

Project Management Performance in the UAE Construction Industry

A. Al-Hajj¹ and A. Sayers²

¹Heriot-Watt University Dubai Campus, School of the Built Environment, Institute of Building and Urban Design, P.O.B. 294345, Dubai, UAE, +971 44358700; email: a.al-hajj@hw.ac.uk; ma7@hw.ac.uk

²isg, project Director, Sama Tower, Sheikh Zayed Road, Dubai, UAE, +97143506900; email: alan.sayers@isgmideast.com

ABSTRACT

The tremendous growth experienced in the UAE construction industry has been mirrored by the development and expansion of the project management discipline. The UAE has had the unique opportunity of employing the best as well as adopting international best practices. This paper identifies whether project management as a discipline helps deliver the key project objectives in particular those of time, cost and quality. It further investigates whether project managers are involved at strategic levels with the power and authority to effectively influence the direction and course of the project or were merely relegated to a monitoring and reporting role at an implementation level. A survey was undertaken to test the performance of projects in the UAE; the use of established project management tools and methodologies. Analysis was undertaken on the results to compare them against an international benchmark and assessing any correlation between those projects performing poorly and projects with poor use of tools and methodologies or a poor ranking of the critical success factors. Over 33% of projects failed to meet their stated objectives in respect of time, cost and quality and were considered poorly performing. Project managers were generally well qualified in their primary discipline and experienced in the construction industry but were less experienced in the field of project management many with no formal affiliation to professional institutions. Although project managers generally had good knowledge of tools and methodologies a significant proportion had either no knowledge or saw no practical use for the established techniques.

INTRODUCTION

Project management emerged in the 1950's on large defence projects and evolved through the development and application of specific project management tools. Project management in this context was a separate function away from the main activities of the organisation. The specialist knowledge allowed the managers to command the power to be responsible for the project and the autonomy and the space to deliver the project goals. More recently, several multi-disciplinary definitions of project management have evolved. For example:

“Project management is the application of knowledge, skills, tools and techniques to project activities to meet project requirements. Project management is accomplished through the application and integration of the project management processes of initiating, planning, executing, monitoring and controlling, and

closing. The project manager is the person responsible for accomplishing the project objectives". Project Management Institute (2004. P 20).

"Project management is the process by which projects are defined, planned, monitored, controlled and delivered such that the agreed benefits are realised. Projects are unique, transient endeavours undertaken to achieve a desired outcome. Projects bring about change and project management is recognised as the most efficient way of managing such change". Association of Project Managers (2009)

Within the construction industry, there is a continuing problem of definition of the role of the project manager who are considered a new breed of construction professional arising from increased complexity and the specialisation of projects. Patten (2003). Over the last 30 years project management has come to be acknowledged as an efficient tool to handle novel or complex activities. It is felt to be more efficient than traditional methods of management with their functional divisions and formal hierarchies. (Munns & Bjeirmi 1996). In a construction context however, it was recently demonstrated in the Swedish construction industry that project management appears to have developed as bureaucratic, functionalist and mechanistic. No longer "the explorative and unstructured endeavour it was initially designed to be". (Styhre 2006). Recognising the conflicting views project management is seen as an evolving phenomena undergoing constant change. (Atkinson 1999).

The aim of this paper is to identify from the perspective of practising project managers whether project management as a discipline helps deliver the key project objectives in the context of the UAE construction industry. In addition, the paper will identify whether construction projects in the UAE meet key performance objectives. In particular time, cost and quality defined at project initiation; assess whether perceived failures are attributable to the project management discipline.

