Lessons from a Successful Data Warehousing Project Management

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ABSTRACT
This article provides an overview of project management aspects of a data warehouse application implementation. More specifically, the article discusses the project’s implementation, challenges faced, and lessons learned. The project was initiated with an objective to redesign the procurement data pipeline of a data warehouse. The data flows from enterprise resource planning (ERP) system to enterprise data warehouse (EDW) to reporting environments. This project was challenged to deliver more quickly to the customers with improved report performance, and reduced total cost of ownership (TCO) in EDW and data latency. Strategies of this project include providing continuous business value, and adopt new technologies in data extraction, transformation and loading. The project’s strategy was also to implement it using some of the agile principles. The project team accomplished twice the scope of previous project in the same duration with a relatively smaller team. It also achieved improved quality of the products, and increased customer satisfaction by improving the reports’ response time for management.

KEYWORDS
Agile Methodologies, Data Warehouse, ETL, Project Life Cycle, Project Management, Team Dynamics

INTRODUCTION
Project Management is the application of knowledge, skills, tools, and techniques to project activities to meet project requirements (Schwalbe, 2013). A project is “a temporary endeavor undertaken to create a unique product or service” (Project Management Institute, 2004). There is a variety of tasks being accomplished by people and organizations through projects. In information technology (IT) there are hardly any activities that are not done as a project. This study shares experience of a project called ‘Procurement Data Pipeline Optimization’ which is huge, complex, and technically challenging. In implementing technically challenging projects, and achieving technological product breakthroughs adopting emerging tools and technologies is important to deliver a project successfully and on time (Rahman, Wittman & Thabet, 2016).

The prime objective of project management is to meet specified performance within cost and on schedule. The three primary forces behind project management are (1) the growing demand for complex, customized goods and services (Zhu & Mostafavi, 2017), (2) the exponential expansion of human knowledge, and (3) the global production-consumption environment (Meredith & Mantel, 2011). “Projects are characterized by their importance, specific end results, a definite life cycle,
complex interdependencies, some or all unique elements, limited resources, and an environment of conflict” (Meredith and Mantel, 2011). This project had many challenging tasks, complex dependencies, and several teams consisting of different functional areas. It had cost, schedule, and scope defined. This project was a six-month project. This project had well defined deliverables. It was an IT project which went through the steps of software development life cycle (SDLC) such as requirements analysis (Xiang et al., 2016), systems analysis, development, unit and systems testing, user acceptance testing, and deployment into Production.

This project followed the project management methodologies. Based on customer service needs the product manager under a particular product line, gathered a high-level service needs list. Then he engaged a project manager (PM) to launch initial fact-to-face in which all key stake holders meet and discuss all service needs, come up with key tasks and schedules, and assigns different teams to do certain work such as proof of concept (PoC) that had technical challenges. IT projects frequently faces some sudden technical challenges for which no solution available or known (Wu, 2013). Those challenges need to be overcome during project life cycle.

Due to confidentiality, it is not possible to draw the organization chart. However, the author would elaborate in words. This was an IT procurement pipeline optimization project. It serves the business purpose of the organization. The company consists of many large divisions and each of them is dependent on the procurement of materials and supplies. So, this IT project implemented an automated system which is optimized. This project brought efficiency in business operations in all the divisions of the company. This project in fact allowed each of the business divisions to perform their business operations with up-to-date business information. This allowed the whole organization to operate competitively.

LITERATURE REVIEW

Data warehouse is the central repository of an organization’s enterprise data. It holds both historical and current data. Organizations build their reporting environment and dashboards on top of the data warehouse. These data come from heterogeneous sources of operational databases and data marts (Rahman, 2016). In data warehouses hundreds of applications are built over a period of time. Each year dozens of applications are released as part of new project or as part of enhancements of existing applications. These application projects may cause many unforeseen technical challenges. The data warehouse project managers need to have technical background as well as leadership capability to be successful. Otherwise, they might not comprehend unforeseen technical challenges and risks until they are imminent at which point they find it difficult to meet the deadline, manage resources and do a flawless production release. (Rahman, 2013).

Over the last three decades a significant amount of research work on project management has been conducted by researchers and practitioners. Their research cover a wide-variety of subjects that enriched this discipline. This has also been helping in undertaking large, complex, and challenging projects (Zhu & Mostafavi, 2017). The prominent projects undertaken in the last two decades include the Sydney Opera House in Australia, the Euro-Tunnel in Europe, the Tacoma Narrows Suspension Bridge in USA, and Calcutta Metro in India (Kharbanda and Pinto, 1996), Millennium (Y2K) Bug, Obamacare’s HealthCare.gov Website to name a few. The author is able to gather huge amount of experience from these project implementations in terms of both success and failure, and lessons learned. There are a lot of challenges and risks that emerge in a project life cycle (Rahman, Wittman & Thabet, 2016). Project Managers need to work closely with different stakeholders to overcome challenges and get development work done on-time (Mohan et al., 2016).
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