Critical Success Factors for Scoping of Business Improvement Projects: Based on Input-Transform-Outcome Model

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Abstract
Business improvement projects deal with the transformation of current operational process to an improved operational process, which can be beneficial for the organization in achieving business targets and competitive advantages in the market place. There are lots of issues related to managing such projects—technical and business uncertainty, unmanageable project scope, poor management focus on organizational aspects, difficulties in measuring return on investment and so on. The management of business improvement projects becomes difficult due to poor addressing of such issues at the time of initiating and defining the scope. These projects’ success or failure is highly depending on the analysis of the scope including business and technical aspects. As there are casual uses of methodologies in scoping of business improvement projects; with an objective to guide future scoping of such project in organizational setting, this research tries to identify critical success factors of project scoping based on Input-Transform-Outcome (ITO) model’s scoping techniques after analyzing the conceptual understanding of project practitioners in Bangladesh. From the thematic analysis of interviewees’ responses, this research finds at the time of project scoping, emphasize on strategy and operation, consider business performance metrics in defining outcomes and focus on business and organizational outputs over technical outputs; are the critical success factors for business improvement projects.

Keywords: Business Improvement Project, Project Scoping, Input-Transform-Outcome (ITO) Model, Critical Success Factor

Introduction
Operational environment of business organization comprises of number of business processes which support the functional departments. In the competitive context of business environment, organizations’ try to secure profitability by undertaking effective business processes which are incurring less cost and time. The competitive advantage of business depends upon strategies based on low-cost leadership and differentiation. Business process effectiveness directly impacts both of these competitive strategies of the business. Thus, organizations’ tend to undertake business improvement projects which have primary objective of bringing positive changes in overall business process [1]. In practice, business improvement projects typically focus on the Information Technology (IT) components or the computerized systems; which is an important part of these projects but not the only part. Another common phenomenon is business improvement projects are labeled as IT projects with entirely technology and systems component focus. With the objective to transform the business process into a better one [2], these projects need to consider business contexts as well. If business improvement projects only consider the technology components, these are cases of underscoping. Research shows that, more than two third of business process reengineering projects were failed due to poor addressing on the business and strategic perspective of the exercise. Due to this scoping problem, these projects have minimum success rate and often massively disrupt the current business functions [1] [3]. This research is intended to identify the critical success factors of scoping business improvement projects in order to guide future similar projects’ scoping. In particular it attempts to answer the question “What are the critical success factors business improvement projects need to consider while scoping?”

Literature Review
Traditional business organizations heavily rely upon the functional or hierarchical view, where now-a-days organizations focus on process view. In order to run business operation, functional view deals with answering the question ‘what’, on the other hand process view answers the question ‘how’. Process view transforms the ideas from vertical chain of command to workflow and from static-separated tasks to dynamic-coordinated tasks [4]. This dynamic characteristic of business process indicates that changes and adjustments in the business process involve critical management decisions. With core objective of improving business process performance, lots of business improvement projects are undertaken. Business improvement projects are also triggered by changes in business and corporate structure such as
product or service innovation, merger and acquisition and so on. Business process improvement exercise can be undertaken as Continuous Process Improvement (CPI), which refers to incremental changes and improvements on business process by the passage of time. Another approach of business process improvement is undertaking specific project using either one or combination of Business Process Management (BPM), Business Process Engineering (BPE) and Business Process Reengineering (BPR). One common problem in the project management domain of such business improvement projects is labeling of the project as IT projects with little or no consideration of business and organizational context. The output of these IT projects mostly contains software or systems components [5].

Another common scenario of such project scoping is making the list of output open-ended with ‘should have’, ‘could have’, ‘nice to have’ outputs and these have no plausible relationship with the desired business target of undertaken business improvement project. Often the target of business improvement project sets as implementing new software which completely ignores the business performance issues. Due to these scoping problems, the management of business process development projects becomes difficult [6] [7]. The work, time and cost estimations become unrealistic resulting low pay-off of invested money [8]. Moreover, current process disruption can be triggered by scoping problem of business improvement projects. A classic example of such projects is RMIT’s PeopleSoft Implementation Project [9]. This project entirely focused on implementing the software systems with poor consideration on business context such as implementation plan, senior management involvement, corporate governance and documentation issues. Overlooking of these business and management issues caused process malfunction and corrupted the financial records. This led to delay in issuing student identity card and billing of international student tuition fees. For this disruption, number of international students was dropped in the following academic year.

