Information Technology Project Management Processes and Practices: A Comprehensive Study for Successful Implementation of IT Projects

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Abstract

The role of Information technology has become very important in advancing companies. It helps companies facilitate their business processes. However, it's very a challenging process to convert from non-systematic environment to a systemic environment, but it's still a crucial factor for success. This paper discusses the IT project management strategies, skill, factors for implementing IT projects. It also recommends strategies to implement IT projects successfully. It identifies factors that hinder the process of IT project implementation and to the challenges that may be faced during implementation and to determine ways to cope with the challenges.

Keywords: IT projects, Information system, project management strategies, implementation challenges

Introduction

Due to the increase in globalization and advancement of technology all around the world, organizations are implementing latest IT applications in order to enhance their operations and to provide the optimum value to their customers. In order to implement the IT applications, comprehensive project management is conducted by the organizations. Adoption of latest technologies is essential for organizations because it not only enhances the efficiency of the organizations it also strengthens their competitive position in the market. An organization can enjoy competitive advantage against its competitors if it holds exclusive rights to a technology which helps it provide better products or services to the customers.

The nature of the IT projects may differ in accordance with the nature of the business of the organization however the tools used to manage the projects remain the same. While undertaking any project, it is among the priorities of the management of the organization to carry out the project efficiently, within a predetermined amount of time, and within the scope of the available resources. In order to ensure these objectives, the strategic core of the organization uses project management techniques which include extensive planning, systematic breakdown of all the steps to be followed till the completion of the project, and identification of the critical path within the segregated project activities. In the recent past, project management has become more than just a tool for implementation of project. Organizations are resorting to project management as a principle driver of change. Project management has been bringing out desired results for the organization and so this discipline has been ever so evolving in order to make it more efficient.

The aim of this report is to propose the best practices for implementation of an IT project. In order to reach this aim, the report uses an assumed situation and proposes its solution using example of an actual organization that carried out a comprehensive IT project management in the recent past. The report also highlights the factors that are responsible for IT project failures, anticipated challenges associated with the implementation of the IT project, the success factors essential for the implementation, and the recommendations for the organizations that seek to undertake IT projects.

Objectives

As mentioned in the introduction, the aim of this report is to highlight the best practices for undertaking IT project management. In light of this aim, the objectives of this report are outlined below.

1. To devise strategy for successful implementation of a proposed IT project.
2. To identify the factors that are essential for success of IT project management
3. To identify factors that hinder the process of IT project implementation.

4. To identify the challenges that may be faced during implementation and to determine ways to cope with the challenges.

Scope

This research report covers a wide array of topics associated with the subject of IT project management. IT project management has a wide scope because it involves two distinct subjects, that are, IT and project management. These two disciplines merge to form a bigger subject which includes multiple aspects of an IT project and numerous aspects of project management. This research report covers a number of topics from both the sides of the subject. With regard to IT project, the report includes an analysis of the factors that lead towards failure of IT projects and it also includes an assessment of the factors that lead towards success of IT project. With regard to project management, the report includes an analysis of the factors that are essential for successful project management such as: benchmarking, planning, and continuous evaluation. Apart from the theoretical topics, the report also includes an assumed practical scenario for which the report presents a strategically designed solution. The report also includes a case study of an actual organization that carried out IT project management. This case study helps in the identification of the best practices which help in the development of the best practices recommended in this report.

Significance of the Report

Organizations all around the world are enhancing their operations through implementation of IT projects. This report is highly relevant for such organizations as it highlights the factors that are essential for IT projects and the factors that need to be eliminated. Different organizations have different processes and tools for IT project management, and this report helps in the harmonization of the IT project management process. This report highlights some of the important aspects of project management, such as benchmarking. This aspect of project management is relatively new and it is highly relevant for IT projects as it helps the organizations follow the best practices derived from similar projects undertaken by other organizations. Therefore, this research study would attempt to determine the best practices that can be implemented by an organization to ensure success in IT project management.

Methodology

In order to achieve the purpose of the report, a comprehensive secondary research was carried out. All the data pertaining to the factors causing failures of IT projects, factors essential for their success, challenges faced in implementation, and the case study of P&G was acquired from secondary sources including books and journal articles. The reliability was checked by the established credibility of the sources. This report places significant reliance upon secondary data therefore it was ensured that the sources for the secondary data were relevant, credible, and reliable.

