2.1.1. Fishbone

¹⁴ Failure Mode and Effects Analysis

¹⁵ Root Cause Analysis

		2.1.2. Cause mapping
		2.1.3. PROACT / NELMS
		2.1.4.5Why
		1.2.4. 5W1H
	2.2. Value-added	2.2.1 Value classification : VA ¹⁶ ,BVA ¹⁷ , NVA ¹⁸
		2.2.2. Extras elimination
	2.3. Experimental	2.3.1. Interview with peering
		2.4.1. Where we are?
	2.4. Gap analysis	2.4.2. Where should we go?
		4.2.4.3. Bridge the gap
		2.5. Other needed methods selection
3. paradigm	Visual	3.1. RACI ¹⁹
		3.2. CRUD ²⁰
		3.3. Digram matrix
		3.4. PDF, DOC, HTML
		3.5. Animation
		3.6. Simulation
		3.7. Visual Diff
4. analysis and improvement document	Process and	4.1. Problems
		4.2. Gap
		4.3. Solutions
		4.4. Optimal model diagram design
		4.5. Executive action to implement each process
		4.6. Executive challenges of each process
5. Revisions		5.1. Process architecture
		5.2. Interactive diagram
		5.3. N2 chart: Business process relations matrix design
6. Optimal status maturity measurement		
7. Process applying document in BPMS		

¹⁶ Value Added

¹⁷ Business Value added

¹⁸ Non Value Added

¹⁹ Responsible – Accountable – consultant - Informed

²⁰ create, read, update and delete

3.5. Implementation:

The implementation of BPM is a complex process and requires many technical and non-technical aspects. (Sharfina Febbi Handayani*, 2019). Now it's time to run the improved model. This step is one of the most challenging activities to do and requires a lot of care. In this step, we will use BPMS to mechanize and execute processes in the organization. One of the best tools for implementation is implementing and deploying processes, BMMS, which has the latest technology with the highest BPM compliance. BPMSs reduce the cost of generating and executing changes compared to other standard methods while speeding things up.

Note:

Before entering this phase, we will prepare the process implementation document. This document has detailed and sufficiently detailed analysis as well as IT technical details to mechanize the processes.

In this phase, the following steps will be performed.

Table 5 - Implementation

IMPLEMENTATION	1. BPMS = BPMS FEATURES AND FUNCTION
	2. Process execution tools: Business process management systems
	3. Existing and accessible BPMS
	4. Evaluation and selecting Indicators : BPMS
	5. Implementation procedure in BPMS
	6. Development, test, and run in BPMS
	7. RPA - new technology

3.6. Continuous monitoring and improvement:

When the state of an internal business process is not normal or when it is not the same with a customer's awareness, a negative value gap arises, which means the difference between service providers' intention and service recipients' expectation. (Chong Un Pyon, 2010).

In order to stay competitive Firms measure, monitor, and analyze their performance. Performance management systems are regularly implemented as balanced and dynamic solutions requiring considerable human and financial resources, and offering support to the decision-making process by gathering, elaborating and analyzing information. (Vesna Bosilj Vuk̄si 'ca, 2013). Business Process Management is a management approach that describes how companies can achieve efficiencies by integrating and improving their business processes and by aligning those business processes with corporate strategies and goals. Companies that routinely practice Business Process Management (BPM) are able to consistently improve on the results obtained from existing processes. (Alexieva, 2012). The implemented process should be continuously monitored, and according to the process description, the intended corrections for further improvement and maturity of the organization should be identified. This step will always continue.

In this phase, the following steps will be performed

Table 6 - Continuous monitoring and improvement

MONITORING AND CONTROL

1. PROCESS PERIODICAL EVALUATION BASED ON THE DESIGNED INDICATORS

2. PDCA

3. Reformative and preventive steps

4. Process management Pamphlet with three chapters that include all the implemented cases in project and creating the common literature

Comparison of BPM establishment methodologies

Table 2 summarizes the approach of the introduced methodologies. By putting these methodologies together, you can make a perfect comparison and then identify which method best suits your organization's specific circumstances.

