Utilization of Project Management and Soft Skills in Business Informatics Projects

Muhammad Hassan Bin Afzal
Bengal Solutions, College of Business
Idaho State University,
921 South 8th Avenue – Stop 8020, Pocatello, ID 83209
Email: afzamuha@isu.edu

L. Daniel Cravens, J.D., DBA,
Director, Bengal Solutions, College of Business
Idaho State University,
921 South 8th Avenue – Stop 8020, Pocatello, ID 83209,
Email: cravdan@isu.edu

Abstract—In case of Information Technology Enabled Services (ITES) related projects, the importance of proper utilization of project management skills is highly important. There are ample amount of exploratory investigative research analyses that specifically focused on the specific set of skills, experiences and academic knowledge is highly required for IT project managers. The main concern arises how to build certain skill sets and knowledge base among the managers so that they can handle, operate and complete an IT project successfully. Effective communication skills with both the clients as well as the team members are the highly desired attribute of a successful IT project manager. This paper explores further the role of project management skills to manage big scale business informatics project. This study also highlights the significant importance of big data management, utilizing project management concepts and best practices.

Index Terms—Project Management in ICT projects, Big Data Management, Handling Business Informatics projects, ICT Project maintenance, soft skills.

I. INTRODUCTION

Both hard skills and soft skills are highly essential for a successful IT project manager. All too often soft skills can be overlooked with regard to their essential role in the success of IT projects. The impact of overlooking soft skills can be highly adverse to projects. Reported failure rates of IT projects often exceed 50 percent, often this is related to failures that can be tied to soft skill challenges. [1]

In addition delays and budget overruns are common in many IT related projects. Often these delays and budget overruns can be tied to a lack of soft skill abilities among the managers of these projects. [2]

A Myers-Briggs personality assessment of 1,229 IT professionals found that only 19 percent could classified as "feelers." Feelers are those who could be best described as using emotions and values to make decisions. Of those IT professionals studied 81 percent were classified as "thinkers." Thinkers rely on focus on logical analysis and objectivity to make decisions. Additionally, 67 percent of the IT professionals studied were classified by the Myers-Briggs instrument as introverts with regard to their personalities. [2]

The results from the Myers-Brings testing data may indicate that many IT professionals may have challenges with regard to the interpersonal talents which make up an important component of soft skills. Also the shifting paradigms present in project management may cause many "left-brained" project managers in IT settings to become uncomfortable at times. [2]

Research also indicates that while many IT professionals excelled academically in preparation for their careers, what was learned in the university classroom did not, generally speaking, provide students with the soft skills they need in the professional world. Simply put, soft skills training may be lacking in many university IT programs. [3]

One area soft skill area where many IT professionals struggle in particular with is in the management of others. Often, due to a lack of developed interpersonal skills, IT managers fail to understand the motivations and interests of those who they supervise. Often this deficit of understanding causes the manager to fail to motivate subordinates effectively on project teams. Additionally IT managers may also fail to satisfactorily understand the motivations of their superiors, and clients. Similar issues may effect relationship with vendors and contractors. This overall lack of understanding of others can lead not only to a failure to motivate subordinates, but also a lack of success in meeting the project expectations of clients and superiors. [3]

In order to acquire the soft skill sets, a specific type of mixture between academic background as well as appropriate real world exposure is very necessary. Over

the time, these IT managers built these specific desired skill sets that are highly attractive to the potential employers.

In case of Information Technology Enabled Services (ITES) related projects, the importance of proper utilization of project management skills is highly important. There are ample amount of exploratory investigative research analyses that specifically focused on the specific set of skills, experiences and academic knowledge is highly required for IT project managers. The main concern arises how to build certain soft skill sets and knowledge base among the managers so that they can handle, operate and complete an IT project successfully. Effective communication skills with both the clients as well as the team members are the highly desired attribute of a successful IT project manager.

II. BUSINESS INFORMATICS PROJECT AND NEEDS

The informatics projects are basically formed based two basic criteria's such as there's a problem that needs to be addressed and this project will be immensely helpful to solve that problem. On the other hand, there's a huge scope and opportunity in the current market and the proposed IT project can be a huge financial success for the market.