PROJECT SUCCESS AND FAILURE

There is a growing recognition that there is a distinction between project success and project management success as both have differing objectives. The literature demonstrates that project success should be measured against the overall project objectives over the life cycle of the project and should not be measured through a narrow interpretation of time, cost and quality. Project management success on the other hand is more narrowly defined over a shorter time frame and is judged by the traditional time, cost and quality parameters. (De Wit 1988) and (Munns and Bjeirmi 1996). Toor and Ugunlana (2008) cite Seeling (1967) as introducing the concept of critical success factors and Rockart (1982) as adopting the term for the first time. Kerzner (1987) identifies 6 critical success factors being corporate understanding, executive commitment, organisational adaptability, project manager selection criteria, project managers leadership style, and commitment to planning and control. Pinto and Slevin (1987) identify ten general factors of project mission, top management, project schedule/plan, client consultation, personnel, technical tasks, client acceptance, monitoring and feedback, communication and trouble-shooting. Pinto and Mantel (1990) cited by Dvir et al (2003) proposed 3 performance benchmarks for measuring project success: the implementation process, the perceived value of the project and client satisfaction with the delivered project. Turner (1993) identified 6 criteria to measure the success of a project; the facility is produced to specification within

budget and on time; the project provides a satisfactory benefit to the owner; the project achieves its stated business purpose; the project meets pre-stated objectives to produce the facility; the project satisfies the needs of the project team and supporters and finally, the project satisfies the needs of the users. Munns and Bjiirmi (1996), formulate four goals and identify 11 variables and factors from the writings of various authors that will help secure them. They cite the work of Morris and Hough (1986) as identifying 9 factors for project success. Atkinson 1999 attempted to breakdown the success criteria contained in previous research into four categories or types which he termed “the square route” to understanding success criteria. These types are firstly the narrow traditional criteria referred to as the “iron triangle”, moving through a type referred to as the information system, then benefits to the organisation and finally into a fourth type termed benefits to the stakeholder / community. Pinto (2000) incorporated the use of power and political behaviour to promote successful implementation and maintained to be effective a successful project manager must develop a reputation as an expert; prioritise social relationships on the basis of work needs rather than on the basis of habit or social preference; develop a network of other experts or resource persons who can be called upon for assistance; choose the correct combination of influence tactics for the objective and the target to be influenced and finally, to influence with sensitivity, flexibility and solid communication.

Shenhar et al (2001) categorise fourteen success measures into four success dimensions of project efficiency, impact on the customer, commercial success and potential for the future. 12 factors were subsequently identified by Cooke-Davies (2002). Westerveld (2003) proposed that four key performance indicators (KPI's) encapsulate success namely: clients appreciation; project personnel appreciation; users appreciation and stakeholders appreciation. 17 KPI's for project success were developed and ranked by Bryde (2003). Sohail and Baldwin (2004), Developed 67 performance indicators for managing micro contracts. White and Fortune (2002) went on to conduct an empirical study across various industry sectors and set out to identify common criteria and critical success factors used for defining project success. Of particular importance their sample tested 995 project managers across 620 organisations. They ranked 8 criteria used for judging project success together with 24 factors critical to the projects's outcome. In addition they developed a series of 46 questions to assess the methods, methodologies tools and techniques in current use in the field of project management.

To explain how project process is associated with project success, Toor and Ogunlana (2008) developed a conceptual model. They compiled a list of 39 critical success factors which they used to study project managers on a large construction project in Thailand, see table 1. These factors were subsequently analysed and grouped into four summary factors termed comprehension, competence, commitment and communication. Their intention was to differentiate between the process and the performance domains. These domains can be mapped and compared to project management at operational and strategic levels identified by earlier researchers. Further research in their paper “beyond the iron triangle” developed the exploration of a series of key performance indicators and their correlation. (Toor and Ogunlana 2009).

Within a UAE context Saboni, Aouad and Sabouni (2009) researched the effects of electronic communications systems on project success in the United Arab Emirates and developed a matrix of 15 ranked criteria. It is evident from the

research, that the objects of project management and those of the project are different. The control of time, costs and progress, which are often the project management objectives should not be confused with measuring project success. Experience and research demonstrate it is possible to achieve a successful project even when management has failed and vice versa. Also, they maintained that research into project success criteria is subjective, context oriented and time dependent.

