IDENTIFYING KEY RISKS IN BUILDING PERFORMANCE

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Abstract
Successful development project is crucial to all project stakeholders. Meeting the dateline to complete a project will be an added advantage for both the developer and the owner. As project management is a core capability in the construction industry, high-quality project planning processes are necessary for project success. Poor up-front definition and planning is the common cause of project failure which causes serious problems in many areas later in the project and also affecting building performance. Therefore, this paper aims to identify the key risks in planning stage. This paper provides a theoretical framework showing the relationship between eleven key risks in planning stage and four building performance indicators in operation stage which gained through literature study.

Keywords: project planning, risk, building performance

1. INTRODUCTION
The International Facilities Management Association (IFMA) defined Facility Management as “the practice of coordinating the people and the work of an organization into the physical workplace” and a more explicit definition as an integrated approach to operating, maintaining, improving and adapting the buildings and infrastructure of an organization in order to create an environment that supports the primary objectives of the organization. IFMA further illustrated the asset lifecycle model as below:

Figure 1: Asset lifecycle
Source: IFMA Glossary
A major part of activities performed in construction organizations deal with planning, executing, coordinating, and controlling projects. Planning is crucial in determining project success as many construction projects do not meet their targets due to poor quality of management practices (Brown et al., 2001 and World Bank, 1996). World Bank (1996) study of construction projects has found that of the 900 surveyed projects, an average cost overrun of 40 percent over the original cost and an average time overrun of 60 percent over the planned completion time were reported.

Dvir and Lechler (2004) mentioned that planning is a process with many different activities that cover a variety of issues, using numerous planning techniques and planning procedures such as analysis, design reviews, reports and interpersonal communication. Dvir et al. (1999) indicated in a study of 110 development projects that the origination and initiation phase, has the greatest influence on project success. During that phase major decisions are made such as deciding the project’s objectives and planning the project’s execution. They also found that although the preparation of formal design and planning documents has a strong positive effect on meeting time and budget objectives, it also contributes significantly to customer benefits deriving from the end-product. Thus, planning does not automatically lead to project success, but lack of planning is likely to lead to project failure.

In Malaysia like other countries construction industry is one of the major industries contributing significantly in the growth of socio-economic development. Achieving project completion on time and within budget at specified quality standards is major criterion of project success. Although in Malaysia a lot of money has been spent in construction, the industry is facing a lot of challenges such as the expenditure exceeding the budget, delay in completing the project on time, building defects and over dependent of foreign workers. MARA (Majlis Amanah Rakyat) has spent about RM 12 billion in its development since 1st Malaysian plan. A portion of this allocation was spent on construction. The major issue in MARA large construction project is the delay resulting from significant time overrun and cost overrun (Memon et al., 2011). He further analyzed and concluded that cash flow and financial difficulties faced by contractors, contractor's poor site management and supervision, inadequate contractor experience, shortage of site workers, incorrect planning and scheduling by contractors are most severe factors affecting construction cost.

2. RISK IN PLANNING

Compared with many other industries, the construction industry is subject to more risks due to the unique features of construction activities, such as long period, complicated processes, abominable environment, financial intensity and dynamic organization structures (Flanagan and Norman, 1993; Akintoye and MacLeod, 1997; Smith, 2003). Managing risks in construction projects has been recognized as a very important management process in order to achieve the project objectives in terms of time, cost, quality, safety and environmental sustainability (Zou et al., 2006).

More effective management of risks would be possible if these risks are managed from the perspective of a project life cycle. Many risks may arise in more than one phase of a construction project and hence they need to be considered in more than one phase. As much research suggested,
addressing project risks earlier rather than later in the project life cycle can minimize the negative consequence brought by the risks (Ward and Chapman, 1995; Smith, 2003). Identifying the possible occurrence of risks in each stage and making appropriate actions to cope with them are significant. On the other hand, as these risks are all project stakeholders orientated, how to effectively get different participants to manage them in the context of a project life cycle is decisive to the project success (Zou et al., 2006).

Zou et al. (2006) summarized the key risks of planning phase as below:

i. High performance/quality expectations
ii. Tight project schedule
iii. Incomplete approval and other documents
iv. Variations by the client
v. Inadequate program scheduling
vi. Design variations
vii. Inadequate or insufficient site information (soil test and survey report)
viii. Incomplete or inaccurate cost estimate
ix. Lack of coordination between project participants
x. Excessive approval procedures in administrative government departments
xi. Bureaucracy of government

3. BUILDING PERFORMANCE
Performance measurement plan is the identification and translation of the organization's objectives and requirements into the optimum firm to meet current and future needs. The critical observation of practice, allied to a careful reading of the literature, suggests the need to determine, verify and integrate the axioms of modern performance measurement (Dilanthi and David, 2001).

In the last decade, there has been growing critics of traditional performance measures as too narrowly focused on financial measures (Olve et al., 1999).

Every Performance Measurement System consists of a number of individual performance measures/performance indicators. Performance measures are the vital signs of the organization which quantify how well the organization achieves a specified goal (Seokjin and Behnam, 2008). Table 1 showed the multiple dimensions of the most important measures which are quality, time, cost and flexibility (Neely et al, 2005; Toni and Tonchia, 2001).

<table>
<thead>
<tr>
<th>Quality</th>
<th>Time</th>
<th>Flexibility</th>
<th>Cost</th>
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<tbody>
<tr>
<td>Performance</td>
<td>Manufacturing lead time</td>
<td>Material quality</td>
<td>Manufacturing cost</td>
</tr>
<tr>
<td>Features</td>
<td>Rate of production</td>
<td>Output quality</td>
<td>Value added</td>
</tr>
<tr>
<td>Reliability</td>
<td>Deliver lead time</td>
<td>New product</td>
<td>Selling price</td>
</tr>
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<td>Conformance</td>
<td>Due-date performance</td>
<td>Modify product</td>
<td>Running cost</td>
</tr>
<tr>
<td>Technical durability</td>
<td>Frequency of delivery</td>
<td>Volume</td>
<td>Service cost</td>
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<tr>
<td>Perceived quality</td>
<td></td>
<td>Mix</td>
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<tr>
<td>Humanity</td>
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<td>Resource mix</td>
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Table 1: The most important individual performance measures
4. THEORETICAL FRAMEWORK
The theoretical framework establishing the relationship between the risk management variables and the performance measurement variables is shown in Figure 2 below.

Figure 2: Theoretical Framework

5. CONCLUSION
The theoretical framework showed an overview and relationship between the variables that to be discussed in the research. The issue is the project failure to meet its objectives without proper planning. It is very crucial to identify the key risks at the earlier stage and minimize the negative consequence brought by the risks at the later stage. This research is to develop a framework for risk during planning stage lifecycle. The further outcome of the research will provide the appropriate risk mitigation plan and thus enhance the building performance.

6. REFERENCES


