Chapter 6

Performance measures and project procurement

Derek H.T. Walker and Kersti Nogeste

Chapter introduction

Projects are procured to fulfil one or more project outcomes. Chapter 2 referred to a range of project types and their characteristics and a discussion of project vision and how it can be used to determine what is expected to be done and how to do it. Chapter 3 discussed the importance of stakeholders and identifying their expected project outcomes and also how developing techniques and processes to address these should shape performance measures and provide an effective mechanism to engage with them. In Chapter 4 we discussed Triple Bottom Line (TBL) concepts, ethics and governance, and the governance model presented in Figure 4.1 of that chapter illustrates how performance measures can be linked to accountability and transparency and the way that disclosure to stakeholders of how the project is to be delivered was to be performed. Chapter 5 discussed how strategy is the starting point in working out what gaps exist between a current value generating situation and maintaining sustainable existing value or generating new value. Chapter 8 discusses how learning and innovation are dependent on feedback and consequently how project performance measures can provide crucial (feedback) knowledge to enhance an organisation's continued success.

Figure 6.1 illustrates the basis for this chapter. Project performance measures should be defined to reflect the full complement of project stakeholders' expected project outcomes – both tangible and intangible. Well defined performance measures will comprise a combination of lag and lead indicators which satisfy audit and control requirements and also provide the basis for continuous quality improvement.

This chapter deliberately avoids detailed discussion on traditional project performance techniques relating to time, cost and quality, planning, monitoring and control because they are adequately addressed in many other texts on project control (Cleland and King, 1988; Harris and McCaffer, 1995; Turner, 1999; Cleland and Ireland, 2002). Instead, we take a more holistic view of how project performance measurement can be

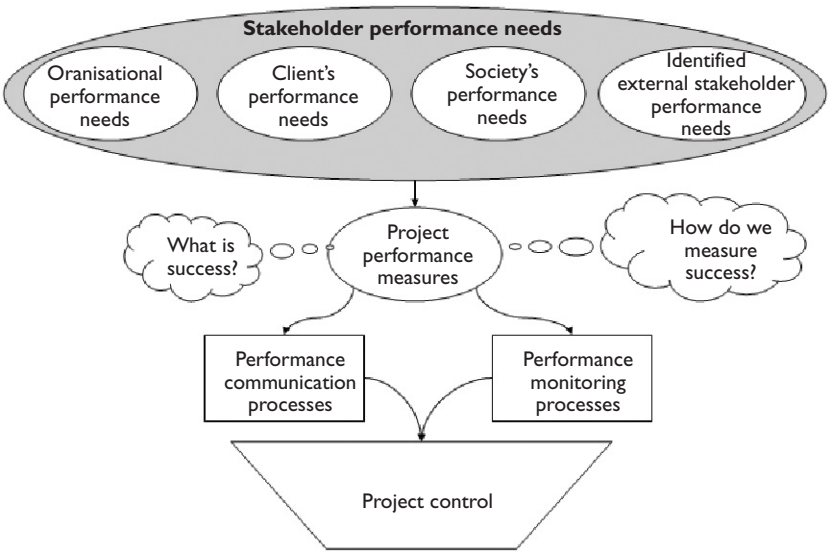

Figure 6.1 Basis of chapter.

defined to align with stakeholders' expected project outcomes. This chapter is therefore structured as follows:

The next section discusses the concept of project success and how it may be measured. This involves a brief discussion of several tools that have emerged over the past decade or two, especially those related to a balanced scorecard approach that recognises 'hard' and 'soft' measures. The following section discusses 'intangible' outcomes in particular. The last chapter section discusses how capability maturity models are related to project performance measures.

The prime objective of this chapter is to demonstrate how stakeholder based definitions of project performance can be used to define project procurement performance specifications for both tangible and intangible outcomes. Outcomes include the full complement of benefits or value which is often delivered, but poorly defined, monitored and reported upon. Additionally, this chapter will help readers to understand how procurement choices might incorporate performance measures that drive improved internal and supply chain team quality and innovation cultures. Encouraging and facilitating these cultures through shaping project procurement choices may then lead to improved effectiveness and efficiency in delivering value.

The concept of project success

There has been a lot of interest in the concept of project and PM success. Anton de Wit (1988) distinguishes between project success and

PM success. He states that project success is judged by the degree to which project objectives have been met. We can extend this distinction to argue that a successful project also delivers outcomes which provide the potential for benefits and that successful PM sustains or enhances the value of a project's objectives.

PM success refers to the extent to which efficiency focused PM processes are applied. It is important to note that PM success cannot compensate for an organisation choosing the wrong problem to solve or for poor project definition and design (as indicated in Figure 1.2). The choice of the wrong problem to solve may be due to a number of factors, including the project sponsor's own personal motivations. We discussed the cognitive school of strategy in Chapter 5 which included examples provided by Flyvbjerg, Rothengatter and Bruzelius (2003) of project strategies based on poorly defined or suspect project sponsor motivations.

The concept of PM success has evolved over time. Early literature equated outputs with success, primarily in terms of time, cost and quality standards (de Wit, 1988). This then evolved to a broader definition of PM success including scope management, stakeholder management, communication management, the linking of causes and effects, and the proven ability to learn from experience (Cooke-Davies, 2002). PM success has also been defined through a process lens focused on project leadership and coordination spanning the project phases of conception, planning, production and handover (Munns and Bjeirmi, 1996). More recently the concept of PM success has evolved to include the definition and alignment of expected project outcomes and outputs, including intangible outcomes and tangible outputs (Nogeste, 2004; Nogeste and Walker, 2005). The definition and alignment of expected project outcomes and outputs will be discussed in more detail, later in this chapter. PM success has also been defined by relating an organisation's PM maturity to capability maturity models (CMMs) (Ibbs and Kwak, 2000; PMI, 2003; Cooke-Davies, 2004).

In a widely cited PM paper, Baccarini (1999) outlines how the Logical Framework Method (LFM), an approach developed in the 1970s by the American Aid Agency, may be applied to defining project success and how it can lead to the development of a balanced approach to measuring project performance. The LFM traces the links between *goal*, *purpose*, *outputs and inputs*. The project goal is understood to be the overall orientation and alignment with the organisation's strategic direction. The project purpose describes the near-term effects upon stakeholders; outputs are specific tangible results and deliverables, and inputs are the resources and activities used to deliver the outputs. Baccarini describes the LFM as a how-why logic chain where the relationship between the project objectives are transparently presented – the 'how' describing the means and the 'why', the ends. Project success is defined by starting with the project goals and asking how they can be achieved – thus generating a description of the project purpose.

Asking in turn how the purpose will be achieved generates a description of the project outputs, and again asking how the outputs will be achieved generates a description of the necessary project inputs. Working in reverse order, from project inputs through project outputs, purpose and goals, the logical basis for a project can be defined by asking the question 'why?' at each step in the logic chain.

A more sophisticated view of success

Projects may meet one or more of the following needs as outlined by de Wit (1988: 166):

1 A functional *reason d'être* such as responding to a commercial opportunity or delivering necessary infrastructure. In these cases, the project

   a Will work and should pay for itself.
   b Is justified on the basis of engineering and economic rationale.
   c Performance measures will include economic and technical, such as fitness for purpose;

2 A prestige need based on the overriding logic that the project is to boost the owner's brand image (Examples being the Eiffel Tower or the Sydney Opera House – both of these may create large amounts of tangible and intangible value, simply through their existence.) In these cases, the project

   a Will be judged on political criteria.
   b Is justified on the basis of ephemeral rationale such as pride, spiritual uplifting, and the expected long-term intangible benefits from the project generating culturally transformational icons.
   c Performance measures will most probably include political and perception oriented criteria such as popularity, increased standing, enhanced reputation or even the increased power of sponsors; and

3 A research need that is based on pure or applied research projects, such as medical research or experimental projects. In these cases, the project

   a Will be judged according to how well it provides a platform for future pure or applied research initiatives.
   b Is justified on the basis of reaching a solution to a complex problem that satisfies key stakeholders (even though goals and targets may be somewhat unclear at the outset of the project).
   c Performance measures will most likely focus on the development of absorptive capacity and enhanced agility to react to new opportunities (see Chapter 8 for further discussion on this aspect).

Other categories of projects could also be added. Nevertheless, the point is that project success is closely tied to motive and need, and as Flyvbjerg *et al.* (2003) stress, motivation should be expressed as transparently as possible to help resolve any conflicts of interest at the pre-feasibility and feasibility stages of a project. Standard project performance measures of time, cost and quality should not automatically be given highest priority. Instead, project performance measures need to accurately reflect the 'true' priority of stakeholders expected project outcomes; both tangible and intangible.

As discussed in Chapter 2 of this book, Shenhar *et al.* have undertaken much work to define different types of projects. Of particular interest is their relatively sophisticated association of the four dimensions of success with the timeframe of expected results, which is based on their argument that 'project success planning should be an integrated portion of the organisation's strategic thinking and strategic management' (Shenhar *et al.*, 2001b: 719). Table 6.1 illustrates and comments on several emergent success dimensions, the way that they may be measured, and comments upon these measures. This table illustrates the presence and degree of attainment of the highlighted emergent success dimensions together with comments on these measures (Shenhar *et al.*, 2001b: 712).

