

The Role of Technology in Project Management - a case study of Saudi Company

Yousef A Alharbi, Rami H Alamoudi

Department of Industrial Engineering, King Abdulaziz University, Jeddah, Saudi Arabia
Corresponding Author: Yousef A Alharbi

Abstract: The paper discusses the effects of applications such as Oracle Primavera, Zoho Projects, Omnifocus and Clarizen on project management. The influence of storage cloud functionalities on project management is discussed. The decentralization of project teams, computerized scheduling, automation of workflows and budget tracking have all been made a reality by specialized software. The practical effects of all these advantages are highlighted. Therefore, the companies often have to work at promoting cohesion within their organization. Short examples of how the use of technology has affected Almarai corporation's projects are researched into. Hence, the role of technology in enhances the decision making for the project member is discussed. Finally, the paper outlines the drawbacks and the benefits of incorporating technology into a company's projects and gives recommendation based on the observations.

Keywords: Project management, technology, Zoho Projects, Oracle Primavera, Omnifocus, Clarizen, Saudi Arabia, Saudi Company

Date of Submission: 11-03-2019

Date of acceptance: 28-03-2019

I. INTRODUCTION

A project is a collaborative or individual enterprise that is carefully planned to achieve a particular goal. Conversely, technology refers to the application of scientific principles to make work easier. Project management is the process of planning, initiating, and controlling a specific work in an organization with the aim of achieving goals that were pre-set within a particular timeline while attaining success measures [1]. Companies use projects to implement their ideas within a fixed timeframe. The more complicated idea is, the larger the project and the more the number of people required to oversee it. Ideally, this presents a problem for corporations that are involved in big projects. When dealing with a massive project, one must plan the actions of many people who are at times spread over a large area or even different time zones. Achieving such an achievement requires one to employ technology in managing the project. At times, simple applications such as Google Apps can be used to make work easier. However, sometimes requires specialized software. Ultimately, the role of technology is to simplify the project management process.

II. RESEARCH METHODS

The paper primarily relies on a survey and secondary sources to collect data. By reviewing journals, a book and official website data are used to extract information. Data from these sources was deemed to be reliable because it is written by people with technical experience on the subject.

The survey was conducted using questionnaires and interviews. These two formed the backbone of the primary sources for the study. Very specific open ended and closed ended questions were posed to the subjects on the topic. The subjects were chosen from a wide demographic pool. Primary and secondary sources were fused to develop theories. Data sampling and population also formed part of the research method of the paper.

III. DATA ANALYSIS

A. Descriptive Analysis

The ages of the participants in the study were varied. However, the majority was 36% ranged between thirty and thirty-nine, 30% were in the forty to forty-nine age groups. The results also show that a broad demographic was chosen to estimate varied opinions on the first question. 60% of the respondents had an undergraduate degree while only 6% had a graduate degree. The figures prove that the study had a diverse subject base. The number of projects was handling at one time are high 58% of the participants have more than 5 projects at one time. Most of the participants agree that communication, schedule, monitoring, storage cloud technologies are important for improving the project management.

The results show that technology is being heavily underutilized by Almarai in its project management. 45% of the demographic used MS Outlook, MS Project was the second most used software. Shockingly, none of the subjects claimed to have ever used Oracle Primavera, Attask, Yanner, Clarizen or Omnifocus. The applications that the company failed to exploit are the most sophisticated tools; failure to exploit them is a poor decision by Almarai’s management.

B. Statistical Analysis

In this section will analysis the data as statistical. Statistics is basically a science that involves data collecting, exploring and presenting large amounts of data to discover underlying patterns and trends. Statistical analysis can be broken down into two discrete steps, as follows:

- Describe the nature of the data to be analysed.
 - Explore the relation of the data to the underlying population.
- So, will discuss and describe the above steps one by one starting with:

➤ **Data types:**

There are two types of data numerical and categorical/contextual. Numerical data is data that is measurable and countable, such as time, height, weight, amount, and so on. Numerical data divide in to two classifications; Discrete or attribute data were the terms that were applied to “yes/no” and “count” data, also there Continuous or variable data was the term applied to “measurement” data. Categorical data provides information on the context from which a particular piece of data was taken, Categorical variables take on values that are names or labels, such as the color of a ball, race, sex, age group, and educational level. The data on this study are mainly categorical data.

➤ **Explore the relation of the data:**

By using the Minitab statistical software will explore the relation between the date by using 100 Stacked to show the relation on the data as chart.

A 100% stacked bar chart is designed to show the relative percentage of multiple data series in stacked bars, where the total (cumulative) of each stacked bar always equals 100%.

From the below table and chart, found that 78% of all project members thought the project in the organization are average or less success. There are less number from team members and project engineer think that project much less successful the organization.

