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Chapter 2

Title: Value and Benefits Realisation

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Table of Contents

- Abstract
- Introduction
- Chapter aim and objectives
- Learning outcomes
- Body of the book chapter
- Chapter summary
- Chapter discussion questions
- Case study: High Speed 2
- Case discussion questions
- References

SIGNIFICANCE: THE NEED FOR BETTER BENEFITS REALISATION IN MEGAPROJECTS

Abstract

This chapter elaborates on the challenges of benefits realisation in major projects. The assumption that large-scale projects bring value/benefits to a wide range of project stakeholders is usually an implicit assumption underlying the willingness of governments to make significant investments in these ventures. This chapter will examine the historical roots of value management, the manner in which we can measure and understand project “value,” and its implications for more effective project stakeholder management. We conclude the chapter by illustrating the significance of benefits management through an in-depth examination of an ongoing large-scale UK project – High Speed Two (HS2).

Chapter Aim and Objectives

The goal of this chapter is to establish the historiography, theory, and advances in our understanding of project benefits realisation in order better facilitate the development of major infrastructure and construction projects. It is believed that bringing megaprojects benefits either at the local, regional or national level represents a key, but challenging, task for project managers. Project managers are in need of a clearer understanding of realisable value that will enable them to cope with the uncertainty surrounding megaproject developments. By minimising the negative impact of such projects on both people and places and selecting the most beneficial and viable project for the wider communities, project managers and policymakers can catalyse their efforts and use of public resources.

Learning Outcomes

After studying this chapter readers should know the following:

- The characteristics of public infrastructure and construction projects, also termed mega projects.
- How benefits realisation relates to megaprojects
- Theoretical origins of value and benefits
- The elements of project value management and how to interpret them
- The main resources, competences, and capabilities when dealing with benefits and their objectives and constraints
- How stakeholders are involved, managed and perceptions taken into account
- How benefits realisation translates in practice - Case Study: High Speed 2

Introduction

Public infrastructure and construction projects can be major tools to enhance economic and social development (Jia et al., 2011; Kara et al., 2016). Therefore, it is not surprising that more and larger infrastructure projects are continuously proposed and introduced, with the global expenditure on infrastructure estimated to be US \$3.3 trillion a year for the period from 2016 to 2030 (McKinsey Global Institute, 2016). Infrastructure spending is mainly driven by large-scale projects, which have unique features in terms of their level of aspiration, lead times, complexity and stakeholder involvement (Barlow, 2000; Flyvbjerg, 2014). Therefore, it is typical that construction megaprojects are attracting more attention, as their growth results in an increased impact on people, budgets and urban spaces (Xue et al., 2015).

According to Flyvbjerg (2014) and Hu et al. (2014), the terms ‘major project’ or ‘major programme’ are frequently used interchangeably to define large public projects when referring to megaprojects. When defining a ‘megaproject’, the common characteristics in the literature include a strategically aligned set of multiple projects, costs in excess of \$500 million and completion times of more than five years (Major Project Association, 2014; Miller and Lessard, 2000). Notably, project managers are faced with increasing budget constraints, and, thus, the design, evaluation and selection of such highly costly projects has become particularly critical in turbulent economic conditions (Greenspan, 2004; Matti et al., 2017; NETLIPSE, 2016).

Although the likely benefits of megaprojects are largely recognised, the uncertainty surrounding their impact represents a key challenge for project managers and their parent organisations, especially because of the length of the lifecycle of such projects (Marshall and Cowell, 2016; Zanni et al, 2017). The uncertainty of major infrastructure and construction projects is due to their complexity, i.e., “the property of a project which makes it difficult to understand, foresee and keep under control its overall behaviour, even when given reasonably complete information about the project system” (Vidal et al., 2011: 719). Therefore, managing time and cost constraints is regarded as ‘firefighting’ to keep afloat, which leads to unrealistic estimates in order to meet goals, while ignoring setting the real benefits in the feasibility stage (Flyvbjerg et al., 2003). It is recognised that benefits realisation is an important element for improving project performance (Laursen and Svejvig, 2016; Turner, 2014). Likewise, we believe that benefits realisation has a greater impact on project success, in which it is essential to minimise the waste of public resources by creating a better decision-making process that includes the needs and expectations of a broader range of project stakeholders and that leads towards more impactful megaprojects.

Qui Bono? – Defining the Nature of Project Value

The terms *value* and *benefits* are sometimes used interchangeably, with several overlapping and, at times, ambiguous concepts such as “value” (Morris, 2013), “benefits” (Chih and Zwikael, 2015; Peppard et al., 2007), “worth” (Zwikael and Smyrk, 2012), and “success” (Yu et al., 2005). Additional concepts that are used quite often to voice these ideas include value creation (Andersen, 2014; Winter et al., 2006a), benefits management (Ward and Daniel, 2012), and benefits realisation management (Bradley, 2010; Laursen and Svejvig, 2016). In their paper, ‘Taking Stock of Project Value Creation: A Structured Literature Review with Future Directions for Research and Practice’, Laursen and Svejvig (2016) highlight inconsistent and sometimes murky terminology, including “Research-based view”, “Contingency theory”, “Principal-agent theory”, “Transactional-cost theory” and Porter’s “Value chain”. They conclude that the project management literature rarely supports value creation for the funding organisation, highlighting

an important distinction between *project management success* and *project success*. While the former relates to efficient output delivery, the latter is concerned with benefits realisation for the funding organisation. Thus, there is some semantic ambiguity in the distinctions between value and benefits. Part of the reason for this is the different foci of key project stakeholders and how they view the terms themselves.

“[V]alue creation depends on the relative amount of value that is subjectively realized by a target user (or buyer) who is the focus of value creation – whether individual, organization or society – and that this subjective value realization must at least translate into the user's willingness to exchange a monetary amount for the value received”. It follows from this definition that there is perceived use value, subjectively assessed by the user (or buyer), and then monetary exchange value, the price paid for the use value created (Bowman and Ambrosini, 2000: p.13).

