Critical Success Factors for Procurement Process of Telecommunication Network Equipment in Pakistan: Identification and Validation

Imran Mehmood*

* *Centre for Advanced Studies in Engineering, Islamabad, Pakistan*

Abstract

Procurement of network equipment represents a criticcal part of mobile telecommunication business. These equipments are extremely valuable and buying them needs a sound method within the execution of procurement process. Most equipment is procured in units to catch up with technological innovations, competition, client pressure for quality services, etc. This study examines and validate the crucial factors that a project manager must look out for during telecommunication network equioment procurement process. Hundred respondents were selected from different organizations and twenty seven important success factors i.e. themes, were identified. These themes were operationalized to assess their impact on project success. Validation of the identified themes was done using multiple regression process in SPSS. Based on quantitative analysis conclusions and recommendations were made to assess the extent to which these critical success factors impact the projects success.

Keywords: Project Management Book, Critical Success factors, Project Management Organization, Contract Management, Procurement, Telecommunication.

Introduction

Since the mid of the last century, organizations are pursuing various project management approaches to originate the amendment required to fulfill structural goals and objectives. This is part of each project: be it internal or external, offshore or onshore, with its own distinctive set of challenges. However, attributed to the complicated nature of project activities, challenges related to managing project's constraints of budget, quality and time the changes are distinctive and ever-changing. The management of project constraints explains, if not totally, why several projects fail.

The factors range from external forces like government laws, environmental forces, society, pressure teams, monetary markets, labor markets, technology, client influence, stockholder etc. to internal forces like changes in operative processes, management vogue, resources allocation, skills, internal conflicts etc. The situation has led to the assumptions purported by several project management professionals in several industries that if project and line managers will establish what represents a project success and therefore the factors that confirm a thriving outcome of a project, will improve their performance. However, characterizing those factors will make a project successful. Erling

et al. (2006) expressed that there is not any clear proof of linking a project success and actual project success. Different departments have unique views about success and failure, and what factors will contribute to either. The technology sector is the most rapidly changing industry and requires creativity. The telecommunication industry constitutes a big part of IT and is often at the middle of technological changes. Hence, has been compelled to contend with perennial processes of procuring new equipment and material for its operations. Zhu et al. (2009) pointed that equipment procurement is a frequent activity and it is important to optimize the procurement processes to cut prices. Therefore, procurement processes are a central process of telecommunication business management. This study is about to identify and validate the factors that constitute the procurement of network equipment process.

Research Objectives

The objectives of this study are:

1) To identify the critical success factors during procurement of telecommunication network equipment

2) Validate whether the identified factors are truly critical for procurement process

Literature Review

The dynamic nature of the business environment, uncertainty in political environments, speedy technological advancements, monetary markets instability, budgets and development struggle adds more complexity to the already complex nature of project management. The complex nature of projects makes it tougher to describe the term “Success”.

This section will review the literature to understand the essential success factors in project management including, project success and essential success factors for procurement management.

Project Success in Project Management

The definition of project success is complex Salleh (2009). PMBOK (2012) states that a project is successful if it satisfies the triple constraints i.e. time, scope, and quality. This description of project success is now considered as the standard description for stating any project as 'successful'. It implies the productive accomplishment of time, value and quality objectives, moreover, the quality of the project method too (Erling et al, 2006). Erling et al (2006) expressed that overall project success deals with the broader and long term impact of the project, which suggests the success of both project management and project product. They noted that project management is determined at top level of the project, suggesting in several cases, success criteria vary in terms of months or years once project is finished. Hence, deciding if a project is productive is troublesome if viewed from various success criteria (Erling et al, 2006).

Baccarini (1999) used the construct project success in a very different approach; viewing it as product success, which means the standard and impact of the top product to the end user (in terms of satisfaction of user(s) wants, meeting strategic structure objectives,

satisfaction of stakeholders' need) once a project execution is finished.

However, Lim and Mohamed (1999) cautioned that project managers shouldn't solely look into project success for the accomplishment of some planned project goals, like time, cost, performance, quality and safety. However, conjointly, they contemplate that users who do not have similar pre-determined goals relating to the project in any respect are not interested in outcome of the project. Hence, the expectation on the result of the project and therefore the perception of project success or failure are completely different for everybody (Lim and Mohamed, 1999).

