Monitoring the Performance of Complex Projects from Multiple Perspectives over Multiple Time Frames

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Modelling Success on Complex Projects: Multiple Perspectives over Multiple Time Frames

Abstract

When complex projects go wrong they can go horribly wrong with severe financial consequences. We are undertaking research to develop leading performance indicators for complex projects, metrics to provide early warning of potential difficulties. The assessment of success of complex projects can be made by a range of stakeholders over different time scales, against different levels of project results: the project's outputs at the end of the project; the project's outcomes in the months following project completion; and the project's impact in the years following completion. We aim to identify leading performance indicators, which may include both success criteria and success factors, and which can be measured by the project team during project delivery to forecast success as assessed by key stakeholders in the days, months and years following the project. The hope is the leading performance indicators will act as alarm bells to show if a project is diverting from plan so early corrective action can be taken. It may be that different combinations of the leading performance indicators will be appropriate depending on the nature of project complexity. In this paper we develop a new model of project success, whereby success is assessed by different stakeholders over different time frames against different levels of project results. We then relate this to measurements that can be taken during project delivery. A methodology is described to evaluate the early parts of this model. Its implications and limitations are described. This paper describes work in progress.

Key words: Project success criteria, Project success factors, Project failure factors; Leading performance indicators, Stakeholders; Project complexity.

Introduction

Globally, there has been an increase in the size and complexity of projects being undertaken by governments and other organizations in both the public and private sectors, (Baccarini, 1996; Williams, 2002). Williams suggests that the causes of complexity are the increasing complexity of products being developed and the tightening of timescales. Alarming numbers of complex projects fail to meet their time and cost targets leading to a perception of failure. Other projects fail to deliver their performance targets or other critical features, or deliver nothing because major stakeholders cancel them due to the time and cost overruns. These perceived project failures are of critical concern to project investors, with so much at stake in large complex projects.

However, there are well known cases of projects that were substantially late and overspent which were later perceived to be very successful. The Sydney Opera House and Thames Barrier (Morris and Hough, 1987) are two examples. Meanwhile other projects have been completed on time and cost, but have left their investors dissatisfied because they have failed to deliver the desired benefits. The Sydney Cross-City Tunnel for road traffic is an example of this. What this illustrates of course is that the wretched golden triangle of project success (time cost and quality) is an inadequate indicator of project success, but also that success is not just related to completion of the project's scope of work, but also to the delivery of the project's outputs, outcomes and impacts, that different stakeholders assess these different levels of project success, and they do so over different timeframes.

The aim of this research is to develop leading performance indicators for complex projects that can be measured during project delivery to predict project success, but project success not just measured by completion of the scope of work to time, cost and quality, but as measured by performance of the project's outputs, outcomes and impacts, as assessed by different stakeholders over different timescales. The leading performance indicators may (as suggested by Turner, 2002) be measures of the success criteria that can be monitored during project delivery, but may also be related to the project's success factors (or failure factors) and be symptoms that the project is on track or going off

the rails. We expect that there may be combinations of the leading performance indicators that should set the alarm bells ringing, and that different combination may apply under different types of project complexity. It may be that a given failure factor on its own may not be a cause for concern, but that failure factor with another, in the context of given dimensions of complexity will be a cause for concern.

We are undertaking this research project to address the following research questions:

1. How can we assess the success of large projects in a more comprehensive way that takes account of the views of multiple stakeholders over multiple time frames in the life of the project and the product it produces
2. What measures of performance during project delivery, (leading performance indicators), will provide a valid forecast of this assessment during project delivery?
3. Can an assessment of the project's success or failure factors be used as an early warning system for the successor failure of large projects?