The unified theory of acceptance and use of technology (UTAUT) is a specific type of model that measure the recognition of the users of the proposed/newly implemented technology and it was first introduced by Venkatesh et al. [10].The widely popular model named UTAUT targets to clarify true intentions of focused user groups whether they will accept the IT system appropriately and utilize the regular basis. This model basically provides an in-depth overview of user acceptance of the IT system as well as a behavioral pattern of using the IT system. This UTAUT model is consists of four key elements such as
- a) Performance probability,
- b) Effort probability,
- c) Social impact,
- d) Assisting circumstances.

The newer version of UTAUT is known as UTAUT-2 which also integrates three more elements in the initially proposed model. These three new elements are,
- a) Hedonic Enthusiasm
- b) Price Value
- c) User personal behaviors

These proposed extra three parameters to initial UTAUT model brought more success and offered more decisive options about user behavioral pattern and technology acceptance. It significantly improved the accuracy of explaining the behavioral intention (from 56 percent to 74 percent) and using the technology (40 percent to 52 percent). [11].

Good project management skills are highly essential in leading a successful IT projects because of the following reasons [4-6].
- a) It clearly shows which path to follow that will be beneficial for the project

- b) Appropriate resource management
- c) Reducing significant chances of wasting money on unrequired matters
- d) A structured and well-defined approach to complete the project
- e) Step by step procedure to move ahead with the project
- f) Continuous checking of the risk factors in order to avoid failure.

III. THE MAIN PHASES OF INFORMATICS PROJECTS

Recent studies and various in-depth research in business informatics projects strongly emphasizes that, broadly there are ten main phases in order to conduct, sustain and manage a Business Informatics project. These ten phases are discussed below sequentially with appropriate brief details.

a) The first step is to outline the scope, objective and major requirements for the project and obtaining official authorization.

b) Work breakdown structure is the second phase of the IT project management. All the works, responsibilities, duties and tasks should be appropriately delegated among the team members.

c) Clearly outline, explain and write down the full project plan for the proposed IT project. It is highly required step for the IT project and in future this plan will be reviewed to find out any can be improved and/or altered to obtain better outcome.

d) Designing a visually appealing and self-explanatory timeline of the project is highly recommended because it will provide more contest for all the stakeholders.

e) The art and skills of communicating with all the interested parties such as the team members, the management and the clients.

f) Managing and understanding the team member's motivational factors and driving forces are highly essential. If it can be assessed and utilized in proper manner, it will be a successful venture.

g) There should be a clear and well defined guideline for the project work ethics, roles and responsibilities for the participants for the IT project. It makes the job easier for the project manager to carry out and complete the project properly

h) There should be a frequent team meetings to track down the progress and possible risk factors and/or obstacles that might be occurring and what possible way that can be reduced significantly and move ahead

i) The final phase consists of both pre-launch plan of the project and also after successfully launching the product what will the roles of the teams to support the clients

To sum up the above-mentioned steps, the following five steps can be broadly followed in order to complete the Business Informatics project. These major steps are,

a) Informatics Project Origination.
b) Informatics Project Scheduling and forecasting
c) Informatics Project Implementation and performance analysis
d) Informatics Project Observing and Governing mechanism
e) Informatics Project Conclusion and aftercare.

IV. PERSONALIZED MEASURABLE ORGANIZATIONAL VALUE (MOV)

The measurable organizational value (MOV) of a project strongly determines the success rate of a project as well as it specifically aligns with the mission, vision and values of the organization. That is why the MOV of a project must be well defined, measurable, mutually agreed upon between all the stakeholders and corroborated.