Table 7 - Comparison of BPM establishment methodologies

Methodology Component	<i>Method approach</i>	<i>Level of change</i>	<i>Advantage</i>	<i>focus</i>	<i>BP M life cycle coverage</i>	<i>defect</i>
<i>Chang</i>	Up to down	Fundamental in the structure of the organization	Strength of the support phase	Formation of specialized teams	Almost complete	Not addressing the role of IT
<i>Weske</i>	Up down / down up	Limited	Credibility and comprehensiveness	Organization strategy	perfect	Not giving full details
<i>ARIS</i>	Up to down	Limited		The role of software	perfect	Unavailability / dependence on tools / difficulty of use
<i>Jeston & Nellis</i>	Considers parts of the organization simultaneously.	Limited at the individual level	Provide details and link steps	Executive steps	Almost perfect	Not addressing the role of IT
<i>Fundamentals of BPM</i>	Up to down	Fundamental in the structure of the organization	Comprehensive structure and process with appropriate details	Executive steps	perfect	Not addressing the role of IT

<i>Propose model(D & R)</i>	Up down / down up	Contin	Comprehens	Execut	Perf	-
		uous improvement in the structure of the organization	ive strategy, structure and process with appropriate details	ive steps by full details	ect	

4. Methods

The first part focuses on the ease of use, usefulness, and popularity of the methodology in general, while the second part examines the establishment capability of the methodology, and finally, the third part deals with the technical and structural methodology in compared to other methodologies.

4.1. Part One:

(i) This methodology is easy to use, (ii) this methodology is useful for establishing business process management, and (iii) this methodology is very popularity.

We used the voting system to score "Strongly Agree," "Agree," "Neutral or Neutral," "Disagree," and "Strongly Disagree" in each of the terms.

4.2. Part two:

In this evaluation section, participants were presented with six indicators to assess specific establishment capability (shown in the table below). We used "very high", "high", "neutral or neutral", "low" and "very low" scores in each of the terms. The evaluation criteria and indicators are as follows:

Table 7 – Description of part two indicators

Indicators	Description
Goal	To what extent does this methodology allow the processes to be in line with the organization's strategic goals?
Organizat ion	<ul style="list-style-type: none"> - Does it create the necessary trust among managers to establish process management? - Does it create the necessary partnership between employees to establish process management?
Environm ent	Is this methodology responsive to change at different process levels, to the effects of environmental change?
Integrity	Has this methodology paid enough attention to creating an integration between processes and process communication?
Culture	Has this methodology considered changing the organizational culture and preparing the organization?
Knowledg e	In this methodology, knows business process management been given enough and necessary attention according to global trends?

4.3. Part three:

In this section, based on the following indicators, this methodology was rated compared to other methodologies. "I strongly agree," "I agree," "I have no opinion," "I disagree," "I completely disagree" has been used. The evaluation criteria and indicators are as follows:

Table 8 - Description of part three indicators

INDICATORS	DESCRIPTION
COMPREHENSIVENESS	Has this methodology considered the various dimensions of the establishment of process management in terms of workforce and IT dimensions?
COVERAGE	Does this methodology cover all stages of the process management cycle?
ABILITY TO RUN THE PROCESS	In this methodology, has attention been paid to adaptations to transform the process model into a system execution model?
ARCHITECTURE	Does this methodology lead to architectural and infrastructure design for processes?

5. Results

5.1. Evaluation results of the first part:

In total, the average evaluation score for ease of use was 78%, Usefulness 85%, and popularity 81% for each.

5.2. Evaluation results of the second part:

5.2.1. Implementation framework of the proposed model

Establishing the proposed model in organizations is generally possible in four steps as follows:

- 1 - Identify the factors affecting organizational processes,
- 2 - Determining the impact of each factor in the organization,
- 3- Determining the degree of correlation between the influential factors in the organization,
- 4- Designing a factor analysis model and how to transform the current organization into a process-oriented organization

5.2.1.1. Phase 1: Identifying the factors affecting organizational processes

Tools: observation, interview, questionnaire preparation

Source: Documents within the organization or other similar organization, employees, and organizational elite

Data collection method: library, field

In this phase, we first divide the affected factors into two categories. The first category is observed variables, and the second category is hidden or hidden variables. Observed variables are those that are recognized by the internal study as a criterion that can affect the organization's process. Studying the variables observed in other organizations can always be useful for the analyst in identifying the organization's variables in question. To study and perform statistical analysis, we have to divide these variables into groups so that we put the observed variables that are somehow related to each other in a group, which In fact, these groups are the same hidden variables.