Analysis

The analysis section of the report is the core as it leads towards the final recommendations for the best practices of IT project management. This section includes a comprehensive analysis of the factors causing IT project failures, factors essential for successful IT project management, an overview of the proposed situation, the proposed solution to the assumed problem, case study of P&G, factors that helped P&G implement IT project successfully, and use of those factors in the proposed situation.

Factors Causing IT Project Failures

The advantages of an IT application can only be acquired by organizations if the implementation of IT projects is carried out successfully. There are a number of examples of failures of IT projects and the causes for the failures have also surfaced. Following is a brief explanation of some of those causes.

Lack of Strategy and Planning

One of the biggest factors that are directly responsible for the failure of IT projects is lack of comprehensive implementation strategy and planning. This is the most important phase in any IT project and this is the phase that is not given the extent of work it deserves. A number of project managers fail to realize that the success of the IT project management depends upon the effectiveness of the initial strategy and the efficiency of the planning (Southon et al., 1999).

The strategy includes the determination of the overall scope of the project, the direction of the project, the extent of resources that will be applied, and the time period within which the project will be completed. Planning is more comprehensive as compared to development of strategy. The strategy provides the direction for implementation; the plan provides the nature and timing of procedures that will be conducted in order to follow that direction. Therefore, both the strategy and the plan for implementation are integral to the whole project and their determination beforehand can greatly assist in the effective implementation of the new information system. Absence of strategy and planning may lead towards failure of the IT project.

Insufficient User Involvement

According to Social Construction of Technology (SCOT) theory, human action shapes technology (Mingers & Willcocks, 2004). Thus, the development of an IT system originates from the needs and requirements of the users. Thus, another significant factor responsible for the failure of IT implementations is the lack of user involvement. The management fails to realize that ultimately it is the staff members who will be required to operate the new system, and failure to acquire the opinion of the staff members renders the information system ineffective. Due to lack of user involvement, the IT systems are developed with features that staff members do not need, or without features that are essential to the operations. The lack of user involvement may also result in a user interface that is difficult for the staff members to use (Al-Ahmad et al., 2009). All these factors render the IT project ineffective and lead to its failure.

Lack of Oversight by Strategic Core

Another important factor that is responsible for failure of IT implementations is the lack of oversight over the implementation of IT project by the strategic core of the organization. For successful implementation, it is highly important that the senior management personnel of the organization take active part in the project (Bartis & Mitev, 2008). They key management personnel can carry out oversight by gaining regular feedback regarding the implementation of the IT project.

Inadequately Experienced Project Managers

In an organization that is not acclimated to the latest developments in IT, there is lack of managers that have experience with IT applications. Therefore, it is often the case that the manager overseeing the IT project is unaware of the technical aspects of the project, and this leads to multiple shortcomings. It is essential that the project manager and the personnel overseeing the manager hold sufficient IT knowledge and carry sufficient experience to ensure that the project is conducted properly (Marshall, 2006).

Lack of Communication with IT Software Developer

Another major reason behind the failure of IT implementation is that the software developer has a different understanding of the IT requirements of the organization. This leads to the development of an information system that is irrelevant for the organization.

Reluctance of Organizational Personnel

The staff of the organization may show resistance towards the implementation of the new IT applications. The staff members may become acclimatized to the current system used by the organization therefore they may find it difficult to accept the new IT system. The staff may also show reluctance towards learning how to operate the new IT applications. This attitude of the staff members may be responsible for the failure of a new information system.

Lack of Competent Staff

Staff members of the company may lack the level of competence required to operate the latest IT applications. Since information systems like 'Entity Resource Planning' are highly complex systems as they integrate multiple functions of the organization and establish a centralized database which is accessible by individuals from multiple departments of the organization. If the staff members are not adequately qualified to operate the new system, the IT project may fail its actual purpose notwithstanding the success of implementation.

Factors Essential for Successful IT Project Management

Where on one hand some factors contribute towards the failure of IT projects, on the other hand there are other factors are necessary for the success of IT projects. The subsequent sections highlight some of the factors that have a positive impact on the overall implementation of IT projects.