In order to undertake this work we need to undertake several steps:

1. Develop a model of project success reflecting the perception of the perception of different stakeholders of the performance of the project's outputs, outcomes and impact by different stakeholders over different timescales.
2. Evaluate the ability of success and failure factors, as perceived by the project team and other key stakeholders at key stages during the project life cycle to predict leading performance indicators in complex projects.
3. Evaluate the ability of leading performance indicators that can be measured by the project manager and project team during the project to predict the achievement of project success as judged against the performance of the project's outputs, outcomes and impact by different stakeholders over different time scales.

4. Identify combinations of those leading performance indicators in the context of different combinations of complexity that are predictors of project success, or more likely, precursors of project failure.

This paper describes work in progress. It develops the model of project success for step 1, and describes how we plan to complete step 2. Future research studies will address steps 3 and 4. In the next section we review the latest thinking on project success, and the monitoring of results against the project's outputs, outcomes and impacts. From that we develop a new model of project success, measuring success using different factors, different stakeholders, and different timescales. We then describe how we plan to measure and compare the perception of success by the project manager and project team during the project to that by other stakeholders after the project.

A New Model for Project Success

In this section we develop a new, more comprehensive model of project success that reflects an assessment by different stakeholders against the different levels of project results, (outputs, impacts and impacts, Xue, 2009) over different time scales. We review recent work on success and on results-based project monitoring and evaluation as a basis for the model.

Turner and Müller (2005)

Turner and Müller (2005) reviewed current thinking on project success. They surveyed the literature into project success criteria and success factors over the previous 30 years. Early writings in project management, in the 1970s and earlier, were about tools and techniques , and mainly optimization tools derived from operations research . Then in the 1980s, writers began to try to identify success factors, elements of the project that the project manager and project team can influence to increase the chance of success. The earliest work was done by Andersen et al (2004, first Norwegian edition 1984). The most widely quoted list of success factors is due to Pinto and Slevin (1987). Then in the 1990s,

authors started writing about success criteria, the measures (quantitative and qualitative) by which a project is judged to be successful. Early work was done by Wateridge (1996) who argues that the identification of success criteria should be the starting point and that it is the responsibility of the project team. Appropriate success factors can then be identified from the success criteria and the right tools chosen to achieve the factors. The project excellence model, Figure 1, (Westerweld and Gaya-Walters, 2002) combines success factors and success criteria into a single model.

Insert Figure 1 about here

Turner and Müller (2006) in conducting their research into the leadership styles of successful project managers initially used as their measures of project success the perceptions of project stakeholders as suggested by the project excellence model, Figure 1. They suggest that project success is a combination of:

- appreciation by the client
- appreciation by the project team
- appreciation by the users
- appreciation by the contractors
- appreciation by the other interested parties

However, during the early stages of their research Turner and Müller (2006) found this list to be inadequate, and so for the main phase of their research they extended the list of success criteria to include some measures of performance. They identified nine success criteria:

- Meeting project's overall performance (functionality, budget and timing)
- Meeting user requirements
- Meeting the project's purpose
- Client satisfaction with the project results

- Reoccurring business with the client
- End-user satisfaction with the project's product or service
- Suppliers' satisfaction
- Project team's satisfaction
- Other stakeholders' satisfaction

Turner and Müller also allowed their respondents to nominate their own measure as a tenth criterion.

Turner (2009)

Turner (2009, first edition 1993) identifies that success is judged by different stakeholders, against different criteria, over different timescales, Table 1. The bottom three criteria relate to the work of the project, and the new asset produced (the project's output). They incorporate the triple constraint; that is is the work finished and asset delivered to time, cost and quality? But they also include appreciation by the project team and contractors. The middle three criteria relate to whether or not the asset performs as desired, it achieves the desired outcomes. These judgements reflect appreciation by the users and consumers, and are made in the months after the asset is commissioned. We differentiate between the users, people who operate the asset, and consumers, people who buy the product produced by the asset. Finally, the top three reflect whether or not the project makes a profit, and the asset achieves its long term goals, it has the desired impact. These judgements are made by the project's investors, and are made years after the asset is commissioned.