In this case, the hidden variables become a suitable cover for the observed variables. It should be noted that in model design, the hidden variables are always the same as the model nodes. It is necessary to use data collection tools. Questionnaires can be of great help to an analyst in this regard. Two essential points in preparing questionnaires are that, firstly, the number of questions in the questionnaires should be equal to the number of apparent variables, and secondly, the number they have to answer should be tailored to the model so that the model is good. For example, in this study, 14 variables are considered for a hypothetical organization to simulate this state, in proportion to which at least 300 observations should be collected.

Before preparing the questionnaire, it should be collected using the method of information libraries, which in this section, with the help of reading books and articles and researches in the relevant field, we can identify the most critical variables in this Especially find out. Then we prepare a closed questionnaire with a Likert scale. In the Likert spectrum, each question is faced with five options - for example, strongly agree, agree, average, disagree, and strongly disagree - with the value of each option being 2, 1, 0, respectively. -2- 1. We will publish the prepared questionnaire according to the required volume among the organization members to answer it. Table 1 lists the hidden variables that cover the explicit variables of the hypothetical organization in question.

Table 10 - Hidden and explicit variables

<i>Knowle dge</i>	<i>Integrati on</i>	<i>Culture</i>	<i>Environ ment</i>	<i>Organiza tion</i>	<i>Goal</i>
Knowledg e of implement ing process model to executive model (K1)	Creating integratio n in the organizati on (U1)	Attentio n to organizat ional culture (C1)	Respondi ng to environm ental change (E1)	Organizati onal Belief (O1)	In line with organizati onal goals (G1)
Organiz ational Process Knowle dge (K2)	Orga ni za ti on al Pr oc es s	Pre pari ng to cha nge the orga niza tion	Envi ron men tal requ irem ents cove rage (E2)	Org aniz atio nal Part ners hip (O2)	Com preh ensiv e Proc ess Man age ment Obje

	C o m m u n i c a t i o n (U 2)	al cult ure (C2)	ctive s (G2)
Pay attenti on to curre nt know ledge in the organ izatio n(K3)			Co mpli ance with the gene ral poli cies of the orga niza tion (O3)

5.2.1.2. Phase 2: Determining the impact of each factor in the organization

Tools: LISREL software

In this phase, we seek to provide a conceptual model of the organization that can show the relationships between the factors. In other words, at this stage, we are looking for logical relationships between hidden variables. Hidden variables are divided into two categories, dependent variables, and independent variables. Factor load is what we seek to determine, based on which the relationship of variables to each other is measured. The factor load of an independent latent variable is equal to, the factor load of the independent latent variable is equal to, and the latent variable is equal to each other. If the factor load is less than 0.3, the relationship is considered weak, and we ignore that relationship. A factor load between 0.3 and 0.6 is acceptable, and a factor load more significant than 0.6 is considered very desirable. The goal is to determine the factor loads between the variables identified in the organization. Figure 1 shows the hypothetical organization's initial model concerning the hidden and apparent variables drawn using LISREL software.