The personalized aim of MOV is to serve the specific targeted customers, meaning that this MOV focuses not on attracting a huge customer base, but rather focusing on segmented very specific and most interested customer base and to serve these customers with better service quality, extra value added services and personalized support to each of the customers. Current market trends suggests that, personalized and segmented marketing always generate more sincere interests among potential and/or current customer base, and most of the time results in positive market growth for the companies. The similar concept is applicable to the development and tracking measured success of large scale IT projects [14-17]. In order to achieve such goals and targets it is required to keep low variety of stock keeping units (SKU) to serve customer as well as keep costing as lower as possible. In order to add more values to the offered products and services following aspects require significant attention [7-9].

a) Better content management system
b) Live tracking of modular developments of the projects
c) Provide more accurate updates and support to customers
d) Speedy services
e) More connected business
f) More connected technology oriented and less paper work

V. MEASURING THE SUCCESS OF THE PROJECT

The measurement of the success of the project is totally dependent two phases. The first phase will decide whether the actual efficiency has been significantly increased, say by 50% then it is one of the strong indicators that the project is going towards the success.
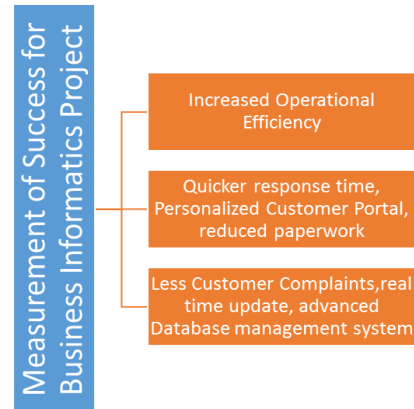

Figure 1. Indicator of Success measurement of the Project

The second phase will be based on reducing the total paper work, personalized portal for customers, live tracking facility and enhanced services for customers. It would also significantly increase the dynamicity of the whole system which leads to higher revenue in return [6, 8].

Developing very specific and practical milestones and deliverables to track the success of IT projects is another important practice to be followed in order to ensure the success of an IT project. Business Informatics projects usually follows an iterative process, and future developments are strongly related to earlier deliverables and their accuracy, strength and adherence to scope requirements for the project. That's why, it is immensely essential to strongly focus on each and every step of the project to ensure the matching performance with scope and requirements of the initial project outline, and be flexible to modify and update the course of action to match the scope and requirements of the project[13-17].

VI. CONCLUSION & FUTURE WORKS

Based on the recent research paper titled "requirement management a key to successful project management for software systems" which was published on June 2016 focuses on the very first phase of an IT project which is requirement analysis .

In present days, the success rate of IT projects are very low, and the major problematic area is the poorly defined requirements for the project. In order to be the IT project to be successful, it is required to meet all the requirements utilizing the specified resources and finish up all the predefined criteria on time and deliver it to the clients. Now, most of the time, at the end of the project the requirements keep changing due to client's interference and/or management's interferes.

While technical skills in the workplace are fairly abundant, including in career areas outside the field of IT, recent literature stresses the need for more training in soft skill competencies. One particularly important gap is related to communication in the workplace, and with clients. But others areas of deficiency, include: integrity, courtesy, responsibility, social skills, attitude, professionalism, flexibility, teamwork, and overall work ethic. The lack of soft skills, in many different fields, is creating a critical issue for companies.

There has been a good deal of literature produced which has already documented the gap in soft skills in the workforce, including in IT. However, there is a lack of research which measures the gap of soft skills among IT professionals. Also, there is still more need for research which helps identify which soft skills are most important to successful IT professionals.

This paper clearly illustrated based on their investigative research and analysis that appropriate requirement management is highly important in order to carry out a successful IT project. Even in order to develop a structured framework to progress and promote rural development by leveraging IT projects, requires a significant amount of soft skills implementation to handle the workforce and get the jobs done properly. That is why it is essential to outline, define and write down all the requirements for the IT project and it is needed to sealed and signed by both the management as well as the client side. This study also proposed a specific defining matrix which can identify the scope creep in an IT project and how to avoid such problematic scenario. Using such matrix and defining characteristics will be immensely influential and beneficial for the organizations to conduct successful timely finished IT projects in the future.

REFERENCES

[1] S. Aneerav, et. al, "Skills in software project management," *Issues in Informing Science and Information Technology*, vol. 2, pp. 691-704, 2005.

[2] M. Summer, D. Bock, and G. Giamartino, "Exploring the linkage between the characteristics of IT project leaders and project success'," *Information Systems Management*, vol. 23, no. 4, pp. 43-49, 2006.