Insert Table 1 about here

Shenhar and Dvir (2007)

Shenhar and Dvir (2007) extend Turner's (1999) model, Table 2. They identify five categories of project success:

1. efficiency
2. impact on the team
3. impact on the customer
4. business success
5. preparing for the future.

Insert Table 2 about here

In this model the users, consumers and investor are in one sense swept into one, called the customer. However, business success and preparing for the future are of interest to the investor rather than the other two. Shenhar and Dvir (like Turner, 2009) suggest that the criteria to the left are judged at the end of the project, those in the middle in the months following the project, and those to the right years later.

Asia Development Bank (ADB)

The ADB has developed a results-based monitoring and evaluation system for projects it is sponsoring in China (Xue, 2009). Based on the WK Kellogg Foundation Logic Model Development Guide (2004), this system identifies three levels of results, assessed over differing time frames, Figure 2:

Insert Figure 2 about here

- *Project output:* the new asset delivered by the project, commissioned at the end of the project: Its successful achievement will be judged at the end of the project.
- *Project outcome:* the new capabilities that operation of the new asset gives to the investing organization. These enable the parent organization to do new things, solve problems or exploit opportunities, to generate benefit. Their successful achievement will be judged in the months after the project, although it is expected that they will provide benefit for years.

- *Impact:* the long term performance improvement that it is expected the new capabilities will enable the parent organization to achieve. This will enable the parent organization to attain its goals for longer term development. It will be judged years after the end of the project.

The new model

We have combined the last three models into a new model of project success, Table 3, which combines the different levels of results, the different timescales over which the different types of results are judged. However, unlike Turner (2009), we have suggested that all the stakeholders may judge all the levels of results.

Insert Table 3 about here

The investor or owner: This is the person or group who pays for the project. They effectively buy the project's output (new asset), and then pay for its operation after the project and obtain the benefit to repay their investment. Turner (2009) suggests that this group are only interested in the project's impact years after the project. Here we suggest that they will be interested that the project's output should be delivered to time and cost and with appropriate features and levels of performance to repay their investment. Their interest in the outcome will be that the asset continues to perform, and the operating costs and revenue will be such that they can make a profit. They will also be interested in the reputation of the asset (Yang and Moe, 2008) and customer loyalty so they continue to receive their revenue stream. Their interest in revenue, operating costs and profit will extend over the years to the whole life value the new asset provides. Shenhar and Dvir (2007) also suggest that their interest in the impact covers the new technology, competence and capability the asset provides. We have also suggested that the asset may be the first of a new class of product.

The consumers: These are the people or group who buy the product the new asset produces. They effectively obtain the benefit from the project's outcomes and pay for that benefit. This provides the

investor with their revenue stream. Their interest in the project's output is the time that they begin to receive the product or benefit, and the price they pay for it. The price will reflect the cost of the project and of operating the new asset. They will be buying the features the new asset provides. This interest will continue throughout the life of the asset (Shenhar and Dvir, 2007; Turner, 2009). Over the years they will also be interested whether or not the benefit provided by the asset will provide them with competitive advantage.

The operators or users: These are the people or group who operate the asset on behalf of the owner. Their interest on project completion will be on the features and performance of the asset, and in the documentation and training they are given. During early operations of the asset, their interest will be in the usability and convenience of the asset, and its availability, reliability and maintainability (ARM). Over the years they will be interested in the new technology, capability, competence and class (Shenhar and Dvir, 2007).