Figure 6.2, adapted from *Shenhar et al.* (2001b: 717), illustrates the association of the four (4) dimensions of success with the timeframe of expected results. Dimension 1 has the short term goal of project efficiency, Dimension 2 has the medium term goal of customer success, Dimension 3 has the long term goal of business success and Dimension 4 has the very long term goal of preparing for the future. Figure 6.2 indicates a relatively high concern for project efficiency and customer impact, whilst only moderate importance is placed upon business success, with virtually no importance placed upon actively preparing for the future. Shenhar *et al.* suggest that this framework can be used as the basis for defining project performance success measures for different types of projects.

The concept of success would not be complete without understanding the role of a project vision that translates into a mission statement and explicit objectives. There are numerous well publicised examples of failed projects. The Standish Group have reported numerous examples of failed IT projects (1994, 2003). In a recent book, the founder and chairman of the Standish Group presents 10 lessons learnt on the basis of the the Group's experience and many case studies (Johnson, 2006). Two of these lessons learnt are of direct relevance to this chapter. Firstly, that of having a clear vision, and secondly, that of having a well primed project champion. One of the more spectacular project failures is the London Stock Exchange Taurus project where poor project vision led to massive scope creep and subsequent classical casebook failure, resulting in the project being cancelled after the spending of £500 million (Drummond, 1998). The failure of Project Taurus is attributed to a number of reasons including poor stakeholder management,

Table 6.1 Emergent Success Dimensions

Success dimension	***Measures***	***Comments***
1 Project efficiency	• Meeting schedule goal • Meeting cost goal	Goals need to be realistic. If 'stretch goals' are to be used then they need to be defined clearly along with the consequences of meeting the goals only part-way.
2 Impact on the customer/stakeholder	• Meeting technical specifications • Meeting functional performance • Solving a customer's problem • Fulfilling customer needs • Customers use of the project product • Customer satisfaction • Meeting intangible needs • Meeting unarticulated needs	Many of these relate to orthodox quality measures and can be addressed using total quality management (TQM) philosophical approaches. Shenhar *et al.* (2001b) refer to customers defining project success. However, as noted in Chapter 3, a variety of stakeholder groups can influence the perception of project success. Therefore, the relevant stakeholder groups need to clearly identified, along with their respective success criteria. Consideration also needs to be given to clearly defining expected intangible project outcomes. Effort must be expended to clearly articulate as many expected outcomes as possible. Otherwise, unarticulated expectations may not be addressed.
3 Business success	• Commercial success • Gaining increased market share	While commercial success is important, authors such as Shenhar *et al.* (2001b) ignore the situation where some organisations may choose to limit themselves to a particular niche market.
4 Preparing for the future	• Developing a new technology • Creating a new product • Creating a new market	Shenhar *et al.* (2001b) identified that these types of measures have been relatively poorly represented in the relevant body of literature.

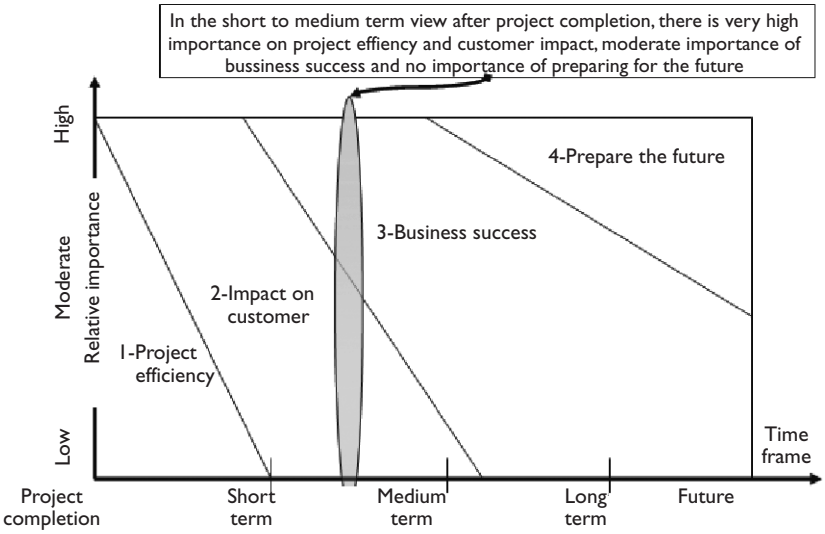

Figure 6.2 Relative importance dimensions of project success: Adapted from Shenhar *et al.* (2001b: 717) with permission from Elsevier.

and the inability to effectively and accurately gauge how well project objectives were being met.

A project firstly needs to have a clear vision of the transformation it is expected to achieve and how it will add value. Development of a vision by interacting with stakeholders is discussed in depth in Chapter 3. What is relevant here is that a clear and unambiguous vision be developed and communicated to all project participants so that the image of success is clear in the minds of all concerned with the project. On at least one reported project, a clear image of success kept the project team and stakeholders focussed upon achieving success – even when PM processes were being poorly applied (Christensen and Walker, 2003). A project vision statement can be assessed according to how easy it is to understand, whether it is motivational, inspirational, credible, promotes working smarter and specifies stretch goals (Christensen and Walker, 2003: 50). Project vision statements should be translated into specific mission statement/s that explain *how* the vision will be transformed into reality. The mission statement/s should clearly define project goals/objectives. Cascading from the vision, mission and objectives will be the detailed specification of the project composition and the methods and processes that will be used to realise the project. These methods and processes can include the definition and alignment of expected project outcomes with project outputs (Nogeste and Walker, 2005; Nogeste, 2006a).

A balanced scorecard (BSC) approach

For about 50 years it has been known that there is a need to clarify the links between a broad range of performance indicators and productivity (Likert, 1958). The value of a balanced approach to highlighting performance measures and linking these to the project's objectives and organisational vision has been more recently demonstrated on commercial projects (Norrie and Walker, 2004) and not-for-profit projects (Norrie, 2006). The principal advantage shown by using this approach was that a clear and significant cause-and-effect link between the PM methodology adopted and the goals and vision is achieved. This achieves the same level of clarity between a goal and its rationale as was noted earlier with the LFM. During the early 1990s in particular, the literature began to acknowledge the short-sightedness and lack of cause-and-effect clarity between inputs and performance. As Eccles (1991: 134) argues, 'developing a coherent, companywide grammar is particularly important in the light of an ever-more stringent competitive environment'. Eccles also highlighted how short-term (often lagging) indicators represented by financial performance measures can skew perceptions of performance. Companies need to report on leading performance indicators that illuminate the cause-and-effect links between inputs and outcomes.

Robert Kaplan and David Norton introduced the ideas of a BSC in the early 1990s. They recognised the value of leading indicators and successfully developed and operationalised these into a BSC tool that became widely known and used. The BSC comprises the following four elements (Kaplan and Norton, 1992: 72):

1 The financial perspective that poses the question 'How do we look to shareholders?';
2 The internal business perspective that poses the question 'What must we excel at?';
3 The innovation and learning perspective that poses the question 'Can we continue to improve and create value?'; and
4 The customer perspective that poses the question 'How do customers see us?'

A small number of critical goals are defined for each of these perspectives, along with associated measures. For example, Kaplan and Norton describe the Financial Perspective of a case study example as having three goals – to survive (measured by cash flow), to succeed (measured by quarterly sales growth and operating income by division), and to prosper (measured by increased market share and return on investment). In addition, the Innovation and Learning perspective of a case study example had four goals – *technology leadership* (measured by time to develop the next generation), *manufacturing learning* (measured by process time to maturity), *product*

focus (measured by percentage of products that equal 80% of sales) and *time-to-market* (measured by new product introduction versus competition) (Kaplan and Norton, 1992: 76).

Kaplan and Norton also described how vision, strategy and a BSC could be linked, providing the example of how Rockwater (a part of Brown & Root/Halliburton) and Apple used the BSC to plan long term performance (Kaplan and Norton, 1993). During the mid 1990s, Kaplan and Norton expanded their BSC methodology beyond objectives and measures to also include targets and initiatives. This led to the BSC becoming both a strategic and operational instrument (Kaplan and Norton, 1996), able to be used for project performance management. More recently, Kaplan and Norton have further developed the BSC into a strategy mapping tool that can be used to specify goals in terms of plans and initiatives. Kaplan and Norton's Strategy Maps have helped to further clarify cause-and-effect links (Kaplan and Norton, 2000, 2004c), which is particularly useful when seeking support for initiatives that are linked to leading performance indicators. The combination of cause-and-effect links and leading performance indicators allowed Kaplan and Norton to include the definition of intangible assets within Strategy Maps, including the use of traffic light reporting to graphically represent performance (Kaplan and Norton, 2004a).