Overview of Critical Success Factors (CSFs)

Many studies are conducted to find out which success factors influence success of projects. Fortune and White (2006) posit that there is a transparent lack of accord between researchers and authors relating to what factors have an effect on project success. Baccarini and Liu (1999) agree that shaping important success factors for a project is contentious and complicated.

Critical success factors idea was developed by Daniel (1961) regarding the way to manage data systems crises and was more developed by Rockart (1979) on his work by distinguishing the employment of important success factors to form competitive advantage. Zwikael and Globerson (2006) describe important success factors the most important reason responsible for project failure or success. They posit that project failure remains high as a result of existence or absence of important success factors. Therefore, these should be followed by project managers. Erling et al (2006) outlined important success factors as “those options that are known as necessary to be achieved so as to form wonderful results”. If important success factors do not seem to be taken into thought, one should expect that problems act as barriers to overall outcome.

Barbara (2010) noted that the strength of important success factors is identified by senior management and different groups participating in work. Anderson and Jessen (2000) stressed the necessity to separate the particular task and other people whereas evaluating project results. They contemplated that known important success factors supported a step-wise structure and reflective progression through a project. They covered: scope (Project mission and goals, terms of references), designing (planning at world level, designing at detail level), execution (activities, decisions), and management (financial and technical management, internal and external communication). Belassi and Turkel (1996) classified the important success factors into four areas: the project (e.g. size, uniqueness, urgency), the organization (structure, management support), the external setting (technological, financial, political) and also the project manager and his unit (scope, abilities). Pinto and Slevin (1987) suggested to use important success factors to diagnose outcomes.

Cooper and Klienschmidt (1996) centered on the identification of important success factors for new development, together with an outlined strategy and adequate analysis and development. Westerveld (2003) uses foundation for quality management model to reason important success factors such as: leadership and team, policy and strategy, neutral management, catching, resources, and merchandise management.

Essential CSF for Procurement Projects

This study highlights the essential factors that influence the projects to assure success. The project's acquisition method is essential to attain project success, owing to delays of apparatus required and equipment delivered with wrong specifications. Hence, making sure adequate instrumentality as per schedule, brings success in the project. The analysis considerations, however, assumes that essential factors influence the acquisition method within the project to attain success. The influencing factors should be given special and continual attention to assure that they contribute to overall success of projects. Moreover, the periodic communication and cooperation, visibility of the project, coaching of users and stakeholders and commitment to the project is found to be essential for general acquisition method to attain project success. Taking under consideration the factors, it shows many areas within the acquisition method that are essential. The analysis provides essential factors to assist the members in understanding. However, the acquisition method is essential, and the way the factors influence the method to attain a simpler process that will lead to lower total prices within the future. Zhu et al (2009, p. 1) stated that:

"In the trend of convergence and transformation, telecom companies are presenting more investment demand for updating networks or deploying new technologies, that will need more equipment procurements, resulting in large amount of procurement costs. Then how to optimize procurement decisions to reduce relative costs is critical for telecom companies' development, especially in the circumstance of financial crisis."

Alternative literatures (PMBook, 2008; kerzner, 2009) have suggested that procurement management is one of the most important step in a project and, can itself, be considered as a project. Below (Table 2) provides a summary of literature concerning important success factors for procurement projects.

Table 2: Critical Success Factors from the Literature

Relevant Literature	CSFs	Relevant Literature	CSFs
Panayiotou Et Al (2003)	Efficient processes, Monitoring & evaluation Systems and Training	Stonehouse et al. (1996) Kanter (1999)	Shared authority between public and private sectors
Klafft (2009)	Trust buildings measures for partners.	Frilet (1997)	Social support
Quayle (2005)	Leadership, Strategy, Marketing, Waste reduction, Financial management, Staff development, Supplier development	Qiao et al. (2001)	Technology transfer