Table 1: The participants primary role in project against organization success rate

	End User	Project Engineer	Project manager	Project Owner	Team Member	All
Average success rate	4	7	3	2	10	26
Less successful	0	5	0	1	7	13
More successful	1	2	2	1	1	7
Much less successful	0	1	0	0	2	3
Much more successful	0	0	0	0	1	1
All	5	15	5	4	21	50

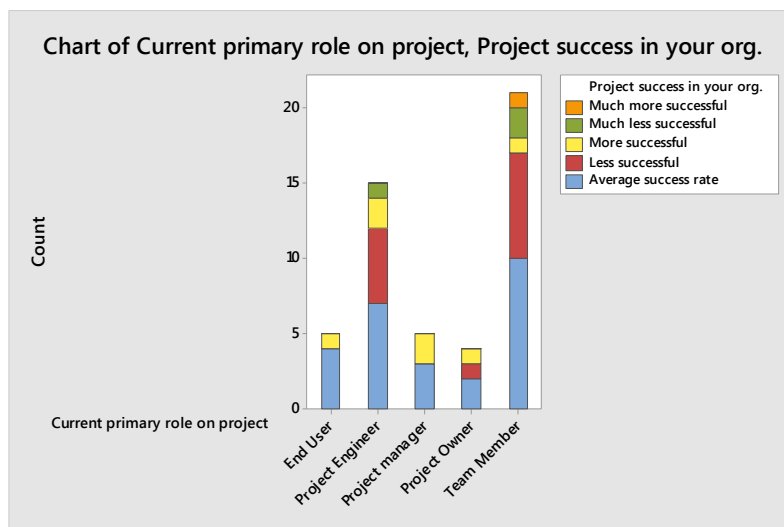


Figure 1: The participants primary role in project against organization success rate

The project members agreed with using the project team communication technology and tool to communicate among each other efficiently.

Table 2: The participants primary role in project against using team communication tool

	End User	Project Engineer	Project manager	Project Owner	Team Member	All
Agree	3	7	4	1	12	27
Disagree	0	0	0	2	0	2
No opinion	2	0	0	0	6	8
Totally Agree	0	6	1	1	3	11
Totally Disagree	0	2	0	0	0	2
All	5	15	5	4	21	50

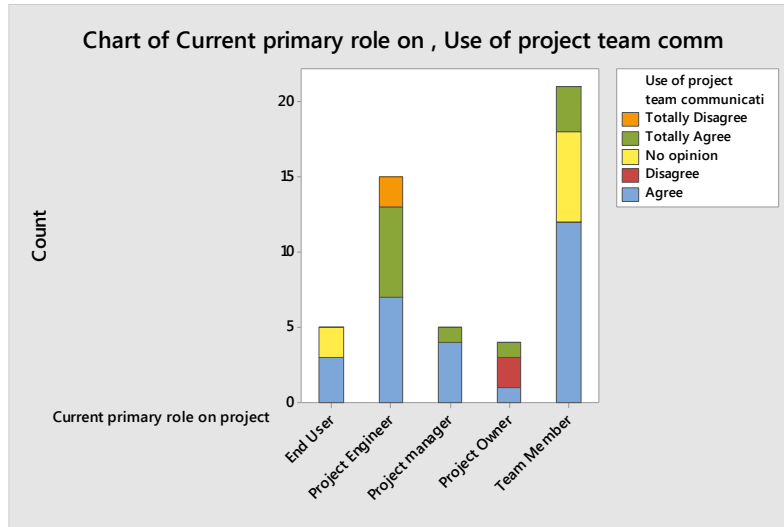


Figure 2: The participants primary role in project against using team communication tool

Using of technology for scheduling and monitoring the project activities are beneficial as agreed by the participant.

Table 3: The participants primary role in project against using of scheduling and monitoring tool

	End User	Project Engineer	Project manager	Project Owner	Team Member	All
Agree	4	8	3	2	10	27
No opinion	1	0	0	0	6	7
Totally Agree	0	7	2	2	5	16
All	5	15	5	4	21	50

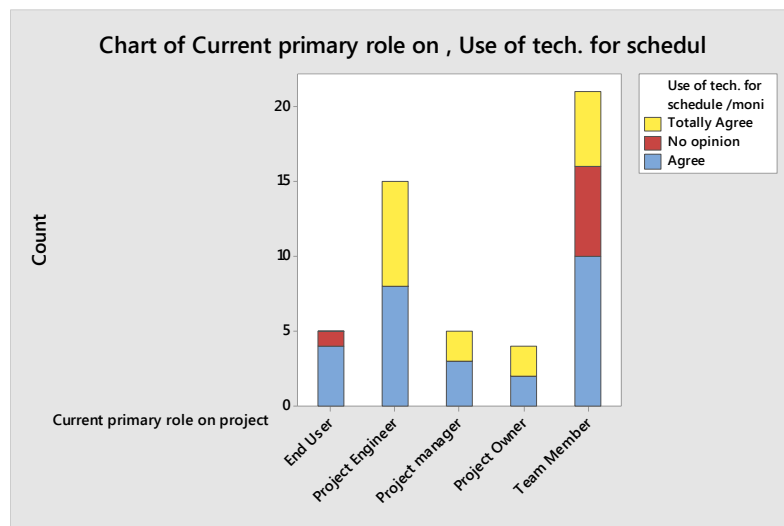


Figure 3: The participants primary role in project against using of scheduling and monitoring tool

