FACULTY OF BUSINESS ECONOMICS

Master of Management: Management Information Systems

Masterproef

Business process modeling concept: Methodologies guideline for process excellence. Business process modeling application and implementation for the banking industry

Promotor :
Prof. dr. Koenraad VANHOOF

Alina Jiryes

Master Thesis nominated to obtain the degree of Master of Management , specialization Management Information Systems

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KNOWLEDGE IN ACTION

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*Master Thesis | Business Process Modeling Application and Implementation for the
Banking Industry*

Submitted by: Alina Jiryes

June 2, 2012

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Alina Jiryes
May, 2012

Abstract

The topic of Business Processes Modeling is one of the oldest widespread topics in the history of operational management. Companies locally and globally seek to have continuous operational improvement, and up until today the topic is still one of the most conversed areas that every Chief Executive Officer (CEO) is discussing within the company. There are many perspectives and solutions for Business Process Modeling in the market, offered by top-positioned modeling practitioners and/or consultants; whereby, companies are spending massively in order to enhance processes, aiming to enhancing future productivity and profitability improvement.

The essence of the thesis is to begin by discussing the concept and guidelines for Business Process Modeling and to illustrate the key contributes when conducting Business Process Modeling projects to Retail banks. From the very beginning of the thesis, it would very clear that the perspective for the thesis is be as practical and hands-on as possible, in order for the end-user whether it was a student interested in learning about the application of BPM in retail banks, or the CEO of the largest bank in the globe, the take-away from this thesis is to relate to the topic from a business and pro-active perspective and be able to have a better understanding the concept of BPM and the BPM lifecycle and its importance on the organization. Moreover, the thesis will then discuss Business Process Re-engineering and illustrate how BPR can be applied to an organization without resistance. Beyond this point in the thesis, the last two chapter aims to illustrate a Core Banking Transformation approach that focuses to understand the challenges banks are facing, and what is the trickle-down effect of BRP transformation on the whole organization. At this point of the thesis, the reader of the thesis is expected to be comfortable with understanding the approach for Core Banking transformation, and the importance of Business Process Modeling as an integral part of the whole value generation.

After all, the last chapter titled "Core Banking Business Process modeling in Practice" sheds the light on a local boutique retail bank in Jordan, that has defined their strategic direction few years ago and are now ready to conduct Business Process Modeling projects in order to enhance their operational positioning, and focus on the number of business procedures that would be aligned to the strategic direction, system, people, etc. After conducting intensive research on the bank and interviewing employees from different branches, it is clear that the bank is currently facing

various challenges in terms of branch operations and dealing with their customers in an efficient and effective way.

To maximize the value derived from this new strategic initiative that the boutique bank has undergone and to minimize the associated challenges and risks of the implementation process, the thesis will model and redesign the business processes of selected core banking procedures and provide the proper graphical documentation to govern the utilization of the redesigned processes.

One of the main tangible goals of the thesis is to enhance the operations of a selected boutique bank in Jordan from a processes perspective. Once the Business Process Modeling and Reengineering initiatives took place at the bank, and after a very short period post-implementation, there was a great success in having the customers, employees, and management sending an immediate impact on the operations, which will lead to operational excellence in the long run.

Contents

List of Abbreviations

Abbreviation	Definition
BPM	Business Process Management
BPI	Business Process Improvement
BPMN	Business Process Modeling Notation
BPR	Business Process Reengineering
CSO	Customer service Officer
IT	Information Technology
KFS	Key Success Factor
KPI	Key Performance Indicators
MICR	Magnetic Ink Character Recognition
ROI	Return on Investment

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Chapter 1: Introduction

The continuous change in the organizations nowadays is obliging organizations to continuously improve in order to stay competitive in the market. A major part of the continuous improvement initiatives for businesses in markets, and precisely in emerging markets, is to improve operations and performance. According to Ernst & Young publication on Business Process Management (BPM) "The current business environment presents a constant stream of both challenges and opportunities. It's essential for businesses to effectively define, identify and manage their most valuable customers in order to increase operational efficiency and enhance performance". (Young, 2011)

Most businesses are focusing on a process-oriented way to manage their organizations, to enhance the optimization of their processes. There has been a sense of demand for the BPM which will determine, control, and improve the processes performance. BPM is an enabler for the firm to improve the performance, whereby more efficient operations would lead to drastic improvements in the performance of the organization. Companies invest in BPM to minimize their operational costs that could be incurred due to inefficient and ineffective processes in the entire value chain of the business.

The banking industry has been growing rapidly in emerging markets, consequently, banks are continuously focusing on their clients by providing a more efficient and effective operations to serve their clients. Furthermore, applying the business process modelling to several departments in the banks will certainly identify workflows between the departments and illustrate the process from start-to-end. Stakeholders must be involved in modelling the processes, this additionally adds to the quality requirements of models. The process model consistency and quality assurance is one of the most important Key Success Factors (KSF) in the business process modelling phase.

Additionally, a detailed explanation will be conducted thoroughly throughout the research on the concept, guidelines, modeling suites, approach and the techniques of business process

modeling. In addition to that defining and discussing Business Process Re-engineering (BPR) which is considered an enabler for performance improvements**.** Moreover, a discussion regarding the importance of the BPM when applying it to any business, whereby, the business will be able to operate more efficiently and effectively which will have a direct impact on the performance of the business. Moreover a comprehensive theoretical research will be conducted to identify the best-practice of the business process modeling to highlight the importance of the possible common pitfalls and errors during the process modeling.

The thesis is devoted to demonstrate an understanding of BPM, with a particular emphasis on business process modeling notation. The major topic of the thesis is to analyse and develop business process modelling for the he Financial Services Industry in emerging markets, and precisely, applying business process modeling for a selected retail bank in Jordan. A detailed fully-fledged field work research will be conducted in order to collect and analyze data from local Bank in Jordan, in addition to conducting interviews with consultants and prominent bankers in Jordan to discuss the current situation of the banking operational procedures. Therefore, a detailed holistic analysis will be conducted on the current state (As-is) business processes to find the common areas of improvements for selected banks in Jordan. After conducting a systematic approach to review and document the procedures, a gap analysis would be conducted to illustrate the industry best practice procedures for the (To-be) target stage of the bank i.e. developing the To-Be banking procedures manual. Therefore, a major asset of the thesis would be to consider various approaches and guidelines when modelling processes to have output-oriented processes for the selected bank.

1.1 Thesis objectives:

They key objective of the thesis is to provide a comprehensive study regarding business process modeling in the Retail and Consumer banking division, by discussing the concept, approach, guidelines, and suites for developing business process modeling. The focus of the thesis would be to conduct an in-depth analysis to develop the best practice for the front-office banking business procedures (Branch operations). The thesis will also analyze and recommend an approach for selecting the business process modeling solution used when conducting process modeling.

Business processes must be clear and precise to all the targeted stakeholders of a business; therefore, this will help increase both services offered by the bank and the performance of employees while performing the processes to serve customers. According to studies conducted by Deloitte & Touche Consulting practice, "In the world of service, it's all about balance. You need an up-to-the-minute view of what your customers want. And you need to have all the processes and infrastructure in place to deliver it. Keeping up with either requires a disciplined approach – and the ability to shift direction at a moment's notice." (Touche, 2011). Businesses are constantly concerned in focusing on customers, therefore, it would require business management to assess the processes of the business in order to make sure they are aligned to industry best practice and hence, modify the business processes.

1.2 Structure of the thesis

Chapter one of the thesis includes the introduction and objectives of thesis. Chapter two includes a discussion of the BPM, by introducing the concept of BPM and then with conducting a comprehensive research on the BPM lifecycle. It continues by discussing the implementation of BPM to organizations and illustrating the key success factors. The chapter finalizes with the importance of BPM and its effect on organizations. As for Chapter two, the point of this chapter is to present a comprehensive overview on the concept of BPM. The chapter will analyze the lifecycle of BPM, and will illustrate the complete processes for the implementation and illustrate the Key Success Factors as well as discussing the importance of BPM and its effect on the organizations.

Furthermore, chapter three will discuss business process modeling from a broad prospective, and the guidelines that would govern the business process modeling initiatives being conducted at any local and/or global organization. This chapter will show understanding of the Business Process Modeling Notation (BPMN) and analyze the various components that are used when developing processes. Building on the previous chapter, chapter four would discuss the concept of Business Process Reengineering (BPR) by focusing on the methodology that is used by organizations and business process modeling practitioners to re-engineer the business processes of an organization. This chapter will also discuss how BPR will be implemented in an organization, which will allow the organization to benefit from a smooth transition into the utilizing

the re-engineering business processes without any resistance from existing employees at the organization. This chapter will also discuss several alternative methodologies for BPR that are currently in use based on the literature research and direct primary research being conducted in this area. Eventually this chapter analyzes a proposed BPR methodology that is most suitable when applying BPR initiatives in the financial services industry, precisely, retail and corporate banks. Chapter five will discuss global operational and strategic challenges that are currently facing banks, and illustrates various insights on the operational excellence that banks would be interested in enhancing and improving. This chapter also focuses on the Core Banking Transformation approach that is currently being applied by banks locally and globally according to industry best-practice and overall operational excellence. And finally, the last chapter will put the Core Banking Business process modeling into practice, and would provide a case study of a local boutique bank that will go through a fully-fledged modified Business process modeling life-cycle as discussed in previous chapters. Chapter six would provide an As-Is (current situation) and To-Be (target situation) deep analysis of a selection of banking business processes that will then be used as inputs for the Business Process Re-engineering section of this chapter.

Chapter 2: Business Process Management (BPM)

The point of this chapter is to present a comprehensive overview on the concept of BPM. The chapter will analyze the lifecycle of BPM, and will illustrate the complete processes for the implementation and illustrate the Key Success Factors as well as discussing the importance of BPM and its effect on the organizations.

2.1 Business Process Management Concept

Organizations nowadays are becoming more and more focused on adopting a systematic-oriented way of doing business. BPM is a process centric approach that is used to improve performance by combining information technologies with processes and governance methodologies. Moreover, it fosters effective, agile and transparent business processes, though collaborating between Business, People and Information. (Kiran Garimella, 2008) With regard, BPM has become a critical technique of controlling and leading business processes.
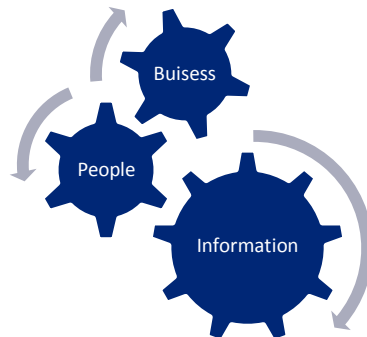
Figure 2.1: BPM relationship

For many years, profitability, efficiency, and customer satisfaction has been the core of any successful organization, and hence continuous improvement and control influenced a great deal of attention to management. In order to give rise to such a streamlined organization, the business department in any organization must understand and apply the management methods of BPM, to reduce the time and the effort needed to operate.

2. Business Process Management

In the other words the definition of **Business Process Management** "is an approach that's designed to produce better processes. It is a collaborative effort between business units and the IT world, and this effort fosters a new paradigm of efficient and logical business processes". (underdahl, 2011)

Managing processes is a comprehensive concept requiring a technical and organization aspect that must be taken into consideration. As mentioned above, the concept is targeted at improving the effectiveness and efficiency of existing business processes. In other words, the concept focuses on managing the business processes. "The term business process is a combination of activities within an organization with a structure, describing their objectives to achieve certain goals." (Aguilae- Saven, 2004). Moreover, attention should be given to the characteristics of those processes as they constitute the sole instrument of the BPM, and form the main indicator for choosing the appropriate management tools to drive the change. Hence, "support and continuous improvement are the two most important features. To do so, several software and techniques are used to analyze, design, and control these business processes". (Weske, 2007) BPM concept is not only directed at the processes, but also it includes assets as documents, human resources, and applications. At the bottom line, the role of a vital management is to take all of these strategic measures and utilize them in a way to optimize the value driven from business processes; hence, generating the maximum revenue from the satisfied customers.

Moreover, according to the writer of the book Business Process Movement for Dummies BPM is classified into three major dimensions which are Business, Process, and Management. (Kiran Garimella, 2008)

Figure 2.2: BPM dimensions

According to Garimella's research work, any business would need to identify its goals and objectives before conducting any type of business process modeling and re-engineering. The main goal of any business is customer value-creation and to focus on the methods to convey this value to the customers. As we can see BPM would facilitate the process of aligning the goals and strategies to the operational activities.

Secondly, process is a structured activity which transforms inputs (resources) to valuable outputs (products and/or services). Therefore, processes are more effective and would form better value to the customer, through the adaptive automation and coordination of people, information and systems. As processes become more transparent, it would mean that the processes become more visual and hence have effective operations which would allow employees to monitor and track the flow of processes and their outcomes.

Finally, Management is another enabling dimension according to the work of Kiran Garimella in the book titled BPM basic for Dummies. Management is aligning employees and system together to achieve the selected goals and objectives. After all, BPM allows the management of any company to integrate all the systems, tools, methods and techniques of process management into architected system.

2.2 Lifecycle of Business Process Management

Organizations are trying to keep competitive advantage in the marketplace by constantly determining the rapid changes in the market, and rapidly adjusting their strategies to reflect changes. As a result business processes is expected to be flexible, dynamic and capable of adapting any change. "Change is the only constant thing in this world, especially for businesses. This is because consumer demands are also constantly redefined. Success can only be achieved by keeping up with modernization. Therefore, businesses should always reinvent themselves, so that customers will not get bored with whatever they have to offer. This is where effective BPM comes in handy." (My Biz Routine, 2009) This chapter will be covering the Business Process Management life-cycle from different perspectives, a deep analysis will be conducted from Deloitte's and Accenture's point of view. Moreover, after conducting some field and desk research on both consulting companies, the research will generate a comprehensive lifecycle of Business Process Management.

First of all, an analysis will be conducted on Deloitte BPM lifecycle. After conducting interviews with Business Analysts and Consultants working for Deloitte & Touche consulting practice, it was clear that Deloitte & Touche has developed their own BPM lifecycle that is utilized when conducting Business Process Management assignments with various clients from any industry. As show in Figure 1 bellow, the BPM lifecycle is composed of Assessing Feasibility, Designing Processes, Building and Testing, Implementing and Rolling In, and finally Optimization. According to the interview with a Deloitte & Touche Business process modeling practitioner "The thread of business processes includes documenting and assessing current-state processes and operations as well as designing, documenting, building, and implementing enhanced and modified business processes" (Touche, 2011). The following definitions would illustrate the steps to be conducted within the BPM lifecycle based on the model implemented by Deloitte & Touche consulting practice:
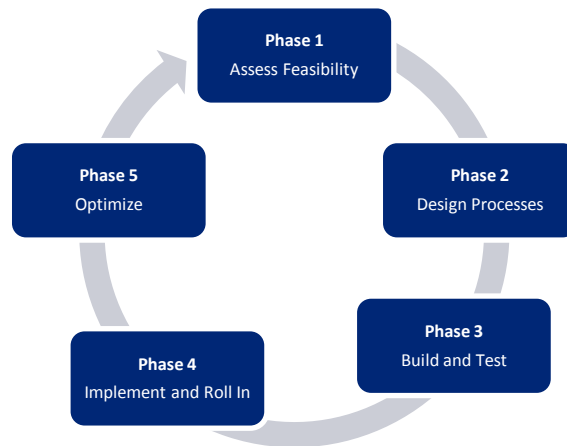
Figure 2.3: Deloitte's BPM lifecycle

BPM lifecycle based on the model implemented by Deloitte & Touché consulting practice:

Phase 1 **Assess Feasibility:** In this stage the practitioner would be responsible to determine the process scope and conduct analysis on the current business processes, in addition, to benchmarking with best common practice and providing gap analysis regarding the difference between the As-Is current business processes and the To-Be business processes.