While Kaplan and Norton were working on the whole-of-business perspective, others were applying these ideas to project environments, for example in IT and ICT projects (Stewart and Mohamed, 2001; Stewart *et al.*, 2002; Stewart *et al.*, 2004). Stewart (2001) describes how the BSC was applied on a case study project to evaluate project health (based on the project phases of initiation/conceptualisation, planning, implementation/execution and closeout). In addition, Norrie (2006) describes how the BSC was used by a range of not-for-profit projects to filter project proposals and cull non-strategic projects, resulting in the realignment and reassignment of scarce resources to strategic projects.

By improving project monitoring, communication and control, Kaplan and Norton's BSC has clearly been shown to be of value to both in-house and outsourced projects.

Hypothetical example of a BSC

TheSource P/L is an organisation that helps local councils within a densely populated region of Australia to source sub-contractors, suppliers and skilled contract management staff for small-scale projects ranging from construction and maintenance that many builders or facilities management organisations may not be interested in, through to sports events, product launches, and production of marketing and community interaction communication services. The stated vision of TheSource is 'To provide local council organisations with a best-in-class level of procurement decision making infrastructure support'.

The organisation's mission is 'To maintain knowledge and intelligence of how to deliver best-in-class procurement decision-making infrastructure support and to continue to deliver that level of service to local councils who do not have the background or resources to do so'. The organisation's key objectives are

1 to remain a sustainable and viable business so that they can deliver their mission;
2 to develop and maintain business processes to support their mission which are at least equal to best-in-class procurement support infrastructure in the best resourced PM organisations;
3 to ensure access to knowledge about best-in-class innovations that ensure that the organisation continuously learns from the experience of itself and best-in-class PM organisations; and
4 to maintain a commitment to delighting customers and other stakeholders with the results of service delivery whilst also maintaining a commitment to continuous improvement.

TheSource started its journey with a handful of experienced senior managers who were retrenched during the mid-1990s from a large city council, when cost cutting demanded a drastic head count reduction. These founding members had experience in building and maintenance, event management, IT, and social service delivery. All founding members had gained tertiary-level academic qualifications and remained passionate about learning and innovation. The founding members also had a strong social conscious and strong belief in the value of TBL. They especially wished to assist smaller councils that did not have broad business and environmental sustainability skills, to offer their communities public services and facilities that met TBL goals. The founding members of TheSource formed a collective that evolved over a two-year period into a consultancy organisation similar to the TGC organisation described in Chapter 8 (Miles and Snow, 1995; Miles *et al.*, 2005). As part of their commitment to maintain and improve their service delivery, core members of TheSource conducted a series of stakeholder workshops to investigate stakeholders' needs and identify gaps in the existing service delivery process and systems. Following the workshop, TheSource core staff developed a strategic plan which included the definition of a small number of critical objectives for each of the four BSC perspectives, along with a matrix of goals, measures, targets and corresponding initiatives. The matrix was validated by reviewing it with the most articulate stakeholders. A sample BSC is presented in brief in Figure 6.3.

When defining goals, it is important to focus on 'the critical few' (Murray and Richardson, 2000). Based on interviews with key executives from a sample of 20 organisations from large companies (some being subsidiaries of global corporations) operating in Canada, Australia and Chile, about their strategic planning and performance measurement practices, Murray and

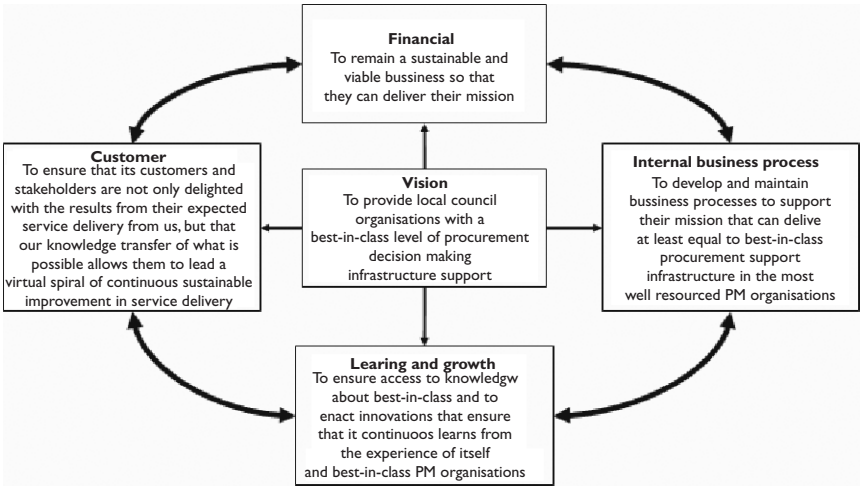

Figure 6.3 BSC showing strategy and high level objectives.

Richardson concluded that successful strategy implementation was more likely to occur when organisations and staff concentrated on the critical few, high impact initiatives. Their findings can be considered to be quite logical, since a long 'shopping list' of initiatives would prove to be quite distracting and overwhelming, with the potential for people to focus on what they want to do rather than necessarily tackling high-impact initiatives. In addition, in an environment comprising many concurrent initiatives, it may prove almost impossible to track the true impact of each initiative.

The aim therefore, should be to identify and analyse difficult performance issues into a consolidated list of the top 3, or at most top 5, ranked and prioritised issues. This allows the organisation to maintain focus on the critical few issues that matter most to business sustainability and more easily recognise cause-and-effect loops between the measure and a sustainable outcome. It is worth noting that the definition of 'few', is context sensitive and therefore should be determined according to the number of initiatives required to achieve an organisation's vision, mission and goals. Table 6.2 provides an example of how TheSource defined its Learning and Growth perspective in terms of the initiatives that would be implemented, monitored and reported upon.

As a result of their strategic planning exercise, TheSource defined 2–3 initiative per year per BSC perspective. This was done with the expectation that as the whole group of engaged stakeholders (including TheSource staff) became familiar with this approach, the number of improvement initiatives could be increased and the measures, targets and initiatives would become better articulated and designed forming a virtuous circle of improvement.

Table 6.2 Illustration of learning and growth perspective

	Goal/Purpose	***Measure***	***Target***	***Initiative***
To achieve our goal, how will we sustain our ability to change and improve?	*Goal*: To engage our stakeholders in a process of feedback improvement through joint learning workshops *Purpose*: To lead to actual improvement	Number (n) and quality (1 = very low, 5 = very high) intensity Impact scale: *immediacy* – (1 = 1–2 years to 5 = within 1–2 months) *Improvement scope* – (1 = cherry picking easy successes to 5 = tackling fundamental effective delivery flaws)	3 cherry picking initiatives with low impact as a trial within first 6 months, with 3 high intensive fundamental exercises in second 6 months.	Cherry picking: 1 – establishing the format of details about a beta version information base on plumbers, electricians, and jobbing builders 2 – incentive system trial that helps people make sense of identified competitive advantage knowledge.

Figure 6.4 illustrates the process that was followed. It must be acknowledged that TheSource was established under relatively unusual circumstances. As redundant employees from several councils, the founding members had already developed considerable social capital in the form of trust and respect, intimate customer knowledge and process knowledge gained by working for their previous employers who had now become their clients. Similarly, the founding members had developed considerable social capital with their supply chain including people they had previously contracted via their employer-councils' relatively bureaucratic procurement processes. Therefore, the founding members had a ready pool of stakeholders willing to work with them to develop and implement 'a new way of doing business'. Stakeholder discussions varied from the more formal, to the less formal and spontaneous in quasi-social settings. Because core staff had a community-centric ideology and focus, they frequently met stakeholders in social settings where the topic of conversation naturally flowed towards feedback and validation of their projects. Therefore their combined forms of stakeholder engagement resembled an action learning research project (Peters, 1996; Peters and Smith, 1996; Coghlan, 2001; Smith, 2001; Zuber-Skerritt, 2002; Coghlan and Brannick, 2005).

After five years, TheSource occupied a niche market; being awarded many small works projects without a need to tender for work. The open book policy and open mind approach adopted by TheSource allowed their clients to satisfy all reasonable probity requirements and while the company income was not excessive (key staff earned about 20–30% more than they would have, had they remained in their council positions) the organisation had built up considerable knowledge capital. Staff members continued to maintain and develop relationships with their clients and supply chain.

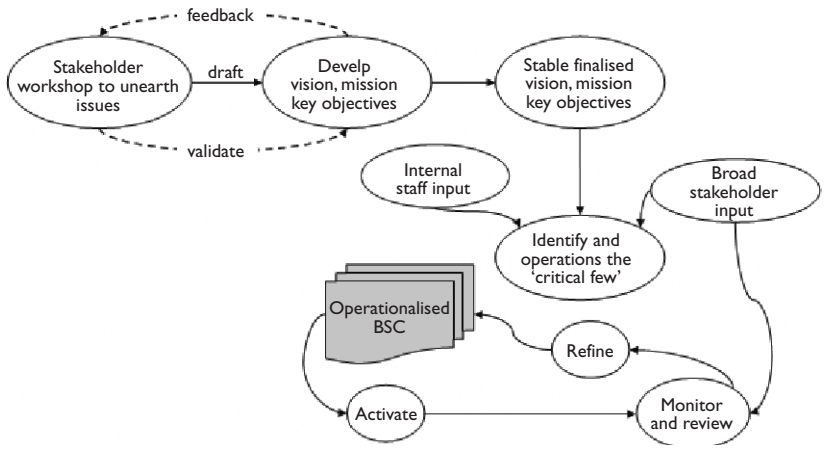

Figure 6.4 Typical BSC operationalisation cycle.