Some of team members and project engineers are disagree with using data storage cloud system to store the project related data. However, most of team members, project managers, project engineers, end users are agreeing with using this system.

Table 4: The participants primary role in project against using data storage cloud

	End User	Project Engineer	Project manager	Project Owner	Team Member	All
Agree	3	8	4	1	8	24
Disagree	1	0	1	0	1	3
No opinion	1	1	0	2	7	11
Totally Agree	0	6	0	0	5	11
Totally Disagree	0	0	0	1	0	1
All	5	15	5	4	21	50

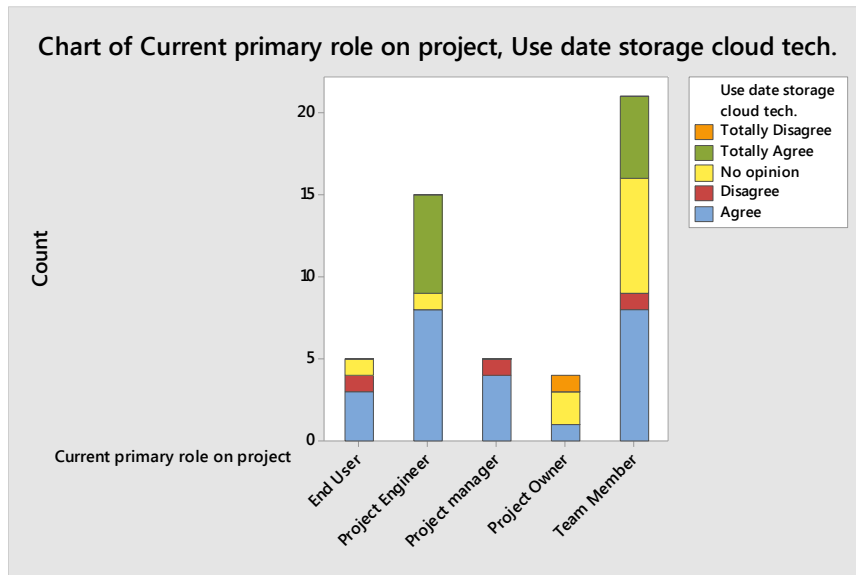


Figure 4: The participants primary role in project against using data storage cloud

There are less project managers and team members are saying that the project not conducted as efficient as possible but there are project members thinks the project sometimes or all times are conducted as efficient as possible.

Table 5: The participants primary role in project against the project efficiency rate

	End User	Project Engineer	Project manager	Project Owner	Team Member	All
No	0	0	1	0	2	3
Sometimes	3	11	1	3	10	28
Yes	2	4	3	1	9	19
All	5	15	5	4	21	50

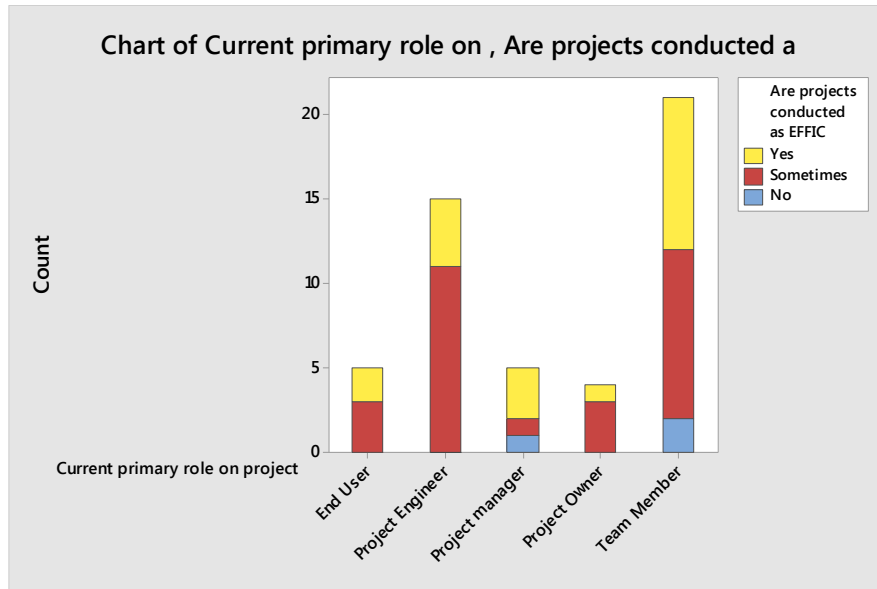


Figure 5: The participants primary role in project against the project efficiency rate