The project sponsor or project executive: These are senior managers from the owner or user organization, who prior to the project identify the need for the new asset, and the potential benefit it will bring. They will persuade the investor to provide the finance for the project and during the project will continue to sponsor and support the project to win financial and political support for it. At the end of the project, they are concerned that the new asset should have the desired features and perform to solve the problem or exploit the opportunity identified. Their concern with time and cost will be that the new asset should potentially provide the investor with a profit. Their concern over the coming months will be that the new asset is performing to provide the predicted benefits, and so the support they have given the project is justified, and they are maintaining their reputation (Kang and Moe, 2008) and relationship with the investor (Turner and Müller, 2006). In the long term they will want to gain support for future projects, and be interested in the new technology and new capabilities the new asset is providing the organization with, (Shenhar and Dvir, 2007)

The senior supplier: This group is senior management in the lead contractor. They may be from within the engineering or information systems department of the owner organization, they may be the consultant in the traditional (FIDIC, remeasurement) contract, or they may be a managing or prime contractor (Turner, 1995, 2003). At the end of the project they are concerned that the work of the project should be completed to time and cost and that they will have made a profit from the work. They will also be interested in the safety record and risk record for the project. During operation they will be concerned that the asset will perform as expected, to maintain their reputation as a prime contractor (Kang and Moe, 2008) and so they will maintain client or investor loyalty (Turner and Müller, 2006). In the years following they will be interested in the new technology, competence, capability and class (Shenhar and Dvir, 2007) and whether the success of this project increases the chance of future projects.

The project manager and project team: At the end of the project they are of course concerned by the triple constrain, that is whether the work was completed to time and cost and the new asset performs. However, they will also be concerned by their learning from the project and the camaraderie from working on the project, their future career moves and their personal well being, (Turner et al, 2003; Reid 2007; Turner et al, 2008; Turner, 2009). In the months following the project, they will be concerned about the reputation of their work (Kang and Moe, 2008) and the maintenance of relationships and whether they get repeat business (Turner and Müller, 2006). Over the years, they will be concerned by their job security, (Turner et al, 2008), their future projects and the development of new techno logy and competence (Shenhar and Dvir, 2007).

Other suppliers: These are people or groups who provide goods, materials, works or services to the project. Immediately after the project they will be concerned by whether the project finished on time so that they get paid promptly, and whether they made a profit. Over the coming months their interest will be in their reputation (Kang and Moe, 2008) and repeat business (Turner and Müller, 2006). Over the years they will be interested in repeat business (Turner and Müller, 2006), and the development of new technology and competence (Shenhar and Dvir, 2008)

The public: The last stakeholder we consider is the public. Their concern throughout the life of the asset will be with environmental and social impacts (Atkinson, 1999). If the project is publicly funded they may also be concerned about whether it is representing value for money, so that they know that their taxes have been well spent.

Measuring and monitoring project success

The success of the project can only be fully evaluated by the stakeholders after the project, in the days, months and years following. However, our aim is to develop leading performance indicators, metrics that can be used to predict project success during the life of the project. There are at least two reasons for doing this:

1. To monitor and adjust the performance of the project team, contractors and subcontractors and project management. We wish to measure project performance against success criteria during the life of the project to identify areas that may not achieve project objectives and implement changes in the project plans.
2. To identify as early as possible if it is unlikely to achieve the project goals within the range of resources the stakeholders are willing to commit. In other words, if the project goals cannot be achieved the sooner the project is cancelled, the fewer resources will be expended.

The level of ongoing success of existing projects can be evaluated against milestone data in time, cost, forecast functionality and scope, but we argue that the perceptions of multiple stakeholders regarding a range of success criteria are also critical this determination. For instance, the assessment of the ongoing success of an existing project is necessary for the ongoing evaluation and management of the prime contractor, sub-contractors, project teams, and team member's performance. Inappropriate evaluation of the success criteria of an existing project could misdirect the project's decision making, de-motivate employees and establish an unproductive organizational culture. We argue that to

effectively ascertain the success or otherwise of large complex projects, the perspectives of multiple stakeholders need to be evaluated, such as the owners, consumers, users, the sponsors and project executive, project managers and project team members, suppliers, and very importantly, public stakeholder groups, such as the media (Turner, 2009). We further argue that evaluations of ongoing success criteria during the lifecycle of a project will act as an early warning system for the ultimate success or failure of projects. Current practice confirms, however, a comprehensive, holistic evaluation of ongoing success criteria is rarely done taking into consideration the perspectives of stakeholder groups.