In addition, process improvement initiatives resulted in much previously tacit knowledge, being made explicit. TheSource now has a formidable lessons-learned knowledge base comprising an ICT web portal (see Chapter 7), a well supported and ICT enabled COP(see Chapter 8) and sophisticated process knowledge. Since its inception more than ten years ago, TheSource has re-engineered and fine-tuned its business processes and systems to a point which would be nearly impossible to imitate without relatively large investments in time, money and expertise. On this basis, the organisation's vision of business sustainability, expressed in terms of its own position in relation to its competitors has been realised. In addition, TheSource has also accumulated stores of 'goodwill' that have become tangible in terms of their being the first organisation to be contacted by many councils for smaller projects and also an increasing number of larger and more complex projects. This situation has resulted in TheSource now competing with significant PM and Facilities Management operators.

Interestingly, with their move into the sphere of larger and more complex projects, TheSource was approached by some of its 'new competitors' to franchise TheSource business model. Franchise related negotiations currently underway indicate that TheSource is an organisation that is worth many millions of dollars.

This hypothetical case study illustrates how the BSC, when linked to business strategy and a strong upstream and downstream value chain focus, can provide a vehicle for both a quality culture and innovation culture. BSC measures can be used to make internal procurement and PM activity performance more transparent as well as more focused on sustainability. Used as a reporting tool, the BSC allows clients to gain a better appreciation of all the value elements. When designing reward systems, the BSC also allows probity requirements to be clearly addressed.

Particular aspects of this hypothetical case study lead into the next section of this chapter which focuses on the improved identification and definition of tangible and intangible project outcomes.

Fully realising value – from tangibles and intangibles

Since the early 1990s when Kaplan and Norton were developing and publishing their ideas about a BSC, there has been a veritable explosion of ideas about the true nature of value – perhaps in support of the economic rationalist debate or perhaps providing an alternative view.

In parallel with Kaplan and Norton's ongoing development of the BSC and Strategy Maps, there was a movement underway in Scandinavia and the UK. The Scandinavians had a particular interest in the generation of social capital value through cooperation, knowledge sharing and caring about human workplace issues. Karl Erik Sveiby (1997: 11) compared

the visible and invisible, and tangible and intangible parts of a balance sheet. He classified invisible intangible assets into three categories: external structure (brands, customer and supplier relationships); internal structure (an organisation's management, legal and relationship structure, procedures and processes, IT, research and development initiatives, patentable ideas, and corporate knowledge or memory); and individual competence (education, experience, personal networks and so on). Sveiby described how the difference in the total share price (market) value and the book value of a firm can be partially (if not substantially) explained by intangible assets.

Other parallel efforts in Scandinavia included the development of Skandia's intellectual capital (IC) navigator (Edvinson, 1997) and the definition of intellectual capital by Roos and Roos (1997), as comprising organisational, relationship and human resources.

Another strand of related work in the UK, was generated by the accounting professions (Neeley, 2002; Neeley *et al.*, 2002). This work was based on the growing interest in the TBL concept (Elkington, 1997) and acknowledgement that balance sheets were limited to providing information about lagging performance indicators.

Fully realising project value – from tangible and intangible outcomes

The importance of an organisation's tangible and intangible assets combined with projects being procured to implement organisational strategy leads to the need for stakeholders to align the strategic importance of tangibles and intangibles through to the project level (refer Figure 6.5). One means of

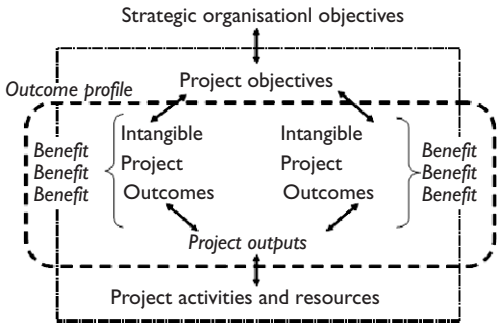

Figure 6.5 Using outcome profile™ templates to document the strategic alignment of tangibles and intangibles through to the project level.

doing so, is for project stakeholders to use the Outcome Profile™ template[1] to guide them through the process of defining tangible and intangible project outcomes (Nogeste, 2006b).

The Outcome Profile™ template comprises the following subheadings; each for the described purpose:

Outcome name

A commonly agreed descriptive Name for the expected outcome.

Outcome description

A clear and common definition of the expected outcome.

Outcome realisation timeframe

Specification of the outcome realisation timeframe ensures a clear and common understanding of when the outcome can reasonably be expected to be realised – either during or after the project.

Outcome owner

The Outcome Owner is assigned responsibility for the realisation of the outcome. If the outcome is to be realised some time after completion of the project, then it is impractical to assign the responsibility to the Project Manager.

Benefits

The Benefits of an Outcome are described in terms of the advantages provided by the outcome (Ward *et al.*, 2004: 7) – the underlying reason/s for pursuing the outcome.

Whilst outcomes and benefits are often confused with each other (Ward *et al.*, 2004: 8), they are different. Benefits are only able to be realised as a result of an 'observable outcome' – 'the outcome is needed for the benefit to be realised' (Ward *et al.*, 2004: 54). For example, if an outcome of an Information Technology project is that personnel are able to do their work more quickly, freeing up time, then the ensuing benefit is 'what is actually done with the time that is freed up, since clearly if managers do not find ways to utilise the time released then no benefit will materialise' (Ward *et al.*, 2004: 8). 'Only with the conscious intervention of managers' will an outcome yield business benefits (Ward *et al.*, 2004: 8).

In some cases, project stakeholders may also wish to define potential disbenefits. This will help project stakeholders to agree that the potential disbenefits 'are a price worth paying to obtain the positive benefits' (Ward *et al.*, 2004: 15).

Beneficiaries

The recipients of the benefits (or disbenefits).

Success criteria

It is important to explicitly define Success Criteria, especially, to avoid multiple and possibly contrary definitions of project success. Project stakeholders may define success in different ways (Shenhar *et al.*, 2001a: 716) by referring to different sets of data, or even when referring to the same set of data, interpret it differently, according to their particular perspective (Rad, 2003). In addition to interpreting data differently, 'the success rating of a project may also differ according to subjective, individual judgement' (Dvir *et al.*, 2002).

Success criteria may be defined in either quantitative or qualitative terms. It is currently considered acceptable to define the success criteria of intangible outcomes in terms of ' "guesstimates" backed up with explanations of assumptions' (Keen and Digrius, 2003) since 'it is better to be approximately right rather than absolutely wrong' (Andriessen and Tissen, 2000). This is an approach which is in keeping with Kaplan and Norton's findings that 'even if the measures (of intangible assets) are imprecise' the simple act of attempting to gauge them 'communicates the importance of these drivers for value creation' (Kaplan and Norton, 2004b).

Outputs

Aligning an outcome with its associated outputs defines the need for the project to generate particular outputs; an approach which is consistent with the UK Treasury Department's Green Book which describes outcomes being able to be expressed in terms of outputs (HM Treasury, 2003: 13).

In addition, it is important to define which outputs are/are not within the scope of the project. For example if a project is to generate a signed contract, the generation of a contract renewal may be an output to be delivered after completion of the project.

Dependencies

The successful realisation of an outcome, its benefits and outputs will be dependent on a number of factors that need to be clearly defined and documented as dependencies.

Risks

The successful realisation of an outcome, its benefits and outputs will be subject to a number of risks which need to be identified and assessed, along with corresponding mitigation/contingent actions which will need to be incorporated into the project plan. A good starting point for risk identification is to examine the risks associated with previously defined dependencies.

Using the Outcome Profile™ template to define expected project outcomes, benefits and outputs in business outcome vocabulary will increase the likelihood of procuring successful projects because the use of this vocabulary maintains a focus on (business) outcomes rather than (project management) processes (Dallas, 2002). This is especially important information to provide to project managers and project teams, given the results of recent research studies which have identified that 'Project managers infrequently tie project management outcomes to corporate business outcomes' (Phelan, 2004).

The following three-step method can be used to complete the Outcome Profile™ template.

Step 1 – Plan and conduct a stakeholder workshop.
Step 2 – Document the workshop report.
Step 3 – Use the workshop report as a key input to project planning/review.

The purpose of each of these key steps is as follows:

Step 1 – Plan and conduct a stakeholder workshop.

The purpose of the workshop is for a selected group of project stakeholders to use the Outcome Profile™ template to identify, prioritise and define expected tangible and intangible project outcomes.