B. Fitzgerald [10] states that, business improvement projects often take too long time, cost too much and do not support business targets due to wrong ‘software focus’ scope and no formal method of resolving this problem at the beginning. Ad-hoc approaches are taken by project team in managing such projects and the team does not understand the business and organizational context [11]. It is suggested that, a formal and disciplined technique of scoping business improvement project can be useful as engineering, design and construction projects’ formal scoping approach [5]. The critical success factors can be identified from such formal techniques considering the project management understanding and experiences of the practitioners, which can be significant for attaining project success in future undertaken projects. After the implementation of various consultancy and research concepts at managing projects in organizations such as Australian Bureau of Statistics, American Express, General Electric, Philips, Victorian State Government and Tasmanian Government in Australia, the Input-Transform-Outcome (ITO) model is developed. This framework is used for developing the conceptual underpinning of this research and acted as the basis for realizing desired research outcome.

In the framework, project scoping can be done through setting up an ITO model and using project scope process [12]. For business improvement projects usage of these tools are important because these can help to identify the business and organizational context and specify project boundaries. Enterprise architecture concepts of ‘As-Is’, ‘Would-Be’, ‘To-Be’ states can be linked easily with these scoping techniques. The model states how project outputs can be utilized to generate target outcomes. Target outcomes should be the ultimate goal to achieve by undertaking project. In BPM, BPE, BRP, Enterprise Systems (ES), Business Analysis (BA) and Enterprise Architecture (EA) domain, target outcomes are often termed as business drivers. EA frameworks such as Federal Enterprise Architecture Framework (FEAF) and The Open Group Architecture Framework (TOGAF) emphasizes the importance of business drivers before considering design and technical analysis [4] [13], supporting the concept of setting target outcome first. ITO model can be a useful tool to define business improvement projects’ target outcomes. The chronology of setting ITO model is not same as the shown timeline at the bottom of the model (Figure 1). It will be basically right to left where frequent iteration will also be required to identify and validate outcomes and outputs. The components of ITO model are–

![Figure 1 Project Input-Transform-Outcome (ITO) model](http://www.ijmsbr.com)

**Figure 1** Project Input-Transform-Outcome (ITO) model [12, pp. 25]

**Inputs**: funds measured in terms of dollar and labor measured in terms of working unit, show how much resource business improvement project needs. This area is critical for such project due to the tendency to spend more than budgeted.

**Process**: shows what works need to perform during business improvement project. This area is crucial for such project because using terms such as ‘known-unknown’ and ‘unknown-unknown’ makes the work process very open and vulnerable to uncertainty. Such undefined work process is difficult to control and monitor in project environment.
Outputs: the deliverables and artifacts created from the project process. Business improvement projects have serious issues regarding output definition.

Utilization: a unique contribution of ITO model toward project scoping is this. Typical projects are termed finished after the delivery of the outputs. Utilization in ITO model shows how project outputs will be utilized by project customers to generate target outcomes. Project customers in this model, are entities that utilize outputs and contribute to target outcome generation. This utilization step is the link between project outputs and outcomes. For business improvement projects this utilization is important because improved processes are tested in real world operational environment at this phase. Any major issues arising from changed processes can be fixed accordingly to support the outcome generation. The utilization of the improved process will be continued as operational process after securing the target outcomes.

Target Outcomes: show intend of the business improvement project.

Statement of scope is the basis of an ITO model. Statement of scope and scoping process are crucial while setting up the project ITO model as project scope helps to identify project boundaries. Two main steps in the project scoping process [12] are developing statement of scope and validating statement of scope. There are two major tools are used to resolve the scoping issues—statement of scope (used to establish scope) and utilization map (used to validate scope). In order to set project scope, the following is the project scoping process—

![Figure 2 Project scoping process](http://www.ijmsbr.com/)