Khanapuri At El (2011)	Cost savings Centralization of procurement, Re-engineering of process Budgetary control, Supplier management, Chang management, Knowledge pool, Maturity of market place Legal framework.	Kanter (1999) Qiao et al. (2001) Zhang et al. (1998)	Government involvement by providing guarantees
Vaidya et (2006)	Technological standards, System integration, Top management support, Business case/project management, Systems and technology, Change management, Performance management	EIB (2000)	Sound economic policy
DOF (2001), Birks et. al (2001), S&A (2003), Subramaniam and Shaw (2002)	System Integration	Jefferies et al. (2002) Kopp (1997) Gentry and Fernandez (1997) Arthur Andersen and Enterprise LSE (2000)	Competitive procurement process
S&A (2003), AGV (2003), OGC (2002), CGEC (2002), AOT (2003)	Top Management Support	Qiao et al. (2001) Tiong (1996) Zantke and Mangels (1999)	Project technical feasibility
Birks et. al (2001), DOF (2001), OGC (2002), OSD (2001), WB (2003)	Change Management	Jefferies et al. (2002) Kopp (1997) Gentry and Fernandez (1997) Arthur Andersen and Enterprise LSE (2000)	Transparency in the procurement process
DOF (2001), S&A (2003), WB (2003), AOT (2003), KPMG (2001), Koorn *et al*, (2001)	Technology Standards	Qiao et al. (2001) Jefferies et al. (2002) McCarthy and Tiong (1991) Akintoye et al. (200 lb)	Available financial market
Qiao et al. (2001) Frilet (1997) Badshah (1998)	Good governance	Bennett (1998) Boyfield (1992) Stein (1995) Jones et al. (1996)	Favorable legal framework
Qiao et al. (2001) Zhang et al. (1998)	Political support		

From the literature review most important success factors were identified (Table 3) which are vital for procurement process. The selected success factors are of great relevance to the procurement process of telecommunication equipment. These identified critical success factors are included in our questionnaire to obtain the relative importance of these factors with the project success.

Table 3: Identifies Critical Success Factors

CSFs	CSFs
Supplier Process and Time	Project technical feasibility
Price	Transparency in the procurement process
Technological standard	Government involvement by providing guarantees
Relationship with Supplier	Available financial market
Top Management support	Shared authority between public and private sectors
System training and documentation	Competitive procurement process
System integration	Social support
Security	Technology transfer
Change management	Partner selection
Performance measurement	Experience
Risk	Negotiations
Political support	Team building and training
Good governance	Cost of fuel, electricity, water…, etc.
Economic policy	

Research Methodology

This research utilizes mixed-methods methodology i.e. quantitative and qualitative methods. We gathered data from employees of telecommunication companies working in Pakistan.

The study focuses solely on procurement of network equipment, involving employees of project management, network roll-out, and procurement departments at telecommunication corporations, different key staffs, from transmission, and contract management that are involved in procurement of network equipment. A questionnaire was developed for obtaining results of research questions. It was requested to different managers of different departments like procurement, project management, contract management to fill the questionnaire. Also, phone calls were made to gather the desired information.

Sample Size and Sampling Technique

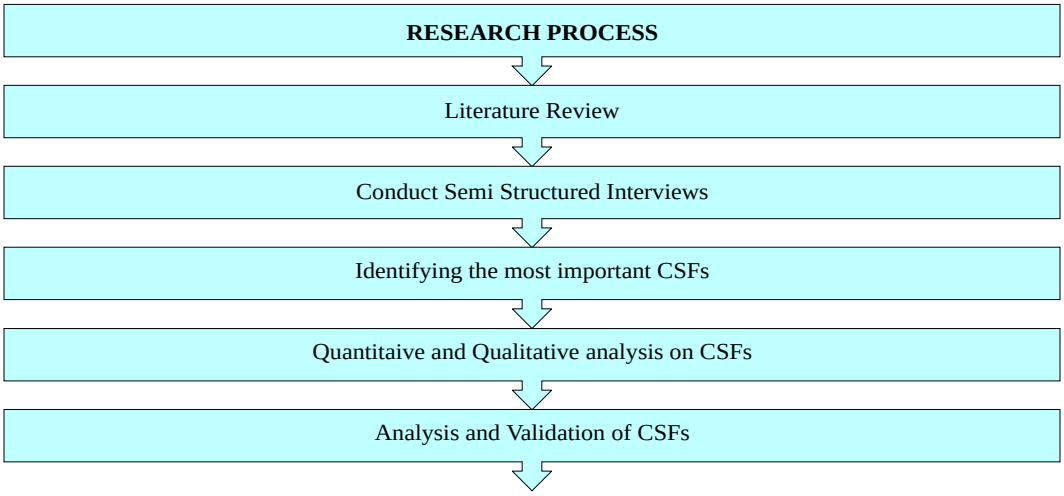
Data was collected from 100 respondents. An extensive survey was conducted from

different available sources. Data was gathered from telecommunication sector, their subcontractors and project managers of different telecommunication companies. Through questionnaire and personal interviews.