Step 2 – Document the workshop report.

The workshop report comprises a number of sections including each expected project outcome defined according to the Outcome Profile™ template, an outcomes/outputs cross reference matrix (refer Figure 6.6) and any additional notes recorded during the workshop.

Output Name	Outcome 1	Outcome 2	Outcome 3	Outcome 4	Outcome n
Outputs Within the Scope of the Project					
Outputs Outside the Scope of the Project					

Figure 6.6 Outcome/output, cross-reference matrix.

The outcomes/outputs cross reference matrix highlights the relationship between project outcomes and outputs. This cross reference table illustrates the potential for one output to affect multiple outcomes (Department of Finance and Administration, 2003a) and prevents the situation where the relationship between outputs and outcomes is a 'matter of judgement' (Department of Finance and Administration, 2003b).

Step 3 – Use the workshop report as a key input to project planning/review.

The workshop report comprising the completed Outcome Profile™ templates, outcomes/outputs cross reference table and any additional workshop notes are used by the project manager to plan/review the project plan.

For example,

i The completed Outcome Profile™ templates are used to define the project scope and schedule in terms of the project outputs and the activities and resources required to generate them.
ii The outcomes/outputs cross-reference table provides a project reporting framework whereby the progress of individual outputs can be related to the delivery of related outcome/s.
iii The individual Outcome Profile™ detailed risk assessments are combined to become the basis of the project risk register.
iv Issues/Action Items identified during the workshop and documented in the workshop report become the basis of the project issues/action items register.

Whilst relatively simple in structure, this three-step process for completing the Outcome Profile™ template requires significant energy and rigour. It relies

upon what Peter Senge (1990) refers to as dialogue; the dialogue between the workshop facilitator and stakeholders helps to reveal/identify, define and prioritise expected outcomes. In addition, the workshop facilitator needs to have well developed social and relational skills. Therefore, the PM and facilitation experience of the workshop facilitator needs to be taken into account.

A key breakthrough contribution of the Outcome Profile™ template is its ability to guide stakeholders through the process of cross-referencing both tangible and intangible expected project outcomes to tangible outputs. In particular, by explicitly cross-referencing intangible outcomes to tangible outputs, all parties involved have a better appreciation and understanding of cause-effect links between outcomes, outputs and the actions and resources required to develop the corresponding outputs and deliver the expected outcomes. Causal ambiguity is reduced because cause-and-effect loops are easier to understand. This aspect is of particular relevance when considering that causal ambiguity has been identified as one of the principal reasons why best practice and other forms of knowledge transfer is 'sticky' and difficult to transfer (Szulanski, 1996; 2003).

We illustrate the use of the Outcome Profile™ template[2] with one of five action research cases used to develop and validate the Outcome Profile™ template and the three-step process (Nogeste, 2006a).

The CYPRASS project

The CYPRASS Project is a youth oriented crime prevention project based in an Australian regional town (population 10,000) with the key objective of addressing the risk factors that lead to youth crime. The project is sponsored by a law enforcement agency and overseen by a multi-agency Management Committee.

Success of the CYPRASS project is recognised as being dependent on the delivery of both tangible and intangible outcomes. Relatively satisfied with their definition of expected tangible project outcomes, the CYPRASS Management Committee was keen to improve the definition of expected intangible project outcomes. Therefore, the Management Committee agreed to participate in a doctoral level research study focused on the improved definition and alignment of intangibles outcomes and tangible outputs.

The three-step process previously described, was applied to the CYPRASS Project as follows:

Step 1 – Plan and conduct a stakeholder workshop.

During the stakeholder workshop, members of the CYPRASS Management Committee identified, prioritised and defined the five priority intangible outcomes of;

1 Youth personal development;
2 Networks of positive relationships;

3 Cultural change within the law enforcement agency (to accommodate more of a crime prevention mindset);
4 The positive image and reputation of the CYPRASS project; and
5 An improved perception of youth by the broader community.

The Management Committee was able to clearly link expected intangible outcomes to tangible project outputs, defining intangible project outcomes in tangible terms. For example, the priority intangible outcome of 'networks of positive relationships' was defined as comprising three tiers of networks; formal links, partnerships and personal relationships.

Step 2 – Document the workshop report

For the CYPRASS Project, the workshop report included an Outcome Profile™ per expected intangible project outcome, as illustrated by the following abbreviated version of the Outcome Profile™ developed for the expected outcome of *Partnerships*.

Outcome name

Partnerships

Outcome description

The purpose of the Partnership outcome is to establish and maintain formal one-to-one inter-organisational sharing links between the CYPRASS program and other organisations, supported by formal agreements (e.g. Memorandums of Understanding) that define a shared and combined commitment to the provision of youth referral and support services in the local shire.

Partnership organisations will comprise local representation of organisations that have established formal links with CYPRASS. e.g. Department of Justice.

Outcome realisation timeframe

- Short (months) to medium/long term (depending on the current status of a partnership)

Outcome owners

- CYPRASS Management Committee
- CYPRASS Project Officer

Benefits

1 Capability to provide strategic, holistic services based on shared and combined contributions.

2 Shared and combined resources, skills and experience capable of providing larger range of services.
3 CYPRASS is seen as a 'networking agent' introducing partners to each other e.g. could be formalised with 'partner events.'

Beneficiaries

Local at-risk youth, their families, peers and the broader community

Success criteria

Quantitative success criteria

1 Number of partnerships
2 Number of partnerships that have delivered personal relationships e.g. mentors
3 Increase/decrease in number of partnerships
4 In-kind resources contributed by partners

Qualitative success criteria

Outputs

1 Proforma partnership agreement, including mention of who/how makes public statements about the CYPRASS program.
2 Contact List to include which Management Committee member is responsible for managing which partnership/s, including media liaison partnership/s with local media.
3 Management Committee meeting agenda includes standing items for reviewing partnership related activities, including resource estimates for developing/maintaining partnerships.

Dependencies

1 Management Committee members' time
2 Management Committee member organisations' support
3 CYPRASS formal links are capable of delivering a sufficient number and diversity of partner organisations
4 'Sufficient' number and diversity of partnering organisations

Risks

In summary, six Partnership related risks were identified. Of these, five are Medium risks and one is a Low risk. With the majority of risks being assessed as Medium, Partnership related risks need to be actively managed by the Management Committee to prevent them from becoming High risks and placing the realisation of partnership outcomes at risk.

Step 3 – Use the workshop report as a key input to project planning/review.

By cross-referencing intangible project outcomes to hitherto unplanned ('missing') tangible project outputs, the Management Committee and, more particularly the Project Officer, were able to identify why expected intangible project outcomes were not being realised. The Project Officer was then able to define the resources and activities required to develop the 'missing' project outputs. The process also enhanced the project's risk management process.

Capability maturity models (CMM) and project performance

Organisations that prefer to either pre-qualify potential tenderers, or negotiate with a preferred alliance-type partner, may find it convenient to use a tool that evaluates the organisation's maturity in delivering key tangible or intangible project benefits. For example, if innovation is a key element of a BSC that is important to the client organisation, then it may wish to benchmark the partner organisation with itself. Alternatively, it may wish to monitor its organisational partner to assist that partner to improve its organisational innovation maturity in any given BSC dimension. For example, an organisation commissioning in-house projects may wish to assess the maturity of its internal business units that deliver projects. Whatever the reason for the evaluation, the following section should be of interest.

An early initiator of the CMM concept was developed by a research team from Carnegie Mellon University in the USA supported by the software engineering industry sector (Paulk *et al*., 1993). Paulk *et al.* (1993: 2) started this work in November 1986. The result was a five stage model that has been widely adopted and adapted – for example in assessing construction management processes in the Australian construction industry (CIDA, 1994) and for Knowledge Management and Organisation Learning (the K-Adv) (Walker *et al*., 2004; Walker, 2005). The most familiar of more recent CMM tools is the PMI's Organisational Project Management Maturity Model (OPM3) (PMI, 2003). Maturity levels are generally described in five stages. *Initial* (1) leads through a disciplined approach to applying best practices to being *Repeatable* (2) Standard consistent application of these processes leads to level (3) *Defined* and once the processes become predictably and routinely applied the maturity level becomes *Managed* (4) Through continuous process improvement it reaches level (5) *Optimised* (Paulk *et al*., 1993: 6; PMI, 2003: 28). OPM3 is being progressively deployed by organisations concerned with improving productivity and effectiveness of their PM teams.

The (K-Adv) provides us with an example of how a CMM tool might allow us to understand how organisations create competitive advantage through effective use of knowledge.

The K-Adv model envisages a knowledge competitive advantage as flowing from the organisation's ability to better manage its knowledge resources. Figure 6.7 indicates that the pivotal feature of the K-Adv is delivered by people, and only people can effectively manage knowledge so the '*people infrastructure*' is the key element of the knowledge advantage. An effective people infrastructure does not easily occur; it needs to be nurtured by an effective '*leadership infrastructure*' that facilitates and frames an effective people infrastructure because the leadership group controls access to much of the needed resources. With effective leadership in place, a supporting information and communication *(ICT) infrastructure* can be put in place.