The objective of this phase is to:
- Define the scope, performance and improvement targets
- Plan the working tasks
- Develop business and technology goals, resource needs, cost estimates, and timing
- Gather business and technology requirements
- Set the change imperative, conduct a change readiness assessment, and start the business case
- Assess internal and external factors
- Implement technology infrastructure changes

Phase 2 **Design:**

In this stage, the practitioner would be responsible to develop a detailed design for the business that fulfills the vision, and to plan any software integration and development activities. Therefore, the business process modeling team would be responsible to assign the approach and strategy for the exercise. In this stage, the team would be conducting interviews with the Client and logging opportunities, and setting expectations for the To-be business processes.

Phase 3 **Build and Test:**

The objectives of this phase is to build the processes according to the defined approach and strategy worked on in previous phases, thus, the team would be responsible to develop the To-be operations processes and procedures and the plan for implementation.

Phase 4 **Implement and roll in:**

In this stage the responsibility of business process modeling practitioner is to implement the processes that were designed. The objectives of this stage are to deliver a functional solution to the enterprise, and in addition to deliver the business benefits.

Phase 5 **Optimize:**

The final stage of the lifecycle of the BPM is to implement the continuous improvements and sustain any monitoring and improving the system. Therefore, the practitioner would conduct post-implementation reviews to ensure that the project objectives and business benefits were achieved. In addition, to develop a continuous improvement plans to realize benefits from the current project and to identify new opportunities for improvement.

The second analysis will be conducted on the on Accenture's BPM lifecycle which has been proven success with clients from various industries. This analysis was generated from interviewing a group of consultants that works for Accenture Middle East office and the publications issued by the company. "Accenture's Business Process Management—Lifecycle team helps organizations establish a BPM capability, linking business strategy with Information Technology (IT) and people-based operations to create transparency, agility and efficiency. This enables companies to make smart decisions and execute quickly on the resulting actions—using their "process of process management." (Kirchmer, 2010)
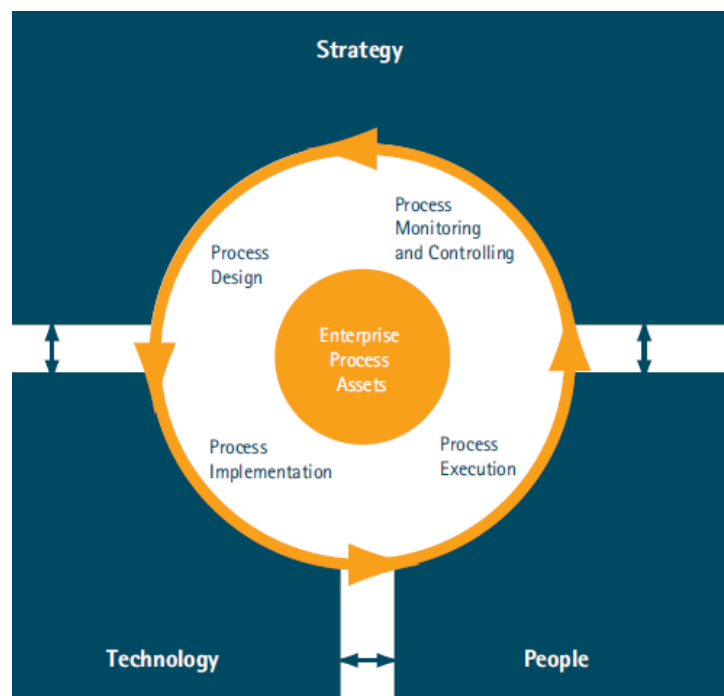
Figure 2.4: Accenture's BPM lifecycle

The life cycle above is composed of mainly four major key cycles including the process design, process implementation, process execution, and process monitoring and controlling, the following is a summary of the key cycles:

Phase 1   **Process Design:**

In this thread, the practitioner working on business process modeling would provide the requirements and roadmap plan that will be used to develop the to-be business processes. With reference to the plan, the process flow will be designed including the process outline with all the tasks and responsibilities. In this area, the practitioner would align the requirements and objectives of the company with the to-be state of the organization model and processes.

Phase 2   **Process Implementation:**

The process implementation stage is when the practitioners are complete with the business process modeling since this stage would be essential to the implementation and would act as an input for the implementation phase. The practitioner would supervise all the activities that are essential to organize the team and to document all the processes and provide roadman implementation plans

Phase 3   **Process Execution**

The process execution stage is when practitioners have planned for the implementation and is ready to execute the processes in order for all the employees to be involved in the execution process. Employees and IT resources participate in the process execution in order for the company strategy to be realized. Therefore, most entities in the organization must engage human resources and simultaneously orchestrate and invoke supporting IT applications and services.

Phase 4   **Processes Monitoring and Controlling:**

Upon completing the process implementation, it would be crucial for the management of the business to conduct controlling and monitoring initiatives; whereby, it would identify the differences and the problems at its early stages that

could be solved at the beginning stages. The system will be monitoring the processes continuously to amend any issues as early as possible in order to overcome any obstacles in the life-cycle of the BPM.

According to Accenture consultants which are continuously offering expertise to clients in all business transformation areas, "Each process has an owner. Since the success of the process can be measured on the basis of value for the customer, the customer basically sets the metrics by which the process performance is measured. The result is a customer-oriented organization." (Kirchmer, 2010)

The following table summarizes all the major key questions that need to be analyzed during the BPM lifecycle according to Accenture, a professional service company specialized in BPM.

Address questions for Business Porcess Management:

- How do I standardize my processes in a post merger-and-acquisition environment?
- How do I achieve safety and regulatory compliance?
- What does it take to scale up my processes to meet the next level of growth?
- How do I achieve real business value through a process-oriented implementation of ERP (SAP, Oracle, etc.) or similar systems?
- How can I manage standard operating procedures and facilitate their use?
- How can I identify "quick wins" for process improvement?
- How can I identify shared services opportunities?
- How can I develop a processoriented requirements definition the basis for software development?
- How can I enable a processdriven application consolidation minimizes business risk?
- How can I prepare for a successful process automation to achieve and cycle-time reductions?
- How can I focus my process management initiatives on high-impact business processes?
- How can I enable smart, wellinformed decisions and the fast execution of resulting actions?
- How can I measure the performance of my processes?
- Is it more efficient to outsource components of my process management?

Figure 2.5 Key Questions for Accenture Business Process Management (Kirchmer, 2010)

Based on the research that has been conducted to review various BPM life-cycles the cycle below is a comprehensive cycle that would include all the threads of a BPM initiative according to the scientific and practical holistic research. (In this part the researcher consolidated the life-cycles). One of the thesis aims is to consolidate the life-cycles to find the optimal cycle that could be used for a BPM initiative. The life-cycle would start by analyzing the business vision and strategy, and then designing the approach that will serve as a guideline for modeling. Upon completion of business processes modeling, the practitioner would need to implement the business process designed for the business which will later be controlled and monitored by management. The controlling and monitoring stage is significant to verify the performance of the BPM over the selected period. As a final stage of the BPM life-cycle, and given that any market and industry would face continuous changes by internal and external factors, it is critical for the business to conduct the final stage of the life-cycle which is Business Process Re-engineering (BPR), hence, reviewing the existing process and developing the to-be business processes reflecting any strategically implications and business direction.
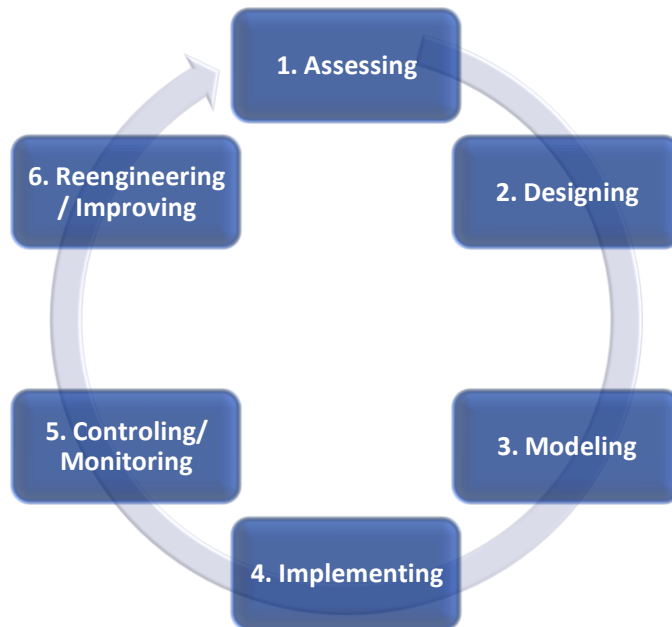
Figure 2.6: BPM lifecycle

In order to understand the proposed life-cycle, the following stages would explain each thread of the life-cycle in depth:

Phase 1   **Assessing Business Vision & Strategy:**

In this thread, the practitioner would evaluate end-to-end processes of the company along with the business vision and strategy, and any additional documents supporting BPM. At this stage, the business process practitioner is responsible for defining the business concept, defining the market needs, and defining the key performance indicators, in other words, to understand the whole requirements in order to develop the business processes at a later stage of the cycle. According to a senior business process modeling consultant recommendation at Deloitte & Touche "It is important at this stage to define the process owners of each process, whereby, reasonable for the monitoring and controlling the processes; moreover, it is essential to identify the roles and responsibilities for the employees at the business that will be responsible for executing the task." Finally, the business process practitioner would list the processes of the business, which will be used as a reference in the designing and modeling thread of the BPM life-cycle.

Phase 2   **Designing Processes:**

In this thread, the business process practitioner would provide the requirements and plan that will be used to develop the to-be business processes, with reference to the findings that were discovered and identified in the previous thread. According to the plan defined previously, the process flow will be developed that will include the processes outline with all the tasks and responsibilities. In the designing processes thread and based on the information gathered, the practitioner would align the requirements and objectives completed in the previous stage with the plan.

Phase 3   **Modeling Processes:**

In the process modeling thread and based on the information gathered in the previous stage, the business process practitioner would be responsible to design the processes and responsibilities on the selected process modeler. The final result of this stage would be to define the business processes, along with the workflow, sub-processes, tasks, roles and responsibilities, etc… The result would also apprehend all the activities needed to align the business processes into the business processes modeler to clarify the work flow between departments. It is clear that the business process modeling is considered as one of the most important threads of the BPM life-cycle, where if designed poorly would negatively reflect on the whole life-cycle. The thesis will shed the light on this thread in depth, and would be covering the approach, tools, methodologies, suites, and guidelines for process modeling, additionally, provide a best practice business processes for the banking industry specifically, consumer retail banking procedures.

Phase 4   **Implementing:**

All threads are integrated together in the lifecycle of a business process modeling; the previous process modeling thread is essential where it acts as an input for the implementation phase. In this thread, the practitioner would supervise all the activities that are essential to organize the team and to document all the processes. Moreover the infrastructure of the business processes is arranged according to the data gathering stage, and the analysis of the supporting documents.

Phase 5   **Controlling/Monitoring:**

The controlling and monitoring thread would identify the differences and the problems at its early stages, to avoid any dilemma while proceeding with the processes. The system will be monitoring the processes continuously to amend any issues as early as possible in order to overcome any obstacles in the life-cycle of the BPM. The above thread is prior to the re-engineering thread since it

will clarify all the issues that have been raised during the previous stages of the life-cycle, and this will ensure that the processes are aligned to the main objective and the purpose of the procedures.

Phase 6   **Re-engineering/ improving:**

According to Hammer and Champy in 1993 the definition of re-engineering is:"The fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical modern measures of performance, such as cost, quality, service, and speed"

BPR is the method of fulfilling the gap between the As-Is processes and the strategic direction of the organization. Therefore, in today's continuous changing working environments, businesses have managed to figure out an incredible solution which is BPR which is a fundamental rethinking and redesign of the business processes. (Chapter four BPR will illustrate a comprehensive description of BPR and the methodology for implementing BPR in any type of organization)

2.3 Business Process Management Implementation and Key Success Factors

BPM implementation is considered a sensitive topic when discussed with senior management of any business. Therefore, BPM is considered to be a comprehensive management approaches that would focus on aligning all the aspects of the business with the needs and wants of customers. Therefore, understanding the type and nature of business is highly valued at this stage, in addition to understanding the needs and wants of customers in order to be able to align the needs and wants of customers with the strategic goals and direction of the business. Another important aspect the organization must concentrate on is the business architecture which illustrates the deign representation of how a company classifies itself in terms of its roles between departments and how to achieve value. (Kiran Garimella, 2008)

The value-added driver when conducting BPM projects is the delivery of enhanced business performance through cost reduction, increased productivity, and the ability to turn the business on agility. (Miers, 2006)

Upon reviewing multi-diverse criteria's related to developing BPM, the thesis would illustrate a suitable approach for the three major criteria's that would need to be applied when conducting BPM. In order to put BPM into practice, businesses would have to begin with a high-level business analysis, understanding the business goals and objectives, and understanding and defining the needs and wants of customers. Figure 4 as shown in the illustration below focuses on the three major criteria's that would need to be applied while conducting BPM implementation.

Business process management
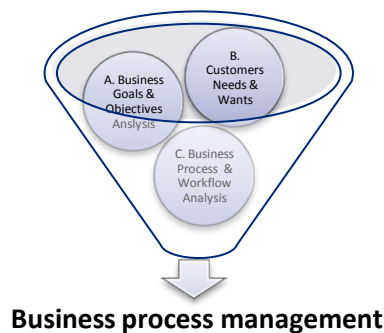
Figure 2.7 BPM Criteria's

According to the figure above, criteria A is focusing primarily on understanding the business and collecting the major relevant figures and data to be able to conduct a comprehensive business analysis on the business goals and objectives; hence, this will reinforce the understanding of business and the nature of the business in order to conduct BPM in a business. Given that business analysis is considered to be very diverse, according to the research conducted on professional services and consulting firms' websites, there has been a tendency to analyze the business according to Strategy, Architecture, and Systems. Therefore, to effectively apply the BPM approach it is critical for a business to have an overall understanding of the nature of

business and focus on strategic matters in order to align the all aspects of the business with the needs and wants of both the management and the target customer of the business. As for criteria B and with reference to the discussion of BPM criteria's above, the criteria is customer needs and wants, it is essential for every business to analyze their customer needs and wants and to understand the customer is one of the crucial factors that leads to a successful organization. In other words, this would lead to meet the competition of the market between different organizations.

And as for the last criteria in Figure 8, which is emphasizing on the importance of business processes and workflow analysis, this criterion would be considered to be a prerequisite in order to conduct BPM implementation. According to an associate at A.T. Kearney Management consulting firm, "The business process analyst developer would be assigned to conduct data gathering that is related to the existing As-Is business procedures, along with supporting documents, specifically, Organization structure, authority matrix, business model, strategy documents and organizations structure." The figure below illustrates all the supporting documents that are gathered during this stage that will be very important prior to conducting the BPM lifecycle.