Value management traces its roots to the use of structured cost reduction techniques in manufacturing operations. During World War 2, U.S. manufacturing and strategic materials were prioritised for armaments, leaving other organisations in search of alternative materials and methods for producing goods. Finding processes and cheaper materials that allowed for the manufacturing of goods with no loss in quality became a goal of U.S. companies and gave rise to a structured process that eventually coined use of the term, “Value Analysis” (VA). Value Analysis was a means for industrial engineers to critically evaluate plant flow operations, employ cheaper materials, identify redundant or “non-value-adding” processes, and improve the overall efficient use of resources to maximise output. This leads to general working definition (Kelly and Male, 1993: p.8): Value analysis is “an organised approach to the identification and elimination of unnecessary cost.” Unnecessary cost is defined as cost that provides neither use nor life nor quality nor appearance nor customer features (Kelly and Male, 1993).

The second stage rose to prominence in the 1960s and shifted the focus from process improvement for existing products to the analysis of evolving designs in manufacturing and

construction, a concept known as “Value Engineering” (VE). Value was based on applying manufacturing principles as widely as possible, including infrastructure and construction. The formation of the Society of American Value Engineers (SAVE) in 1959 established the term *value engineering*, which came into common use as the preferred term, and is the term most used in the United States today. The first recorded use of a value incentive clause in a construction contract was in 1963 by the United States Navy Bureau of Yards and Docks. A characteristic of North American value engineering from its inception is the team approach to function definition and creativity through application of a logical, sequential approach to the study of value.

There are suggested to be seven phases in the VE process, following the steps (Miles, 1961):

1. Orientation – determining what is to be accomplished, what the customer really wants, and what are the desirable characteristics of the finished product.
2. Information – gathering as much information about the project as possible at the outset. Critical elements in information collection include:
 - a. Clients’ needs and wants – the fundamental requirements and the “wish list”
 - b. Project constraints – factors that impose discipline on the project team; e.g., site conditions, timing, regulations, etc.
 - c. Budgetary limitations – the amount that can be committed to the project
 - d. Time constraints – lifecycle stages and impact on the project’s completion
3. Speculation – ideas are generated through brainstorming to solve the problem
4. Analysis – The whole life cost of each idea is estimated and they are jointly ranked for acceptability
5. Development and Planning – the project development schedule is established through work breakdown structures and network creation
6. Schedule Execution – the project is executed according to the original plans
7. Status Summary and Analysis – critical evaluation of the project being undertaken, with suggestions for improvement of the immediate project or for future development.

The third stage of value management, which began in the 1990s, widened the scope of the service to include the analysis of the organisational and business strategies, which give rise to the requirement for products and services. This emphasis on Value Planning (VP) highlighted the employment of strategic planning principles to address concepts of value as they relate to new product development, new service introductions, and other strategic initiatives that organisations undertake. Strategic choices now required that firms address the manner in which strategic, real options maximised firm value, through cost reductions and/or benefits maximisation. In this sense, “Value,” moved from its earliest orientation as a production execution concept to a strategic task, migrating from the shop floor to the executive corner suites.

Value management (VM) derives its power from being a team-based, process-driven methodology that uses function analysis to analyse and deliver a product, service or project at optimum whole life performance and cost without detriment to quality. Value management developments were initially dominated by North American thinking (Dell’Isola 1988, Fallon 1980, Kaufmann 1990, Miles 1972, 1989, Mudge 1990, O’Brien 1976, Parker 1985, Zimmerman & Hart 1982). From a European context VM is seen as a style of management. Bringing together the information from the three European value standards, it is a methodology whose goal is to reconcile differences in view between stakeholders, and, internal and external customers as to what constitutes value. It does this through a structured, systematic, analytical function-oriented and managed process involving a representative, multidisciplinary team brought together in a participatory workshop situation (Source: Male, et al, 2007). Figure 1 offers a simplified timeline of the development of the various elements in VM.

<FIGURE 1 HERE>

Value as Satisfaction versus Consumption

For this chapter, we will use the terms “value” and “benefits” somewhat interchangeably. In the broadest sense, a benefit is the improvement resulting from a change (outcome) that is perceived as positive by one or more stakeholders (adapted from Bradley, 2010: xiii; Office of Government Commerce, 2009: 21–22). Value is often represented as a simple formula, or ratio of needs satisfaction over resource usage; that is, attempting to satisfy user requirements while minimising the application of resources required to satisfy those needs. The fewer the resources used or the greater the satisfaction of needs, the greater the value (Venkataraman and Pinto, 2008). Thus, the concept of value relies on the relationship between the satisfaction of many differing needs and the resources used in doing so. Stakeholders, internal and external customers may all hold differing views of what represents value. The aim of VM is to reconcile these differences and enable an organisation to achieve the greatest progress towards its stated goals with the use of minimum resources (see Figure 2 below).

<FIGURE 2 HERE>

It is important to realise that value may be improved by increasing the satisfaction of need even if the resources used in doing so increase, provided that the satisfaction of need increases more than the increase in use of resources. Value Management is distinct from other management approaches in that it simultaneously includes attributes which are not normally found together. It brings together within a single management system: Management style, positive human dynamics, and consideration of external and internal environment (“What is Value Management,” n.d.).

Elements of Project Value Management

Project benefit/value management is an emerging research area that emphasises the strategic roles of projects organisations, and describes the benefit management process within projects (e.g. Breese et al., 2015). Although we actively seek to better understand benefits management and indeed, the nature of benefits that derive from projects in general, it is also the case that there

is both an ad hoc understanding of benefits themselves as well as conflicting and multiple conceptualisations of project benefits among scholars. In a recent paper, Serra and Kunc (2015) argue that assessments of project benefits/value concern two interrelated but distinct elements: project performance itself, often identified as efficiency measures of delivery according to predetermined metrics of budget, schedule, and requirements; and project success, which evaluates how well projects deliver benefits that meet wider business goals, thus creating value (Cooke-Davies, 2002). The argument is commonly made that project assessments are still too wedded to traditional metrics of project performance defined in the narrower framework, and not sufficiently broadened to account for a more inclusive and expansive idea of project success (Zwikael and Smyrk, 2012). The problem, of course, is that value from projects are often derived from these latter concepts, the ideas that most traditional project management fails to teach. Thus, when we focus too heavily on simple “project management success” metrics of cost, schedule, etc., we neglect the other, intangible elements that most directly address value realisation.