IV. ADVANTAGES OF TECHNOLOGY IN PROJECT MANAGEMENT

The primary role of technology is to simplify work. Most researchers agree that technology is an essential tool for suitability when designing and executing a project. Such as, technology has made communication during mission management simple. Moreover, companies such as Clarizen have developed specialized collaboration tools and project-based chat platforms [2]. There is a move by the general population in many countries to move towards a home-based workforce [2]. Effectively, with this new market activity, the role of technological advancements has become more relevant than was previously required.

Innovations such as superior efficiency in cloud technologies have made the cost of accessing storage cheaper. Cloud computing engineering was historically a preserve of wealthy corporations [2]. However, the advances by companies such as Clarizen have made it more affordable and, hence, more accessible to most organizations. The technology allows one to access data remotely and via devices such as one's phone and laptop. Hence, it increases data safety as access to information stored in this manner can be regulated and checked.

Technology makes it possible to access real-time updates of developments. Project administrators at times require to inform or to be notified immediately of any changes that occur in planning or implementation. For instance, if any materials are wasted or are stolen in a project, the required managers need to search immediately. Having a real-time update application integrated into the plan allows the required personalities to keep track of matters at all times [3]. The advantage of the plan is that it prevents delays. In essence, technology can ensure that project heads are informed of events transpiring in real time.

Mobile decentralization of project teams has been made possible by telecommunications advances. Ten years ago people had to meet and discuss issues in person if they were working on a project. Nowadays, companies can compose mission teams in different areas of the world and work on a single project without ever being in the same building. Definitely, this ensures that the company handling the costs saves money and time as meetings are held online.

Scheduling software allows parties involved in a project to keep up-to-date of the timelines that are set. Usually, complex projects are composed of many smaller movements that should be managed simultaneously. It is common for tasks to lag behind their estimated time of completion when there are many components involved. Scheduling software automates the system, hence, ensuring that people are informed when their deadlines are to be met. Moreover, when a schedule is changed all individuals involved are notified in a synchronized manner. Hence, the project is not derailed by lateness.

Project software can be used to automate workflows. Workflow automation is often a tedious administrative task that may waste team members' time. In the past, one person was required to ensure that the work done by team member X was sent to person Y. Currently, technologies are available that merge cloud computing with chat platforms. When part of a project is completed and uploaded, those that need to approve of the work are alerted via email or some other platform automatically. Ultimately, technology decreased menial administrative tasks.

Budget tracking is the weak point of most ventures. In business, every operation is allocated a specified amount of money. For the plan to make business sense to a company it ought to keep within the budget. At

times the cost of materials may be hiked by unforeseen circumstances. It is imperative that the financiers are made aware of the escalating costs. In essence, budget tracking allows stakeholders to adjust their finances to meet the project's needs.

V. RECOMMENDATIONS

All business entities need to embrace advanced computer and cloud-based project management techniques. Using these technologies is easier and more convenient than ignoring them. Giant companies such as Almarai cannot afford to ignore this crucial technology. Smaller businesses that are embracing advanced technologies will have better-run projects than the larger ones. In such a way, corporations that ignore change may, eventually, lose their market share.

Each large organization ought to have a whole department that oversees project management. As was discussed earlier, project design and implementation are a challenging job. Due to the specific skills and training that are required to handle such tasks a division should be dedicated to this purpose. Essentially, people in charge of this division ought to continually be on the lookout for new technology and should incorporate it into projects.

Constant training programs should be held to keep company employees abreast with the current trends in the field of project management. Technology is a fast-paced field. If companies do not dedicate funds to train their employees, they may lose the benefits associated with utilizing these engineering tools. Hence, the dynamic nature of technology requires that a dedicated workforce is allocated to project management oversight.

VI. CONCLUSION

The role of technology in project management is to simplify the process. Many researchers agree that designing and executing a project well requires advanced computer engineering. Fortunately, science has provided the species with various advances that have enabled breakthroughs in certain fields. Innovations in science have made cloud technology relatively affordable. Consequently, real-time updates of project timelines are now possible. Additionally, the decentralization of project structures has been made possible by technology. The technology has been indispensable in automating workflows, budget tracking, eradicating redundancies and avoiding delays. Companies that fail to incorporate technology in management are less likely to be secure. Hence, corporations ought to use computer technology to administrate their businesses.

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Yousef A Alharbi. " The Role of Technology in Project Management - a case study of Saudi Company." IOSR Journal of Engineering (IOSRJEN), vol. 09, no. 3, 2019, pp. 45-50.