Prior to conducting any BPM initiatives in the organization, it is important to collect certain documents that will be supportive for the practitioner team conducting the business process transformation. The following is a summary of the supporting documents that will be gathered during the data gathering and analysis stage:
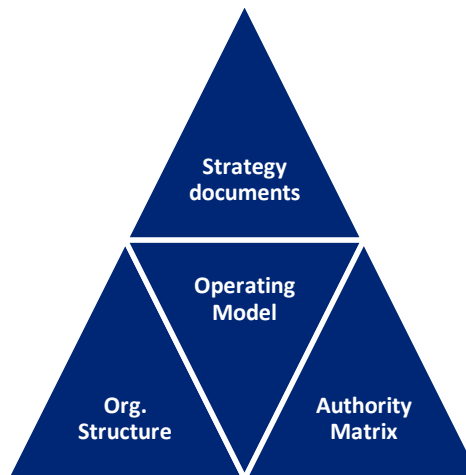
Figure 2.8 Thesis Data Gathering and Analysis 2011

Organizational Structure: The Organizational Structure is defined as the framework that will typically illustrate the hierarchical inside an organization with clear understanding of the lines of authority and communications, and would illustrate the rights and duties of each individual in an organization. Since the organizational structure mainly depends on the strategy and objective of the company, it is recommended to gather the structure, since it will assist the business process practitioner in the roles and responsibilities of each department. Moreover, the organizational structure illustrates the relations between the departments and employees in the organization, accordingly to that it clarifies the work flow of documents and responsibilities in the organizations.

Authority Matrix: The Authority Matrix is table or grid that would illustrate the authority delegation of the employees in an organization, and would define the complete responsibility outcomes and tasks of business processes in the organization. Therefore, this document is recommended to be gathered in the data gathering and analysis stage, in order to have a clear understanding of the authority delegation between employees in a business, and which would assist the business process practitioner in understanding the authority delegated to each employee that is part of the process. (Whitemore Solutions Ltd, 2009)

Business Model: The business model is a detailed description of the organization operations, operating strategies, corporate structure and deliverables. Moreover, the business model is day-to-day activities of the organization and would define the operation streamline of the business. Therefore, the model of the organization should illustrate the business operations (production process) and in this manner it will assist the practitioner in developing the To-Be Business processes aligned to the decisions of the business model, and would illustrate the handshakes between departments and finally, how the business is intending to generate the profit of the organization from its deliverables. (A. Osterwalder, 2010)

Strategy Documents: Determining the strategy documents helps the management to have a clear vision of the future plan of its organization, and to work to towards these plans and to achieve their objectives; this will help in determining the strategic direction, increasing the profit and the performance of the organization. Moreover, the strategy documents that will be gathered by the business process developer is basically all relevant documents summarizing the mission, vision and the objectives of an organization.

2.4 Importance of Business Process Management and effect on the Organization

Nowadays, organizations must be responsive to the continuous change, and take action to the challenges that counter them. By implementing the BPM to the organization this will give them the ability to manage their processes, accordingly to that the organization will achieve their strategic goals.

On a high level, based on various studies conducted regarding the effect of BPM on the organization, and according to Business Process Management Dummies Book; "BPM basically provides the organizations to improve their processes with less time and effort. On the other hand it offers a high Return on Investment (ROI), rapid development, and the tools to drive process improvement. Additionally, BPM can facilitate the organizations to become more agile and able to face the challenges of future." (Underdahl, 2011)

The BPM would actually have a direct impact on the organization, and would help the company to become more responsive and proactive in various ways. One of the major impacts on the organization would be increased productivity, whereby, more work would be done with few employees and make sure the same pool of resources are able to work efficiently, hence, increase productivity. As for another major impact on the organization, which is speed to market, where the BPM would assist the company to be a leader to take advantage of the new market by conducting thinking out of the box and returning to the roots and fundamentals of products and services and redefining them in a more attractive manner. The third impact that also would have a direct impact on the organization, is to reach the global market by streamlining the supply chain and make use of various opportunities around the globe by standardizing the value and supply chain of a business and aligning it with world-wide best practice. Achieving compliance is an important factor that companies would prefer to have in their organization, therefore, companies would be seeking to implement BPM to help reduce money and time and able to have processes that already aligned to the corporate governance of the selected business. Another factor that must be taking into account and which will have a direct impact on the ability of the business to innovate, is that BPM would increase the chances of having innovation taking place in an organization, especially when the business process are modeled to allow innovation internally. (underdahl, 2011)

Figure 2.9: How would BPM affect the organization?

Nevertheless, implementing the BPM will deploy more and innovative opportunities for the organization. The implementation of processes would have a positive impact on the organization, hence, improve the performance and productivity of the business and would improve the ROI.

Chapter 3: Business process modeling

This chapter will discuss business process modeling from a broad prospective, and the guidelines that would govern the business process modeling initiatives being conducted at any local and/or global organization. This chapter will show understanding of the Business Process Modeling Notation (BPMN) and analyze the various components that are used when developing processes.

3.1 What is business process modeling

Businesses globally find it strategically and operationally significant to understand the core business processes to be able to lead the organization and manage their daily operations and activities. In order for businesses to manage their activities and functions precisely, businesses would have to document the core processes that are used by the employees to perform various activities. The concept of business process modeling gives an organization the ability to design and document their business processes to capture all the activities and roles and responsibilities of employees in a certain function e.g. Core Business, Information Technology, Human Resources, etc. Therefore, the management will be able to holistically understand and analyze the processes from a top-view to make sound decisions regarding business performance, operational excellence, and strategic direction.

The common practice for businesses is to first understand the concept of business process modeling in order to be successful in any operational transformation initiatives. The business process is defined as the transformation of inputs to outputs, where tasks and activities will be defined in the sequence that will be executed. The effectiveness of a business process is integrating the processes with an organizations strategic direction and to focus on the customer needs.

According to Thomas H. Davenport (1993) **Business process** is "a structured, measured set of activities designed to produce a specific output for a particular customer or market. It implies a strong emphasis on how work is done within an organization. A process is thus a specific ordering of work activities across time and space, with a beginning and an end, and clearly

defined inputs and outputs: a structure for action. Processes are the structure by which an organization does what is necessary to produce value for its customers."

Subsequently, modeling the processes is a valuable classification that includes the core aspect of the operational business processes. "An enterprise can be analyzed and integrated through its business processes, hence the importance of correctly modeling its business processes" (Sara, 2004). Therefore, once the processes are designed and documented, there will be a general understanding of the operations of an organization, taking into consideration all the internal and external factors that might affect the organization. In other words, this will facilitate the communication between the employees in the organization, since it clarifies the departments, responsibilities and documents work flow in an organization.

Business process modeling "is generally a modern term of improving the business processes of an organization in terms of performance and quality to satisfy the customer. The business process model diagram represents the sequence of tasks to clarify the workflow of activities. In addition, business process modeling is a cross functional combining the work between different departments at an organization. Therefore, it is performed by business specialists and IT professionals. (Business process modeling wikipedia) (Buisness/ Selling: Business Process Modeling, 2009)

There are various reasons behind conducting business process modeling, and this area is becoming a main concern for many businesses. Therefore, one of the various reasons of conducting the business process modeling is managing and documenting the processes to improve organization performance which will allow the organization to achieve its strategic goals to satisfy customers' needs. It's very crucial and important to manage and model the business processes in an organization in order to sustain competitiveness in the global market. Also, business process modeling allows the organization to utilize the Information Technology and other resources to constantly optimize and manage the business processes to improve the organization performance.

When an organization conducts business process modeling another purposes for the initiative is to align business functions and business goals, which will also improve the visibility in the organizations' operations.

The practitioner must take into consideration the major categories and perspectives for Business process model which are: Functional, Informational, Organizational and Behavioral. First category, functional, represents what activities are being performed and the ways these activities must be performed. As for the second category, informational, determines the useful documents and data for modeling the processes. Another category, organizational, depicts a process in terms of where and by whom activities are being performed the owner of the activity, as mentioned above business modeling determines the departments, role and responsibilities in an organization. The last is the behavioral category which represents a process in terms of when activities are being performed and it clarifies the rules of sequence in which activities are performed. (Tung) (Bernus, 2006)

3.2 The importance and the benefits of business process modeling

Business process modeling would have a positive impact on the organization once the complete redefined business processes have been implemented, which will trickle down the effect on all the stakeholders of the organization. This impact is usually measured by a defined set of Key Performance Indicator (KPI) that will be defined prior to this initiative, which will control to what extent the business process modeling will impact the organization from more than one perspective. The major stakeholders that would benefit from this initiative are the management of the organization, employees, and customers. As the organization goes through business process modeling implementation, the organization would prepare all the stakeholders for this implementation, and ensures that the employees are ready for this initiative. Additionally, all the employees of an organization will be offered training courses to align the team with the new redesigned business processes, and which will allow the organization to begin operating within the redesigned business processes. Therefore, once the organization completes the implementation of their redesigned business processes, this will allow the customers of the organization to observe the benefits of this initiative, some example are efficiency and effectiveness in operations, smoother processes that minimizes time of the process. All these quick-wins mentioned above will contribute to the customer satisfaction for a company, and ultimately improve the performance of the organization.

The implementation of business process modeling to the organization will impact the overall business operations; furthermore, the figure below illustrates the benefits of implementing

business process modeling. (Singh, Deepak President and CTO at AccuProcess Inc) (pasindulathpandura, 2007)

A	Align operations with business strategy
B	Improve process communication
C	Formalize existing process and spot needed improvements
D	Improve operational efficiencies and gain competitive advantage

Figure 3.1: Benefits of business process modeling

Business process modeling works on aligning the business processes to the organizational strategy, hence, ensure reaching the goals and the wants of the organization. However, in the modeling phase practitioners must ensure that the business processes are achieving the strategic goals of the organization. Nowadays, organizations are facing major changes from the external and internal environment; therefore, business process modeling enables the agility of business processes, which will allow the business to take advantage of new business opportunities. The organization must ensure that their processes and rules are well designed and are implemented in the right way; this will lead to better decision making since all rules are documented. Moreover, models must be developed in an efficient and effective way which will allow the departments and employees to have a clear visibility on the operational processes and understand their roles and responsibilities. Since, the business process modeling presents a clear comprehensive model understandable by all employees this will help the organization to

minimize the number of errors and conflicts between employees that maybe caused from the unclear workflow of processes and undetermined roles and responsibilities. In addition, business process modeling forces the organizations to formalize their understanding of current processes, by highlighting the areas of improvements, which will consequently eliminate unnecessary steps and/or automating the steps that are currently manually done. All these benefits help the organization to gain a competitive advantage which will allow the company to become compatible with any market changes, fierce competition, and customer demands.

3.3 Business process modeling guidelines

After conducting various research initiatives to find comprehensive guidelines for conducting Business process modeling, it is apparent that researchers have not published a consolidated set of guidelines that combine major pinpoints that needs to be taken into consideration when modeling the business processes. Therefore, a contributed research will be done on this matter, to provide a clear and a comprehensive modeling guideline that will help redesigning business processes, specifically for the banking business procedures.

To being with, the business analyst and the practitioners would have to analyze various suites for conducting the business process modeling, to select the most compatible suite that is aligned to the objectives of the BPM and the reasons behind this initiative. In addition to the suite that will be selected for the business modeling, it is also the responsibility of the practitioner to select the most suitable guidelines, which would require an intensive literature research and review, plus analyzing the organization situation. As mentioned above, a comprehensive research has been conducted to find the most comprehensive guidelines, and it has been noticed that most guidelines focuses on the way of designing the processes, and is not taking into consideration the whole framework of the organization i.e. the objectives behind the business process modeling and the direction of the business.

According to J.Mendling guidelines, there are seven main guidelines which are also known as the 7PMG. These guidelines present the directions of how a process model can be improved and the possible alternative that can be used.

The following are the guidelines that are interpreted by J.Mending (Aalst):

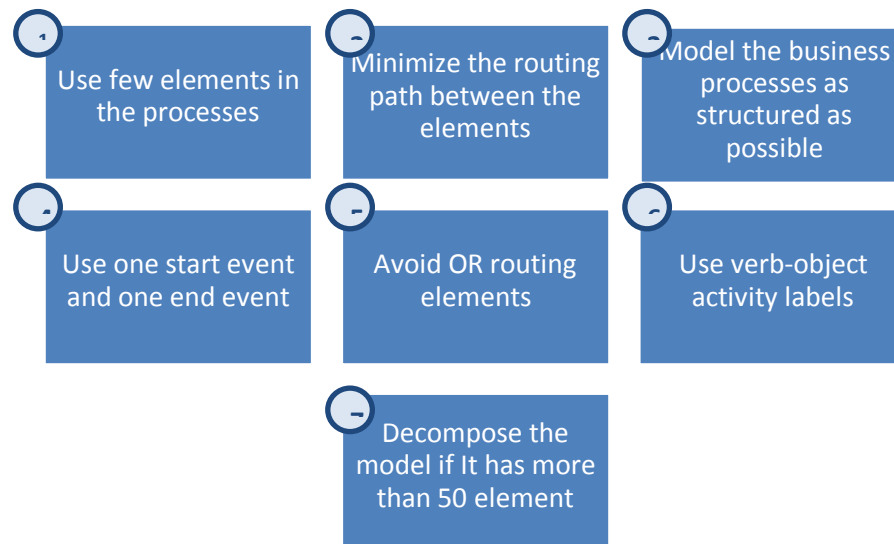|		
① Use few elements in the processes	② Minimize the routing path between the elements	③ Model the business processes as structured as possible
④ Use one start event and one end event	⑤ Avoid OR routing elements	⑥ Use verb-object activity labels
⑦ Decompose the model if It has more than 50 element		

Figure 3.2: J.Mendling guidelines

According to the diagram above, there are seven main guidelines that will be useful to follow once developing business processes models. The first guideline would recommend using few elements in the processes, since fewer elements would facilitate the procesess in order for it to be conveyed and understood by the business experts. Another guideline would recommend to use a minimal routing paths between the elements, and model the business processes as structured as possible. The fourth guideline recommends that every process must have one start and one end event in order to eliminate any possible confusion by the business experts. Each process must also start with an action verb-object to illustrate an activity that must be completed by the assigned individual, which will allow the management to control authority and responsibility. Lastly, the business process model must be decomposed if it has more than 50 elements.

The guidelines published by J.Mendling are essential for modeling the business processes; however, other important factors must be taken into consideration; such as, determining the collaboration between departments and the clear roles and responsibility of all the business users. Moreover, they must indicate KPIs in the business processes, which will control and ensure that the performers are performing in the ultimate and most effective and efficient way. However, errors must be avoided as soon as they occur, which will oblige the organization to perform and attain quick-win solutions. Another important aspect, after modeling the business

processes is the importance of documenting the processes to ensure that the business processes are comprehensible by all business users and stakeholders in an organization.

3.4 Business process modeling Notation (BPMN)

There are various modeling languages that are used by practitioners that are used for different purposes in an organization. Determining which language will be used is the decision made by the management of the company and the practitioners working on the business process modeling initiative, a detailed analysis must be conducted on the organizational requirements and the purpose of conducting business process modeling. If the purpose of the business process modeling is to be used for internal consumption of the management, then the graphical-driven business processes languages will be selected which needs to be clear to all internal stakeholders e.g. employees, management, HR department, IT department, etc. The selection of the modeling language all depends on the value that must be delivered with the business process modeling, and the goals of an organization. Another key issue when selecting the business process modeling language is to understand how the processes will be implemented to an automated system. After all, the thesis will model the processes by using the graphical notation language also know as, Business process modeling Notation (BPMN), the criteria for selecting this language is due to the fact that the aim of business process modeling in the thesis is for internal consumption by the management of the company to effectively understand and model the business processes, in order to find areas for improvements.

Business process modeling Notation (BPMN) "is a graphical notation that describes the logic of steps in a business process. This notation has been especially designed to coordinate the sequence of processes and messages that flow between participants in different activities." (Matias Tarub) .
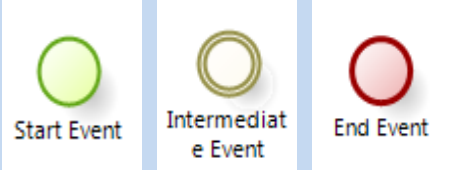
The concept of BPMN was developed by BPM Initiative and at the moment is being maintained by Object Management Group that represents a standard notation that most employees and stakeholders find easily to understand and digest. (Grapholite). Modeling the business processes using notations would help the organization to manage and understand their business processes easily, since the primary goal of BPMN is to present a holistic approach that will be

used by stakeholders; such as the practitioners that model the processes, IT department that will implement these processes and the management and the business owners who will manage and control theses processes. (OMG , 2008).