Ika (2009) dichotomises the value-related aspect of project assessment into: 1) project/product success – satisfaction of end user and benefits to stakeholders and project staff, and 2) “strategic project management,” which he identifies as business success, or the achievement of client’s strategic objectives. Similar models show how project success relates to value realisation, including: project success (outcomes and benefits) and project corporate success (achieving strategic objectives) (Camilleri, 2011); ownership success (benefits minus costs) and investment success (financial return) (Zwikael and Smyrk, 2011). These and other authors have adopted a model of value realisation that takes into consideration both tactical and strategic elements; that is, the short-term realisation of direct project outcomes (marketplace or technical success of the venture) and subsequent strategic advantages from the project.

Serra and Kunc (2015) offer a “chain of benefits” model that describes the development of a causal set of benefits from the results of projects (see Figure 3). This conceptual model suggests that benefits realisation starts with successful project completion, prompting business changes

that not only yield immediate desired outcomes (tactical project success, in our parlance) as well as intermediate benefits. Business changes can also create side effects, which are the negative outcomes from change. A negative outcome might be the need for recruiting additional personnel with advanced skill sets (for IT projects) or cost increases from new regulations or safety requirements. Serra and Kunc (2015) argue that these side effects and consequences can also realise further intermediate benefits, which, in turn, contribute to the achievement of end benefits (Bradley, 2010) and end benefits directly contribute to the achievement of one or more strategic objectives of the organisation. Usually, end benefits are results of changing processes composed by sets of projects that are managed together as a programme, which, because of the role programme management plays, allows the organisation to coordinate work in a synergic way to generate greater benefits than individual projects could do (Thiry, 2002).

<FIGURE 3 HERE>

The *International Journal of Project Management* dedicated a special issue on ‘project benefit management’ (2016), highlighting the need for future studies in this research area. Building upon the rise in interest in benefits realisation, there has been a steadily increasing interest in programme and portfolio management as vehicles for translating individual project benefits into a broader idea of generating corporate value (Pellegrinelli, et al., 2011). As Figure 3 implies, the advantages of using portfolio management lie with its emphasis on prioritising the most desirable (optimum) mix of projects and larger programmes to maximise value impact, within the realms of risk and cost (as shown in Figure 2). Thus, the use of portfolio management for benefits realisation is that it enables organisations to not only emphasise ‘doing projects right’, but also ‘doing the right projects’.

Propositional Elements in Understanding Project Value Management

Following Goodpasture’s (2002) perspective, we can identify five fundamental concepts that must be embraced in order to manage projects for value. The first concept suggests that *projects*

derive their value from the benefits that the organisation accrues by achieving its stated goals. Remember that projects are typically initiated as a perceived solution to a goal, need, or opportunity. Thus, when we want to determine the degree to which a project is being managed for “value,” it is first critical to ensure that the project falls in line with organisational goals. Projects that are being run counter to a firm’s stated goals (e.g., customer satisfaction, commercial success, or improving health and safety) already fail the first test of value. Inherent reasons for this have been attributed to a rogue sponsor with a fear of failure (<https://onlinepmcourses.com/rogue-project-sponsor/>). This results in project objectives aligning with a hidden agenda and the position of power being abused to meet their own goals (Helm and Remington, 2005). We cannot maintain the façade that a project is “valuable” when it clashes with the company’s stated or supported goals.

Second, projects can be viewed as investments made by management in that they consume resources and time, and therefore, *projects are expected to provide returns with associated benefits.* Any investment comes with an expected return for the risk undertaken. When an organisation takes the step of investing a significant amount of money in a project, they do so with the understandable expectation that the project will yield an acceptable return, based on their internal rate of return requirements, or measured against some societal standard for desired outcome.

The third concept in Figure 4 emphasises that *there are inherent risks in projects as there is considerable uncertainty surrounding their outcomes.* These risks may be technical (Does the technology that is driving the project work?), they may be commercial (Will the project succeed in the marketplace?), they may involve health and safety issues (Can we manage the project within appropriate parameters of safety?), or some combination of all of the above. An acknowledgement of project risk is recognition that all projects convey “unknowns” due to the unique nature of each endeavour. While investors may not have the wherewithal to manage these project risks, they do tolerate them as the potential rewards associated with project outcomes may outweigh the negative impact the risks.

The fourth concept defines project *value as a function of the resources committed (investment made) and the extent of risks taken*. As Goodpasture (2002: p. 4) notes, “The traditional investment equation of ‘total return equals principal plus gain’ is transformed into the project equation of ‘project value is delivered from resources committed and risks taken.’” Using these terms, we can see that value will always walk a narrow line between expected return on investment and risk. When the equation gets out of balance; that is, when the perceptions of the organisation are that the expected return cannot make up for excessive levels of risk, the project ceases to produce value. The implication of this concept is that different projects require different levels of investment with varying levels of risk. Consequently, the value delivered by each of these projects will also vary.

The fifth and final concept in Figure 4 suggests that *project value is the outcome of striking a balance among the three key project elements: Performance, resource usage, and risk*. So, were we to think like an accountant, we would add up the credit column to include drawbacks such as expenditure (resource usage) and risk recognised and accepted. Balanced against these “credits” is the company’s expectation of project performance and positive outcomes. Naturally, the higher the expected performance of the project, the greater the resource usage and risk a company is willing to commit to the project.

Goodpasture’s (2002) perspective on value implies that an organisation is constantly reassessing value two ways: first, they take an individualist approach that looks at value in terms of one project at a time. Each brings its own potential value, requiring top management to sift through the pros and cons for each opportunity when deciding on a project investment strategy or when forced to choose among competing project options. Second, value is reaffirmed during the project’s development cycle. A project may have shown promise of delivering value early in its initiation only to have that value brought into question later on. In this way, many projects are terminated short of delivery if the perception of value becomes negative. The metaphor of a set of balancing scales comes to mind: in one bowl we place our best guess as to a project’s real

benefits to the organisation and then weigh it against the risks and costs that we expect to accrue in consequence. Does the scale still tip in the direction of positive outcome? Then the project provides positive value for the organisation.