Research Process

Research process of the study is elaborated below (Figure 1).

Figure 1: Research Process of the Study



Qualitative Analysis

Qualitative analysis was conducted for detailed analysis of results. Respondents were asked different questions from procurement, project management and contract management in interviews. Open ended questions were asked from respondents.

Quantitative Data Analysis

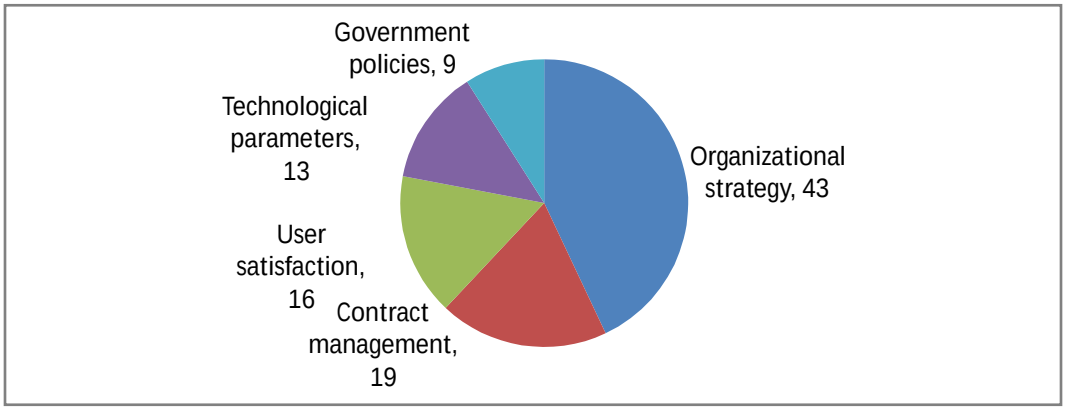
The quantitative data collected through questionnaire was analyzed by conducting multiple regression using SPSS. Results of multiple regression are shown in the sections below.

Important Factors for the Success of Procurement Project

Thoughts of respondents vary from person to person. Some project managers suggested that vendor management, asset management and quality management plays a vital role in this step. They also pointed out that project teams must follow the practices which could bring more benefits and this shoud be the part of contract execution. Some factors must be kept in mind in the contract requirement like warranty, services, acceptance of product and maintenance. Adoption of all these means must be implemented by the project teams and management. While negotiating with suppliers, implementations of all factors should be made in procurement policy. Also, tracking and controlling of project after finalizing the contract should be done. They need to develop procurement strategy and once it is done, they need to evaluate supplier and then make a selection. The results of qualitative data produced follwoing five themes (Figure 2).

1. Organizational strategy
2. Contract management
3. User satisfaction
4. Technological parameters
5. Government policies

Figure 2: Frequency distribution of samples (Success factors)



Themes of Identified CSFs

The detailed analysis of success factors involved in procurement project of different categories helped to highlight critical success factors. The identified CSFs are further divided categorically on the basis of responses of the respondents. The categories of these CSFs is shown below (Table 3).

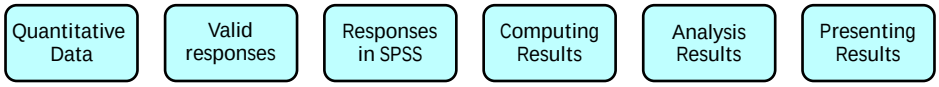
Table 3: Categorical division of CSFs

Categorical divisions of CSFs				
Organizational Strategy	Contract Management	User Satisfaction	Technological Parameters	Government Polices
Top management support	Negotiations	Relationship with supplier	Technological standards	Political support
System training and documentation	Competitive procurement process	Security	Project technical feasibility	Government involvement by providing guarantees
System integration	Supplier process and time	Risk	Technology transfer	Economic policies
Change Management	Price	Social Support		
Performance measurement	Available financial market	Partner selection		
Good governance	Shared authority between public and private sectors	Experience		
Team building and training	Transparency in the procurement process			
	Cost of fuel, electricity, water..etc			

Quantitative Analysis

The process of quantitative analysis is shown below (Figure 3).