Benchmarking

The trend of using pre-existing knowledge and experience within project management is on the rise (Kerzner, 2013). This enhances the overall efficiency of the project along with ensuring its feasibility and timely completion. The past experience and experience of others can be incorporated in project management through the use of benchmarking. Benchmarking is an evaluative tool used to assess different aspects of project management. In simple terms, benchmarking is a process that enables the organizations to build upon existing ideas. The process of benchmarking encourages the organizations to change their point of view from internal to external to ensure that the objectives have been set correctly and the actions necessary to achieve those objectives are being taken properly. Benchmarking generally includes determining of standards, which have been experienced during a past project or which have been acquired through observation of projects carried out by other entities (Barber, 2004). It allows the managers to acknowledge and implement the best practices pertaining to project management (Kerzner, 2010).

Presence of a Strategic Plan

Among the most important factors that influence the effectiveness of project management is the presence of a carefully crafted strategic plan. The organizations should have a clear idea regarding its motives and the goals it hopes to achieve as a result of the project management undertaking (Ibbs & Kwak, 2000). The strategic plan should include a comprehensive account of the objectives of the project, effects of the project on different aspects of business including its competitive position, and how those objectives would be achieved.

Comprehensiveness of Planning

Any project requires comprehensive planning in order to be executed efficiently. The planning phase of a project includes determining the timing for the project, breaking down the project in systematically sequenced steps, allocation of resources to each step of the project, and determining timings for evaluation of the completed work (Meredith & Mantel, 2011). Therefore, in order for the project management to be effective, the planning phase needs to be executed effectively.

Availability of Resources

It is essential that the organization has sufficient resources to implement the project in accordance with the chosen benchmark. If an organization does not have sufficient resources to implement a project in accordance with the best practices, the process of project management is rendered ineffective (Lam et al., 2010).

Strong Leadership and Project Management Skills

A successful execution of a project in accordance with the best practices requires strong leadership and project management skills. The strategic core of the organization needs to exercise regular oversight of the project to ensure that the work is being carried out in accordance with the chosen benchmark. The management should also take note of the variances and the reasons for those variances (Cassell et al., 2001).

Organizational Support

According to Zwikael and Globerson (2006), the success of project management in construction companies is due to intensive organizational support. Project managers are provided with the resources they require to carry out the project and their requirements are prioritised to ensure that the delays in completion of the projects are avoided.

Overview of the Proposed Situation

If it is assumed that a customer calls the helpline of an organization and one of assistants answers him/her. Due to the absence of an IT application to carry out the filtering of callers, the employee will be required to ask the customer if he/she is calling to report the problem or the purpose of calling is to tracking claim that already reported. If it the second case the assistant will ask for the incident number. The assistant will put the customer on hold and will call the customer service representative. The assistant will then inform the representative the nature of call that will be transferred along with the fact whether it is a new claim or old claim attached with incident number.

There are a number of issues which hinder the efficiency of the organization in the described situation. First of all, the assistant that receives the call is required to inquire the customer regarding the nature of the call. After acquiring information regarding the nature of the call, the assistant then transfers the call to the respective representative.

The customer is required to wait while the call is transferred. The overall process does not only waste the assistant's time but also diminishes customer satisfaction due to the extent of time it takes. The subsequent section proposes a solution to the problem.

Proposed Solution to the Situation

Through the implementation of an IT application, the assistant's role regarding receiving the customer's call could be replaced by an automated machine. The machine will provide the customer with two options: "1" to report and "2" to track claim. If the customer hits 2, the automated machine will ask the customer to enter the incident number. Then, the customer will be transferred to customer service representative with the Incident ID and the customer will be facilitated directly by the customer service representative bypassing the assistant entirely. In order to implement the new system, the following steps will need to be followed:

1. Buying a new phone system that allows the procedures specified in the solution.
2. Implement the new system using IT project management.
3. Test the new system to ensure the probability of failure is at an acceptably low level.
4. Ensure the validity of the system by checking that the incident number consists of numbers.
5. Adapting customer service representatives with these new changes through training.

Benefits of the Proposed Solution

Time Conservation

This change will exclude the assistants from answering the calls and save them to another kind of work. Usually every assistant answers 30 calls in a day at an average of 42 seconds per call. The new system will save 21 minutes for every assistant therefore enhancing the overall efficiency of the organization.

Customer Satisfaction

In the process described in the situation, customers were required to talk to the assistant fist and then they were required to wait till they were connected to the service representative. With the implementation of the new system, the level of service will enhance because the automated machine will modify the service process enabling customers to reach the service representatives directly.

Issues Associated with the Solution

Cost of Implementation

The cost of implementation of the new system depends upon the size of the organization. For a small business entity as assumed in the proposed situation, the cost of implementation of a new phone routing system may be approximately $700. However, this cost is not significant as compared to the extent of benefits that will be derived from the implementation.