**Research Methodology**

**Research Strategy:** This research tries to employ the qualitative data collection and analysis techniques, which helps to identify the critical themes from participants’ responses. Those responses are analyzed using an interpretive approach to find out the contexts based on particular understanding [14]. According to Kaplan and Duchon [15], the approach is helpful to conceptualize and understand events, concepts and categories. The conceptual framework of the research is a new concept in Bangladesh perspective and that phenomenon leads the research into an explorative one. The how or what types of question seek to categorize the themes from the discussion [16]. In order to achieve the research aim, the conceptual framework is communicated with the interviewees to develop the conceptual understanding among them. After that, the interview is conducted to receive the responses about critical success factors from the conceptual underpinning. The responses are analyzed using thematic analysis to generate the results. The following figure illustrates the research strategy—

![Figure 3 Qualitative Research Strategy](http://www.ijmsbr.com/)

**Data Collection:** Data collection for this research is quite challenging. The major challenge is the understanding of the conceptual framework by the project managers as most of them are from engineering and non-business background. Therefore, emphasize is given not only to the response of the respondents but also to the level of their understanding of key aspects on conceptual framework. In order to assess the understanding of the respondents, research questionnaire includes a section containing five basic questions and score their understanding using Likert’s Scale. The respondent score of minimum 18 out of 25 is considered having sufficient understanding of the conceptual framework. The target group of respondents is the project managers having minimum five years of job experiences inclusive of minimum two years in the current employment. They are approached with the summarized conceptual framework for 30 minutes. Then, data collection process begins with face-to-face interviews. Entire process of the data collection is being made with due care.

**Data Analysis:** In order to pinpoint, examine and record patterns from the data, this research uses thematic analysis which is one of the most common qualitative research forms [17] [18] [19]. The specific research questions are the basis of dataset which are used to generate themes that are significant in describing the phenomenon [20]. The analysis process begins with the familiarization with data by developing interview transcripts and potential codes. By organizing and gaining meaningful parts systematically, the next step gives the initial systemic codes. After that, the research finds the themes which can relate with the conceptual framework. By reviewing the themes according to the framework, several themes are accepted for the definition and several themes are rejected. The definitions of each theme are leading towards naming of themes which can
be appealing to the potential audiences. The final step of the analysis is to produce the research results using story telling approach [17] [18] [21] [22].

Research Findings

**Emphasizing on business operations and strategy**: Business improvement projects are generally termed as IT projects or Systems Development projects according to common project management practice. These are focused on automating any process with poor consideration of business and operational impacts. In the framework discussion, there are several indications of how the IT focus can lead to project failure causing operational disruption. One of the critical success factors identified by the respondents is focusing on business improvement process by giving emphasize on business operations context. One of the functional managers who were a part of an operational process improvement project points the scenario saying–

“**In my department’s project, the technology team delivered one automated systems to handle the credit analysis and reporting functions within the desired timeframe. After the implementation of the system successfully, the workflow was disrupted due to shift from manual to automated process. Afterwards, being the user of the system, analysts and officer; found the communication and query module was not developed and hooked up properly with the system. Due to that issue, they needed to rely upon the manual files simultaneously. In that circumstance, the analysts continued with the manual process and the delivered IT systems required further development. The management was reluctant to spend further budget on the system, as a result still the advancement project is not approved. If the business communication and query processes were considered in scoping before focusing on the systems development, the system can be utilized to achieve the performance efficiency now.**”

Strategy in projects is the decision making process of aligning the project and business strategies and managing the alignment, which starts from the project initiation decision. After the project completion it is a continuous business process. While investing money into projects; analysis of real business needs and capability of delivering business value are major risk concerns which can affect the Return on Investment (ROI). Management understanding regarding business value, current activity and performance assessment, human resource capability identification and analysis of investment requirement are strategic factors which are crucial consideration for projects. Project strategic planning, thus closely focuses on this decision dilemma. Strategic managers try to resolve the issue by taking proper project decision. While aligning project and business strategies, decision areas are business vision and goals, requirement and way of delivering required services. Efficient and effective project investment requires competitive advantages analysis which accommodates alignment between corporate strategies and impacts. Strategic planning impact business and projects, so internal capabilities such as infrastructure, process and skills and external factors such as competitiveness and governance need to be taken into consideration. By focusing on the strategic decision making aspects of ITO model, one senior project practitioner illustrates this success factor as follows–