This thesis is meant to provide the retail banking sector with a suitable business process modeling life-cycles, guidelines, techniques, and develop the business processes of a selected bank using the Bizagi suite. "Bizagi suite is a powerful business process modeling Notation modeler, used to design the core business and support processes of an organization." (Bizagi) The modeled processes are a group of notations that presents a network of graphical elements; which is divided into four main elements Flow Objects, Connecting Objects, Swimlanes and Artifacts; these elements will be illustrated in the figures below. (Stephen A. White, IBM Corporation).

The table below illustrates the flow objects that are used for business process modeling Notation, which focuses on the core elements of the processes:

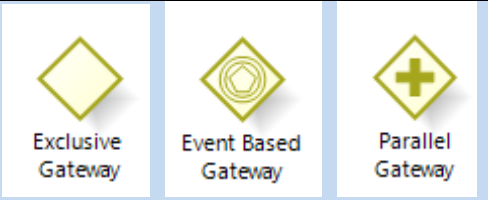| Flow Objects: Core elements of Processes		
Events	**Event** is something that happens and occurs during the path of a business process, which affects the flow of the process and has a trigger or result. There are three types for the event: Start Event, Intermediate Event and End Event. There are several type circumstances that can trigger or impact these events such as arrival of message, timers, ect. These events can start or delay or interrupt a process.	Start Event Intermediate Event End Event
Activity	**Activity** is the generic work performed in the organization within the business processes. There are two types of activities: Atomic type (task) is the lowest level of details and Command type (Sub process) is another level of processes that provides more information.	Task Sub Process

Gateway	**Gateway** is one of the important modeling methods that help to control how the process diverges or converges, so basically the control the path of the processes by splitting and merging the process. There are three types of gateways: Exclusive Gateway, Gateway based on events, and parallel Gateway.	Exclusive Gateway Event Based Gateway Parallel Gateway

Table 3.1:Flow Objects (Stephan A. White, 2008)

The table below illustrates the connecting objects that connect the flow objects together between difference processes to clarify the flow of the process.
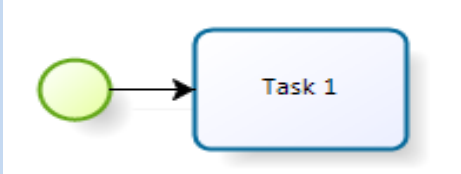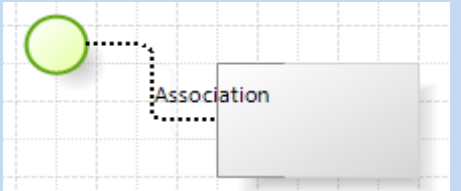
Connecting Objects		
Sequence Flow	**Sequence Flow** connects the process elements together such as connecting the Events with the activities.	Task 1
Message Flow	**Message Flow** presents the flow of messages between processes (different pools)	Message Flow
Association	**Association** links one element with another such as linking it with Start Event.	Association

Table 3.2: Connecting Objects (Stephan A. White, 2008)

The figure below illustrates the Swimlanes which organizes the activities in a process and determine the roles and responsibilities:
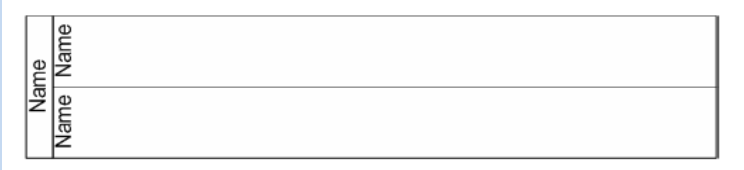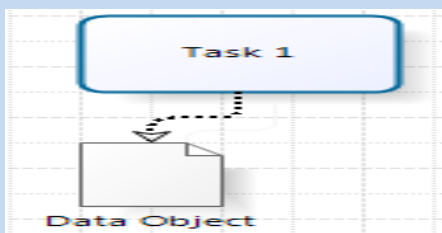
Swimlanes		
Pool	**Pool** its represents the participant in the process, which contains the set of processes performed by the participants.	
Lanes	**Lanes** are the sub-partition within pool. And it is used to organize the activities and classify processes between departments.	

Table 3.3:Swimlanes (Stephan A. White, 2008)

As for the table below, it illustrates the artifacts that illustrate extra notations for the processes such as the data object, group, and annotation:

Artifacts		
Data Objects	**Data Object** Is the data that is required and produces by an activity they are connected by Associations	
Group	**Group** provides a visual mechanism to group elements of the diagram informally, without affecting the sequence flow	
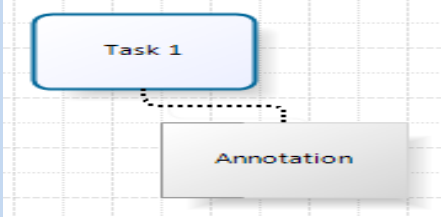
	Annotation Is to provide additional text documentation for the reader	
Annotation		

Table 3.4: Artifacts (Stephan A. White, 2008)

Additionally, there are many features that need to be taken into consideration during the business process modeling phase. One of the techniques that must be taken into account when conducting business process modeling is to keep the diagram as simple and straightforward as possible, and to avoid any complex business processes which may defeat the purpose and the benefits of having the processes designed for the end-user be able to digest and understand the processes. Another guideline and technique is the clarity and comprehensiveness of the business processes, and the ability for the processes to convey the work stream in a straight-forward and easily followed by the end-user of this processes. In this area, practitioners would be responsible to make sure they use the language, style of writing, and action verbs that would allow the end-users to comprehend and utilize the business processes in a more coherent driven way.

Chapter 4: Business process reengineering

Chapter four would discuss the concept of Business Process Reengineering (BPR) by focusing on the methodology that is used by organizations and business process modleing practitioners to re-engineer the business processes of an organization. This chapter will also discuss how BPR will be implemented in an organization, which will allow the organization to benefit from a smooth transition into the utilizing the re-engineering business processes without any resistance from existing employees at the organization. Finally, this chapter will discuss several alternative methodologies for BPR that are currently in use based on the literature research and direct primary research being conducted in this area. Eventually this chapter analyzes a proposed BPR methodology that is most suitable when applying BPR initiatives in the financial services industry, precisely, retail and corporate banks.

4.1 Concept of Business Process Re-engineering

Nowadays, organizations are focusing on developing and redesigning the business processes of an organization, by changing the way of performing the business processes, to reach the competitive global market and achieve dramatic improvement in the performance of the organization; to improve the performance efficiency and effectiveness of operations.
With regard to operations and business performance in today's business world, the business environment is becoming more intense, thus businesses are seeking for continuous improvements regarding changes in operational structures and in processes. One of the areas where most Management Consulting firms are constantly offering as consulting services to businesses is to re-engineer the business processes of the company.

According to Hammer and Champy **Business Process Re-engineering** is defined as "Reengineering is the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance such as cost, quality, services, and speed. Subsequently, business process reengineering is redesigning the internal and external organization processes, customer service procedures, and clarifying the role and the responsibilities in the organization." (Champy, 1993)

BPR requires the organization to redesign the business processes taking into consideration the used information technology and department that supports these processes. Therefore, BRP would require a revisit to the roots of the businesses, and therefore major analysis must be made to the current situation and roots of the issues, instead of providing quick patch or temporary improvements. BPR would actually reinvent the wheel and be able to revisit the whole processes of a business, and not just the tasks and people.

To measure the readiness of an organization to initiate BPR, it is crucial to determine the critical success factors. To implement a successful BPR project the management of an organization should illustrate the critical success factors. First of all the management should determine the vision and the strategic mission of the organization; as well employees must be enrolled, to let them believe that they are part of the organization change. Moreover, the management should have a comprehensive knowledge of the overall organization activities and its current situation. Comprehensive and clear communication between department and employees is crucial for the organizations decision making, because it improves the ability of understanding the whole organization processes. However the organization must provide a collaborative and supportive working environment; working in teams and providing a healthy friendly environment will improve the performance and the loyalty of the employees. (Neda Abdolvand, 2008) However, initiating BPR is a complex and a complicated development which needs to be examined before implementing; all business users must be enrolled and activities must be analyzed, to prevent the resistance of change from the business users. Resistance of change is one of the most common obstacles of implementing BPR, because of the unclear future, which may cause major changes in the organization structure such as job loss or authority loss. (Crown, 2002)
In other words, BPR is analyzing and studying the organizations overall strategies, organizations infrastructure, organization processes and the current situation; to fill the gap between the current situation and the market need, to initiate the BPR.

4.2 Concept of Business Process Improvement

One of the major concerns of an organization is the customer satisfaction and gaining market shares in the market, therefore organizations must continuously change and improve their processes, to improve the profitability of an organization.

Business Process Improvement (BPI) is "Improving quality, productivity, and response time of a business process, by removing non-value adding activities and costs through incremental enhancements. " (BPI, 2010)

Before starting with implementing the Business Process Improvement practitioner must understand and recognize the current business processes of the organization. The framework which is proposed to implement the BPI will start with determining the problems that are facing the organization, focusing on the core cause of the problem rather than focusing on the symptoms of the problem. Secondly, the organization must determine the changes that are facing the organization (external environment) e.g. market changes, changes in the customer needs. After the determining phase the organization must analyze all the changes and problems, and then identify the priorities for solving these problems. Moreover, an appropriate BPI approach much be selected to deliver the right outcomes, to solve the problem in an effective and efficient way. Furthermore**,** processes must be monitored continuously because as mentioned above the market is facing many environmental changes. The reasons why most organizations fail in implementing the Business Process Improvement is because the focus is usually on the specific processes and departments, not taking into consideration the entire organizations processes.

There are two main types for the BPI Quick hits and Incremental improvements. The quick hits are achieved easily and have low risk on the management and stakeholders, they provide direct benefits and are considered to be quick wins that the company can achieve in short and direct term. The other type is the incremental improvements which focus on filing small gaps in the organization, which will achieve significant improvement in the organizations performance. Finally, there is a clear difference between the BPI and the BPR, since BPR aims for dramatic business results which needs rethinking and re-engineering the business processes, plus

conducting major changes in the whole business processes to meet the environmental changes. Compared to the BPI, BPI changes only miner parts in the process and would look for enhancements rather than revolutionary changes. (Namchul Shin, 2002)

4.3 How Business Process Reengineering can be applied to an organization without resistance:

 Applying BPR to an organization successfully the top management of an organization should enroll their employees in the reengineering process, so employees will feel that they are an essential part of this change. Moreover empowering and motivating the employees to their work effectively to reach the strategic goal of the organization, by providing the appropriate essential information, suitable environment, and the useful tools, will reduce the resistance of change among employees. Training and learning is one of the important points that the organization must focus on when implementing the BPR. Additionally to that the organization must clarify the purpose of implementing the BPR, by shedding the light on the outcomes and the objectives of implementing the BPR. As for the deliverables and the objectives from implementing the BPR, one of the most important factors is satisfying the customer with his needs and wants in an effective and efficient way, faster than the average cycle time before implementing the BPR, in result to exceeding the customer expectations. Secondly, building strong relationships with customers help the organization to rapidly spot the weak points of the organization, and to response to the market changes. Thirdly, it changes the way employees used to do the work, enrolling the employees in the decision making, clarifying the roles and responsibilities between departments and employees. After all, eliminating the unproductive processes would help the organization to cut its costs. BPR is attaining impressive improvements in the organizations performance throughout the reengineering of the organization processes, and by rethinking the way which the organization used to do their business.

4.4 Business Process Reengineering Methodologies

After conducting literature research regarding the BPR methodologies that are used, it has been noticed that there is no standard methodology for implementing the BPR. A few BRP methodologies will be analyzed in the thesis to reflect the steps required in order to be able to

understand the basics of BPR and be able to implement the BPR in a selected business. The various BPR Methodologies will be discussed in details below, and as an outcome of the various methodologies analyzed a revised comprehensive BPR methodology will be developed to be illustrated in the thesis.

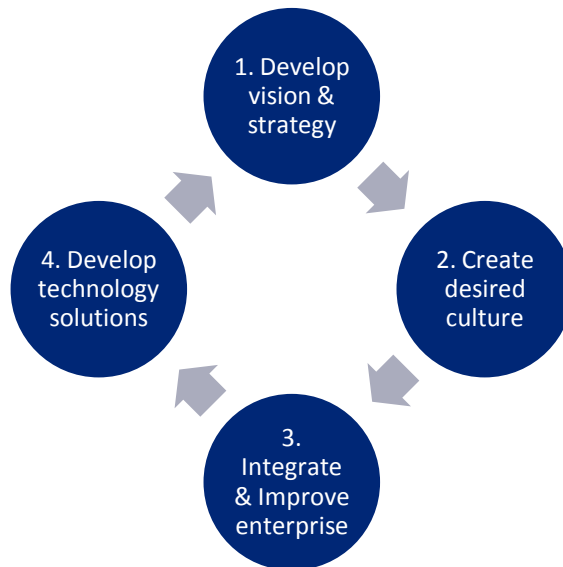**Methodology One: (Underdown 1997)** (Subramanian Muthu)

Figure 4.1: Methoology one according to Underdown

According to the Underdown published paper titled "Transform Enterprise Methodology" the methodology below is composed of four major activities that will be used when conducting BPR. The BPR cycle would start with developing the vision and strategy of the business, and to understand the strategic direction and values of the business. Afterwards, a desired culture must be selected by senior management and be able to identify the value and definition of the desired culture of the business, that will have a trickledown effect on the whole organization. As a third step regarding the BPR cycle below the research has discussed the Integration and Improvement stage, that will include revising the current structure and processes of the enterprise and conducting improvement opportunities on the current situation, in order to reach to the final stage of the process where the BPR practitioner would be responsible to develop the technology solutions in the company.