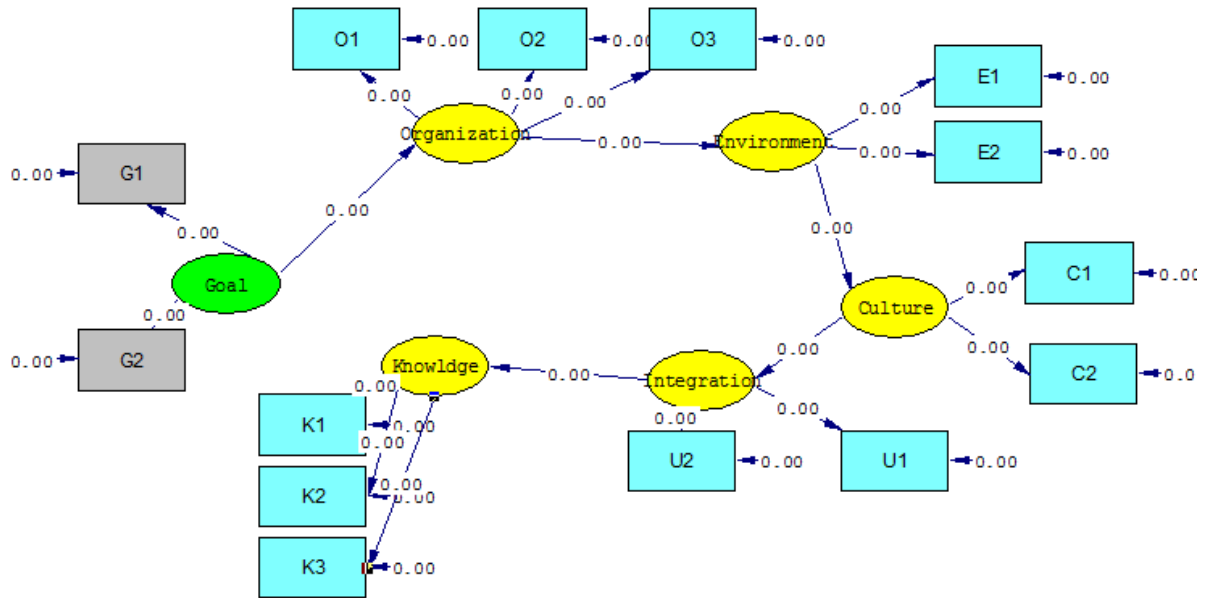


Figure 8 - The initial model is drawn with LISREL software

5.2.1.3. Phase 3: Determining the degree of correlation between the influential factors in the organization

Tools: LISREL software

In this phase, after drawing the initial model in LISREL software and executing the initial model, the factor loads are determined by it. Figures 2 and 3 show the software output in ESTIMATES and T-VALUES modes.