<FIGURE 4 HERE>

Benefits Realisation: Resources, Competences, and Capabilities

Benefits realisation for projects affects multiple stakeholders in multiple ways. That is, the “benefits” that an organisation and its stakeholders derive from their project activities much be weighed in the balance of the goals they seek and the likely outcomes, beyond profitability, that successful projects may offer them. Ashurst and Doherty (2003) formulated a view of benefits realisation in which they argued that firms gain benefits through three ways: resources, competences, and capabilities. For example, Barney’s (1991) work on the ‘resource-based theory of the firm’ argues that it is in an organisation’s interest to invest in assets and other resources that offer a long-run competitive advantage. Following this argument, one way that an organisation realises benefits from projects is through the concomitant increase in resources (either material or human) that accrue from successful projects. Trained and increasingly competent project personnel, greater capital expenditures on future projects, and greater market share are ways in which firms can realise benefits in the form of resources. Prahalad and Hamel (1990) argue that these benefits are broader than simple resource advantages and play into enhanced competencies and firm capabilities.

Overall, it is possible to discern three broad categories of firm-level benefits that can be realised from successful projects (Ashurst and Doherty, 2003):

1. Resource-based benefits: Resources in the form of more “traditional” elements, including capital, people, skills enhancement, as well as other, harder to measure resources, including credibility (reputational), intellectual property, and product/brand enhancement.

2. **Competencies:** When a firm manages and deploys its resources efficiently, it demonstrates greater competence to do the contracted or agreed-to work. Successful projects allow firms to develop processes and procedures that enable them to engage in future project-based work with a level of skill that out-distances their competition. In effect, doing projects well is a forerunner of doing future projects well.
3. **Capabilities:** Sometimes viewed as a combination of resources and competences, capabilities enable an organisation to demonstrate competitive advantage. That is, organisations develop the benefit whereby other clients view them as having the capability to deliver superior solutions, products, or services through project activity.

Using this model, “benefits” to the organisation impact them on multiple levels and the overall, combined effect can permeate the organisation in interacting ways. For example, as the above categorisation suggests, one added component of this viewpoint is that interrelationship of these various elements of benefits. For example, in the IT project setting, Santhanaman and Hartono (2003) demonstrated a clear link between an organisation’s IS/IT capabilities, its overall performance, and its ability to secure a sustained advantage. The underlying point of this model is to recognise that benefits can be defined (and affect organisations) in multiple ways; most importantly, that these ideas offer a complementary, rather than competing, model of benefits realisation. Firms gain benefits from projects both in terms of the project itself and the learning that derives from managing projects successfully, as they build upon a set of enhanced resources, competences, and capabilities.

Management of Stakeholders vs. Management for Stakeholders

In order to position the theoretical stance of our debate towards better benefits realisation and value co-creation, it is important to elucidate the two main and contrasting approaches of managing stakeholders. Scholars have highlighted two different and opposing stakeholder management approaches in the current literature: management-of-stakeholders and management-for-stakeholder (Freeman et al, 2007). The first aligns with the instrumental formulation of stakeholder theory, which sees stakeholders as resource providers for the organisation and

categorises them based on their potential ability to help or harm the organisation (Eskerod and Huemann, 2013). This approach is based on Salanick and Pfeffer's (1978) work which explains that stakeholders could be resource providers to the organisation, based on their interests.

The often limited resources available within organisations have led to the predominance of the instrumental approach to stakeholder management in order to ensure that stakeholders comply with the organisation's needs (e.g. Johnson et al., 2005; Mitchell et al., 1997). From this perspective, the focus is narrowly on those vital or 'primary' stakeholders, such as owners, suppliers, employees, and customers, who have historically obtained greater salience and attention from scholars and practitioners alike. In fact, it is well-documented as to how managerial priority has been given to those salient or 'primary' groups or individuals who have a formal contractual relationship with, or direct legal authority over, the organisation (Eesley & Lenox, 2006). However, the instrumental perspective has been long criticised by advocates of the normative core of stakeholder theory (Jones & Wicks, 1999; Derry, 2012).

Differing from the economic-based vision, a critical voice within stakeholder theory has acknowledged that business is always 'moral in nature', where the focal organisation should involve gathering input from all the affected parties (Freeman, 1994; Jensen & Sandstrom, 2013). These principles, therefore, perceive the organisation as a connected set of relationships between stakeholders that is not built on principles of competition, but on cooperation and caring. In the pioneering work of Freeman (1984) 'Strategic Management: A Stakeholder Approach', the central argument was that the organisation should not consider only those groups who can affect it, but also those who are affected by its operations. Freeman (1984) was the first scholar who clearly identified the strategic importance of other groups and individuals to the organisation but, ironically, "the resulting work on stakeholder management has focused almost exclusively on the former: primary groups that are critical to the firm's survival in its current business" (Hart and Sharma, 2004, p. 9).

In this regards, management-for-stakeholders (Freeman et al., 2007; 2010) links back to the normative formulation of stakeholder theory, which considers stakeholders as legitimate groups whose interests are respected and valued for consideration in their own right. Regardless of their ability to help or harm the organisation, and regardless of their level of power in the network of stakeholders, this holistic approach takes into account the marginalised or disempowered stakeholders, such as community groups, unions, consumer advocates, competitors, special interest groups, the media, and non-governmental organisations (Aaltonen et al., 2008). In contrast to the instrumental approach, stakeholders are identified according to their interest in the focal organisation, and not vice versa. The management-for-stakeholder approach also explains that “firms have a normative [moral] commitment to advance stakeholder interests and that this commitment shapes firm strategy and influences financial performance” (Harrison & Freeman, 1999, p.480). The aim of the corporate is thus focused on meeting and exceeding stakeholders’ needs and expectations.

The frustration with developing a clearer understanding of project benefits management lies with the “accidental” nature of how many benefits are currently realised from projects. In 2009, the Association of Project Management (APM) Benefits Management SIG undertook a survey across APM members in the UK as part of the launch of the SIG. The results were fascinating and disturbing; the survey found that 60% of respondents described their organisation’s approach to benefits management as informal or inadvertent (APM, 2009). Thus, decades after the establishment of professional project management organisations worldwide and on the heels of thousands of papers, books, and other published work on projects, the majority of project management professionals still operate in the dark with regard to understanding how to manage their projects for value.