Implementation Time

The time of implementation also depends upon the nature and scope of the project. For a very large and complex organization, the implementation time may be in years. However, for a small business entity, the time may be in days.

Reluctance of Customers

Customers may resist the change in system as they may be acclimated to the previous system. No solution is going to please every customer, but most consumers today expect to be greeted with an automated system when calling a business. One option is to allow customers to press 0 if they're unsure how to answer the automated questions.

Case Study of Procter & Gamble Company

Summary of the Case

The Procter & Gamble Company (P&G) has its operations in multiple countries and the business of the company is focused on providing consumer packaged goods. The products of the company are sold in more than 180 countries through mass merchandisers, grocery stores, department stores and many other distribution channels. P&G has five major business segments: Beauty; Grooming; Health Care; Fabric Care and Home Care; and Baby Care and Family Care. Each of the business segments of the company manages a wide portfolio of brands which are sold in markets all around the world.

The nature of the project undertaken by P&G was very comprehensive as it spanned the global operations of the company. The company needed to upgrade its ordering, shipping, and billing software that was nearly 20 year old along with its work processes (Jackson, 2013). The risk inherent in this project was very high as the software was associated with the core functions of the company's business. In order to ensure that the project was managed successfully, the company had to be extremely careful in identifying and mitigating all the potential risks that could have a detrimental impact on the operations of the company.

As the first step towards the implementation of the new system, the senior management of the company created a comprehensive project charter that included the relevance of the project to the overall business of the company, the assets of the project, and a summary of schedule and budget of the project. The vice president of P&G's global business services, Patrick Arlequeeuw said, "We knew it would be a project that would take several years. We spent some time on making the business case: What did we want to get out of it? What were the business capabilities we wanted to have? What is the investment and return needed as such? The interesting part is that the preparation time was almost half the project" (Jackson, 2013). Thus, it can be inferred that P&G invested a significant proportion of time in the preparation phase of the project. This allowed the company to assess all the risks and plan comprehensively regarding the milestones of the project.

The implementation of the project was done in multiple phases focusing on different regions where the company operated. The transformation of work process and system was initially done in Western Europe region. This implementation acted as a pilot for other regions. Subsequent seven waves of implementation were done throughout 2011 in other regions of the company's operations. This was an effective way of implementation of the new system as it helped the company ensure continuity of global operations at all times. In addition to that, this allowed greater mitigation of risk as in case of a failure, the impact would be smaller and limited to a single geographic region rather than whole of the operations of the company.

The company ensured continuous identification and evaluation of the risks throughout the project. The senior management of the company benchmarked three sources for continuous identification of risks. The company evaluated the factors responsible for success or failure in other similar projects in other companies. In addition to that, the company utilized internal knowledge created as a result of smaller implementation of system previously. The company also acquired feedback from retailers regarding their experiences with similar transformations. These activities allowed the company to perform continuous identification of risks and stay proactive in the mitigation of the identified risks. After comprehensive screening, the project management team identified three major risks, which were: loss of business due to an inability to process orders in a timely way, loss of credibility because of a lack of quality in the shipping process, and loss of sales as competitors took advantage of the transition. The company responded proactively to address these risks and created a board consisting of senior management personnel to ensure smooth continuation of operations. To facilitate implementation of the project, the team responsible for implementation simulated the daily ordering cycle as it would be after the implementation.

Ultimately, P&G was successful in management of this global project. Among the goals of the company, one was to implement the project without the external stakeholders noticing any disruptions. The company was successful in this goal as the business was carried out as usual throughout the phase of implementation of the new system.

Case Learned

There are a number of success factors that can be identified from the case study of P&G. One of the factors is implementation of the project in multiple phases focusing on different regions. This implementation allowed the company to identify and address the risks beforehand. Another lesson learned from the case was continuous identification and evaluation of the risks throughout the project. The senior management of P&G benchmarked three sources for continuous identification of risks. Another lesson learned was the utilization of internal knowledge. P&G used knowledge created as a result of smaller implementation of system previously. P&G also addressed the risks in timely without influencing the day to day operations of the company.

Recommendations for IT Project Management Based on P&G Case Study

In light of the analysis conducted and the case study, the following recommendations can be made for the organizations attempting to implement IT projects in an optimum manner.