Methodology Two: (Harrison and Pratt 1993) (Subramanian Muthu)
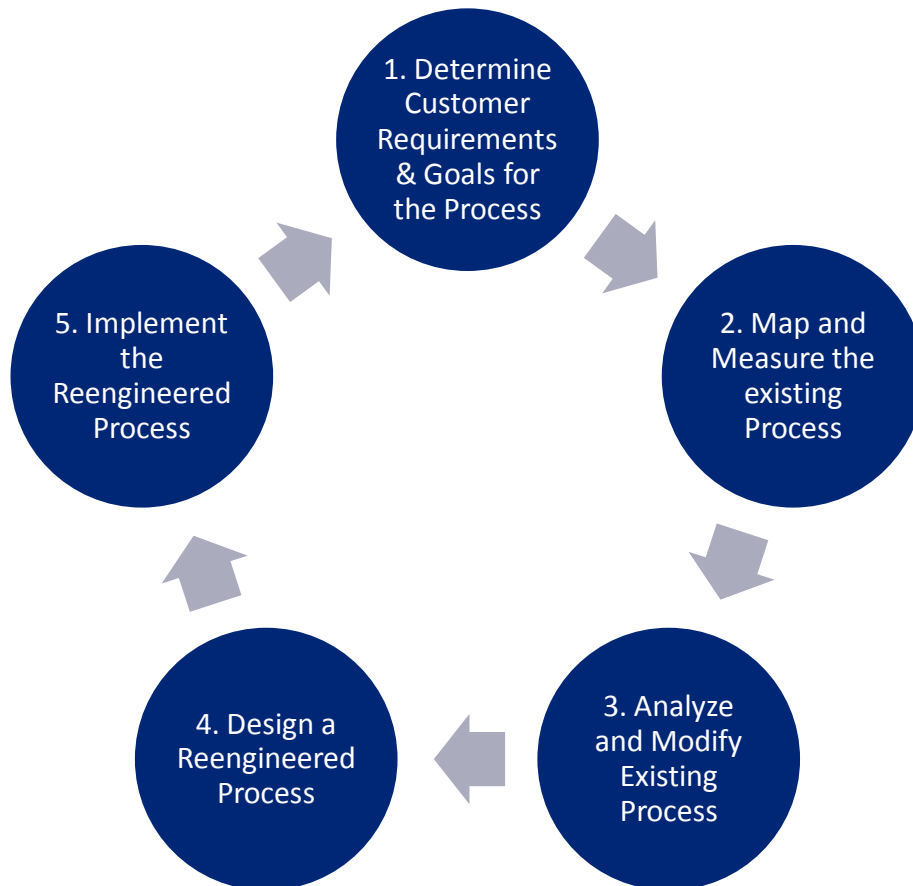
Figure 4.2: Methodology two according to Brain Harrison and Maurice Pratt

The second methodology that will be discussed is with reference to the work of Brain Harrison and Maurice Pratt in their published work "A methodology for Reengineer Business" that discusses the five steps for BPR cycle. The cycle would start with determining the customer requirements and the goals for the process; therefore we can see that the starting point in this methodology is to focus on the customer and to understand the details related to the customer. In most cases, this methodology would be very effective when working with a pure service-oriented business, where the ultimate focus would be on the goals and objectives of the business keeping in mind the customer. The second stage of the cycle, would be to gather all

the data related to existing As-Is business process documentation of the business and to map and measure the existing processes of the business. Afterwards, the BPR practitioner would be responsible to analyze and modify the existing business processes, in order to design and develop the reengineered To-Be Processes of the business. In this stage the practitioner/analyst would actually analyze the processes according to a certain criteria and guideline for business modeling that will be discussed in further details in the following chapters of the thesis. At the final stage, it would be required to implement the reengineered process in the business, and in most cases the practitioner would conduct training workshops for employees to be aligned to the reengineered process and have some piloting for implementation.

Methodology Three: (Furey, 1993)
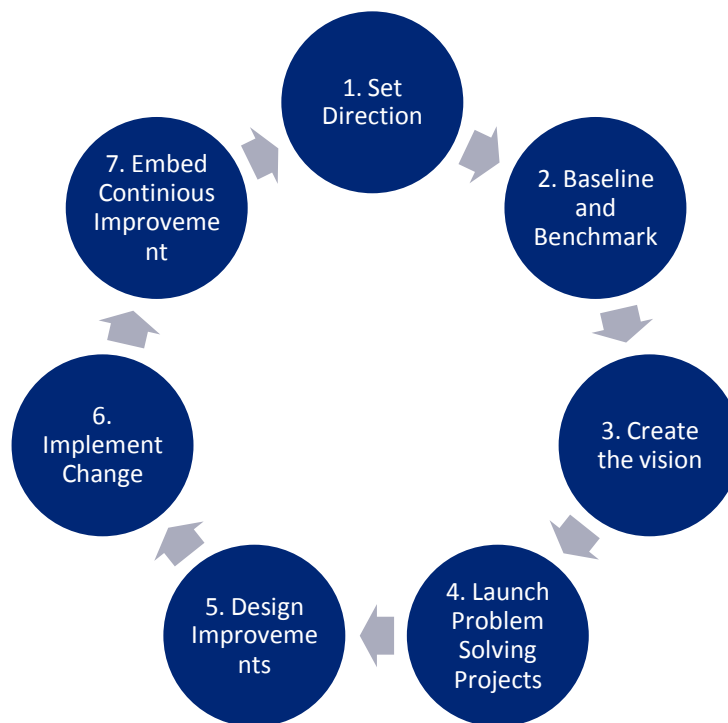
Figure 4.3: Methodology three according to Furey, Timothy.R

With reference to Timothy Furey's work titled "A Six Step Guide to Process Reengineering", the cycle will start off with setting the directions of the organizations. According to this methodology, the organization must first set their direction before starting to reengineer their business processes. Therefore, setting the strategic directions, goals, and objectives of the company will

help the organization conduct activities in a planned direction that will affect the organizations performance positively. The second phase of the above methodology would illustrate the baseline measurement that will be defined by the practitioner; whereby, performance of the organization will be measured and compared to this baseline which will be the reference for subsequent measurements. In this methodology the elements measured are cost, time, and quality. As for the benchmark which is comparing the performance and businesses processes to one of the top organizations which have similar business processes, an exercise to compare the processes and determining a best practice is required to continue with the business process modeling phases. After setting the baseline and benchmark of the organization the life-cycle will move to the third step which is developing the vision of the organization that will illustrate the future plan of the organization. The cycle then continues to launch the problem solving projects, and knowing that each organization will face a number of problems; the organization must find a quick solution and be able to rapidly apply possible solutions. After conducting further analysis on the solutions that could be applied to solve a specific issue for the organization, the practitioner would start by designing the possible improvements and as a follow up task would be responsible to implement the change; however, before implementing the change the management should express clearly the importance of change, since several employees will be change-resistors, until the management explains the importance, objectives and benefits of the change; hence, a smooth change management transition.

It is worth mentioning, that markets are changing rapidly so each organization should be aligned to the industry rapid changes, this will let organizations gain a competitive advantage among their competitors when implementing BPR and Modeling.

Upon reviewing various life-cycles for the BPR, an exercise has been conducted to measure the ability of implementing any of the above methodologies for a Financial Service-Oriented company, specifically Retail Banking. In order for a BPR methodology life-cycle to fit the needs of the banking sector it is important to look deep into the life-cycles and to measure whether they are practical to be implemented for the specific industry.

When selecting a BPR Methodology life-cycle related to the Banking industry, and according to major discussions made with senior bankers in the Jordanian market, it is important for the life-cycle to cover some of the focuses below:

- Customer Needs and Wants
- Strategic Objectives & Goals of the Bank
- Vision and Mission of the Bank
- Benchmarking operations with Industry Best Practice
- Providing baseline in order to measure the performance of the organization will be measured and compared to this baseline which will be the reference for subsequent measurements
- Providing baseline in order to measure the performance of the organization will be measured and compared to this baseline which will be the reference for subsequent measurements
- Mapping, measuring, and analyzing the As-Is process
- Reengineering and implement the processes

Moreover, upon reviewing the three methodologies above and validating whether any of the methodology could be implemented for the Banking sector according to the checklist mentioned above, it has been noticed that none of the methodologies provide comprehensive and fully-fledged that would cover all the needs to conduct BPR on the Banking Sector. Therefore, a revised and a more comprehensive BPR methodology and life-cycle will be developed in the thesis accordingly to meet the conditions and the needs of the Banking industry. The following diagram shows the comprehensive methodology developed to succeed in a service-oriented business, mainly the Retail banking industry.
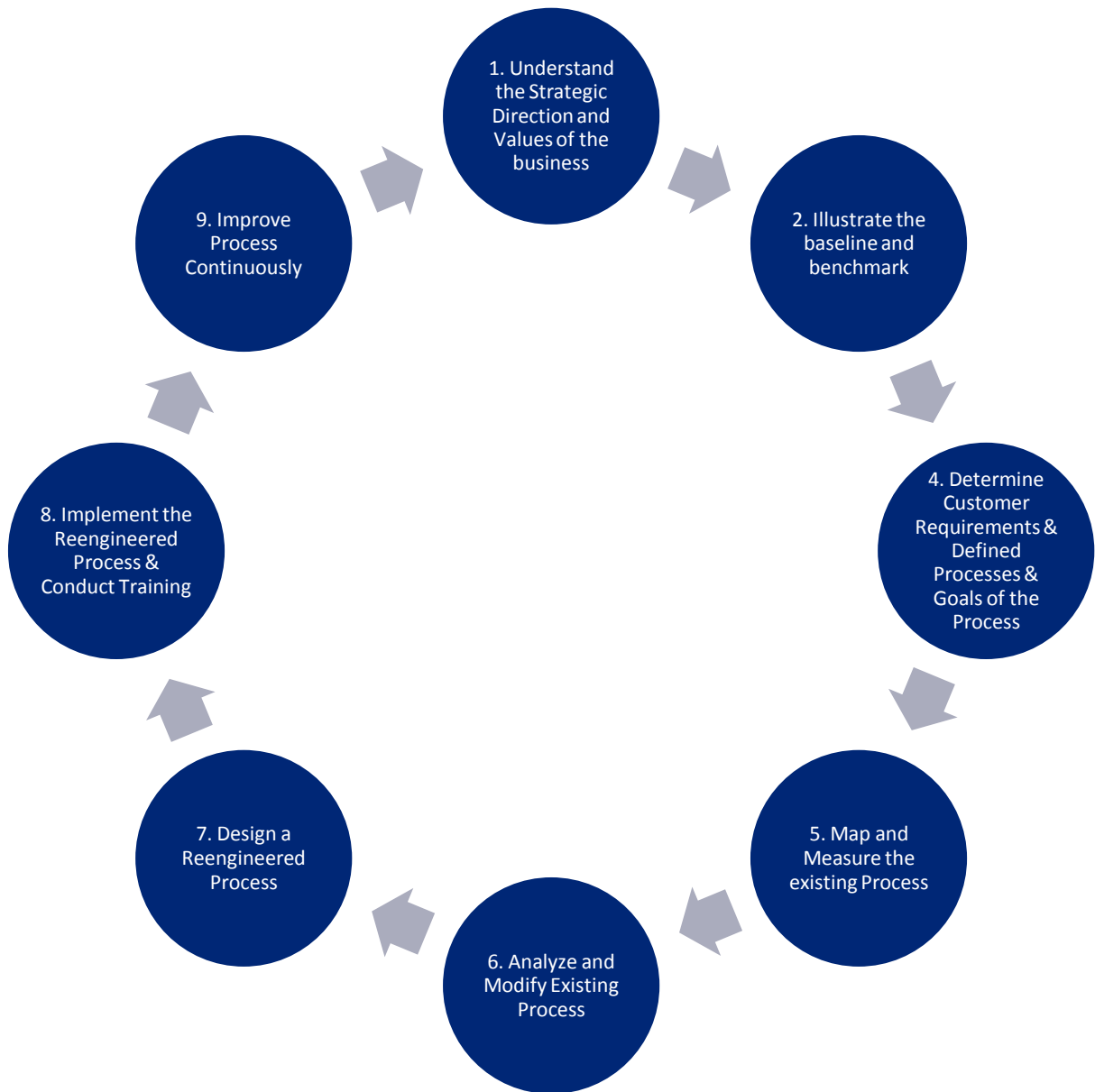
Figure 4.4: Methodology developed by writer

The selected proposed BPR life-cycle methodology will be discussed in more depth below to cover the whole cycle in details to illustrate the main aspects of each thread:

1. Understand the Strategic Direction and Values of the business
2. Illustrate the baseline and benchmark

4. Determine Customer Requirements & Defined Processes & Goals of the Process

5. Map and Measure the existing Process

6. Analyze and Modify Existing Process

7. Design a Reengineered Process

8. Implement the Reengineered Process & Conduct Training

9. Improve Process Continuously

It could be negotiated that this cycle is considered to be very comprehensive and inclusive of all the valid stages for BPR and could be implemented for the Financial Service oriented businesses, such as the financial services industry and specifically Retail and Corporate Business initiatives. However, the cycle begins with reviewing the vision and strategy of the business, and to understand the strategic direction and values of the business and illustrating the baseline and benchmark of organization, prior to determining the customer requirements as in first step of the cycle above. the cycle continues with mapping and measuring the As-Is processes, and these processes must be analyzed and modified to design the reengineering process, and at the last phase the management implement the reengineered processes.

Chapter 5: Core Banking Transformation Approach

This chapter will discuss global operational and strategic challenges that are currently facing banks, and illustrates various insights on the operational excellence that banks would be interested in enhancing and improving. This chapter also focuses on the Core Banking Transformation approach that is currently being applied by banks locally and globally according to industry best-practice and overall operational excellence.

5.1 Global Banks' Strategic and Operational Challenges

Nowadays, banks globally are conducting various strategic and operational initiatives in order to support its core banking operations, as well as enhancing its support services that act as an infrastructure for the whole organization. Amidst a global economic crisis phase, banks had faced dramatic effects on banking stability; therefore, banks are constantly focusing on their internal strategy and operations, in order to maximize profits and minimize cost. The result of those initiatives will be to provide shareholders with a higher return on their investment and provide an elevated shareholders value.

During the past decade, there have been many challenges facing the banking sector that would require banks to constantly look internally and externally to seek for quick-wins and achievements to overcome challenges related to productivity, operations, and the competition. In the past decade, one of the challenges that banks constantly faced is operating obsolete core banking system technologies which would directly affect the banks' operations, performance, and the ability to provide their customer with efficient and effective services.

According to the report issued by InfoSys "The current systems are not able to keep pace with the fast changing needs of the market place. They are often old and expensive to maintain. The current business processes are constrained by silos and contribute to a high cost structure." (Inforsys- FINsights, 2009) Therefore, the solution for having obsolete technology is to internally take the initiative to develop a business case to be presented to the senior management of the bank in order to look into possible solutions and initiatives for selecting various technological transformation projects.

In terms of strategic challenges, a general rule-of-thumb for banks regionally and globally is to provide a superior client service to their customers and ensure customers are satisfied. Therefore, it is very important for banks to focus on their customers, by understanding how customers must be part of the banking processes and activities. Another challenge that banks are facing globally is the increase in overall costs that is jeopardizing the sustainability of the profitability of the bank. Therefore, banks are currently emphasizing to increase the operational efficiency by standardizing business processes across the organization.

5.2 Core Banking Performance Improvements

A report published by A.T. Kearney, a global management consulting firm, focuses on the Banking sector in the Middle East and mentions that most banks are continuing their path of recovery after the economic downturn. With reference to the report published by A.T. Kearney on the Outlook on the Banking Market "It is essential for banks to identify new strategies for growth and prosperity, requiring a clear view on how to improve productivity and services while addressing new opportunities in retail banking and investment banking". (A.T. Kearney, 2012) While banks globally are focusing on productivity enhancements, there are major improvement possibility areas that must be considered by banks when applying business transformation, such as, reviewing the banking processes and organization. Banking processes are mostly manual and in many situations are text-based driven processes, rather than graphical-based processes. Therefore, redesigned processes can provide major efficiency improvements, and would provide employees with clear graphical-based processes to allow the employees to clearly understand the workflow of tasks and activities. More importantly, is the opportunity for the processes to be aligned to the strategy of the banks and restructuring the organization accordingly.

5.3 Core Banking Transformation Approach

In regard to the major challenges that banks are constantly facing, it is crucial for banks to conduct banking transformation initiatives. Core Banking Transformation would provide an overall review and analysis of the banks' core businesses and technology capabilities to deliver an increased value to stakeholders in the form of better maximized profits, additional customer

satisfaction, and a simplified and revised method of process operations. Moreover, due to the obsolete technology that most banks are currently hosting, it is recommended for banks to review their current core banking systems and processes and apply advanced suitable solutions in order to minimize costs and mitigate risks involved.

Since banks are also facing the challenge of competition with the limited capabilities and obsolescence of the current core banking systems in house, it would be recommended for the bank to enhance three major areas for transformation, which are the current core banking system, banking processes, and people to improve the ability to better serve the customer. According to the interviews conducted with various Banking transformation experts from business and consulting.