[3] J. Damien, et al, "Practical intelligence in IT: assessing soft skills of IT professionals," *Communications of the ACM*, vol. 53, no. 2, pp. 149-154, Feb. 2010.

[4] Project management body of knowledge (PMBOK): official study guides. Drexel Hill, PA: Project Management Institute, 1989.

[5] R. S. Pressman, *Software Engineering: A Practitioner'S Approach*. New York: Mc Graw Hill, 1997.

[6] S. Lauesen, *Software Requirements: Styles and Techniques*, Harlow: Addison-Wesley, 2002.

[7] S. A. Kumar and T. A. Kumar, "Study the impact of Requirements management Characteristics in global software development projects: An Ontology based approach," *International Journal of Software Engineering & Applications*, vol. 2, no. 4, pp. 107–125, 2011.

[8] M. H. B. Afzal, "Large scale IT projects: Study and analysis of failures and winning factors," *IETE Technical Review*, vol. 31, no. 3, pp. 214–219, Apr. 2014.

[9] "Software requirement management," *Software Project Management*, pp. 145–158, 2011.

[10] B. Venkatesh, et al (2016), "Requirement management a key to successful project management for software systems," *Voice of Research*, vol. 5, no. 1, June 2016.

[11] V. Venkatesh, M. Davis, "User acceptance of information technology: Toward a unified view," *MIS Quarterly*, vol. 27, no. 3, pp. 425–478, 2003.

[12] A. Chang, "UTAUT and utaut 2: A review and agenda for future research," *Journal The Winners*, vol. 13, no. 2, pp. 106-114, 2012.

[13] M. M. Robles, "Executive perceptions of the top 10 soft skills needed in today's workplace," *Business and Professional Communications Quarterly,* vol 75, no. 4, pp. 453-465, Oct. 2012.

[14] A. L. Masson, D. Lalanne, and T. Amstutz, "A usability refactoring process for large-scale open source projects," in *Proc. 2017 CHI Conference Extended Abstracts on Human Factors in Computing Systems* - CHI EA 17, 2017.

[15] M. H. B. Afzal, "Sustainable development of rural communities in Bangladesh by integrating mobile internet and agent banking technology," *Leadership, Innovation and Entrepreneurship as Driving Forces of the Global Economy Springer Proceedings in Business and Economics*, pp. 361–370, Mar. 2016.

[16] S. Schaible, "Large-scale projects and democratic legitimacy: Problems, challenges and some solutions," *The Governance of Large-Scale Projects*, pp. 271–279, 2013.

[17] H. Saeeda, F. Arif, N. M. Minhas, and M. Humayun, "Agile scalability for large scale projects: Lessons learned," *Journal of Software*, vol. 10, no. 7, pp. 893–903, 2015.

Hassan Afzal is a Bangladeshi graduate student at Idaho State University. He earned his Bachelors' Degree in Electrical and Electronic Engineering from AIUB, Bangladesh. He earned his Masters' in Information Technology from University of Dhaka, Bangladesh. Before joining ISU, he served as a teaching faculty member at Primeasia University, Bangladesh. He has led successful projects for Bengal Solutions and is currently involved in rural development research projects. Dr. Cravens, Director, Bengal Solutions and Hassan presented their collaborative research paper at an International Conference in Las Vegas, October 2017. Their collaborative research paper regarding access to rural health care support was presented in a prestigious global conference, IEEE-R10HTC-2017 and later this concept was awarded as the best graduate research idea at the 2018 Graduate Symposium. This summer, Hassan volunteered for Cradles to Crayons, Chicago to collect and organize critical back-to-school items. He also volunteered for TEDxSLC2017 as a development volunteer. During his free time, Hassan enjoys volunteering and traveling.

Dr. Dan Cravens is employed by Idaho State University's College of Business in Pocatello, Idaho. He is the director of Bengal Solutions, a business consulting program, and teaches in the management department at the College of Business. He holds a Doctor of Business Administration degree from Argosy University-Salt Lake City, a Juris Doctorate from Gonzaga University School of Law, a Master of Arts in government from Regent University, and a Bachelor of Arts in Sociology from Quincy University. His research interests include: servant leadership, entrepreneurship, and organizational behavior.