Benefits Realisation and Stakeholder Perceptions

Although the literature on megaprojects is moving forward, the classic project evaluation methods have been inefficient in capturing and including the views of a broader range of stakeholders and in balancing their economic and social needs and expectations (Eskerod and

Huemman, 2013). The management and organisation literature illustrates various techniques that have helped public decision makers cope with the growing uncertainty of their business environment, especially the complexity of the political, economic, social and technological changes (Porter et al., 2004). Decisions made by project managers have a significant impact on the strategic value delivered by major programmes in the construction industry (Eweje et al. 2012; Vuorinen and Martinsuo 2018). However, although many models have been created to facilitate the process of managing major infrastructure and construction projects, the economic-based evaluation approaches such as the net present value (NPV) are still by far the dominant methods used to evaluate this kind.

Due to the well-documented, complex, and uncertain nature of large infrastructure and construction projects, it is important to consider a stakeholder-orientated approach in the evaluation and approval of these highly risky projects in order to deliver the promised benefits to the broadest possible range of stakeholders. The main importance is not whether the project is finished in accordance with time and cost targets, but that it produces an outcome at a time and cost that made it valuable to stakeholders (Turner, 2014). To further explain this point, it is important to note that the perceived final project outcomes are influenced by stakeholder perception (Davis, 2014; Di Maddaloni and Davis, 2018; Turner and Zolin, 2012). Moreover, the way stakeholders perceive project outcomes also change with time (Dalcher and Drevin, 2003; Turner et al., 2009), and what really ‘fits’ the unique characteristics of complexity, long and expensive developments (scope, time, budget) of a megaproject are the benefits that it will produce to the wider community.

To illustrate, the Thames Barrier was ‘priced at £110.7 million in October 1973 (compared with initial estimates of £13-18 million) [and] was ultimately delivered at a cost of £440 million’ (Dalcher, 2012, p.648). Further, it took just under twice the estimated four years because of delays during the preconstruction phase. However, regardless of the delays, it is considered a great engineering achievement with the value of preventing floods and saving lives (Morris and Hough, 1987). On the other hand, Heathrow Terminal Five was completed successfully within

time and cost constraints; however, British Airways had minor commissioning issues relating to check-in procedures for oversized baggage, leading to the later public and customer perception that the project was not able to deliver the promised benefits with consequent damage to the reputation of British Airways (Brady and Davies, 2009, 2010a, 2010b; Brady and Maylor, 2010). This raises the question of whether a better focus on benefits realisation is required, especially for complex projects whose value is not immediately obvious at completion.

Involving a wider range of stakeholders is key to minimising benefit-shortfalls and enhancing positive input through better stakeholder management procedures, (Bourne and Walker, 2005; Cleland, 1986; Cleland and Ireland, 2007; Donaldson and Preston, 1995; Olander 2007). However, an example where this is often missed is when megaprojects fail to align project objectives with those of the marginalised or disempowered stakeholders (Choudhury, 2014). Little has been done by managers and academics alike to achieve a people-centered vision for cities which enhances quality of life and produces prosperous neighborhoods. Megaprojects should not be viewed as simply more expensive versions of normal projects; ‘mega’ also relates to the skill level and attention required to manage and understand conflicting stakeholder interests and needs through the extensive project life cycle of major programs (Capka, 2004). In fact, findings from the literature show that a major challenge affecting large infrastructure developments is a lack of understanding of the various interest groups, the motivation behind their actions and their potential influence during the project life cycle (IFC, 2007; Miller and Olleros, 2001; Winch and Bonke, 2002).

During major projects, stakeholder needs are often different and a variety of disputes occur. Stakeholders’ objectives, composition, relationship patterns and claims are unique and dynamic along different stages of the project (Windsor, 2010). In order to satisfy individual vested interests, stakeholders apply strategies to affect project decision making. Understanding these strategies is helpful for project managers in forecasting stakeholders’ likely behaviours (Frooman, 1999). Therefore, listening and responding to stakeholder interests and concerns is a process that helps project managers maximise stakeholder positive input and minimise any

detrimental or negative impact (Bourne and Walker, 2005; Cleland and Ireland, 2007). Since Cleland (1986) brought the stakeholder concept into the project management field, the management of project stakeholders can be considered an established area in contemporary standards of project management (APM, 2013; PMI, 2013). However, often the project owner fails to take the opinions of other stakeholders into consideration and this will attract hostility towards the project. Therefore, a vast number of interests will be affected, both positively and negatively, throughout a construction project life cycle (Olander, 2007).

Yang (2013) focuses on stakeholder analysis considering it either as a process or an approach to support decision making and strategy formulation. Whereas, Olander and Landin (2008, p. 561) state that the “stakeholder analysis process should be to identify the extent to which the needs and concerns of external stakeholders can be fulfilled, and analyse the possible consequences if they are not”. Aaltonen (2011) states that stakeholder analysis in megaprojects is an interpretation process by project managers analysing the project stakeholder environment. Therefore, the importance of identifying exactly who the participants are also includes an accurate identification of the stakeholders’ interests and their impact on the project (Achterkamp and Vos, 2008). Returning to our idea of stakeholders’ influence on the delivery of project value, the more we can identify and categorise the various stakeholder interests, the better we are able to create value-laden projects for the widest possible audience.

In order to identify and prioritise stakeholders among different and competing claims, Mitchell et al. (1997) developed the stakeholder ‘salience model’ based on three attributes of power, legitimacy and urgency. According to their typology, stakeholders belong to one of seven categories; ‘dormant’, ‘discretionary’, ‘demanding’, ‘dominant’, ‘dangerous’, ‘dependent’ and ‘definitive’. This classification system indicates the amount of attention that project managers should give to stakeholders needs and perceptions of value from project outcomes (Mitchell et al., 1997). However, although many scholars cite this model in their work, important methods such as the ‘power/ interest matrix’ (Johnson et al., 2005) and ‘stakeholder circle methodology’ (Bourne and Walker, 2005) were developed from Mitchell et al.’s 1997 work reflecting the

instrumental perspective of stakeholder theory, where prioritisation is necessary. Nonetheless, the model does not reflect stakeholder dynamic changing attitudes through the different phases of the project life cycle (Olander, 2007) and neither that the resources, nor the network positions of stakeholders can be considered static (Pajunen, 2006). The obvious implication is that project organisations face the very-real conundrum of managing for value even in the face of transitory or shifting perceptions of what stakeholders seek from the project.