The Core Banking transformation approach is a step-by-step work plan that is used when banks go through the transformation initiatives. After receiving various opinions from different parties regarding the optimal step-by-step approach for the transformation, the approach below illustrates the Core Banking transformation approach which was developed after tremendous effort in conducting market research and interviewing major banking professionals in the banking industry, this approach was completed by guidance of one of the consultants at the bank. The approach has been developed taking into consideration the most effective steps that are needed. The transformation approach is composed of six work step-cycles that would be mainly used by the business, Information Technology department, and with the support of external consultants. The steps would cover three main workstreams that are included in this approach which are: Processes, Systems, and People.
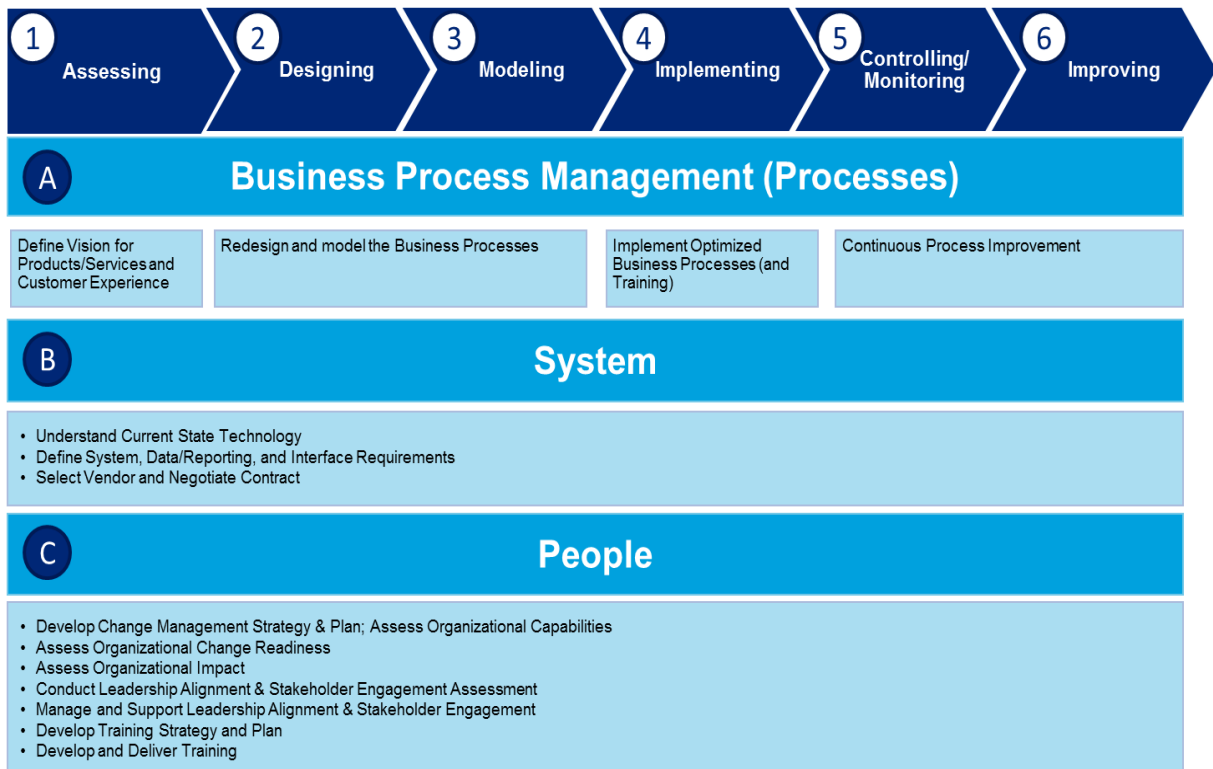
Figure 5.1 Core Banking Transformation Workstream Approach

The Core Banking transformation approach also includes the life-cycle of the Business Process Management developed earlier in chapter two and will be applicable under the first workstream in this approach i.e. Business Process Management (processes). The Business Process Management (processes) workstream focuses on enhancing the processes and ensuring alignment to strategy, systems, and roles and responsibilities of the people based on the Core Banking System implementation. The life-cycle of the Business Process Management (Processes) begins with assessing the current situation of the organization and focusing on mapping the strategic direction of the bank with the future vision and end-state of the processes. The second phase focuses on redesigning the existing processes and understanding the needs of the business in order to capture all the possible areas for improvements into the improved To-Be banking processes. The Modeling stage is the most important phase where the practitioner would be responsible for modeling the banking processes designed previously into Business process modeling software that will be used for the internal employees at the bank and mapped

with the Core Banking System. Upon completion of the design and modeling stage, the bank will conduct implementation of the processes in order to ensure that the optimized business processes are implemented in the Branches and operations, and the training has been delivered to the process owners in order to reflect on the whole organization. The final two stages of the Core Banking transformation under the process workstream is controlling, monitoring, and improving the Business processes during the years after implementation, in order to ensure sustainability and long-term achievements.

As for the other two workstreams, Systems and People, they are both considered crucial for Banking transformation since the whole transformation will be successful only when the most suitable system is put into place and the people are well trained to be able to smoothly adapt to the new Core Banking System platform. The role of management in collaboration with the IT Department within the System workstream is to understand the current state technology and define the systems that will be required for the transformation. In addition, one of the tasks required under the System workstream is for the Business units and IT department to select the Vendor and negotiate the contract for implementing the Core Banking System in corporation with the Vendors.

The third workstream is People, which is considered the most important enabler and agent for a Core Banking Transformation, in which there would be a need to develop a Change Management Strategy and Plan and to assess the organizational capabilities, readiness, and impact. In order to have a successful transformation, the bank would have to conduct leadership alignment and stakeholder engagement assessment along as developing and delivering training for the employees.

The scope of the thesis will only cover the Business Processes Management (Workstream A), providing example for the System and People workstreams is out of the scope of this thesis.

Chapter 6: Core Banking Business process modeling in Practice

This chapter will put the Core Banking Business process modeling into practice, and would provide a case study of a local boutique bank that will go through a fully-fledged modified Business process modeling life-cycle as discussed in previous chapters. Chapter six would provide an As-Is (current situation) and To-Be (target situation) deep analysis of a selection of banking business processes that will then be used as inputs for the Business Process Re-engineering section of this chapter.

6.1 Case Study: Local Boutique Bank "Core Banking Business process modeling"

A local boutique retail bank has been selected as the case for this thesis; boutique banks usually serve only a particular selected segment from the total bankable population. The bank is an existing bank in Amman and has been in the banking and foreign exchange services for years and is now evolving into one of the growing boutique banks in the Jordanian banking sector. The fully-fledged modified Business Process Management life-cycle discussed in previous chapters will be applied in this chapter. Consequently, the outcome of this exercise is to begin by understanding the current As-Is business procedures for the selected bank, with focus on selected number of business procedures for the retail bank.

Currently the bank is operating a network of 20+ branches and is expected to increase the number of branches by launching another 10 branches locally. The bank has hired local banking consultants to develop the strategic direction for the bank growth building on the banking competitiveness for the Retail segments. Ever since, the bank has been going through a major Core Banking Transformation, to enhance operations and to continuously develop to reach best-in-class positions. The bank has selected "Oracle Flex Cube" as the Core Banking System, which is one of the best systems worldwide and will be implemented at the bank, along with other initiatives such as the Business Process Management.

The bank has taken a new strategic initiative to set its operative infrastructure at an industry specific best practices and international standards level through implementing a new Core

6. Core Banking Business Process Modeling in Practice

Banking System (CBS). Managing the implementation process for the bank will ensure the desired value of the new CBS which will create a major need to acquire strong expertise to supervise the implementation process. The challenges associated with the implementation process can highly affect the successful completion of such challenging task as well as impact the utilization of the new CBS and the value derived from well-defined processes and procedures of its utilization.

To maximize the value derived from this new strategic initiative and minimize the associated challenges and risks of the implementation process, the thesis will model and redesign the business processes of selected core banking procedures and provide the proper graphical documentation to govern the utilization of the redesigned processes.

The case study will develop the To-Be Core banking selected processes & procedures according to the Business process modeling best practices and global standards discussed in previous chapters. The current scope of the business case will cover the development of the selected new core banking processes and procedures to support the implementation of I-Flex and change management activities within a framework that assures the effectiveness and efficiency of the CBS in supporting the bank's business and technological needs.

The scope of the business case will cover the following:
- Review the As-Is processes & procedures documents
- Recommend improvements on the core banking procedures in order to incorporate the new core banking system processes
- Develop a graphical procedure and present them in a flowchart format. The flowchart will include the steps and responsibilities (Swim-lanes) and will be developed using a specialized modeling tool "BIzagi".

Interviews were conducted with a group of the Bank employees to discuss the position of the bank in terms of the Core Banking Transformation, in order to be able to diagnose the current situation and provide recommendations for the future state i.e. the To-Be stage after implementing the Core Banking System and conducting Business process modeling.

6. Core Banking Business Process Modeling in Practice

The following table illustrates the three workstream modules (Business process modeling, System, and People) which will be used for assessing the As-Is (current state) and understanding the To-Be (future state) of the bank's situation:

6. Core Banking Business Process Modeling in Practice

Core Banking Transformation Assessment Modules		
	As-Is (Current State)	**To-Be (Future State)**
A. Business process modeling (Core Banking Processes)	· Currently the processes are documented in textual format, which is not allowing the organization to communicate these procedures in a standard manner · The language for the existing banking procedures is in Arabic format and the management of the bank is requesting an English format for all the procedures for standardizing the procedures with the procedures of the existing support processes · Some tasks require rework and iterations since the workflow of the processes is not certain · Many tasks that are performed in the process depend on exceptions and special cases for the clients which will usually consume more time for the employee to request for approval for exception, which increase the total time length of the process · Issues with tasks that require	· The bank is aiming to use business procedures in a graphical notation instead of textual format. The graphical notation will facilitate the understanding of the performance collaboration and business transaction between the organizations · All processes must be in English language, since the processes will be used for internal consumption (Management reporting) and must be standardized with the other support services procedures that are already developed · Tasks that require rework and iterations must be assessed and redesigned in order to eliminate any redundancy in the process · Redesign the tasks that require verification or approval in order to minimize total time of the processes and the customer waiting time e.g. assess the approval cycle in terms of authority and position. · The bank has decided to eliminate the exceptions and special cases

Core Banking Transformation Assessment Modules		
	As-Is (Current State)	**To-Be (Future State)**
	verification or approval is also increasing the time length of the process · Some activities are redundant and would to be redesigned in order to be more efficient and effective in every task conducted. · The customer is currently investigated with updated information every time the customer is applying for a new product at the bank, and this is considered to be time consuming from a customer perspective and the bank's employees perspective.	exemptions from the processes which usually consume more time, and is aiming to develop a process that limits the exceptions and focus only on general tasks that are certain and applies to the majority of the clients · The processes will have to focus on the customer and improving the customer experience in the branch · All the scanned documents that are collected from the customer, must be all inserted into a web intranet on the system to be available for any bank employee whenever the customer is applying for a new product at the bank e.g. if the customer is applying for a home or personal loan, the employee of the bank must be able to enter into the system and find the documents required from the customer.

6. Core Banking Business Process Modeling in Practice

Core Banking Transformation Assessment Modules		
	As-Is (Current State)	**To-Be (Future State)**
B. System (Core Banking System)	· The system used at the bank is an older version of a Core Banking System that has been implemented few years ago, and has been continuously patched for continuous operations and this has led to various strategic and financial risks, for example. The processes and systems were not aligned at the bank and the processes were not reflecting the system that was operating.	· The bank has selected "Oracle Flex Cube" as the Core Banking System, which is one of the best systems worldwide and will be implemented as other workstreams completes such as the Business Process Management. (It is beyond the scope of the thesis to automate the banking processes and to configure the process with the Core Banking System) . The core banking processes must be aligned to the core banking system.
C. People (Front-office and back-office)	· Currently the bank is operating using a decentralized operating model, where each branch would be responsible for most of the process, with minimal interaction from the back-office operations located at the Headquarters. · Bottlenecks and time delays exist in the Front-office (Branch employees and especially in the Customer Service) which is delaying the complete process,	· The bank is planning to become centralized in terms of operations, where the front-office will be responsible for minimal data entry on the Core Banking System, with the majority of work to happen in the Back-office operations. · In order to minimize the costs of the branch, the bank has decided to cut costs related to over-time incentives for customer services representatives that are working after hours to complete the

Core Banking Transformation Assessment Modules		
	As-Is (Current State)	**To-Be (Future State)**
	leading to customer disappointment and higher costs.	process and enter the data on the core banking system. The decision is to have the front-office to initiate the process on the Core Banking System with minimal steps to be done on the system, when the Client is in the Branch, and the rest of the process will be forwarded to the Back-office operations to finalize the tasks and send for approval.

Table 6.1: Core banking transformation assessment module

6.2 Organizational structure of the Bank:

Every organization globally and in the region, would have to identify the organization structure which will help the management to classify the positioning of every employee and helps to determine his/her roles and responsibilities towards the activities performed in the organization. The following is the organization structure that was provided by interviewing the Branch Manager at the Bank:
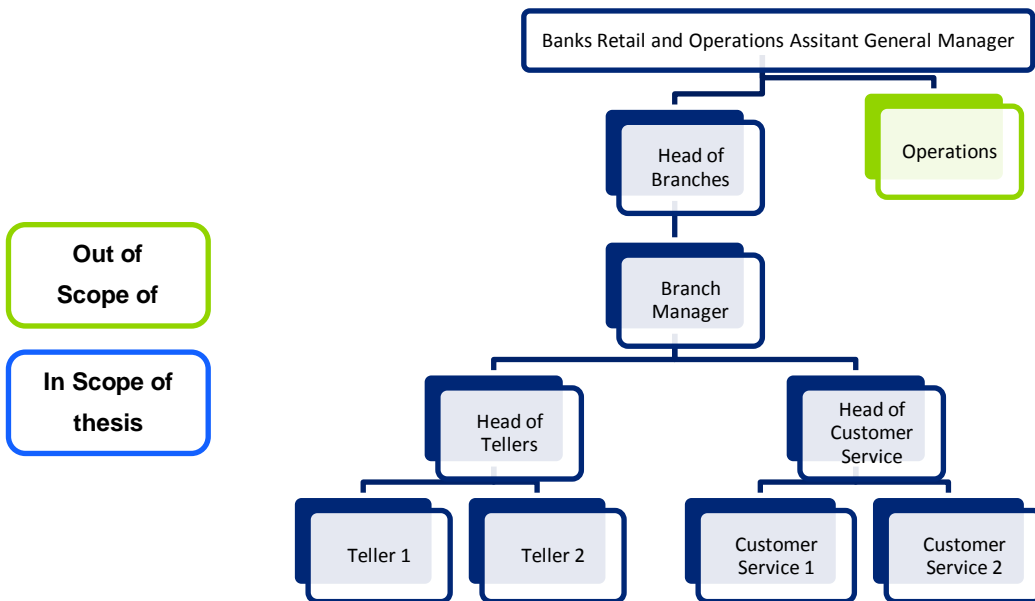
Figure 6.1 Banks structure

Banks have usually fundamental retail branch organization structure which begins with the teller and customer service representatives, who aids to customers in routine banking transaction. The teller would report directly into the head of tellers, who are in charge of overlooking all employees and ensures that the transactions are processes effectively. On the other hand, the customer service representative would report to the head of customer service. The above is a high-level positional organization structure that will be used in order to model the processes based on the documents gathered from the selected bank.

The operating model for the branches at the moment in terms of the way people, technology, and processes interact will be discussed below in order to understand the existing operating model and be able to conduct Business process modeling aligned to the target operating model.