Table1. Critical Success Factors. (Source: Toor and Ogunlana 2008)

1. Top management involvement and sponsorship	23. Knowing what the client really wants
2. Strategic alignment of project goals with stakeholder interests	24. Developing positive friendly relationships with project stakeholders
3. Proven project management methodology adopted	25. Building a balanced and winning team
4. Effective change management	26. Benchmarking firm's performance against successful projects
5. Effective project planning and control procedures	27. Mutual trust among project stakeholders
6. Clearly defined goals, objectives and priorities for all stakeholders	28. Conducting regular reviews to assure and verify progress on project
7. Competent project manager	29. Creating accountabilities, expectations, roles and responsibilities for the organization
8. Competent project team members	30. Clear prioritization of project goals by the client
9. Sufficient resources	31. Requiring the use of facts and data to support actions at all levels of decision making
10. Regular client consultation	32. Proper dispute resolution clauses incorporated in the contract
11. Adequate communication among all related parties	33. Clear and detailed written contract
12. Responsiveness of client	34. Competent contractor - High quality workmanship
13. Feedback capabilities in the system	35. Awarding bids to the right designers / contractors
14. Clearly designed and co-ordinated technical tasks	36. Using up to date technology and automation for construction work
15. Client acceptance of plans	37. Learning from previous experience
16. Effective project control mechanics	38. Frequent meetings among stakeholders to evaluate overall performance
17. Fast trouble shooting capabilities in the system	39. Absence of bureaucracy from the workplace
18. Adequate work breakdown structure (WBS) linked with organizational breakdown structure (OBS)	
19. Standard software infrastructure and use of IT	
20. Reliable cost estimates by quantity surveyors	
21. Clearly written lines of responsibility	
22. Positive organizational structure for project management	

As we move into the 21st century, over 50 years from the inception of modern project management, the concept of project success continues to prove elusive. There is a growing recognition that traditional construction project management is set within a narrow context and with a natural tendency to concern itself at an operational level within the delivery stage of the project life cycle. Soderlund (2004a) maintains the critical success research has been a dominant theme within project management arising as a result of project failures in the 1980's although it no longer "gives us a deeper knowledge about real life project management". Soderlund (2004b) maintains a theory of projects cannot be built

merely on empirical insights and calls for an investigation of the differing perspectives to better understand the differing dimensions and broadening scope of project management.

Munns and Bjeirmi (1996) identified that: “*whilst project management plays a role in project success that role is affected by many other factors outside the direct control of the project manager. This would start to explain why projects can succeed or fail independently of the project management process*”.

It seems from all the research, there are difficulties in assessing project management at a strategic level, the definitions of goals and business objectives and the later implementation process. This would indicate that project management with its adoption of methodologies and techniques form only a limited part. Munns and Bjeirmi (1996). Consequently, a narrow definition of tasks and assessment of project success hints at why project management success and project success are not directly correlated. Importantly, a project may be successful despite the failings of project management if it meets long term objectives (Munns and Bjeirmi 1996). Reinforcing this view, project management is seen essentially as a purposeful functionalist activity based on reductionist techniques through structures of central control and order (Pollack 2007). Pollack (2007) asserts little is known as to how the various tools, methodologies and techniques are used by project managers to undertake their work and further maintains that the effectiveness of some of the basic techniques were only appropriate in the simplest project context.

METHODOLOGY AND FINDINGS

A series of pilot questionnaires and exploratory interviews were performed using professionals operating in the field of project management in the UAE construction and development sectors. To capture quantitative data, an internet survey questionnaire was compiled and candidates invited to participate by email as a selected sampling method. Candidates were selected on the basis they were known to be operating within a project management capacity in the UAE to provide a truly representative sample. A total of 72 professionals were invited to participate in the survey, 59 responses were received, a response rate of 82%. Validation of the data was also undertaken through a Spearman ranking correlation coefficient as a non-parametric to test the data from varying research studies was truly compatible. 93% of respondents were actively involved in the management of projects. They arrived into project management mainly through three routes namely Building Contracting, Quantity Surveying and Engineering disciplines. Respondents were found to be reasonably experienced with less than 6.78% having less than 5 years experience, 61% are qualified to Bachelors Degree level with 27.12% possessing a Masters Degree qualification. 52.54% of the sample works for project management consultancies, 32.2% have a Cost / Quantity Surveying background, and 25.42 % are of Building / Contracting background. About 58% of the sample has no formal Project Management affiliations, only 29% affiliated to recognised PM affiliations and 13% have general affiliation. It is evident that respondents gain their experience from primary backgrounds before progressing to project management. In addition, 42.37% of the sample occupy senior roles with only 5.08% operating at Assistant level. 78% of respondents have responsibilities for more than one project. Information gathered on project value, role and also level of experience, suggest that the project managers involved in this study are experienced. Furthermore,