The challenge of delivering value is mirrored by the concomitant challenge of identifying, understanding, and developing strategies for managing project stakeholders based on their interests and perceptions of benefits to be realised. Literature shows growing attention to stakeholder attitudes toward a project. This attitude is captured by the model proposed by McElroy and Mills (2000), which distinguishes whether a stakeholder is an advocate or adversary of the project in five levels of ‘active opposition’, ‘passive opposition’, ‘not committed’, ‘passive support’ and ‘active support’. Olander (2007) and Nguyen et al. (2009) propose a quantitative approach (‘stakeholder impact index’) to assess stakeholder impact integrating more variables from Mitchell et al. (1997), Bourne and Walker (2005) and McElroy and Mills (2000). Moreover, a social network approach (Rowley, 1997) has been applied in stakeholder analysis for a small infrastructure project by Yang et al. (2011a), which considers the interaction among multiple stakeholders by examining their simultaneous influence to forecast the corresponding responses and organisational strategies (Rowley, 1997).

Based on an infrastructure project in Hong Kong, Li et al. (2012) consolidated a list of 17 stakeholder interests and different priorities in megaprojects of major stakeholder groups. What emerged is that in many cases stakeholders seek to prevent their vested interest from being jeopardised and an issue that is very important to one stakeholder group may be the lowest priority of another group (Li et al., 2012). Some scholars focus on the link between spatial dynamics and stakeholder impact. This concept has been applied in the context of infrastructure planning by Dooms et al. (2013), which examine that stakeholder structure and interests vary with their spatial distance from the project, with stakeholders gaining higher salience as they

become geographically closer to the project (Dooms et al., 2013). However, although conceptual frameworks and analytical models have been suggested by stakeholder theory scholars, managerial priorities and concerns have been focused almost exclusively on those primary stakeholders important to the project's economic interests (Aaltonen and Kujala, 2010; Hart and Sharma, 2004).

Scholars have mainly distinguished primary stakeholders from secondary stakeholders, and classified them using the literature's prevailing stakeholder salience model proposed by Mitchell et al. (1997). Primary stakeholders are characterised by contractual relationships with the project, such as customers or suppliers, or have a direct legal authority over the project, such as governmental organisations. Secondary stakeholders do not have a formal contractual bond with the project or direct legal authority over the project (Eesley and Lenox, 2006), but they can influence the project (Clarkson, 1995). According to Aaltonen et al. (2008), while actors of such interest include community groups, lobbyists, environmentalists and other non-governmental organisations, if secondary stakeholders are excluded by project managers, they may engage in a set of actions to advance their claims, with negative consequences to direct operational costs and to the reputation of the focal organisation (Eesley and Lenox, 2006).

Much of the knowledge about stakeholder analysis practices in the megaproject context has been from the stakeholder impact perspective, especially on the impact that primary stakeholders can exert on project outcomes. In fact, the majority of prior project research has focused on the management of those primary stakeholders important to the project's resources. Secondary stakeholders seek a claim for a legitimate role in project decision making (Derakhshan et al., 2019; Olander and Landin, 2008) and therefore, more time should be spent at the front end of a project (Pinto and Winch, 2016) and developing a stakeholder engagement plan which includes a broader range of stakeholders (Eskerod et al., 2015; van den Ende and van Marrewijk 2018).

In the last decade, major steps have been made by practitioners and academics towards a broader inclusiveness of stakeholders. In fact, the NETLIPSE research (Hertogh and Westerveld, 2009; Hertogh et al., 2008), based on best practices and lessons learnt in large infrastructure projects in Europe, demonstrates the beneficial outcomes of involving stakeholders on an extended level in many megaprojects, such as the Øresund Crossing in Denmark, the West Coast Main Line in UK, the Bratislava Ring Road, the Lisboa-Porto High Speed Line and the North/South Metro line in the Netherlands. These projects are clear examples of how organisations have seen local stakeholder's involvement as valuable and considered them as an important issue in any project (Buuren et al., 2011; Hertogh and Westerveld, 2009; Hertogh et al., 2008). The management of megaprojects needs to increase and enhance transparency, fairness and participation by considering and balancing the project's stakeholders' economic, ecologic, and social interests. Project managers need to consider a long-term perspective for ethical and sustainable development which will take into account the global, regional and local stakeholders (Eskerod and Huemann, 2013). It is noted that scarce managerial attention has been given to the process of managing the social and political impact of megaprojects affecting a broader range of project stakeholders.

There are also project management scholars that have linked benefits realisation to sustainable development (e.g. Sabini et al., 2019; Silviu, 2017). Projects as a vehicle for change play a crucial role in the sustainable development of organisation and society, and recent debates have encouraged research in integrating broader societal objectives (sustainable developments) within projects (process and final goals) (Huemann and Silviu 2017). The main argument is that benefit realisation helps to understand how sustainable development can be integrated in the management of projects, linking it to strategy. Keeys and Huemann (2017) show that the benefit co-creation process is as an iterative process, shaping benefits throughout the project lifecycle involving stakeholder engagement, adaptive process and emergence of benefits in context with a broad group of stakeholders. In turn, sustainable development envision businesses and their projects to deliver benefits to a broad group of stakeholders and, on the other hand, shapes the perceptions of how stakeholders make sense of organisations' activities (Di Maddaloni and Derakhshan, 2019).

Regarded as a high-level objective in constitutional documents and official policies of states, regional, and local governments (Ji and Darnall 2018; Mossner 2016), sustainable development has been generically defined as “*development that meets the needs of the present without compromising the ability of future generations to meet their own needs*” (WCED 1987). In this definition, the values of solidarity and fairness between generations is thus evident. Along with this definition, recent literature emphasises the need for a holistic approach that integrates ecological, economic, and social dimensions when making decisions in organisations and society (e.g., Aarseth et al. 2017). It was first in 1997 when Elkington introduced the triple bottom lines of sustainability as economic, social, and environmental. From Elkington’s work, it is noticeable how the ecological, economic, and social dimensions (planet, profit, and people) are interrelated and influence each other. In this respect, sustainable development aims at reconciling economic, social, and environmental efforts through the elaboration of more comprehensive long-term strategies and societies’ wider involvement in decision making (Meadowcroft 2013; Rickards et al. 2014; Zeemering 2018).

