BUSINESS PROCESS REENGINEERING AND MASTER DATA MANAGEMENT ALIGNMENT FRAMEWORK

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Abstract— To facilitate the collaboration between business and IT, leading companies are turning to a business process management approach. Because business process management supports companies focus on creating well-defined business processes, it’s frequently being used to help them simplify the increasing complexity of their businesses and coordinate the work of the employees and partners. In the case of Master Data Management, business and IT can use business process management to tackle master data problems, define and manage master data governance in the Context of the business processes that produce and use such data, and put Master Data Management back into the hands of the business. This paper proposes a framework that incorporates Master Data Management with the Process Reengineering lifecycle. It enables the business to govern the Master Data that get generated whenever the process reengineering lifecycle occur. The proposed framework aims to enhance master data governance for today’s digital data environment. The ability to successfully implement these joint concepts requires some level of cross-training and a new perspective.

Index Terms— Master Data Management, Business Process Management, Process Reengineering lifecycle.

I. INTRODUCTION

Master data is one of the important and valuable information that a business holds. It represents core information about the business like; customers, suppliers, products, and accounts, and the relationships between them. Each of these different domains of master data represents information that is needed across different business processes, across organizational units, and between operational and decision support systems. In essence, master data defines an enterprise. The number of joint MDM and BPM projects is anticipated to grow at a considerable rate in the upcoming years. The ability to successfully implement these joint patterns requires some level of cross-training and a new perspective.

A. Motivation

Organizations are looking to transform their business. To fully realize that goal, MDM and BPM projects must bring closer together. Goals, priorities, requirements, milestones, and stakeholders should be aligned.

When organizations align their MDM and BPM projects, they maximize the value of each solution. Many analysts recommend that clients and vendors adopt a strategy that supports this aligned approach [4]. The number of joint MDM anticipated growing at a considerable rate in the upcoming years. There are rich and various competencies in these technologies, but the ability to successfully implement these joint concepts requires some level of cross-training and a new perspective.

A combined BPM and MDM solution bring more value to business processes than implementing two separate solutions. As a result, enterprises are trying to connect these processes in a managed framework or a solution. This combined framework provides a way to apply governance to enterprise master data by using BPM and MDM solutions. By doing so, the organization can combine process agility with trusted data and support processes and policies that can help enforce data quality throughout the enterprise for enhanced business efficiency and effectiveness.

B. Problem Statement

Master Data is always static. It is in a state of continuous change. Based on a study done by a different of sources [9] there is an average of 2% change in master data per month. Given the enormous amount of master data in the organization, this small percentage is considered a significant number of changes.

II. BACKGROUND

Before we introduce the proposed framework, we have to explain some related concepts. In this section, we will take a brief overview of the Master Data Management, Business Process Management, and the alignment between the two concepts:

A. Master Data Management

Master data is data about products, customers, locations, and other items that have lifecycle distinct from that of transactionally processed data. Master data is more constant than normal transactional data, and it is used operationally in different units [5]. Taking control of master data is an across-organization challenge: organizational units need to adopt standard practices, and there must be an information infrastructure that can ensure consistency. MDM provides this across-organization consistency.

Master Data Management is not a new field. Many organizations have systems to store and retrieve master data. Unfortunately, several information systems have become more complex in response to the demands of growth, business changes, and technology changes [8].

Therefore, it has become harder to identify, utilize, and manage consistent, accurate and valid master data items across an organization. Fixing data quality issues at its source and managing the constant change is what MDM is all about. Master Data Management is a new architecture designed to eliminate poor data quality under heterogeneous IT application landscapes.

B. Business Process Management

Business process management is the practice of defining Business processes, describing them in detail, monitoring them with appropriate metrics, and continuously improving Business processes to optimize business performance [2]. Because business process management helps companies focus on creating well-defined business processes, it’s increasingly being used to help them simplify the growing complexity of their businesses and coordinate the work of the employees and partners. BPM is a process-oriented management method.

C. Alignment between MDM and BPM

Fundamentally speaking, BPM presents structured approaches to systemize the management of individuals collaborations to achieve business and enterprise objectives. Particularly, it includes the management and support the design, execute, analysis, and modify/evolve of a Business Process schema, and managing all of the needed resources including people to ensure integrity and completion of Business processes execution, handling of exceptional cases, and compliance with regulations and laws [6]. The combination of BPM (to model and enforce the business process) and MDM (to accurately identify the customer) provides a powerful solution to ensure that master data is accurate and trustworthy from the point of its creation. The two primary things that MDM and BPM intersect within a business are creating master data and using it within business processes. In some scenarios, Business users will not have confidence in the newly created master data unless there are additional assurances applied before they use the master data.

III. RELATED WORK

The Process Reengineering Life Cycle Methodology

![Figure 1 Process Reengineering Lifecycle (PRLC)](image)

The Process Reengineering Life Cycle (PRLC) [4] is a comprehensive, six-stage methodology with guidelines for envisioning a re-engineering project, getting started, diagnosing process pathologies, and redesigning, reorganizing, and measuring the newly constructed process.