6.3 Current Operational Situation of the Bank

After conducting intensive research on the bank and interviewing employees from different branches, it is clear that the bank is currently facing various challenges in terms of branch operations and dealing with their customers in an efficient and effective way. According to the employees at the bank and based on benchmarks that were analyzed on similar banks in the

market, the bank is currently observing operational issues that are directly affecting optimal operation excellence including the customer satisfaction and length of the process, etc…

There are many drivers that are affecting the total length of the process, such as the workflow at the branch is not being communicated clearly to the banks employees and they are not capable of processing using the textual based processes. The approach that branches are operating today is not reflecting the bank's strategy in centralizing the whole processes; each bank is currently operating in its own selected process, without referring to the global processes published to all employees. Consequently, this will extent the total time of the processes since employees will be expected to refer to their collogues in assisting them to solve any issue that is raised when the customer is in the branch conducting any transaction.

Another factor that is considered to be challenging for the current operational situation, is not having the ticketing mechanism for the welcoming the customers visiting the bank and providing the customer with a ticket voucher to allocate the customer into the system for the transaction that he requests.

All in all, every possible challenges and areas for improvements that were assessed previously would reflect on the total time that will needed to serve customers, and the more efficient the process the more customers the branch will be able to assist; hence, improve performance and profitability of the branch.

6. Core Banking Business Process Modeling in Practice

6.3.1 As-Is Assessment for the selected processes:

As for the scope of this business case in the thesis, only few selected core banking processes will be analyzed and reengineered according to the approach and guidelines mentioned in the thesis. The selected processes has been identified based on a criteria that was presented to the bank, and assuming which are the most critical and common transaction among the banks customers. Each process will be analyzed as an As-Is processes, and reengineering the process will take place to develop the To-be state of the process.

المسؤولية	الإجراءات التفصيلية
Customer Service Representative	1) يقوم العميل بتقديم طلب فتح حساب تابع
	2) تعبئة نموذج طلب فتح الحساب تابع مع العميل
	3) التأكد من عدم إدراج اسم العميل المرتقب على قوائم وحدة الشبكات المرتجعة في البنك المركزي الأردني OFAC و UN
	4) اذا كان اسم العميل المرتقب على احدى القوائم المذكورة اعلاه يجب إبلاغ المسؤول المباشر لاتخاذ القرار المناسب حسب وضع العميل بإكمال إجراءات فتح حساب باسمه أو لا
	5) في حالة اتخاذ قرار بعدم اكمال إجراءات فتح حساب عندها يتم الاعتذار للعميل بشكل لائق
	6) التأكد اذا كانت معلومات ال KYC صحيحة
	7) إذا لم تكن المعلومات صحيحة عن KYC نقوم بإجراء تعديل معلومات العميل 2.7
	8) إذا كان العميل يريد فتح حساب ودائع يجب إتباع إجراء عمليات الودائع لاجل2.25غير ذلك يتم القيام بالإجراءات التالية:
	9) استكمال ملء نموذج طلب فتح الحساب التابع
	10) التحقق من النظام البنكي اذا كان للعميل بطاقه صراف الي
	11) إذا لم يكن لدى العميل بطاقة صراف الي، يبلغ العميل عن طلب بطاقة ATM وفي حال أراد اصدارها نقوم بإجراءات إصدار بطاقات الصراف الآلي والأرقام السرية 2.25
	12) واذا كان لدى العميل بطاقة صراف الي واراد ربط الحساب التابع معها عندها يتم تعبئة وارسال الطلب للعمليات
	13) الحصول على توقيع العميل في حال كان للحساب الفرعي توقيع مختلف عن الحساب الاساسي
	14) تدقيق توقيع العميل
	15) إبلاغ العميل رقم الحساب الفرعي من النظام البنكي المحوسب
	16) التوقيع على نموذج طلب فتح الحساب وإرسالها إلى المسؤول المباشر
Branch Manager /CSO	17) تدقيق توقيع العميل
	18) التأكد من صحة ودقة واكتمال معلومات الحساب التابع الذي تم فتحه على النظام البنكي المحوسب
	19) ارسال جميع الوثائق مع اليومية الى ضابط الوثائق والسندات ليتم أرشفتها

Figure 6.2 As-Is Current Process Documentation for the Bank

6. Core Banking Business Process Modeling in Practice

I. Account Opening process:

The account opening process handles the opening of the account which is initiated by the Branch (front-office) and processed in Account Operations (back-office). The customer has minimal interaction with the branch representatives, and has a very minimal role in the beginning to request the account opening, yet would have to wait till the end of the process to be able to open the account successfully and receive the Bank Account Number. The total length of the process is estimated to be around on average 40 minutes to complete the whole process once the customer enters the branch until the customer leaves with an open account. The waiting time is due to various factors that are contributing to a stretched time horizon for the processes, some delays would appear from the long queues that the customer would have to wait due to the fact that the customer services representatives will be occupied with other customers. The reason for having delays with the customer services representatives is the possible bottlenecks that are currently appearing in the process.

In the current situation, employees at the end of the day would have to batch all the documents and applications in a file and send it to the back-office which will process the documents and archive in the system. With this process, the customer is not able to complete the processes in real-time on the system, due to the fact that the account will not be originated until the back-office receives the documents and processes the account on the system. Therefore, this will delay the opening of the account until the next working day, and which will keep the customers not able to deposit or conduct any other transaction on their bank account.

II. Cash Deposit & Withdrawal process:

The cash deposit and cash withdrawal processes is initiated by the Branch (front-office). In the current situation, the customer would have to provide the Teller with the account number, and this is consuming additional time from the Teller to be able to receive accurately the full account number and enter it on the system. Currently, in order for the Teller to verify that the customer is the original bank account owner, the Teller would request from the customer the National I.D. or the Passport, in order to copy the data into the Deposit voucher that will be then achieved. This

validation process is consuming approximately up to 60 seconds from the total of 120 seconds, for the teller to be able to safely copy the data from the personal identification document. The total length of the process is estimated to be around 10 minutes on average to complete the whole process.

III.   Cheque Deposit & Withdrawal process:

The cheque deposit and the cheque withdrawal is completed by the branch (front office). In the current situation the teller must verify the customer identity by asking the customer ID and copy all the data on the back of the cheque. The total length time of this process is to be estimated 8 minute to be completed.

6.4 Improved Banking Operational Situation

After analyzing the current situation of the bank, and conducting several interviews with all departments in the bank specifically the front office. The main topics which were discussed are firstly, pitfalls that are countering the employees in terms of providing services to the customer. Secondly, another important aspect are the recommendations of employees that will determine how to improve the processes, since they are the major performers for processing the activities. Thirdly, was with the top management of the bank to understand clearly the strategic direction and the future plan and goals of the organization. The major aspects which were discussed in the interviews must be taken into consideration when reengineering the processes of the bank.

The queue ticketing system is the latest technology to organize the inflow of customers into the Branch, and it has been observed to be an efficient and effective methodology to ensure that customers are served based on a sequence and customers would appreciating to wait the expected waiting time until they will be served by any Branch representative. The area for improvement that this thesis will present is the ability to allow the customer to enter the Bank Account number for his/her direct account or other related account into the electronic ticketing system technology which will speed of any transaction process time consumed, since otherwise the Branch representative would have to request the customer to provide the number on the counter, and the customer would spend 30 - 60 seconds to make the number available and provide the representative with the number so that it can be inserted to the system. The

processes in the To-be stage will reflect the technology proposed above, and will ensure the efficiency and the effectiveness of every transaction.

On the other hand, the Fingerprint scanning technology is an alternative to the personal identification existing process. Currently branch employees would request the customer to present an I.D. card or a passport to ensure and validate that the customer is the person who has is authorized on the account. The new technology which will be proposed in the To-Be processes below is introducing the fingerprint scanning technology as soon as the customer approaches the counter to request from the branch representatives any transaction. This will save the time that branch employees would spend validating the authentication document and copying all the information from the document.

In the current situation, on every transaction that is currently processed and requires documents to be forwarded to the Back-office Operations in the Main Branch, the Customer Service Representatives or the Tellers would be responsible to batch all the documents that must be forwarded into a forwarding deck, that will be sent daily to the Back-office which will not allow for same-day processing, and would stretch the total time of the process to be completed. Therefore, the proposal to overcome this delay in the process and eliminate any bottlenecks that were identified would be to have speedy document scanner that can be scanned by any of the banks representatives and hence eliminate the transfer of hardcopies, and would allow the Back-office to process transactions real-time on the system with the attached documents made available on the system.

By utilizing the above mentioned technologies and proposed approaches for the processes, the performance of the employees at the Branch will improve and the processes become more effective and efficient. Hence, this will all lead to better operational excellence and would position the bank in a situation where customers are enjoying the quick, efficient, and effective service to process all their transactions.

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6.4.1 To-Be Processes Documentation and Recommendations

The processes below are the To-Be processes that were reengineered based on the life-cycle of the Business Process Management and Reengineering approach mentioned in pervious chapters. The As-Is assessment along with the gap analysis that were conducted previously and the banks strategic direction, assisted the reengineering of the processes and reflected these were reflected on the To-be processes especially to incorporate and capture all the areas for improvements and adapting the future branch settings and trends.

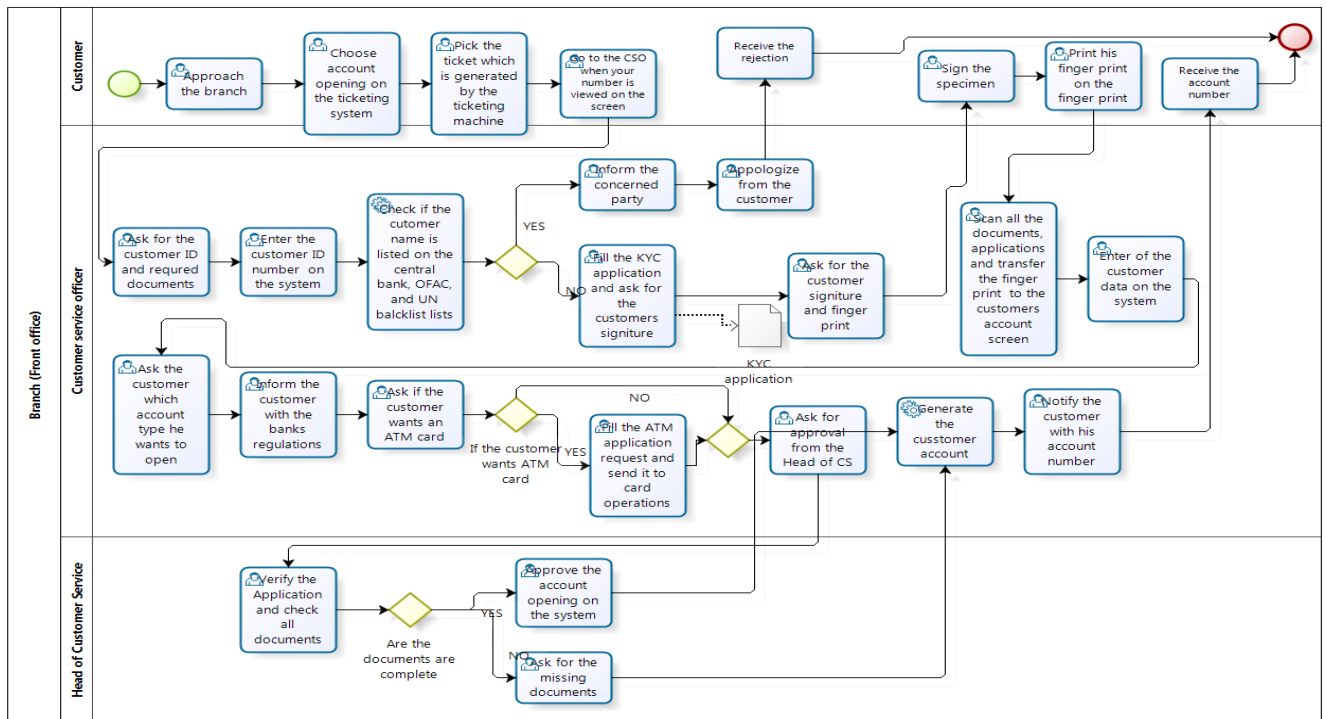### I. Account Opening process:

Figure 6.3: Account opening process

6. Core Banking Business Process Modeling in Practice

Firstly the account opening process is initiated in the branch (Front office) only, without processing and waiting for the account opening completion from the back office. In other words when the teller completes the tasks of the account opening process the account is directly generated and the customer can make any transaction. Secondly, when the customer approaches the branch he/she would select the account opening option on the ticketing system; a ticket will be generated with a number and the estimated waiting time will appear, and at the same time a request for the customer service officer will be sent so the employee can serve the customer with the account screen being integrated to the ticketing system to open the account of the customer on the system. Another important factor which is identifying the customer without asking for any identity approval e.g. ID or passport, can be performed through taking the customers finger print and transferring it to the customer account system. So at any time the customer would want to make any transaction the teller or the customer service officer will ask the customers finger print, and the system will match and verify if the finger prints are identical. Fourthly, the employees will scan all the requested documents on the customer's account without the need of batching all the files and send them to the back office at the end of the day. All these points will be considered as time consuming, and if they were solved this will increase the performance of employees, and employees will be able to serve customers in an efficiency and effective way with less paper; this will all increase the customer satisfaction and customer loyalty, hence, improve the profitability of the bank in the long-term