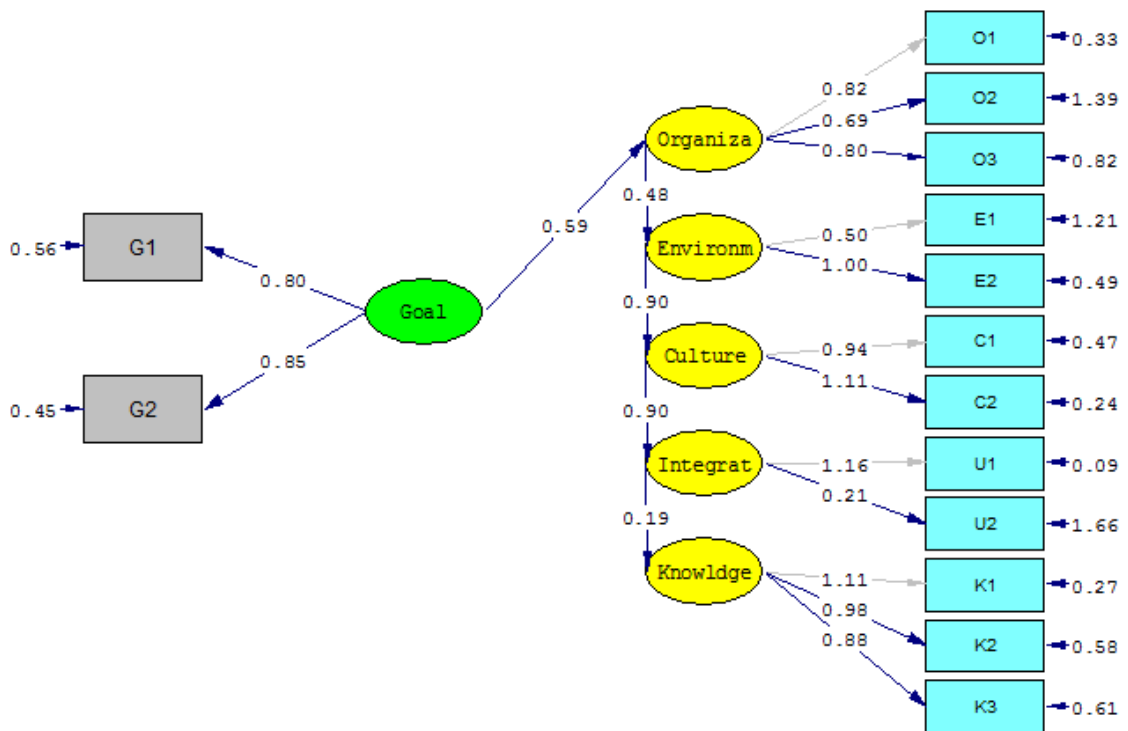


Figure 9 - LISREL software output in ESTIMATES mode

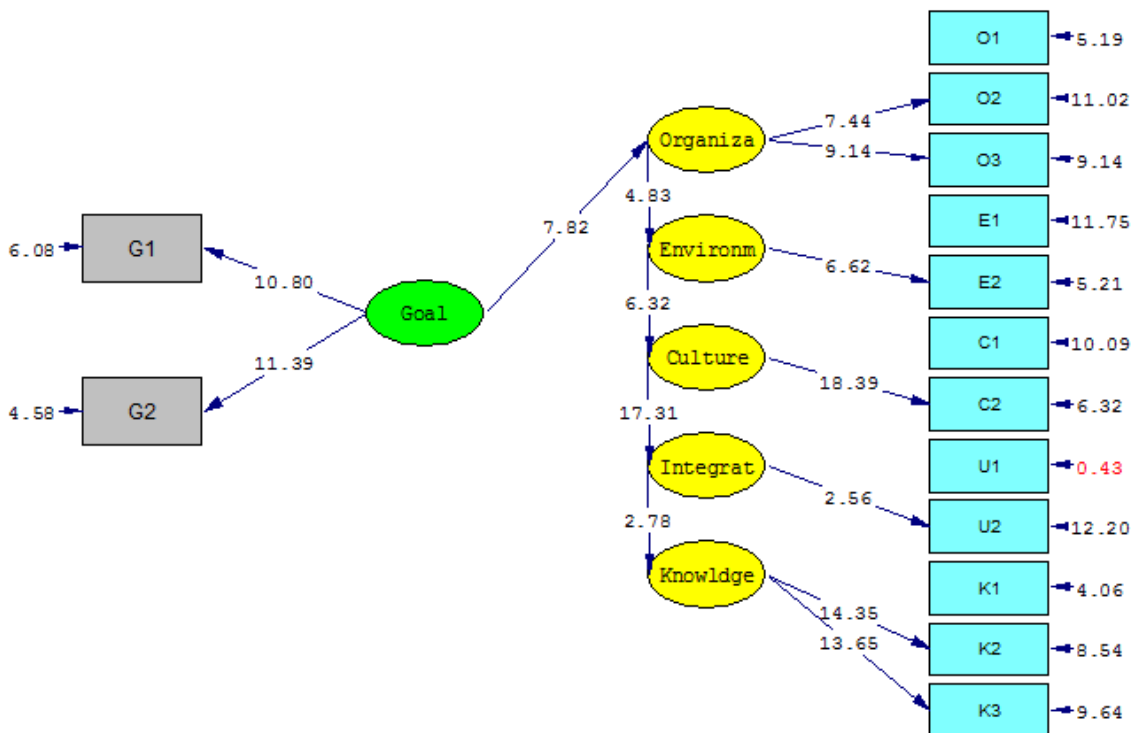


Figure 10 - Software output in T-VALUES mode

5.2.1.4. Phase 4: Designing a factor analysis model and how to transform the current organization into a process-oriented organization

In this phase, according to the output of LISREL software, P's value has been reported for the zero models. Considering that the statistical analysis is performed at a 95% confidence interval, the more P's value tends to zero, the more desirable it is. So we can conclude that the estimated model has good accuracy. If the variables have the range of distances specified in the second phase in ESTIMATES mode, we select and set the other variables aside. In the end, the path that leads us to the goal is chosen as the dominant strategy over other strategies. In T-VALUES mode, variables whose path coefficient is estimated to be less than 1.98 are also passed, which the software discards. Therefore, using the T-VALUES mode, identify the variables that cause an impact in the relevant organization. Table 2 shows the amount and status of the factor load of hidden and explicit variables.