The Envision stage: the organization reviews the existing strategy and business processes and based on the review, business processes for enhancement are targetted and IT opportunities are identified.

The Initiation stage: project teams are assigned, performance goals, project planning and employee notification are set.

The Diagnosis stage: documenting the characteristics and flaws of processes and sub-processes considering their activities, resources, communication, roles, IT and costs.

The Redesign stage: revising the current process design alternatives and other creativity techniques and then design the new developed process.

The Reconstruction stage: assure a smooth transition to the new process responsibilities and human resource roles by changing the management techniques to ensure that.

The Evaluation stage: determine if goals and objectives are met and examine total quality programs by reviewing and monitoring the newly developed process.

A. Collaborative MDM

Collaborative master data management deals with the processes supporting collaborative authoring of master data, this includes the creation, definition, addition, and acceptance of master data. Collaborative Master Data Management is about achieving an agreement on a sophisticated subject among a group of people. The process of reaching to an agreement is usually encapsulated in a workflow that may combine both automated and manual tasks, both are supported by collaborative capabilities. Information about the master data being processed is passed from task to task within the workflow and is governed throughout its lifecycle [8].

Within the master data management environment, a core set of capabilities is required for the Collaborative style of usage. To manage and organize the collaborative tasks and the master data the organization will need to combine task management, state management and workflow. The sequence of task by individuals and the automated processes that’ll be executed are controlled by the workflow. Displaying and prioritizing pending work for completion by individuals is handeled by Task management, whereas helping to model and enforcing the lifecycle of the master data is controlled by State management.

B. Operational MDM

In the Operational MDM style [5], the server behaves as an Online-Transaction Processing system that responds to requests from multiple users and applications. Operational Master Data Management concentrates on providing services in an environment
with high-performance. These services can be invoked either from an enterprise business process, user interfaces or business application. The services in Operational Master Data Management are usually designed to be suitable with different architecture like Service-Oriented or even traditional. To Integrate your current systems with the Operational Master Data Management System you need the support of a broad variety of protocol and communication methods and protocols.

As an example of Operational Master Data Management usage is the business process of opening a New Account. In this process, an individual or organization needs to open a new bank account, or any other type of accounts. Master Data Management services will be invoked to verify what is already known of the customer information and to determine if the product policy is being followed before an offer of a new account is made. If the customer profile does not exist, then the new customer is created in the Master Data Management System and a new account is created. Each task within this workflow is implemented by a service, and many of these services are implemented by an Operational MDM System [5].

IV. THE PROPOSED FRAMEWORK

Master data management is managed in a very chaotic or IT-centric rather than business-centric manner. This leads to the creation and maintenance of duplicate, incomplete, or erroneous master data that hinders operational efficiency, quality, and agility. This paper explores how you can use business process management to define a flexible process to govern master data that business users can drive and IT can support.

The proposed framework combines Master Data Management with the Business Process reengineering Lifecycle. The previously explained Process Reengineering lifecycle methodology contains six stages, the last three stages Design, Construct and Evaluate are where the actual changes occur. We refer here to the changes that might generate new master data items or modify existing ones. The three stages of master data management that have been combined with the process reengineering lifecycle are:

Master Data Definition: The definition and use of the master data need to evolve along with it. This is the first stage, it is aligned with the Design stage, you start having two building the process and at the same time you start defining the created master data. It contains two steps, Master data definition and Insertion to enterprise data dictionary.

Master Data Modeling: This stage is aligned with the construction stage of the process reengineering. The modeling stage contains four steps, starting with Conceptual Modeling, to Logical, and finishing with the Physical Modeling. Once all the three steps of modeling are done, the newly constructed Master Data should be reflected on the related Data Models, across the enterprise.
**Master Data Calibration:** The organization objective of its master data initiative is to achieve the maximum levels of consistency and reliability by having unified definitions of data across the organization. Achieving this would enable more efficient business processes and faster sales cycles while improving overall customer satisfaction. Any change to business process might triggers a change in master data attributes that in turn invokes a change in the master data model. This stage is the checkpoint after each change to the process. The changes can affect, modify, or create new master data items. If not monitored and calibrated with the related data models, the consistency of the enterprise master data will be at risk. This stage contains two steps; Reviewing the master data which has been created in the process. And Identify the new features or items. The output of this stage will be fed to the first stage again.

**CONCLUSION**

The ultimate goal of establishing this framework is to enhance the process of master data governance and to maintain and improve the quality of master data that is available to all applications, business processes, departments and business units, and employees and partners. When master data management is well defined and well governed and involves every relevant department and business unit that uses the business process reengineering, the business value of the data will be maximized. The three stages of master data management combined with the process reengineering lifecycle can be used as a foundation for Master Data Management Solution. Having such foundation will reduce the effort of establishing a master data management solution and it will reduce the gap between enterprise level business processes and enterprise master data.

**REFERENCES**