Figure 3: Quantitative Data Analysis Process



Data Reliability

A very common definition of reliability is "it is the consistency of measurement" (Babbie, 2003; McMillan & Schumacher, 2001). The data which is used in this study is collected from different organizations and varies from person to person depending upon their personal experience and nature of job. To check the reliability of data the value of Cronbach alpha was calculated using SPSS.

Since, we have five predictor and one outcome variable. The value for variables was calculated separately and it is found in the acceptable range of 0.6 to 0.8 (Table 4).

Table 4: Cronbach Alpha Results

Critical Success Factors	Cronbach's Alpha (α)
Organizational Strategy	0.746
Contract Management	0.767
User Satisfaction	0.723
Technological Parameters	0.759
Government Polices	0.709
Project Success	0.775

Correlation Test

The purpose of correlation is to check the relationship between two variables. It does not tell us about to what extent two variables are related to each other. In order to find the degree of relationship we perform regression tests. The two variables that are used in correlation are dependent and independent variable. We will consider 'independent variables' as predictors and the 'dependent variables' as outcomes (APA, 2010; Field, 2009; Leech & Morgan, 2005). We have divided our critical success factors into five sub categories.

Now we are interested to find the relationship between those categories with our project success. Therefore, we will apply multiple regression as we have more than one predictor variable.

Our dependent (Outcome) variable is "Project Success (PS)" and independent (Predictor) Variables are:

i. Organizational Strategy (OS)
ii. Contract Management (CM)

iii. User Satisfaction (US)
iv. Technological Parameters (TP)
v. Government Polices (GP)

Multiple Regression

As CSFs is divided into five sub categories. Therefore, multiple regression equation can be written as:

$$Y = (a0 + a1X1 + a2X2 + a3X3 + 42X4 + a5X5) \ldots\ldots\ldots\ldots\ldots\ldots (2),$$

Where,

X1=Organizational Strategy (OS)
X2=Contract Management (CM)
X3=User Satisfaction (US)
X4=Technological Parameters (TP)
X5=Government Polices (GP)
Y= Project Success (PS)

We performed the multiple regression analysis on our data. We will analyze the impact of independent variables on project Success (dependent variable). We calculated mean (μ) and standard deviation (σ) of the responses. Mean for independent variables lie within acceptable range of 2 and 3.3.

Hypothesis testing

The following hypotheses are tested in this study.

H.1. Adoption of best CSF will improve the efficiency of procurement projects.

H.2. Adoption of best practice of procurement project will improve the procurement process in projects.

Important measurements from multiple regressions are given in the tables (Table 5 – Table 10) which describe the results for testing hypothesis (H1 and H2). For R^2 of 0.112, we can say that the model explains 11.2% of overall variation in data. A high value of F (F = 2.361) shows that the null hypothesis could be rejected and alternate hypothesis is accepted ($p < .05$).

Table 5: Correlation Staistics

Model	Project Success
R	0.334
R^2	0.112

Predictors: (Constant), USMean, CMMean, GPMean, OSMean, TSMean

Table 6: Anova Staistics

S	Project Success
(F-ratio)	2.361
Sig.(p)	0.046

a. Dependent Variable: Mean PS
Predictors: (Constant), USMean, CMMean, GPMean, OSMean, TSMean

All the values of t test are positive except 'Government Policies' and 'Technological Parameters' (Table 7). Which depict that most of the variables contribute significantly to success of projects ($p < .05$). Statistics of VIF (Variance Inflation factor) show multicollinearity among all independent variables as all the value are close to 1; which are acceptable. Overall it is a good project success model.