Figure 6.8 further illustrates the three infrastructure elements of the K-Adv model. Each of the three elements has two sub-elements, and each of these can be further described in terms of critical attributes. The social capital part of the people infrastructure sub-element for example requires four further attributes – trust and commitment, knowledge creation, knowledge sharing and transfer and knowledge use and 'sensemaking'. Each of these boxes illustrated in Figure 6.8 can be used as the basis of a CMM.

The people infrastructure is the key to the K-Adv, delivering competitive advantage and value because it is this facility which, when supported by leadership and information communication technology (ICT) infrastructures, actually delivers value through OL (Walker *et al.*, 2004; Walker, 2005). In our illustration of how a CMM can be used, we focus on the attribute '*knowledge use and sensemaking*'. This is because it closely links with the BSC 'Learning and Growth' theme that we have followed in this chapter and is further complemented by discussion in Chapter 8.

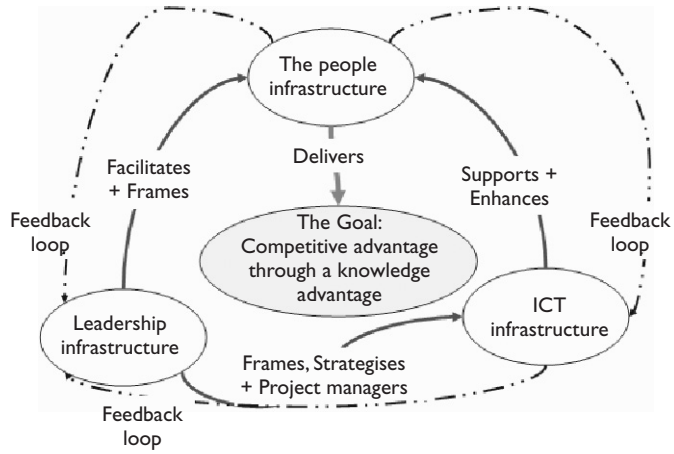

Figure 6.7 K-Adv main elements.

Source: Walker, 2005.

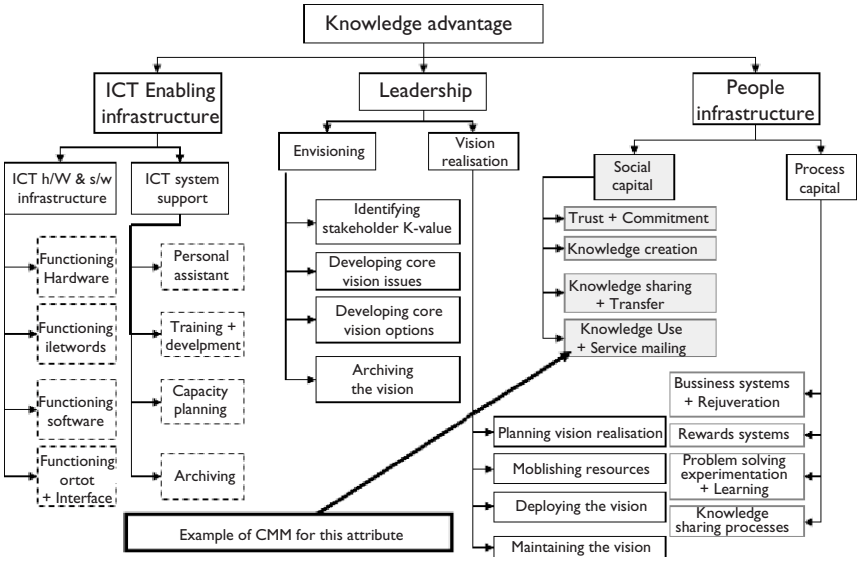

Figure 6.8 K-Adv elements and sub-elements.

Source: Walker, 2005.

The K-Adv tool can be used to facilitate performance measurement in two ways. First, through focussing upon stakeholder goals (prior to, or at the time of, procuring projects) the relevant K-Adv attribute can be evaluated to test the organisation's capability to deliver the identified necessary value. Second, if projects are being undertaken internally, the tool can be used to benchmark and strategically plan how to increase the organisation's CMM level. This process will shortly be explained and illustrated.

The capability maturity level for a specific identified attribute (e.g. for *knowledge use and sensemaking*) can be measured using a scenario or 'word picture' that describes how a particular maturity level may appear to a CMM evaluator. These word pictures can use the CMM matrix description already developed by Walker (2004), or the CMM matrices can be customised to reflect a specific learning and growth BSC initiative identified (as illustrated in Table 6.2). An example follows to illustrate the process.

We will now focus on the 'knowledge use and sensemaking' attribute (box) in Figure 6.8. Walker (2004) identified four performance characteristics for this attribute from the literature: ambiguity and creative chaos; redundancy and thinking; requisite variety; and reflection and curiosity. The key question for this attribute is 'How can we make sense of our knowledge to best use it for competitive advantage?' This can be applied to the 'ambiguity and chaos' attribute measure in terms of the answer 'by providing a demanding

stretch challenge in ambiguous terms that provides creative chaos that people respond positively to'. The level of maturity is determined by the organisation through self-assessment and providing evidence that most closely fits the CMM matrix cell. Each cell provides a word-picture that approximately indicates the maturity level. These descriptors were carefully developed from the literature and validated through workshops with stakeholders but we recognise that they will need refinement, customisation and updating to reflect each organisation.

The levels have been determined by the construction of the CMM. Five levels have been broadly identified throughout the model. Level 1, Inactive AWARENESS, is evidenced by 'People seem generally uneasy and unreceptive to unconventional thinking'. Level 2, Pre-active INITIATION, is evidenced by 'Rigid rules and processes make it difficult and demotivating for people to offer creative ideas.' Level 3, Active ADOPTION, is evidenced by 'Small-scale local "skunkworks" initiatives'. Level 4, Pro-active ACCEPTANCE and ADAPTATION, is evidenced by 'The workplace culture appears chaotic with a buzz of new and conflicting ideas being debated and explored.' Level 5, Embedded ROUTINISATION and INFUSION, is evidenced by 'Top management periodically creates crises and facilitates both senior level management to deliver challenging goals and empowers the coal-face workforce to find delivery strategies.'

This process can be repeated for each of the performance characteristics of the attribute illustrated in Table 6.3 and each attribute indicated in the summary model Figure 6.8 and for each of their identified performance indicators. For simplicity of illustration we follow with our focus on the social capital sensemaking attribute. The process of benchmarking using the CMM follows by proceeding through each attribute CMM in the table. The results can yield a current state situational analysis that is useful for auditing and establishing a baseline and understanding current performance levels for 'lifting' that performance CMM level at a define future time 'T'.

Figure 6.9 illustrates how the tool can be used for benchmarking and strategic planning. Key relevant leaders in an organisation participating in a K-Adv study would be asked which matrix cell illustrated in Figure 6.9 best describes where they consider themselves to be currently performing and where they would like to be at time 'T' in the future. Gap analysis (identifying the range between the now and preferred future state) reveals the degree of change necessary. Strategic and tactical plans can then be made based on the analysis of how to lift positions in the CMM from the current to desired position. This process can be helpful for planning what is needed and undertaking a feasibility analysis as part of preparing a business plan to instigate the desired change. It is also a useful tool for working with a partner or business unit prior to procuring PM services so that the 'Learning and Growth' part of the BSC can be addressed as part of the

Table 6.3 Sensemaking and its contribution to the K-Adv CMM table

Maturity	*Performance & Characteristic*			
	Ambiguity and creative chaos	*Redundancy and thinking*	*Requisite variety*	*Reflection & curiosity*
QUESTION: How can we make sense of our knowledge to best use it for competitive advantage? Answer →	By providing a demanding stretch challenge in ambiguous terms that provides creative chaos that people respond positively to	By providing sufficient resources to deliver both time and a suitable venue to be able to think and explore mental models and hypotheses	By encouraging people to be open to a variety of views and channels of rich communication	By providing sufficient time and space for people to contemplate and reflect so that they map consequences
Inactive Awareness	People seem generally uneasy and unreceptive to unconventional thinking	The organisation pursues a lean-and-mean approach where all non-core activity has to be justified.	A strict code of business determines how things are done within the organisation	Reflection and curiosity is regarded as indulging behaviours
Pre-active Initiation	Rigid rules and processes make it difficult and demotivating for people to offer creative ideas	As a by-product of keeping core ideas-people employed, some level of individual time for regeneration is possible	There is a chaotic ad hoc approach to forms of communicating innovative ideas There are no rules	Reflection and curiosity is supported in theory but in practice is viewed as wasteful
Active Adoption	Small-scale local 'skunkworks' initiatives	A formalised period of 'sabbatical' time-out is resourced through competitive proposal submission	The organisation balances chaos with rigid processes for innovation exploration	People are encouraged to be curious and to reflect but only in their personal time
Pro-active Acceptance + adaptation	The workplace culture appears chaotic with a buzz of new and conflicting ideas being debated and explored	All business units are expected to fund a set resource %age budget to enable new initiatives to emerge	The organisation supports a wide variety of forms of communicating and exploring new ideas	The organisation facilitates presentations by thought leaders to stimulate reflection and curiosity
Embedded Routinisation + Infusion	Top management periodically creates crises and facilitates both senior level management to deliver challenging goals and empowers the coal-face workforce to find delivery strategies	The organisation sets aside a regenerative investment fund to support initiatives for emerging innovation development across the organisation	The organisation links with outside agencies in strategic alliances and rewards individuals and BUs to collaborate with multi-discipline teams and diverse groups	The organisation hosts and fully supports a corporate university that sponsor action learning internal research as well as participating in cross industry or sector research activities