We also propose that assessments of a project's success factors and its level of complexity are critical to determining the ongoing and ultimate success or failure of major projects. Research has shown that for projects in the construction, military, and IT industries, project success factors will predict project outputs, such as project performance (time, cost, quality) (Turner, 2002; Turner and Müller, 2005). Similarly, project failure factors are designed to predict the likely failure to meet project success criteria. No research, however, exists that examines the link between project success and failure factors and a comprehensive assessment of project success criteria across stakeholder groups and time frames, including outputs, outcomes and impacts. Table 4 shows the model of project success and failure factors and leading performance indicators across stakeholder groups.

Insert Table 4 about here

Proposed Methodology

We propose to assess success and failure factors and leading performance indicators for existing projects from multiple perspectives, while controlling for project complexity (see Table 4).

Examining the Links between Project Success and Failure Factors and Leading Performance Indicators

To examine the links between project success and failure factors and leading performance indicators, we will collect data at two points in time. In Study 1 we will measure project success and failure factors and control variables, such as the dimensions of project complexity. In Study 2 we will measure projects' leading performance indicators.

Participants responses will be matched over the two time periods. Regression analyses will determine the strength and direction of the links between the variables and also determine whether different project success factors and project complexity dimensions predict a project's ongoing success criteria, when particular life cycle stages are taken into account.

Archival secondary data will be gathered from the sponsoring organizations' management reporting systems. Data will be collected on the performance against schedule and cost at the most recent milestone. Data on each Project's major Change Orders will also be recorded. Secondary performance data will be collected after Study 1's complexity, success factors and ongoing perceptual success criteria data has been collected.

Examining the Similarities and Differences between Various Stakeholder and Project Manager/Team Member Ratings of Project Success Factors and Leading Performance Indicators

Study 3 will be conducted to examine the similarities and differences between various stakeholders' (e.g., sponsors, users, suppliers, public stakeholders, executive/program managers) ratings of project success factors and leading performance indicators compared to:

- project manager/team members rating of success factors,

- project manager's perceptions of how these stakeholders would rating the project success factors.

The purpose of this study is to determine if the project managers have an accurate assessment of stakeholkder satisfaction based upon project success factors and leading performance indicators.

Study 3 will involve 20 existing complex projects, their project managers and team members and associated stakeholders including investors or owners, consumers, operators or users, project executive or project sponsor, suppliers, and public stakeholders The complex project managers and team participants will be recruited from the sponsoring organization. The associated sponsors, users, suppliers, public stakeholders and executive/program managers will be sourced via contacts within the project and the organization. The sponsoring organization will provide a mailing list of the contact details of potential participants. For each project, the project manager and eight to ten team members will be asked to participate in a paper survey which will take approximately 30 mins. Questions relating to project complexity and project success and failure factors and leading performance indicators will be collected.

In addition to being asked about their own ratings, project managers and team members will be asked for their opinion about how the other stakeholders would rate various success factors and indicators. The answers to these questions will be compared with the responses from the six stakeholder groups; stakeholders including investors or owners, consumers, operators or users, project executive or project sponsor, suppliers, and public stakeholders. This will be used to indicate the extent to which project manageers are in touch with the perceptions of project success held by the various stakeholder groups.

Discussion of implications

The are a number of practical implications of this study. First, the evaluation of project success will be more difficult due to the necessity of considering the perspectives of stakeholder groups. But this cost is offset by the second major implication, better management decisions and more importantly,

better “Go/NoGo/GoBack” decisions during the life of the project. After project closeout, using this richer method of evaluating project success will provide more perspecacious post action reviews and lessons learned. Finally, it is hoped that this more sophistocated method of evaluating project success will create greater appreciation of actual project achievements among stakeholders and the general public.