II. **Cash Deposit & Withdrawal process:**

Cash deposit:
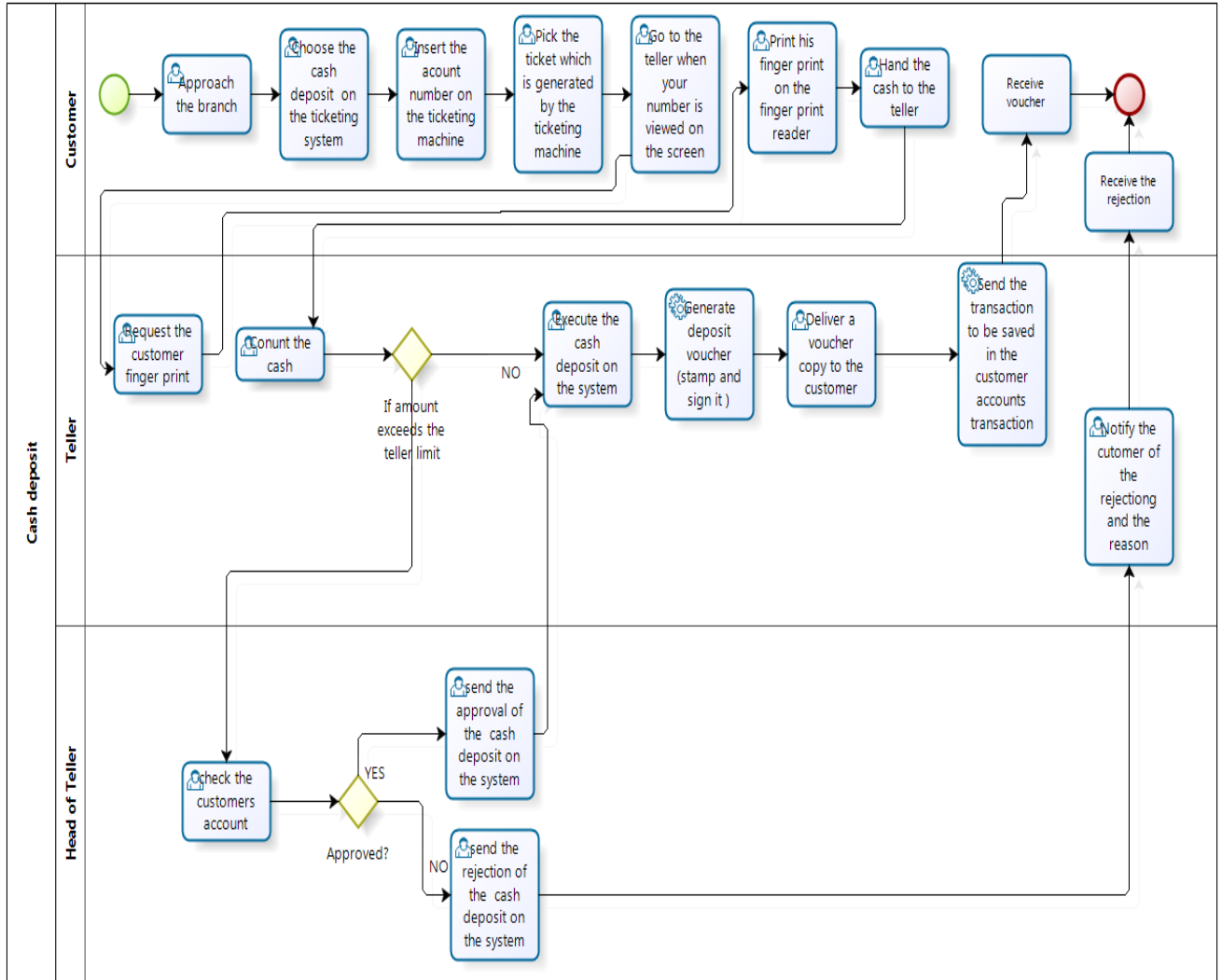
Figure 6.4: Cash deposit process
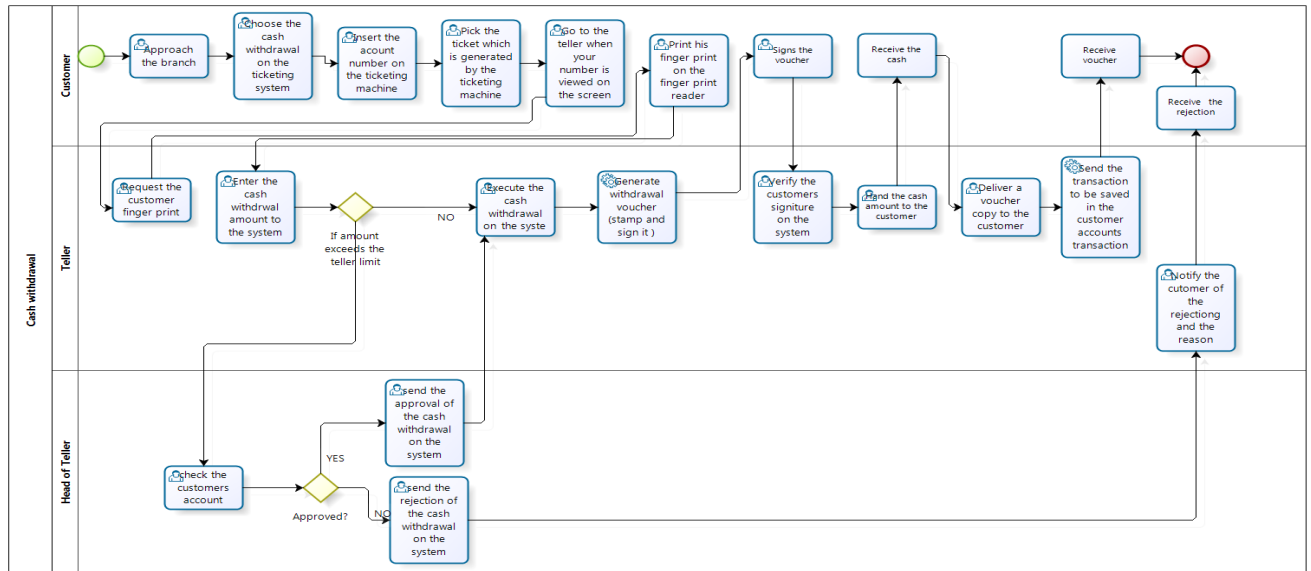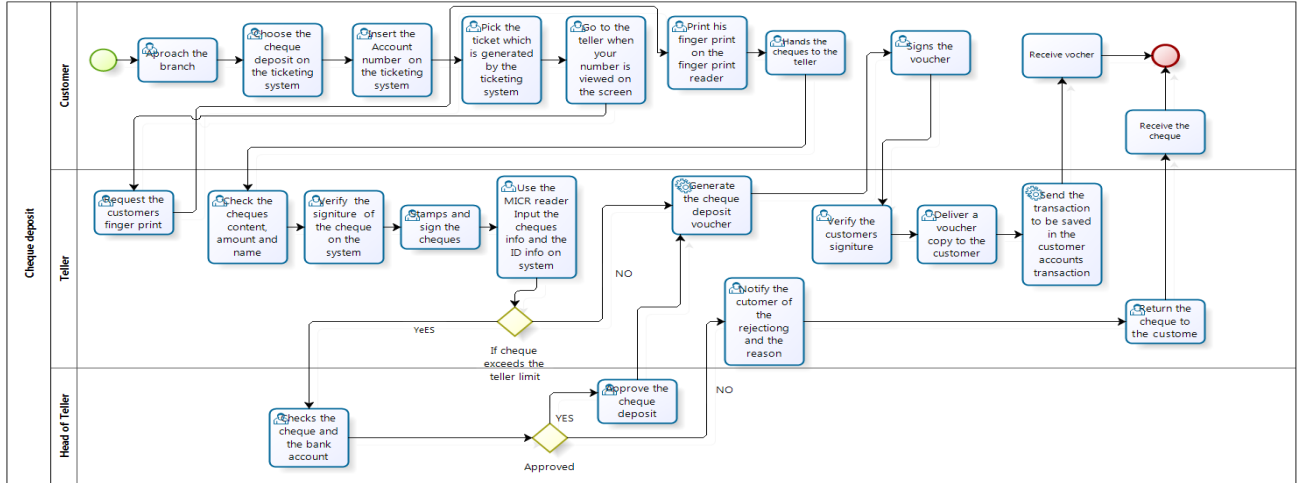
Cash withdrawal

Figure 6.5: Cash withdrawal process

The cash deposit and withdrawal process is initiated in the branch (Front office) by teller. One of the improvements is the ticketing system, when the customer approaches the branch he/she would select the cash deposit or withdrawal option and then the customer would have to inserts the bank account number into the queue ticketing system. The system will generate a ticket with the a number and the estimated waiting time will appear on the ticket, moreover a request will be sent to the teller for cash deposit or withdrawal, with the account number of the customer, in addition will automatically open the bank account which is related to the customer. Secondly, all documents that would have to be transferred and batching to be sent the back office will simply need to be scanned instead, and uploaded immediately into the system. As shown in the processes above, another important point that has been redesigned is the solution of using fingerprints to identify and authenticate the customer.

III.   Cheque withdrawal and deposit process

Cheque deposit

Figure 6.6: Cheque deposit process

Cheque withdrawal
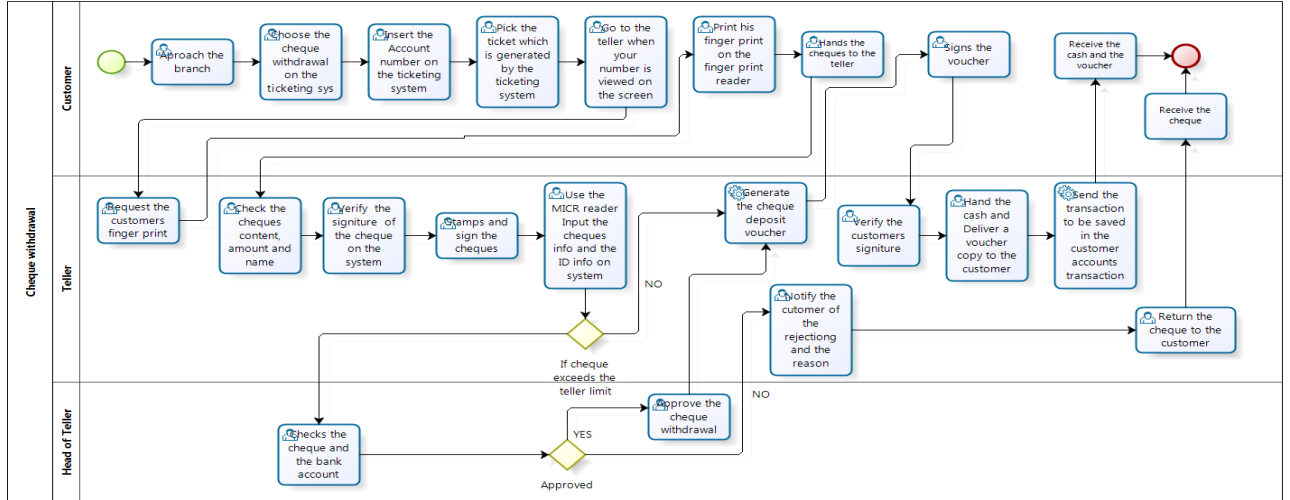
Figure 6.7: Cheques withdrawal process

6. Core Banking Business Process Modeling in Practice

Cheque deposit and withdrawal are initiated in the branch (Front office) by teller. Since the cheques are the most risky transaction in the bank, a new technology was implemented to reduce the risk, by taking the identity of the customer through his finger print, and by transferring all the cheque data on the system by using the Magnetic Ink Character Recognition MICR including the signature. Moreover the signature will be checked by the system if it's identical to the signature which is installed on the system.

Chapter 7: Conclusion

The main focus of the thesis is to be able to deliver the key objectives that will eventually become strategic quick-wins, important innovative outcomes, and concrete solutions in the context it is applied to. The major objectives that are measurable of the thesis is to focus on the following key issues, and be able to measure whether the objectives were implemented and completed:

1. Understanding and analyzing the concept, guidelines, modeling suits, and approach of business process modeling from a banking perspective to be able to apply in the banking industry.
2. Develop major frameworks that will be aligned to the banking sector and be able to identify how it will optimally fit into the business case of the banking example.
3. Capture the banking industry since it is a fast growing industry in the emerging markets so banks are constantly focusing on their clients, and are seeking for innovate way to revolutionize their operations and make them more effective and efficient.
4. Applying the Business Process Modeling to several departments at the bank will identify workflows between the departments and illustrate the process from start-to-end.
5. Conducting As-Is analysis for the current situation and To-Be analysis to provide the future state of the organization, in addition to the gap analysis to compare the two stages.
6. Defining and discussing Business Process Re-engineering which is considered an enabler for the performance improvement, hence allow the business to enhance their processes and operate more efficiently and effectively which will have a direct impact on the performance of the business.
7. Applying Business Process Modeling in the banking industry, and developing the core processes for the retail department.

The thesis has managed to achieve all major objectives set at the beginning of the thesis, and by looking thoroughly on all the major objectives it could be stated the thesis managed to fulfill

all the requirements of the objectives and has managed to focus on all major theoretical and practical matters. There were some areas were the thesis could have been managed in a different way and in the next paragraphs the matter of opportunity for improvements has been clearly discussed.

During the business modeling phase, interviews were conducted with several employees at the bank in order to discuss the outcomes of the Business Process Re-engineering of the thesis. It has been noticed that the business processes were confirmed by the Process owners that were defined from the banks side. There were few comments and improvements that were suggested by the employees, since they had some perspective on their direct roles and responsibility. All the discussions and comments were taken into consideration and the processes were restructured and improved as their requests and are reflected in the processes illustrated in the previous section. Moreover all processes were analyzed and explained clearly to every employee; hence, the people at the bank will be aligned to the processes transformation and be able to distinguish their major roles and responsibilities for processing each task. This initiative has allowed the bank to operate using the improved processes that were discussed and approved by the management of the bank, and the quick wins that were illustrated were efficiency and increased number of applicants during the day, which will lead to positive returns in the medium to long term operational profitability.

According to the table mentioned in chapter six the thesis tried to fill the gap between the As-Is and To-Be processes; this table illustrate the gaps that were able to be filled successfully.

Core Banking Transformation Assessment Modules		
	To-Be (Future State)	**Completed.**
A. Business process modeling (Core Banking Processes)	· The bank is aiming to use business procedures in a graphical notation instead of textual format. The graphical notation will facilitate the understanding of the performance collaboration and business transaction between the organizations · All processes must be in English language, since the processes will be used for internal consumption (Management reporting) and must be standardized with the other support services procedures that are already developed · Tasks that require rework and iterations must be assessed and redesigned in order to eliminate any redundancy in the process · Redesign the tasks that require verification or approval in order to minimize total time of the processes and the customer waiting time e.g. assess the approval cycle in terms of authority and position. · The bank has decided to eliminate the exceptions and special cases	1. The graphical notation has been achieved instead of the textual format. The bank has approved of the graphical notation which wills facilitate the understanding of the performance. 2. Yes the new version of the processes is in English language and will be used as standardized in the whole organizations. 3. All the tasks were reassessed and redesigned to eliminate any redundancy in the process. 4. All the approval processes were minimized according to the bank strategy and the cycle is optimized in terms of authority. 5. All expectation where removed from the updated

Core Banking Transformation Assessment Modules		
	To-Be (Future State)	**Completed.**
	exemptions from the processes which usually consume more time, and is aiming to develop a process that limits the exceptions and focus only on general tasks that are certain and applies to the majority of the clients · The processes will have to focus on the customer and improving the customer experience in the branch · All the scanned documents that are collected from the customer, must be all inserted into a web intranet on the system to be available for any bank employee whenever the customer is applying for a new product at the bank e.g. if the customer is applying for a home or personal loan, the employee of the bank must be able to enter into the system and find the documents required from the customer.	version of the processes, and the bank has approved of the new structure and agreed on the majority of the processes, with some feedback that was reflected immediately. 6. The main focus of the operational is to restructure branch and processes to serve the customer. 7. This will not be developed at this point of the thesis, its requires great investment in the IT and will require further initiatives and branch effort to make it happen
B. System (Core Banking System)	· The bank has selected "Oracle Flex Cube" as the Core Banking System, which is one of the best systems worldwide and will be implemented as	8. The bank has selected the banking system and the processes have been aligned to be able to match with the

Core Banking Transformation Assessment Modules		
	To-Be (Future State)	**Completed.**
	other workstreams completes such as the Business Process Management. (It is beyond the scope of the thesis to automate the banking processes and to configure the process with the Core Banking System) . The core banking processes must be aligned to the core banking system.	system. The team of the bank who are working on the system were helpful to manage, to streamline the workstreams to complete BPM on the core processes.
C. People (Front-office and back-office)	· The bank is planning to become centralized in terms of operations, where the front-office will be responsible for minimal data entry on the Core Banking System, with the majority of work to happen in the Back-office operations. · In order to minimize the costs of the branch, the bank has decided to cut costs related to over-time incentives for customer services representatives that are working after hours to complete the process and enter the data on the core banking system. The decision is to have the front-office to initiate the process on the Core Banking System with minimal steps to be done on the system, when the Client is in the Branch, and the rest of the process will be forwarded to the Back-office operations to finalize the tasks and send for approval.	9 And 10. Out of the scope of the thesis and will be reflected only in terms of processes.

What went well and even better if analysis are curtail set of questions and analysis that will be used at the end of the work to assess the ability to test what were the major achieves and what could have been done better to improve further.

My banking background has allowed me to have insights on the banking industry and be able to connect directly with the employees from the bank and conduct all the initiatives. The reason behind choosing this thesis is the lack of information regarding to the Business Process Modeling from a banks perspective. In addition, the tackling of this project was a very challenging initiative to be able to think of proposed framework for each section that will be required to achieve the objectives. It was a great leaning experience to go through the Business Process Management and Re-engineering life-cycle and identify all the key factors that are important to the process.

The areas for improvement of this thesis is the possibility if I had the chance to spend more time on the grounds with the employees of the bank and spend less time remotely, in order to be able to have a better understanding of their current situation and define the to-be situation as close as it is to the future state of the bank.

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