Table 11 - The amount of factor load of each variable and its status

<i>latent variable</i>	<i>observed variable</i>	<i>Factor Value</i>	<i>State</i>
Goal	G1	0.8	Very desirable
	G2	0.85	Very desirable
Organization	O1	0.82	Very desirable
	O2	0.69	Very desirable
	O3	0.8	Very desirable
Environment	E1	0.5	acceptable
	E2	1	Very desirable
Culture	C1	0.94	Very desirable
	C2	1.11	Very desirable
Integration	U1	1.16	Very desirable
	U2	0.21	Weak
Knowledge	K1	1.11	Very desirable
	K2	0.98	Very desirable
	K3	0.88	Very desirable

5.3. Evaluation results of the third part:

5.3.1.Step 1: Create a decision matrix

Table 12 – decision matrix

Matrix	Architecture	Ability to run the process	Comprehensiveness	Coverage BPM Cycle
Chang	2	3	2	3
Weske	2	2	4	3
ARIS	2	3	5	2
Jeston and Nellis	2	4	5	4
Fundamental	4	3	3	5
Propose model	3	4	4	5
Scale type	Positive	Positive	Positive	Positive
Scale weight	0.2744	0.1564	0.268	0.3012

In this matrix, the index that has positive utility is the profit index, and the index that has negative utility is the cost index.

5.3.2.Step 2: Normalize or scale the matrix

Table 13 – Scaleless matrix

Scaleless matrix	Architecture	Ability to run the process	Comprehensiveness	Coverage BPM Cycle
Chang	0.3123	0.378	0.2052	0.3198
Weske	0.3123	0.252	0.4104	0.3198
ARIS	0.3123	0.378	0.513	0.2132
Jeston and Nellis	0.3123	0.504	0.513	0.4264
Fundamental	0.6247	0.378	0.3078	0.533
Propose model	0.4685	0.504	0.4104	0.533

In this step, we scale the scales in the decision matrix. In this way, each of the values is divided by the vector's size corresponding to the same index.

5.3.3.Step 3: Weighting the normalized matrix.

Table 14 - Weighting the normalized matrix

Weight matrix	Architecture	Ability to run the process	Comprehensiveness	Coverage BPM Cycle
Chang	0.0857	0.0591	0.055	0.0963
Weske	0.0857	0.0394	0.11	0.0963
ARIS	0.0857	0.0591	0.1375	0.0642
Jeston and Nellis	0.0875	0.0788	0.1375	0.1284
Fundamental	0.1714	0.0591	0.0825	0.1605
Propose model	0.1286	0.0788	0.11	0.1605

The decision matrix is a parameter and needs to be quantified, for which the decision-maker determines the weight for each index. The set of weights is multiplied by the normalized matrix.

5.3.4.Step 4: Determine the ideal positive solution and the negative ideal

Table 15 - Ideal positive solution and the negative ideal

Optimal solution	Architecture	Ability to run the process	Comprehensiveness	Coverage BPM Cycle
+	0.1714	0.0788	0.1375	0.1605
-	0.0875	0.0394	0.055	0.0642

The two virtual options created are the worst and best solutions.

5.3.5.Step 5: Determine the distance from the positive and negative ideal solution

Table 16 - distance from the positive and negative ideal solution

Distance	-	+
Chang	0.0377	0.1366
Weske	0.0637	0.1174
ARIS	0.0848	0.1304
Jeston and Nellis	0.1117	0.0915
Fundamental	0.1333	0.0584
Propose model	0.1253	0.0509

We measure the distance between each option by the Euclidean method. That is, we find the distance between the options and the positive and negative ideal options.