Through discussing and conceptualising 15 of the most representative megaprojects in the UK, Di Maddaloni and Davis (2018) have investigated the benefits and challenges of a more holistic approach of stakeholder management in large scale projects. The findings from their work emphasised the need for a ‘proactive’ stakeholder management approach which takes into account both the views of primary and secondary stakeholders. Through building internal capabilities for secondary stakeholder management, organisations have to recognise the importance of creating the right vision for megaprojects and delivering not just assets but bringing extra values either at national, regional and local level. Therefore, by listening and taking on board the views of the affected people through informal and honest engagement, project managers can re-think their strategies for more sustainable megaprojects through time.

Chapter Summary

We believe that enhancing a shared view of project objectives with a wider stakeholder group aids in achieving better project performance and is a key success factor for both project managers and policy makers in order to achieve benefits development. The focus on megaprojects benefits has been from the national government's or the large public or private organisations' perspective (Mok et al., 2015), in which the local context of these projects and related stakeholder management practices are often overlooked and therefore warrant investigation (Di Maddaloni and Davis, 2017). Due to the perceived benefit shortfalls of major infrastructure and construction projects, well-organised actions from 'secondary stakeholder' groups have led to delays, cost overruns, and significant damage to the organisation's reputation (e.g., Hooper, 2012; Letsch, 2013; Teo and Loosemore, 2017; Watts, 2014). For instance, understanding and minimising the effect of megaprojects on people and places can help manage the project benefits by rethinking a more holistic approach that will take into account those stakeholders regularly affected by these projects, namely, the local community. By identifying connections and major assumptions on the influence of marginalised or disempowered stakeholders in megaprojects, this chapter remarks stakeholder management as an essential process designed to maximise positive inputs and minimise detrimental attitudes of all project stakeholders (Bourne and Walker, 2005; Cleland and Ireland, 2007).

Chapter Discussion Questions

1. Consider a project you are familiar with, list and rank the benefits in order of importance to the strategy of the organisation.

For example, the organisation may rank its profits, customer satisfaction, sustainability, innovation as high.

2. What is benefits management and why should it be considered important?

"Benefits management is the identification, definition, planning, tracking and realisation of benefits. Benefits realisation is the practice of ensuring that benefits are derived from outputs and outcomes." (APM, 2019, online)

Benefits management are important as they provide a structured approach for attaining organisational outcomes and successful delivery of projects and programmes.

3. Who should be responsible for the benefits management in an organisation?

“The main roles and responsibilities relevant to benefits management are:

- Senior Responsible Owner - responsible and accountable for programme or project success underpinned by delivery of expected benefits
- programme manager or project manager - responsible for ensuring proper day-to-day management with a strong focus on benefits realisation
- business change agent or benefits manager - oversight and direction of transitional arrangements into business as usual and the embedding of new capability to deliver expected benefits
- programme or project management office - responsible for maintaining a benefit documentation library for the programme or project including version control; the PMO may also be responsible for support and advice on benefits management and for reporting on progress towards benefits realisation
- organisational board - responsible for maintaining strategic oversight of the full range (portfolio) of benefits being projected across the organisation.” (Department of Finance, 2020, Online)

4. When should benefits management start?

Benefits management should start at the beginning of the project and be considered throughout the entire project.

5. Which elements of project value management can be identified and how these can be interpreted?

Project value concerns two interrelated but distinct elements; project performance itself, often identified as efficiency measures of delivery according to predetermined metrics of budget, schedule, and requirements; and project success, which evaluates how well projects deliver benefits that meet wider business goals, thus creating value (Cooke-Davies, 2002). Moreover, value realisation has to take into consideration both tactical and strategic elements; that is, the short-term realisation of direct project outcomes (marketplace or technical success of the venture) and subsequent strategic advantages from the project.

There are five fundamental concepts that must be embraced in order to manage projects for value:

1. Projects derive their value from the benefits that the organisation accrues by achieving its stated goals
2. Projects are expected to provide returns with associated benefits
3. There are inherent risks in projects as there is considerable uncertainty surrounding their outcomes
4. Value as a function of the resources committed (investment made) and the extent of risks taken
5. Project value is the outcome of striking a balance among the three key project elements; performance, resource usage and risk. (Goodpasture, 2002).

Case Study: High Speed 2

The High Speed 2 (HS2) project, costing a projected £50 billion (with a new projected cost estimate of £65bn to £88bn), was initiated with the purpose of increasing the West Coast Main Line capacity and connecting the North of the UK to London and Europe. This was to be delivered in three phases, covering London to Leeds and Manchester via the West Midlands (Birmingham), and joining up with existing rail infrastructure to Liverpool, Newcastle,

Edinburgh and Glasgow. This would be the UK's largest infrastructure project and encompass a number of major projects in their own right, such as land purchase and the redevelopment of London's Euston station. With 18 trains an hour that are planned to run to and from London on the new railway, the Department of Transport has claimed HS2 will cut Birmingham to London journey times from one hour 21 minutes to 52 minutes. Once the next stage is complete, journey times between Manchester and London will drop from two hours and seven minutes to one hour and seven minutes, and trips from Birmingham to Leeds would fall from two hours to 49 minutes. Figure 5 illustrates the current proposed HS2 route.

<FIGURE 5 HERE>

The overall impact of the programme is to balance more the opportunities for the UK economy by linking the North and the South of the UK. The major intended social benefits to the project are to include, increased seating capacity and supporting the longer term need, a better and faster travel experience, improved safety for passengers and fewer car journeys, as well as offering a cost effective alternative to air travel, thereby reducing environmental pollution.

Actual and Forecasted Costs:

According to the Department for Transport progress report update 2020, the Department and HS2 Ltd have spent £7.4bn across the whole programme up through 31 March 2019, of which £6.3bn has been on Phase One. Around 44% (£3.287bn) has been spent on the acquisition of land and property as shown in Figure 6. The Department's emerging estimate, as of first quarter of 2020, gives a potential cost of between £65bn and £88bn (2015 prices), between 17% and 58% more than the available funding of £55.7bn agreed with HM Treasury (National Audit Office, 2020).