There are a number of potential benefits of this research

1. First there is a benefit to academia and the complex project manager community in understanding how project complexity and project success factors influence leadering performance indicators in the context of complex projects;
2. Secondly, there is a benefit to academic and the complex project manager community by providing freely-available, valid and reliable new measures to assess project complexity and ongoing project success.
3. Finally, there are practical benefits to policy development in improving the way project complexity, project success factors and project success are assessed by stakeholders.

Conclusions

Project success cannot be evaluated from only one perspective at one point in time. This paper develops a model of project success across different time frames and stakeholders’ perspectives and describes a methodology to begin testing the model. We propose that the critical stakeholder groups include: project management and team members, investors and/or owners, consumers, operators and/or users, project executive and/or project sponsor, suppliers, and public stakeholders. We further propose that the critical times for assessing project success are during the project, at the end of the project, and months or even years after the end of the project.

During the life of an existing project, success and failure factors and leading performance indicators should be assessed. At the end of the project outputs can be assessed. Months after the end of the

project, project outcomes should be assessed. Finally years after the end of the project impacts can be assessed. We describe a methodology for assessing this model of project success during the life of the project, which compares the project managers' assessment of stakeholder satisfaction with their assessments of the projects' success and failure factors and leading performance indicators.

This study will contribute to the better understanding and measurement of project success by project management, stakeholders, policy makers and academics.

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Figures

1 Project Excellence model, after Westeveld and Gaya-Walters (2002)
2 Three levels of project results, after the Xue (2009)

Tables

1 Different perceptions of success by different stakeholders over different timescales after Turner (2009)
2 Model of project success, after Shenhar and Dvir (2007)
3 The new model of project success for complex projects
4 Project success and failure factors and leading performance indicators of the project stakeholders in Table 3.

Figure 1 Project Excellence model, after Westeveld and Gaya-Walters (2002)