Table 7: Regression Coefficients

Model	Coefficients			
	B	**Std. Error**	**t**	**VIF**
Constant	1.984	.581	3.412	
Organizational Strategy	.417	.181	2.304	1.135
Government Polices	-.162	.099	-1.642	1.144
Contract Management	.474	.191	2.484	1.385
Technological Parameters	-.443	.184	-2.412	.295
User Satisfaction	.142	.170	.834	1.197

a. Dependent Variable: MeanPS

Hence the regression equation can be written as,

$Y = 1.984 + 0.417X1 + .474X2 + 0.142X3 – 0.443X4 - 0.162X5$

Conclusion

This research was conducted to investigate the critical success factors which play any important role in the obtainment of telecommunication equipment. As discussed in previous section that several departments are involved in obtainment of telecommunication equipment, this depends on the nature of equipment and nature of projects. According to the nature of project, various departments are identified which need equipment. One thing remains the same in all process which is 'procurement process'. As the main purpose of this study is: (1) to identify the CSFs and, (2) to validate the CSFs so that impact of these success factors on any kind of procurement project could

be determined. This purpose was achieved. To fulfill our objectives, firstly critical success factors were identified from literature review and then responses were collected for each of the factors from the respondents. Respondents were free to mention any other success factors that contribute towards project success. However, all of the respondents did not mention any other factor. In their opinion, the identified factors are very useful for the project success. From the past literature review, it can also be concluded that there is no such research conducted in Pakistan. So, in Pakistan if these critical factors are taken into consideration then they can bring success in projects.

Recommendations

It is a complicated task to recommend vital success factors for a project, particularly, for telecommunication network equipment. The key reason is that, each project is totally different, each organization is totally different and business operative setting is often totally different. Geography, society, rules and different factors also play their role. What is vital for the project manager is to assess the project critically, determine the relevant vital factors which can guide the execution of project. We recommend that a comparative study should be conducted to ascertain whether any similarities or variations exist within/between the factors across industries or not.

Future Research

Further analysis might be undertaken to check for variations, across countries, cultures, project varieties, size and length. This study extends our understanding of an indispensable quality of any organization i.e. Project Success, by understanding what it suggests within context of organization. There could also be various ways in which to validate the findings of this study. for instance, future studies might expand on our method contributions, specifically, researchers might seek for various measurements and determine additional success factors to benchmark structure of project management performance against these. Other researchers might validate our findings in numerous settings, industries and countries.

References

Anderson, E. S., and Jessen, S. A., (2000), ”Project evaluation scheme; a tool for evaluating project status and predicting project results” Project Management Journal, Vol. 6, No. 1, pp. 61 – 69.

Angeles, R. and Nath, R (2005) Critical Success Factors for the Adoption of Business-To- Business Electronic Procurement, Communications of the IIMA, Volume 5 Issue 1

AOT Consulting (2003).Review of the GEM Purchasing E-Procurement Business System. Perth, Australia: AOT Consulting. (AOT).European Scientific Journal May 2013 edition vol.9, No.13 ISSN: 1857 – 7881 (Print) e - ISSN 1857- 7431 398

Ashley, D., Clive, S. L., and Jaselskis, E. J. (1987) ”Determinants of construction project success”. Project management Journal, Vol. 18 No. 2 pp. 69-79

Auditor General Victoria (AGV) (2003). Electronic Procurement in the Victorian

Government. Melbourne, Australia: Government of Victoria (AGV).

Baccarini, D. (1999), ”Professional project management: a shift towards learning and a knowledge creating structure”, International Journal of Project Management, Vol. 30 No. 4, pp. 25-32

Baker, B. N., Murphy, D. C., and Fisher, D., (1988), ”Factors affecting project success”. International project management handbook ed. D.I.Cleland and W.R.King 2nd edition 902-919, New York.

Barbara, Dexter. (2010), ”Critical success factors for developmental team projects”. Team Performance Management, Vol. 16 Issue 7 pp. 343 – 358

Belassi, W., and Turkel, O. I., (1996), ”A new framework for determining critical success/failure factors in projects”. International Journal of Project Management, Vol. 14, No. 3, pp. 141 – 151.

Bryman, A. And Bell, E. (2003)” Business Research methods” New York. Oxford University Press.

Carey, A. (2001), ”Effective risk management in financial institutions: the Turnbul approach”, Balance Sheet, Vol. 9 No. 3, pp. 24 – 27

Clarke, A., (1999), ”A practical use of key success factors to improve the effectiveness of project management”. International Journal of Project Management, Vol. 17, No. 3, pp. 139 – 145.