87.51% of respondents worked on projects with durations in excess of 13-24 months and 85.71 % of projects are between AED 11-500 million (£1.6-£73 million). Projects are generally of medium complexity, relying on existing technology and a medium number of packages or interfaces. Only 23.21% of the projects are highly complex, using new leading edge technology. These are reasonably large in a UK context and represent 44.64% of the sample. Consequently, it is evident that project managers are responsible for large projects even more so when it is found a further 41.07 % are responsible for projects in excess of AED 500 million / £73 million. Indeed, 8.93% of the sample are responsible for projects in excess of AED 2 billion / £294 million.

TIME, COST AND QUALITY PERFORMANCE

35.71% of respondents projects were found to be delivered within the defined programme with a further 30.36% delivered up to 6 months late. A cut off point was used to analyse success and was set with a threshold for projects of over 6 months defining poor performance. 34.15 % of the sample were working on projects that were considered poor performing in terms of the applied time definition. However, only 3.57% were working on projects between 13 – 24 months late and a similar percentage working on projects in excess of 24 months late. The results are in contrast to uncorroborated reports of excessive delays within the industry. Possible explanations are that UAE projects do truly perform better than those in an international context or alternatively, project managers do not want to report poor performance as it reflects badly on them. It is possibly that the delays have been picked up within a revised programme and project managers are reporting on the amended objectives. This aspect would make an interesting case for further study of all stakeholders to find the true picture. In terms of cost performance, 48.21% of respondents' projects were delivered within acceptable budget parameters with a further 16.07% delivered within 5% of the intended cost. A cut off point of over 5% was set and used to determine poor performance. Consequently, 64.28 % of the respondents' projects were within acceptable limits meaning the converse, that 35% of respondents projects are delivered over budget. 30.36% of those sampled were then found to have project budgets falling within a 6-20% cost overrun. For Quality Performance, 67.31% of projects were found to have quality standards falling within the defined contract terms. Conversely, 32.15% fell outside the quality required by the contract and for the purposes of the research were deemed poor performing.

PROJECT MANAGEMENT TOOLS AND TECHNIQUES

Some of the results arising from this section of the questionnaire were surprising. Work Breakdown Structures (WBS), Organisation Breakdown Structures (OBS) and task Responsibility Matrices (TRM) are regarded as foundations of project management tools and methodologies. In the case of WBS, 42.31% of the sample neither knew the technique, nor used it or found it impractical. In the case of OBS, this rose to 48.08% and was 46.15% for TRM's and 30.76% for the use of Gantt Bar Charts. The findings align with other results where 57.63% of the sample was found to have no affiliation to a formal Project Management organization. It could be argued that the project managers in the survey are not involved with project planning or possibly use these techniques through other names as a result of their different primary backgrounds. It is also material that 11.86% of respondents to the survey skipped this question

altogether, perhaps the question exposed their skills, and it could be the responses noted above are underestimates of the true picture. The picture is similar across other responses, 32.69% for the use of Project Directories, 34.62% for the use of Project Execution Plans (PEP) , 51.93% Benchmarking and Metrics, 48.07% for Key Performance Indicators (KPI's). Although information gathered were surprising they also offer contradictions. Although 21.15 % of respondents claim Value Management (VM) as a technique is indispensable and they use it often this only applies to 9.62% of the sample for Stakeholder Analysis, one of the core components of VM techniques.