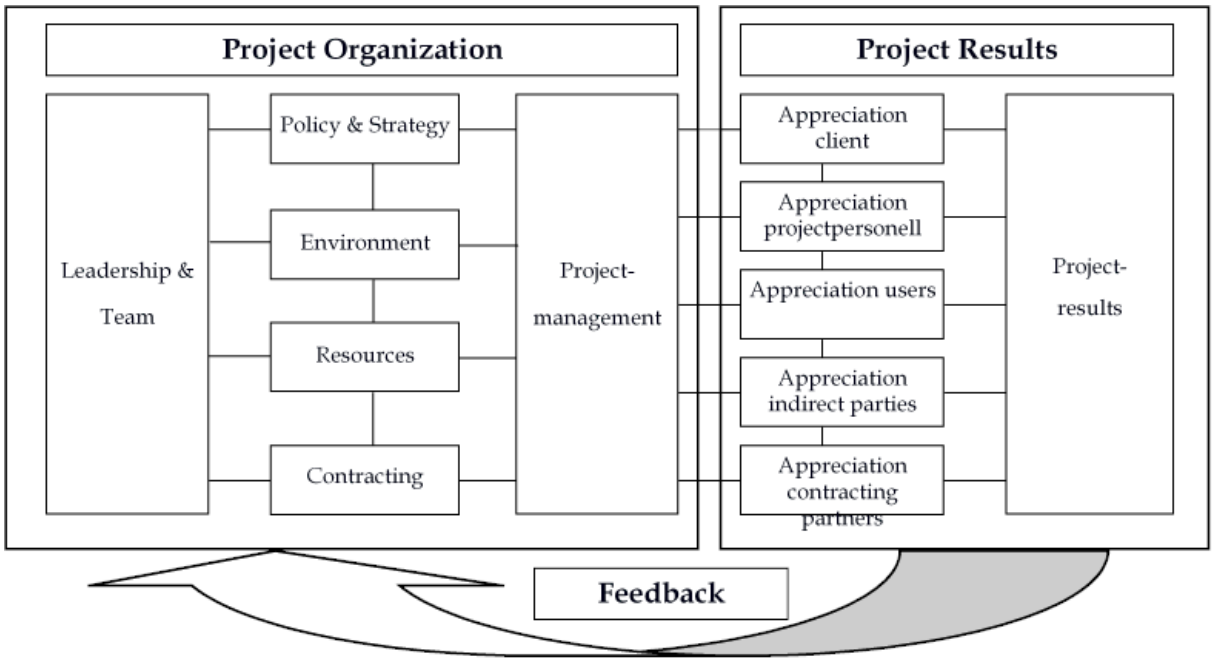

Figure 2: Three levels of project results, after the Xue (2009)

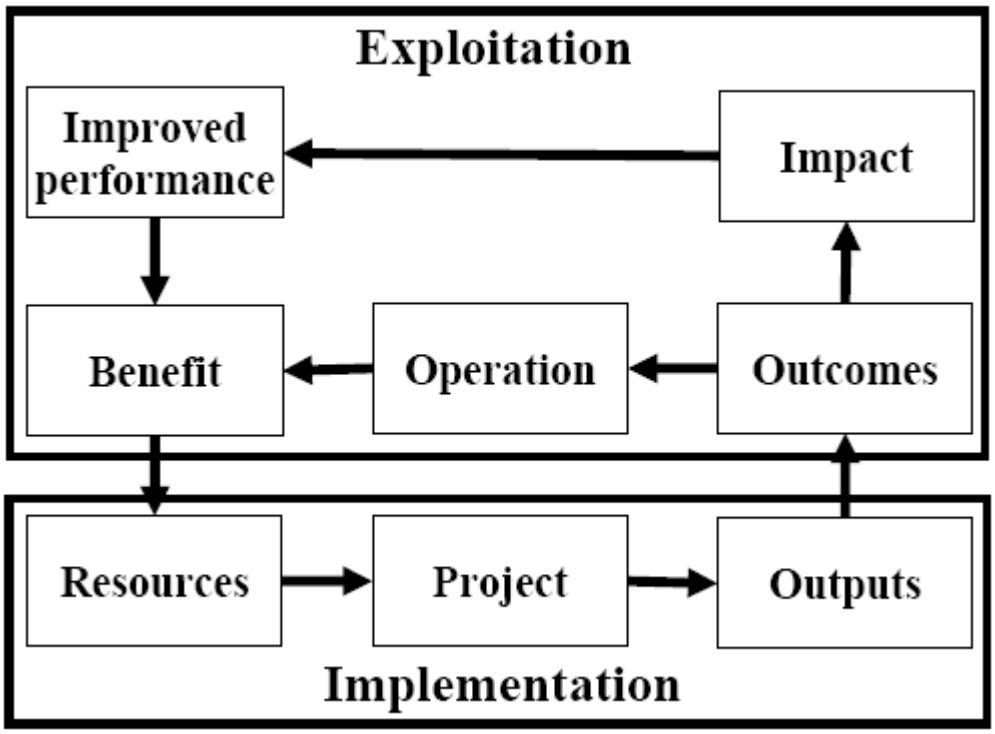

Table 1: Different perceptions of success by different stakeholders over different timescales, after Turner (2009)

Measure of success	Stakeholder	Timescale
The project increases the shareholder value of the parent organization	Shareholders	End plus years
The project generates a profit	Board	End plus years
The project provides the desired performance improvement	Sponsor	End plus years
The new asset works as expected	Owner	End plus months
The new asset produces a product or provides a service that consumers want to buy	Consumers	End plus months
The new asset is easy to operate	Users	End plus months
The projects is finished on time, to budget and with the desired quality	All	End
The project team had a satisfactory experience working on the project and it met their needs	Project team	End
The contractors made a profit	Contractors	End

Table 2: Model of project success after Shenhar and Dvir (2007)