Extensive Planning and Preparation

The first factor is the comprehensiveness of planning and preparation. As mentioned in the prerequisites for successful global project management, planning plays a vital role in the success of a project. Projects that are well thought out tend to reach the level of completion successfully as compared to the projects that are not adequately planned. The planning phase includes, among other activities; determination of the relevance of the project, identification of primary risks, and determination of milestones, timeframe, and resources required.

Implementation in Phases

Another factor that leads towards the success of IT projects is the implementation of the new IT system in multiple phases, each covering a particular function of the organization or its geographic location. Therefore, implementation of a new system in a controlled and isolated environment allows the company to identify the previously unidentified risks and to ensure their elimination in the subsequent waves of implementation.

Regular Risk Assessment

It can also be said that continuous assessment and evaluation of the possible risks emerging from the project is among the factors that leads towards successful management of an IT project therefore all organizations should determine certain key performance indicators (KPI) that help them assess the success of the project in a regular manner.

Utilization of Internal and External Knowledge

For successful project management, utilization of knowledge whether created internally or acquired from external sources is essential as it helps the management minimize the risk of failure. Apart from the utilization of the internal knowledge, the company should study similar projects carried out by other organizations and acquire relevant knowledge that is essential for the company's project.

Zero Impact on Day-to-Day Operations

Among other success factors, one is the implementation of the project in isolation from the day to day operations of the company. As practiced by P&G in their project management, the company isolated the implementation from daily operations. There was a very wide span of operations spread throughout the globe and any small setback could have a detrimental impact on the revenue and goodwill of the company. Therefore, the company implemented the project in such a manner that it did not have any impact on the operations of the company and the external stakeholders remained unaware regarding the exhaustive overhaul of the internal system of the company. Therefore, for successfully implementation of IT projects, organizations should ensure that daily operations are not affected.

Conclusion

Due to the rise in globalization and advancement in technologies, organizations all around the world are adopting the latest IT applications. In order to implement the applications, they carry out IT projects. This report was centered about such IT projects as it highlighted the factors that are responsible for the failures of such projects and factors that assist in their success. The report undertook a proposed situation for which a proposed solution was provided. The report also included a case study of an actual IT project undertaken by P&G followed by recommendations based on the case study.

References

Al-Ahmad, W.; Al-Fagih, K.; Khanfar, K.; Alsamara, K.; Abuleil, S.; Abu-Salem, H. (2009). A Taxonomy of an IT Project Failure: Root Causes. International Management Review, 5(1), pp. 93-104.

Bartis, E., & Mitev, N. (2008). A multiple narrative approach to information systems failure: a successful system that failed. European Journal of Information Systems, 17(2), 112-124.

Cassell, C., Nadin, S., & Gray, M. O. (2001). The use and effectiveness of benchmarking in SMEs. Benchmarking: An International Journal, 8(3), pp. 212-222.

Ibbs, C. W., & Kwak, Y. H. (2000). Assessing project management maturity. Project Management Journal, 31(1), pp. 32-43.

Jackson, K. (2013). 2012 PMI Project of the Year Award Finalist: Behind the Scenes. Retrieved September 28, 2013, from
http://www.pmi.org/BusinessSolutions/~/media/PDF/Case%20Study/Procter%20and%20Gamble%20Case%20Study.ashx

Kerzner, H. R. (2013). Project management: a systems approach to planning, scheduling, and controlling. New York: Wiley.

Kerzner, H. R. (2010). Project Management-Best Practices: Achieving Global Excellence (Vol. 14). New York: John Wiley & Sons.

Lam, E. W., Chan, A. P., & Chan, D. W. (2010). Benchmarking success of building maintenance projects. Facilities, 28(5/6), pp. 290-305.

Marshall, J. P. (2006). Information technology, disruption and disorder: Australian Customs and IT. In Association of Internet Researchers (AoIR) Conference. Brisbane (Australia).

Meredith, J. R., & Mantel Jr, S. J. (2011). Project management: a managerial approach. New York: Wiley.

Mingers, J., & Willcocks, L. P. (2004). Social theory and philosophy for information systems. Chichester: John Wiley & Sons.

Southon, G., Sauer, C., & Dampney, K. (1999). Lessons from a failed information systems initiative: issues for complex organizations. International journal of medical informatics, 55(1), pp. 33-46.

Zwikael, O., & Globerson, S. (2006). Benchmarking of project planning and success in selected industries. Benchmarking: An International Journal, 13(6), pp. 688-700.