<FIGURE 6 HERE>

The aim of the programme was for construction to be initiated in March 2020 and for it to be completed in full by 2033-2036. These targets have been readjusted since the review in August 2019 along with cost estimates. According to the expectations of both the Department for Transport and HS2 Ltd, partial Phase One services from Old Oak Common to Birmingham Curzon Street are to start between 2029 and 2033, with full services from Euston starting between 2031 and 2036. To date, it is not clear when full services to Leeds and Manchester will commence; however, HS2 Ltd estimates between 2036 and 2040.

Reasons for Timescale and Cost Overruns:

The current forecasted cost to complete the programme is significantly above the available funding and the programme will not be completed on time as shown in Figure 7.

<FIGURE 7 HERE>

There are lessons to be learned from the experience of HS2 for other major infrastructure programmes. Important reasons have been found to have an impact on time and cost deviations, questioning the real value of the project. These are in Table 1.

Table 1. Reasons for Cost and Time Deviations

Element of costs and schedule estimate	Reasons for change in forecast
Main civil construction	Additional cost and time of constructing bridges, tunnels and earthworks.

Station design and building	Previous estimates of contractors' overheads and design costs were based on other programmes which underestimated the cost of HS2 stations.
Railway systems	Further development of the design has led to a better understanding of the work needed for systems.
Preparatory work	Site complexity and the volume of work needed has been greater than anticipated.
HS2 Ltd costs	HS2 Ltd incorrectly assumed land and property professional fees were included in the land and property budget. The lengthened schedule also means administrative costs will be spent over a longer period.
Utility diversions	A greater volume of work needed than first anticipated, particularly for site preparation.
Land and property acquisition	Updated surveyor estimates of actual properties to be acquired.

The above key learning points underlying the cost and schedule increases summarise the reasons why Phase One is now expected to cost more than the previous cost estimate in April 2017.

Delivery of Expected Benefits

Given the changes to timescales it is currently impossible to evaluate whether the chosen benefits will be realised. The focus of any analysis to date has centred on Phase One, which connects London to the West Midlands. Sixty-six percent of the land required has been purchased to date. Preparatory work has commenced to set in place the right infrastructure to reconfigure utilities and to carry out important archaeological works on 250 sites.

Delays to the programme overall were caused largely by the underestimation of the complexity of its multiple sub-projects; in particular, that it is delivering infrastructure city to city and through urban areas with higher populations and higher disruption to services than previously thought. There were also some significant issues with the ground conditions which were encountered, requiring the need for more detailed design.

Going forward with Phase One, there will be the need to consider the test, release, and management of benefits, whilst maintaining the momentum of future releases. Integrating systems and teams that manage the day-to-day delivery with the project delivery and managing contractors who are delivering different elements of the project. HS2 is largely funded by taxpayer, which have been questioning the benefits and value of the project through the years. Those who oppose the scheme said the money would be better spent on improving Britain's current rail network, improving services outside of London first and foremost. There are also serious concerns over the impact HS2 will have on the environment, as the route cuts through some Britain's prized countryside.

Key Stakeholders

The programme involves multiple stakeholder groups as shown in Table 2.

Table 2. Key Stakeholders

Stakeholder	Responsibilities
Government – Secretary of State, Department of Transport	Managing public interest and benefits
Investors	Investment and return management
Clients	Input of requirements and driving benefits

Programme board	Directing the programme
Executives of the HS2 company and board	Decision making at company level
Network Rail	Delivery of the line
Suppliers and contractors	Delivering the existing network and new developments of the programme
Utility companies	Delivery of the line
Staff	Delivery of the line
Consumers and public	Users
Communities and groups (e.g. environmental groups)	Destroying countryside

The recommendations made in the recent review include ensuring that the programme is reviewed on a regular basis, ensuring shared management information between different parties involved and ensuring that they have the correct capabilities and contractors managing different elements of the delivery. Crucially, there is a need to ensure that the costs do not spiral out of control and that the categories of benefit promised are being monitored on a regular basis. Some consideration will be made going forwards to cost savings that can be made through utilising some of the benefits of the current infrastructure, whilst balancing this with the benefits promised at the outset.

To date, the real value of the HS2 programme remains questionable. Undoubtedly, the HS2 project is an ambitious national programme, the construction of which will take decades. The Department for Transport, HS2 Ltd and government more widely underestimated the task, leading to optimistic estimates being used to set budgets and delivery dates. In not fully and openly recognising the programme's risks from the outset, the Department and HS2 Ltd have not

adequately managed the risks to value for money. If risks had been recognised and managed earlier, then the significant activity in a pressured environment over the past years trying to understand and contain cost increases may not have been necessary.

Case Study Discussion Questions

1. Identify the benefits, disbenefits and outcomes for HS2.

Benefits: increased seating capacity and supporting the longer term need, a better and faster travel experience, improved safety for passengers and fewer car journeys, as well as offering a cost effective alternative to air travel, thereby reducing environmental pollution.

Disbenefits: Destroying local countryside, businesses.

Outcomes: improving Britain's current rail network, improving services outside of London, more the opportunities for the UK economy.

2. Is it vital to differentiate stakeholders communication strategy, or can one size fit all?

Discuss.

The reader here should discuss how the stakeholders identified in the case study will have differing levels of vested interest in the project. An appropriate stakeholder communication plan can be devised assessing the stakeholder's power, proximity and urgency to the project.

3. Does an increase in budget result in an increase in benefits?

With HS2, the budget was massively underestimated with no increase in the foreseeable benefits. The end users will still get an increased seating capacity, a better and faster travel experience, and improved safety for passengers. However, in order to complete the project, the budget had to increase.

4. Is it worth investing possibly millions of pounds to build a strong brand image for HS2?

Strong brands attract more users and increase profitability. In turn this will enhance the value and benefits for stakeholders and generate a real rate of return.

5. How can benefits and project management approaches help HS2 to work towards a successful project?

Readers should identify the benefits and project management approaches in the chapter and highlight that the application of a benefits management process on success criteria agreed by key stakeholders will promote better project management practices and subsequently have an effective impact on success.

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