5.3.6. Step 6: Calculate the proximity to the ideal positive and negative solution as well as ranking the options

Table 17 - proximity to the ideal positive and negative solution

Result	Proximity coefficient
Propose model	0.711
Fundamental	0.6953
Jeston and nellis	0.5497
ARIS	0.394
Weske	0.3517
Chang	0.2162

5.4. Other related studies and our differences

Many studies have been done on business process management methodology, and various methodologies have been introduced. However, in particular, this methodology can be compared with other methodologies in the following 5 cases:

Method approach: The approach of most methodologies is either top-down or vice versa, but in this methodology, both approaches are used simultaneously. The formation of a strategic committee to identify the highest level, i.e., process areas, and the simultaneous formation of an executive committee to identify the list of processes and then the activities and tasks in each process, indicate this issue.

Level of change: In the details of the analysis phase of this methodology, it is described that the processes in the analysis are divided into three categories: maintenance and implementation (the process has the right conditions and does not require remarkable changes), process improvement or BPI (process needs minor improvements), Redesign (process requires fundamental changes), such a categorization is not observed in any of the methodologies, and only in the methodology of the book Principles and Fundamentals of Business Process Management it is mentioned that after the process analysis phase, it enters the redesign phase. The other two paths, maintenance, and implementation processes and partial improvement processes, will be ignored.

Advantage: In addition to the above, the most crucial advantage of this methodology can be considered the combination of skills, experience, and knowledge to create this methodology, which has led to providing all the executive details and a complete roadmap. In this methodology, special attention has been paid to the youth of human relations for full establishment in the phase of persuasion and preparation.

Focus: In this methodology and focusing on the executive leaflets, particular importance is given to creating trust in managers and employee participation as a separate phase, i.e., in the persuasion and preparation phase, to create a guarantee for full implementation.

DiD & Rvantages: According to research on practice and also the results of the establishment of this methodology, it has been tried not to have shortcomings in it and to cover the shortcomings of previous methodologies such as lack of attention to the role of IT and lack of details to meet all organizational needs.

6. Conclusion

Many studies have been done on business process management methodology, and various methodologies have been introduced. However, in particular, this methodology can be compared with other methodologies in the following 5 cases:

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DiD & Rvantages: According to research on practice and the results of establishing this methodology, it has been tried not to have shortcomings in it and to cover the shortcomings of previous methodologies such as lack of attention to IT role and lack of details to meet all organizational needs.

7. Conclusion

In this article, we provide an overview of current methodologies for managing business processes. We identified and

Discussed different methods: Weske, Chang, Aris, Jeston & Nellis, Fundamental. We described the Propose model and began to evaluate it.

We considered three stages of evaluation. In these three steps, with BPM activists' participation, we evaluated the Propose model (D & R methodology) meticulously and very accurately. From this evaluation, we came to surprising results.

In the first part of the evaluation, it was found that this methodology has a perfect position in ease of use, application in deployment, and popularity. This methodology has a perfect position in terms.

In the second part, the evaluation of the results showed that the methodology introduced in this article has a good position for establishing BPM from a technical point of view and by examining different dimensions and indicators.

A complete comparison was made between this methodology and other standard and proposed methodologies in the third part. Based on the evaluations made in this section, the Propose model gained the highest position compared to other methodologies.

Although it has been complicated and time-consuming to find professionals in this field, we have surveyed the experts and experts in this field in this research. However, we know that due to the limitations in these polls, generalization and generalization may occur. Findings need to be personalized in detail by considering and adapting this methodology to each business's environmental and internal conditions.

Overall, our findings show an apparent demand and interest in applying Propose model among these individuals. This methodology also has a good position for deployment.

In the continuation of our research, we want to focus on process mining and its relationship and impact on business process management methodologies. Because the process mining in the world is a growing trend and this approach is becoming increasingly popular; because it allows businesses to discover and optimize their processes to be appropriate for the era's specific purposes in the digital age.

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