“**Can automated enterprise wide solution critically cover beneficial aspects for organizations of all sizes? It provides a wide range of services to organizations, but due to huge investment requirement mostly large organizations are mostly implementing enterprise wide systems solutions. Making the process standardize is a good thing to have, but simultaneously organizations should be capable of handling standardized processes. They should have capable employees who can address the change issues easily and can perform standardized functions. Due to this reason, project on enterprise systems is a difficult task for management to undertake. ITO model tries to provide a guideline to answer these strategic questions at the time of project scoping and definition, which can be a practical tool for my future projects.**”

**Considering business performance metrics in defining outcomes**: The statement of scope can be the start point of project scoping process, which tells what things are in and out of the project. In the framework, there are three components of statement of scope– an objective statement, a list of target outcomes and a list of committed outputs. As business improvement projects suffer undefined or under-defined scope with ‘must have’, ‘nice to have’ outputs, this statement of scope can be an appropriate tool. The objective statement of the project is expected to be precise and understandable by all. For business improvement projects, an example of such objective statement can be, “to transform existing process into world class standard.’ In the identification and definition of target outcomes, business improvement projects need to consider the performance metrics. According to the research framework, all the listed target outcomes can be filtered using importance, measurability, lag and plausibility criteria. Moreover, each target outcome also needs to be defined by seven attributes as these are helpful for better understandability and usage— title, description, measure, target, source/method, achievement date and person accountable for realizing the target outcome. In elaborating this success factor, one project manager and consultant states–

“For business improvement projects in most cases, following three performance metrics can be used, even these are not the only three metrics– decreased execution cost (measured in dollars, comparing existing process execution cost with changed process execution cost), decreased execution time (measured in time, comparing existing process execution time with changed process execution time)
and decreased execution labor (measured in work unit such as work hour, comparing existing process execution labor with changed process execution labor). As target outcomes are crucial in measuring project success failure, quantitative performance metric based outcomes will increase the likelihood of project success.”

Focusing on business and organizational outputs over technical outputs: Business improvement projects most commonly scoped with only IT outputs which is identified as severe problem in framework discussion. Having new or improved business processes, enabling technology, changed organization structure and training in the business improvement project scope, is a critical success factor identified from the framework by the respondents. Several project managers emphasize each component by sharing their experiences–

“...a common way of dealing with business process is ‘As-Is’, ‘Would-Be’ and ‘To-Be’ states of process, where ‘To-Be’ process will be the committed output. Business process analysis should precede any other output as it is mostly related to others.”

“...some steps of the business process can be enabled by information technology and software components. So, the enabling technology with hardware, software, network component needs to be an important output of the project. This enabling technology can not be the only output for business improvement projects in the name of automating the entire process.”

“...new or improved process can impact the current organizational hierarchy and job description of staffs. Thus there is a need for new organizational structure in the output list to handle such change issues.”

In the research framework, outputs are identified by output list and defined by fitness-for-purpose features. The list of outputs can be generated by using ITO model of the project and defined target outcomes. Business improvement projects can have ITO and non-ITO outputs. ITO outputs are directly utilized by project customers to generate target outcomes. Non-ITO outputs on the other hand, are emerged from project risk, stakeholder management, regulatory requirements and dependency from another output or project and in most cases, not utilized by the project customer directly. For instance, if the process changing impacts the organizational structure so much which requires reducing number of staffs, the business improvement project needs to have special engagement program for employee as stakeholder engagement output. Another common example can be, the enabling technology or software implementation may require new systems architecture and infrastructure as dependency non-ITO outputs.

Conclusion
Business improvement projects are always carrying high expectations from senior level management of the organization, so any failure of undertaking those also has high organizational impact. This research tries to identify the critical success factors from the ITO model to guide such projects’ scoping, with a view to increase the chance towards successful project. Considering the importance of business improvement projects, focusing on the success factors from structured method will help organizations to achieve the required competitiveness in the marketplace. After generating the list of committed outputs and target outcomes, these need to be validated. In order to validate ITO output, utilization map is used in the scoping process. The utilization map can be a useful tool for business improvement projects as most of the have poor relationship among outcomes, outputs and customers. These issues can be explored further from the framework in order to guide the future business improvement projects’ scoping.

References