Cooper, R. G., and Kleinschmidt, E. J. (1996), ” Winning business in product develepment: the critical success factors”. Res.-Technol. Manag. July- August, pp.18 -29

Daniel, R., (1961), ”Management information crisis”, Havard Business Review, Vol. 39, No. 5, pp. 111 - 121

Erling, S., Andersen, D. B., Svein, A. J., and Money, A. H., (2006), ”Exploring project success”, Baltic Journal of Management, Vol. 1 Issue 2 pp. 127-147.

Fortune, J., and White, D. (2006), ”Framing of project critical success factors by a systems model”. International Journal of Project management, Vol. 24 No. 1 pp. 53-65.

Grabowski, M., and Roberts, K. (1999), ”Risk mitigation in virtual organisations” Organisational Science. Vol. 10 No. 6, pp. 704 – 722.

Kezner, H.,(2009), ”Project management; A systems approach to planning, scheduling, and controling.” John wiley & sons, Inc, New Jersey.

Khanapuri, V.B., Nayak, S., Soni, P., Sharma, S., and Soni, M. (2011), ”Framework to Overcome Challenges of Implementation of E-procurement in Indian Context”. International Conference on Technology and Business Management, March 28 -30, 2011

Klafft, M. (2009) ”E-Procurement for consumers: Success factors and Technology Acceptance” SSRN eLibrary.

Lester, D. H., (1998), ” Critical success factors for new product development”. Res. Technol. Manag., January – February, pp. 36 – 43.

Lim, S. C., and Mohamed, M. Z., (1999), ”Criteria of project success: an exploratory re-examination”. International Journal of project management Vol. 17, No. 4, pp. 243- 248

Liu, A.N.N., and Walker, A., (1998). ”Evaluation of project outcomes. Journal of Construction management and Economics. Vol. 16. Pp.109-219

Munns, A.K. and Bjeirmi, B. F. (1996), ”The role of project management in archieving success”, International Journal of Project management, Vol. 14 No. 2, pp.81-7.

Panayiotou, N., Tatsiopoulos I., and Gayialis, S. (2004) ” An E – procurement System for Government Purchasing”. International Journal of Production Economics, 90 (2004), pp 79 -102.

Panda, Prabir and Sahu, G. P (2012) ”E-Procurement Implementation: Critical Analysis of Success Factors' Impact on Project Outcome”. Motilal Nehru National Institute of technology, Allahabad, India, Working paper. http://ssrn.com/abstract=2019575

Pinto, J. K., and Slevin, D., (1987), ”Critical factors in successful project management”. IEEE Transactions on Engineering management, Vol. 34 No. 1, pp 22 - 27

PMBOK (4th Edition, 2008), A Guide to Project management body of knowledge.

Powers, R. F., and Dickson, G. W., (1973). MIS project management: Myths, opinions and realities. California Management Review , Vol. 15 No. 3. Pp. 147-156

Quayle, M. (2005) ”The Real Management Implications of E-Procuremet: The Importances of Involving People”. Journal of General Management. 31, 1, pp 23-39

Remus, U. (2007), ” Critical Success factors for implementing enterprise portals”. Business Process Management Journal, Vol. 13 No. 4, pp. 538 -552

Rockarts, J. (1979), ” Chief executives define their own data needs”. Havard Business Review, Vol. 57 No. 2, pp. 81-93.

Salleh, Rohaniyati (2009), ” Critical success factors of project management for Brunei construction projects: Improving project performanace” Australia.

Steinfort, P. (2011), https://www.aipm.com.au/resource/STEINFORT_-_SustainableProject_Success_FULL_PAPER.pdf.

Turner, J. R., (2004) ”Five necessary conditions for project success.” International Journal of Project management, Vol. 22, No. 5, pp. 349 – 350.

Vaidya, K., Sajeev, A.S.M., and Callender, G. (2004) ” E-Prpcurement Initiatives in Public sector: an Investigation into the Critical Success” 13th Annual International Purchasing & Supply Education & Research Association (IPSERA) Conference, April 4 –7, Catania, Italy.