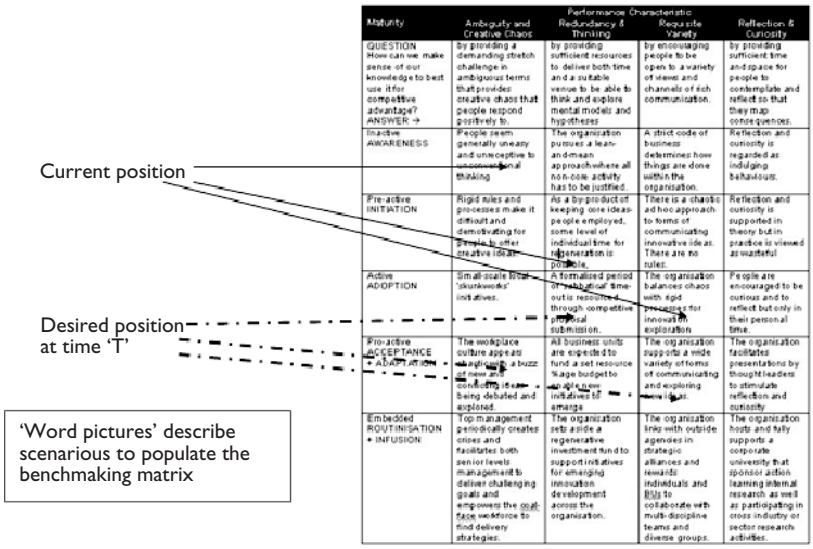

Figure 6.9 Example of benchmarking and gap analysis.
Source: Walker, 2005.

intangible outcomes from the project. This process can also be linked back into an Outcome Profile™ developed using the tools described earlier.[3]

Chapter summary

This section provides some useful examples of tools that can be used to identify and measure expected project outcomes that satisfy stakeholder needs and provide a basis for measuring project performance in terms that have been missing from much of the PM literature to date. The chapter's goal was to provide a transformational view (from the orthodox 'iron triangle' cost, time quality) of project performance. A chapter section identified project success in broader terms than delivering a project on cost, on time and to specified and explicit quality requirements. We purposely went further to include the need to develop a performance management system that meets the need of a broader level of stakeholders, and suggest that even implicit and intangible needs can be made sufficiently explicit and understood that performance measures can be developed to monitor achievement of delivering on these needs.

We have provided insights into how the two clouds illustrates in Figure 6.1 can be defined and addressed. Chapter 3 relating to stakeholder influence on project procurement delivery, clearly indicated the importance of

identifying influential high impact stakeholders whose opinion of how well the project met their needs will shape perceptions of project and PM success. In that chapter, we stressed the need for stakeholder engagement and communication to present useful and meaningful performance status reporting that not only provides a monitoring and control tool but also provides an engagement tool so that relevant joint decision making, where and when appropriate, can effectively take place.

We provided in this chapter examples of three types of tool that can be usefully employed: a BSC; an outcome-output definition and alignment tool; and a CMM tool. We argue that deployment of tools such as these should be factored into the project procurement brief so that project stakeholders and sponsors can better visualise and understand the true level of value they are receiving and can make their judgements of project and PM success on a more reasoned and informed basis.

Vignette

We provided a vignette in the hypothetical example of TheSource in its efforts to develop a BSC for its business. At this point we can add that TheSource has been toying with the idea of more formally linking many of the intangible outcomes that produced 'customer delight' to its BSC measures. It decided to do this so that it could better engage with its customers and supply chain partners and so that it could more fully identify specific (but previously inexplicit) benefits that it has delivered to further place its brand ahead of any of its competitors, especially that it is now considering franchising and thus would need to develop more easily understood procedures to be able to franchise its business idea. Further, it realised that it needed to benchmark its business units as it expanded the scale, scope and reach of the services it could deliver and the CMM appears a reasonable tool to use to do this as well as to develop through gap analysis, plans for future improvement.

Issues to ponder

1 Develop a coarse-grained CMM for the process of procurement performance measurement and try to assess where your current organisation lies in relation to TheSource.
2 Just concentrating upon the BSC for the moment, make a list of the tasks that you think would need to be completed to develop a first draft of a BSC for TheSource and make some preliminary estimates of time, resources and costs likely to be incurred.

3 Again concentrating on the BSC for TheSource, make a list of expected tangible and intangible outcomes for developing BSC benefits.
4 The tools, techniques and processes described in this chapter could present additional management overhead for any organisation, especially a small one like TheSource. To what extent do you think that the cost and management attention required to follow this path is worthwhile?
5 What performance measurement issues would you expect might emerge for a franchisee of TheSource regarding stakeholder engagement and measurement of intangible outcomes that deliver benefits in terms of training and awareness, operational training, development and knowledge sharing?

Notes

1 Refer to http://www.projectexpertise.com.au/ for details on this tool and how it can be used.
2 For a fuller discussion of the following, readers should refer Nogeste, K. and Walker, D. H. T. (2005). 'Project Outcomes and Outputs – Making the Intangible Tangible.' *Measuring Business Excellence*. **9**(4): 55–68. where this material was originally published in more detail than appears in this section of the chapter.
3 See note 1.

References

Andriessen, D. and Tissen, R. (2000). *Weightless Wealth*.Harlow, Great Britain Pearson Education Limited.

Baccarini, D. (1999). 'The Logical Framework Method for Defining Project Success'. *Project Management Journal*. **30**(4): 25–32.

Christensen, D. and Walker, D. H. T. (2003). *Vision as a Critical Success Factor to Project Outcomes*. 17th World Congress on Project Management, Moscow, Russia, June 3–6**:** On CD-ROM.

CIDA, C. I. D. A. (1994). Two Steps Forward, One Step Back – Management Practices in the Australian Construction Industry, Sydney, Construction Industry Development Agency.

Cleland, D. I. and Ireland, L. R. (2002). *Project management: strategic design and implementation*.4th ed.New York McGraw-Hill.

Cleland, D. I. and King, W. R. (1988). *Project management handbook*.2nd ed. New York Van Nostrand Reinhold.

Coghlan, D. (2001). 'Insider Action Research Projects: Implications for Practising Managers'. *Management Learning*. **32**(1): 49–60.

Coghlan, D. and Brannick, T. (2005). *Doing Action Research in Your Own Organization*.Second.London Sage Footprint.

Cooke-Davies, T. (2002). 'The "Real" Success Factors on Projects'. *International Journal of Project Management*. **20**(3): 185–190.

Cooke-Davies, T. (2004). Maturity and Measurement What Are the Relevant Questions about Maturity and Metrics for a Project-based Organization to Ask, and What Do They Imply for Project Management Research? PMI Research Conference 2004, London, 12–14 July, Slevin D. P., D. I. Cleland and J. K. Pinto, PMI, **CD-ROM Disk:** 1–15.

Dallas, M. (2002). *Measuring Success*. the Fifth European project Management Conference – PMI Europe 2002, Cannes, France, Davis Langdon.

de Wit, A. (1988). 'Measurement of Project Success'. *International Journal of Project Management*. **6**(3): 164–170.

Department of Finance and Administration (2003a). Specifying Outputs, http:// www.finance.gov.au/budgetgroup/Commonwealth_Budget_-_Overview/specifying_outputs.html, 27 January.

Department of Finance and Administration (2003b). Specifying Outputs: Case Studies, http://www.finance.gov.au/budgetgroup/Commonwealth_Budget_-_Overview/specifying_outputs__case_studi.html, 17th May.

Drummond, H. (1998). 'Riding a Tiger: Some Lessons of Taurus'. *Management Decision*. **36**(3): 141–146.

Dvir, D., Raz, T. and Shenhar, A. J. (2002). 'An Empirical Analysis of the Relationship between Project Planning and Project Success'. *International Journal of Project Management*. **21**: 89–95.

Eccles, R. G. (1991). 'The Performance Measurement Manifesto'. *Harvard Business Review*. **69**(1): 131–137.

Edvinson, L. (1997). 'Developing Intellectual Capital at Skandia'. *Long Range Planning, Elsevier Science Limited*. **30**(3): 366–373.

Elkington, J. (1997). *Cannibals with Forks*.London Capstone Publishing.