Efficiency	Impact on Team	Impact on Customer	Business Success	Preparation for the future
Meeting schedule	Team satisfaction	Meeting requirements	Sales	New technology
Meeting cost	Team morale	Meeting specification	Profits	New market
Yield, performance, functionality	Skill	Benefit to the customer	Market share	New product line
Other defined efficiencies	Team member growth	Extent of use	ROI, ROE	New core competency
	Team member retention	Customer satisfaction	Cash flow	New organizational capability
	No burnout	Customer loyalty	Service quality	
		Brand name recognition	Cycle time	
			Organizational measures	
			Regulatory approval	

Table 3: The new model of project success for complex projects

Results	Project output	Project outcome	Impact
Timescale	End of project	plus months	plus years
Stakeholder			
Investor or owner	Time Cost Features Performance	Performance Profit Reputation Consumer loyalty	Whole life value New technology New capability New competence New class
Consumers	Time Price of benefit Features	Benefit Price of product Features Developments	Competitive advantage Price of product Features Developments
Operators/users	Features Performance Documentation Training	Usability Convenience Availability Reliability Maintainability	New technology New capability New competence New class
Project executive or project sponsor	Features Performance Time and cost	Performance Benefits Reputation Relationships Investor loyalty	Future projects New technology New capability New class
Senior supplier (design and/or management)	Completed work Time and cost Performance Profit from work Safety record Risk record Client appreciation	Performance Reputation Relationships Repeat business	Future business New technology New competence
Project manager and project team	Time Cost Performance Learning Camaraderie Retention Well being	Reputation Relationships Repeat business	Job security Future projects New technology New competence
Other suppliers (goods, materials, works or services)	Time Profit Client appreciation	Reputation Relationships Repeat business	Future business New technology New competence
Public	Environmental impact	Environmental impact Social costs Social benefits	Whole life social cost-benefit ratio

Table 4: Project success and failure factors and leading performance indicators of the project stakeholders in Table 3.

Project Stakeholders	*Success and failure factors (Jacobson and Choi, 2008)*	*Leading performance indicators (Yu et al, 2005)*
Investor or owner	Clear & accepted purpose Specific plan Open communications Stakeholder endorsement Early stakeholder influence Interested Owner (Andersen et al, 2006; Kang and Moe, 2008; Müller, 2003)	Satisfaction with specifications Relationship with prime contractor Prototype performance Earned value Net project execution cost
Consumer	Clear specifications Open communication Acceptance (Pinto and Slevin, 1988)	Satisfaction with specifications Relationship with sponsor Prototype performance
Operators/users	Clear specifications Commitment Open communications (Andersen et al, 2006)	Satisfaction with specifications Prototype performance
Project executive or project sponsor	Open communications Political support	Stakeholder satisfaction Efficiency and effectiveness Profits Strategic goals Organizational learning
Senior supplier (design and/or management)	Open communications Risk awareness Open communications Respect and trust Collaboration	Managed risk Safety record Stakeholder satisfaction Efficiency and effectiveness Contract compliance Profits Strategic goals Organizational learning Reduced waste (Atkinson, 1999)
Project manager and project team	Clear and accepted purpose Specific plans Commitment Open communications Respect and trust Collaboration Political support Expert advice and review Risk awareness Clear roles & responsibilities Leadership Style	Pride in work Job satisfaction Recognition Personal growth Skill growth Contacts Reputation Top Management support Retention Morale Stress, frustration & time pressure

	(Pinto and Slevin, 1988; Müller & Turner, 2007; Turner, 2009)	(Bryde, 2005; Turner et al, 2008)
Other suppliers (goods, materials, works or services)	Commitment Open communications Respect and trust Collaboration	Business goals Contract compliance Profit (Atkinson, 1999)
Public	Transparency Accountability Community outreach Political support	Opportunity cost Social impacts Environmental impacts (Atkinson, 1999; Yu et al, 2005)