Of the tool used most regularly and found most useful in project management the following were found to be the highest ranking:

- | | |
|------------------------------|---|
| 1. Document register/control | 6. Risk analysis |
| 2. Project Master Plan (PMS) | 7. Work breakdown structure (WBS) |
| 3. Gantt Bar chart | 8. Task responsibility matrix (TRM) |
| 4. Change register | 9. Organisational breakdown structure (OBS) |
| 5. Project directory | |

CONCLUSIONS

1. Over a third of projects performed poorly in the United Arab Emirates with 34% were poorly performing in respect of time, 34% in terms of budget and 32% in terms of quality. This is considered unacceptable.
2. The perceived failures are attributable to the project management discipline in both the use of accepted project management tools and methodologies and the performance measurement against a series of critical success factors. The assessment of both these aspects proved problematic as the literature revealed there were no generally accepted tests or factors although there were recent advances.
3. Project Managers within the UAE construction industry were found to be experienced in construction, but with moderate experience in project management. The majority are well qualified and have primary backgrounds from discipline professions. It is demonstrable that project management is perhaps an “add on” discipline and that also due to the tremendous growth in the sector personnel moved over from other disciplines. The ranked project managers responses scored slightly worse than the international bench mark and it was found there was a correlation between poorly performing projects and failings when compared against established critical success factors. On poorly performing projects 13 critical success factors (out of 39 were found to be deficient). It was found that these areas were not due to failures at strategic levels but were attributable to failings at an implementation level. It is concluded that the poor performance is attributable to the project management discipline.
4. There were significant shortcomings. The highest ranking were inadequate WBS/OBS, poor change management procedures, poor definition of responsibility, incompetency of the project team. All the areas where respondents felt there were failings fall within the remit of the project management discipline at an implementation level hence it is concluded the project management discipline has the power, responsibility and authority to influence the course of the project but has failed to do so.

5. There is no evidence to suggest that poor projects were failing at strategic management levels and there is no evidence to suggest that project managers do not have the power or authority to deliver.

REFERENCES

- De Wit, A (1988) Measurement of project success. *International Journal of Project Management*, **6**(3), 164-170.
- Dvir, D, Raz, T and Shenhar, A (2003) An empirical analysis of the relationship between project planning and project success. *International Journal of Project Management*, **21**, 89-95.
- Kerzner, H. (2006) *Project Management – A Systems Approach to Planning, Scheduling and Controlling*. 9th ed. John Wiley.
- Munns, A K and Bjeirmi, B F (1996) The role of project management in achieving project success. *International Journal of Project Management*, **14**(2), 81-87.
- Pinto, J K and Slevin, D P (1989) Critical success factors in R&D projects. *Research Technology Management*, **32**(1), 31-35.
- Pinto, J K and Kharbanda, O P (1995) Lessons for an accidental profession. *Business Horizons*, **30**(2), 41-50.
- Pinto, J K (2000) Understanding the role of politics in successful project management. *International Journal of Project Management*, **18**, 85-91.
- Project Management Institute (2004) *A Guide to the Project Management Body of Knowledge – PMBOK*. 3rd ed Project Management Institute.
- Rockart, J F (1982) The changing role of the information system executive: a critical success factor perspective. *MIT Sloan Management Review*, **23**(3), 3-13.
- Shenhar, A J, Dvir, D, Levy, O and Maltz, A C (2001) Project Success: A Multidimensional Strategic Concept, *Long Range Planning*, **34**, 699-725.
- Soderlund, J (2004a) Building theories of project management: past research, questions for the future. *International Journal of Project Management*. **22**, 183-191.
- Soderlund, J (2004b) On the broadening scope of the research on projects: a review and model for analysis. *International Journal of Project Management*. **22**, 655-667.
- Toor, S and Ogunlana, S (2008) Critical COMs of success in large-scale construction projects: Evidence from Thailand construction industry. *International Journal of Project Management*, **26**, 420-430.
- Toor S R and Ogunlana S O (2009) Beyond the “iron triangle”: Stakeholder perception of key performance indicators (KPI’s) for large scale public sector development projects. *International Journal of Project Management*, **3**, 1-9.
- Turner, J R (1996) Editorial. *International Journal of Project Management*, **14**(1), 1-6.
- Turner, J R (2004) Five necessary conditions for project success. *International Journal of Project Management*, **22**, 349-350.
- White, D and Fortune, J (2002) Current practice in project management – an empirical study. *International Journal of Project Management*, **20**, 1-11.
- White, D and Fortune, J (2002) Current practice in project management – an empirical study. *International Journal of Project Management*. **20**, 1-11.