Flyvbjerg, B., Rothengatter, W. and Bruzelius, N. (2003). *Megaprojects and risk: an anatomy of ambition*.New York Cambridge University Press.

Harris, F. and McCaffer, R. (1995). *Modern Construction Management*.4th.Oxford Blackwell Science.

HM Treasury, U. (2003). The Green Book – Appraisal and Evaluation in Central Government, http://greenbook.treasury.gov.uk/, 6th August.

Ibbs, W. C. and Kwak, Y. H. (2000). 'Assessing Project Management Maturity'. *Project Management Journal*. **31**(1): 32–43.

Johnson, J. (2006). My Life is Failure – 100 Things you Should Know to be a Successful Project Leader.West Yarmouth MA The Standish Group International Inc.

Kaplan, R. S. and Norton, D. P. (1992). 'The Balanced Scorecard – Measures that Drive Performance.' *Harvard Business Review*. **70**(1): 171–179.

Kaplan, R. S. and Norton, D. P. (1993). 'Putting the Balanced Scorecard to Work'. *Harvard Business Review*. **71**(5): 134–142.

Kaplan, R. S. and Norton, D. P. (1996). Using the Balanced Scorecard as a Strategic Management System, 1.

Kaplan, R. S. and Norton, D. P. (2000). 'Having Trouble with Your Strategy? Then Map It.' *Harvard Business Review*. **78**(5): 167–176.

Kaplan, R. S. and Norton, D. P. (2004a). 'Measuring the Strategic Readiness of Intangible Assets'. *Harvard Business Review*. **82**(2): 52–63.

Kaplan, R. S. and Norton, D. P. (2004b). 'Measuring the Strategic Readiness of Intangible Assets'. *Harvard Business Review*. (February): 52–63.

Kaplan, R. S. and Norton, D. P. (2004c). *Strategy Maps Converting Intangible Assets into Tangible Outcomes*.Boston Harvard Business School Publishing.

Keen, J. and Digrius, B. (2003). 'The Emotional Enigma of Intangibles'. *CIO Magazine*. (April): 104–107.

Likert, R. (1958). 'Measuring Organizational Performance'. *Harvard Business Review*. **36**(2): 74–83.

Miles, R. E. and Snow, C. C. (1995). 'The New Network Firm: A Spherical Structure Built on a Human Investment Philosophy'. *Organizational dynamics*. **23**(4): 5–18.

Miles, R. E., Snow, C. C. and Miles, G. (2005). Collaborative entrepreneurship: how communities of networked firms use continuous innovation to create economic wealth.Stanford, Calif. Stanford Business Books.

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.

Murray, E. J. and Richardson, P. R. (2000). 'Shared Understanding of the Critical Few: a Parameter of Strategic Planning Effectiveness'. *International Journal of Performance Measurement*. **2**(1/2/3): 5–14.

Neeley, A. (2002). *Business Performance Measurement – Theory and Practice*. Cambridge UK Cambridge University Press.

Neeley, A., Bourne, M., Mills, J., Platts, K. and Richards, H. (2002). *Strategy and Performance: Getting the Measure of Your Business*.Cambridge UK Cambridge University Press.

Nogeste, K. (2004). 'Increase the Likelihood of Project Success by Using a Proven Method to Identify and Define Intangible Project Outcomes'. *International Journal of Knowledge, Culture and Change Management*. **4**: 915–926.

Nogeste, K. (2006a). Development of a Method to Improve the Definition and Alignment of Intangible Project Outcomes with Tangible Project Outputs. Doctor of Project Management, DPM, *Graduate School of Business*. Melbourne, RMIT.

Nogeste, K. (2006b). Development of a Method to Improve the Definition and Alignment of Intangible Project Outcomes with Tangible Project Outputs. *Graduate School of Business*. Melbourne, RMIT University.

Nogeste, K. and Walker, D. H. T. (2005). 'Project Outcomes and Outputs – Making the Intangible Tangible'. *Measuring Business Excellence*. **9**(4): 55–68.

Norrie, J. and Walker, D. H. T. (2004). 'A Balanced Scorecard Approach to Project Management Leadership'. *Project Management Journal, PMI*, **35**(4): 47–56.

Norrie, J. L. (2006). Improving Results of Project Portfolio Management in the Public Sector Using a Balanced Scorecard Approach. Doctor of Project Management, *School of Property, Construction and Project Management*. Melbourne, RMIT University.

Paulk, M. C., Curtis, B., Chrisses, M. B. and Weber, C. V. (1993). 'Capability Maturity Model, Version 1.1'. *IEEE Software*. **10**(4): 18–27.

Peters, J. (1996). 'A Learning Organization's Syllabus'. *The Learning Organization*. **3**(1): 4–10.

Peters, J. and Smith, P. A. C. (1996). 'Developing High-potential Staff – An Action Learning Approach'. *Journal of Workplace Learning*. **8**(3): 6–11.

Phelan, T. M. (2004). The impact of effectiveness and efficiency on project success, Hoboken, NJ, Stevens Institute of Technology.

PMI (2003). Organizational Project Management Maturity Model (OPM3) Knowledge Foundation.Newtown Square, Pennsylvania PMI.

Rad, P. F. (2003). 'Project Success Attributes'. *Cost Engineering*. **45**(4): 23–29.

Roos, G. and Roos, J. (1997). 'Measuring Your Company's Intellectual Performance'. *Long Range Planning, Elsevier Science Limited*. **30**(3): 413–426.

Senge, P. M. (1990). The Fifth Discipline – The Art & Practice of the Learning Organization.Sydney, Australia Random House.

Shenhar, A. J., Dvir, D., Levy, O. and Maltz, A. (2001a). 'Project Success: A Multidimensional Strategic Concept'. *Long Range Planning: INternational Journal of Strategic Management*. **34**(6): 699–725.

Shenhar, A. J., Dvir, D., Levy, O. and Maltz, A. C. (2001b). 'Project Success: A Multidimensional Strategic Concept'. *Long Range Planning*. **34**(6): 699–725.

Smith, P. (2001). 'Action Learning and Reflective Practice in Project Environments that are Related to Leadership Development'. *Management Learning*. **32**(1): 31–48.

Standish (1994). The Chaos Report (1994), Company Research Report. Dennnis, MA**:** 14.

Standish (2003). Latest Standish Group CHAOS Report Shows Project Success Rates Have Improved by 50%, http://www.standishgroup.com/press/article.php?id=2, March 25.

Stewart, R. A. and Mohamed, S. (2001). 'Utilizing the Balanced Scorecard for IT/IS.
Performance Evaluation in Construction'. *Journal of Construction Innovation*. **1**(3): 147–163.

Stewart, R. A., Mohamed, S. and Daet, R. (2002). 'Strategic Implementation of IT/IS Projects in Construction: A Case Study'. *Automation in Construction*. **11**(6): 681–694.

Stewart, R. A., Mohamed, S. and Marosszeky, M. (2004). 'An Empirical Investigation into the Link Between Information Technology Implementation Barriers and Coping Strategies in the Australian Construction Industry'. *Journal of Construction Innovation*. **4**(3): 155–172.

Stewart, W. E. (2001). 'Balanced Scorecard for Projects'. *Project Management Journal*. **32**(1): 38–53.

Sveiby, K. E. (1997). The New Organizational Wealth: Managing and Measuring Knowledge-based Assets.San Francisco Berrett-Koehler Publishers, Inc.

Szulanski, G. (1996). 'Exploring Internal Stickiness: Impediments to the Transfer of Best Practice within the Firm'. *Strategic Management Journal*. **17**(Winter special Issue): 27–43.

Szulanski, G. (2003). *Sticky Knowledge Barriers to Knowing in the Firm*.Thousand Oaks, CA. Sage Publications.

Turner, J. R. (1999). The Handbook of Project-based Management: Improving the Processes for Achieving Strategic Objectives.2nd. London, UK McGraw-Hill.

Walker, D. H. T. (2004). The Knowledge Advantage (K-Adv) Unleashing Creativity and Innovation, Unpublished report draft manuscript. Melbourne**:** 183.

Walker, D. H. T. (2005). *Having a Knowledge Competitive Advantage (K-Adv) A Social Capital Perspective*. Information and Knowledge Management in a Global Economy CIB W102, Lisbon, 19–20 May, Franciso L Ribeiro, Peter D E Love, Colin H. Davidson, Charles O. Egbu and B. Dimitrijevic, DECivil, **1:** 13–31.

Walker, D. H. T., Wilson, A. J. and Srikanathan, G. (2004). *The Knowledge Advantage (K-Adv) For Unleashing Creativity & Innovation in the Construction Industry*.Brisbane CRC in Construction Innovation http://www.construction-innovation.info/images/pdfs/2001–004-A_Industry_Booklet.pdf.

Ward, J., Murray, P. and David, E. (2004). Benefits Management Best Practice Guidelines. Bedford, United Kingdom, School of Management, Cranfield University.

Zuber-Skerritt, O. (2002). 'A Model for Designing Action Learning and Action Research Programs'. *The Learning Organization*. **9**(4): 171–179.