

Chapter 14 – IPD from a stakeholder perspective

Authors, Kirsi Aaltonen, Martina Huemann, Christof Kier, Pernille Eskerod, and Derek Walker

Chapter introduction

We have seen in earlier chapters that integrated project delivery (IPD) provides an environment that systematically facilitates collaboration between the triad of project owner, designer and contractor. This environment helps them find innovative value adding solutions to problems and challenges facing them in delivering complex projects. Several chapters in this book support this chapter. Chapter 10 for example examines the culture of collaborative behaviours that shape a stakeholder engagement mind-set. Chapter 11 outlines and deliberates on the knowledge, skills, attributes and experience needed of team members engaged in IPD to be able to collaborate with stakeholders, and Chapter 13 discusses trust and commitment and how disputes and differences in perceiving situations may be resolved collaboratively. Chapter 23 explores ethics and social responsibility and examines ethical dilemmas that may occur when dealing with stakeholders.

The term ‘stakeholder’ has generally been accepted as any person or entity that considers that they have a legitimate stake in an enterprise because they either affect or are affected by that enterprise or they directly or indirectly interact with or have interdependencies with the enterprise (Carroll, 2012). We argue this may equally apply to a project as an initiative or form of enterprise.

This chapter introduces a number of specific concepts that help us better understand stakeholder engagement from an IPD perspective and so it extends a growing interest in stakeholder influence and impact beyond the general management field to its application to project work.

Interest in stakeholder influence on *project* delivery as opposed to general management business has been recent and emergent. Demonstration of this interest area as a significant and new aspect of project organising can be seen with several doctoral theses being produced. Doctoral research is lengthy and intense and is intended to make a new contribution so thesis completion provides a good indicator of topics and areas being seriously researched. However, it is evident that only since the early part of this century have we seen publication of any research thesis on project stakeholder management. One thesis (Bourne, 2005) was on the development of a stakeholder management tool, the stakeholder circle, in the project organising domain. Another study, undertaken in New South Wales on the social processes associated with a protest group of aggrieved stakeholders stopping a housing development project for many years, revealed the power and tenacity of some stakeholder groups and their ability to halt a project and delay it potentially indefinitely (Teo, 2009). We also see a PhD thesis on stakeholder management in international projects by Aaltonen (2010) and more recently taking a value generation perspective of stakeholder contributions (Aapaoja, 2014) and multi-stakeholder perspectives of value in project portfolios (Ang, 2018), as well as results of research work on stakeholder engagement for co-creating value with the purpose to contribute to sustainable development (Keeyes and Huemann, 2017a;2017b).

The Project Management Institute (PMI) acknowledged stakeholder importance by including it into its project management knowledge areas in its fifth edition (PMI, 2013). Several books have also been published more recently that are dedicated to stakeholders from a project perspective (Bourne, 2009; Eskerod and Jepsen, 2013). Issues about how to engage with stakeholders in project work have been discussed in PM book chapter publications ranging from Winch (2004) to more recently (Walker *et al.*, 2008a), Eskerod and Huemann (2014) and Eskerod (2017).

This book section is about behavioural aspects of IPD and this chapter takes a project stakeholder engagement perspective with a particular focus on how project participants develop coherent and positive stakeholder engagement on IPD projects. In this way it moves away from managing stakeholders in the sense that they are either manipulated or that their expectations are managed towards a direction where stakeholders are seen as active collaborators with legitimate perspectives that may help achieve project outcomes that meet both their and the project initiator's value proposition. Naturally there may also be hostile or ambivalent stakeholders. Hostile stakeholders' input may be best 'managed' in terms of minimising negative attitudes and action. Ambivalent stakeholders may be best engaged with to either maintain neutrality or to be encouraged to positively contribute to the project. In each case the term 'engagement' is perhaps more accurate than 'management'.

The above illustrates how this chapter will provide insights into stakeholder engagement targeted at projects and more specifically how it may be applied in IPD contexts. In this chapter we answer two questions:

1. What processes best facilitate stakeholders engagement and action with both external and internal stakeholders to successfully realise a project?
2. How are these stakeholder engagement processes enacted in practice within an IPD-alliancing context?

This chapter is framed as follows. First we open the discussion of stakeholder engagement in general terms. We define what we mean by stakeholders and who may be considered a legitimate stakeholder and how they may influence and impact project delivery citing several case studies from Australia. Then we discuss how digitisation has revolutionised how stakeholders can enhance collaboration between stakeholders to visualise a project output and through that visualisation be able to frame constraints and opportunities more effectively and to re-frame project objectives and requirements accordingly. We then follow that discussion by explaining and illustrating how stakeholder engagement was undertaken on several Finnish projects with critical evaluation of how that process was carried out and how it may have been improved when using a more integrated project delivery approach. We then conclude with a chapter summary that focusses upon stakeholder engagement primarily from a value capture perspective but also acknowledging its role as a risk and uncertainly management tool.

What do we mean by stakeholder engagement? Who are legitimate stakeholders?

We begin this discussion by stating our conception of stakeholder engagement as being a process of dialogue and conversation about values and what is valued by various stakeholders. Senge (1990) refers to dialogue between people not in terms of one person persuading or advocating a position to another to convince them to accept their point of view, rather it is a mutually exploratory process where perspectives are discussed to probe possibilities of mutual gain and benefit. This is how we perceive an effective collaboration process taking place between stakeholders and team members delivering a project.

Legitimation is also about the way that an interest is portrayed as a valid position to be taken on that interest. Kaplan (2004;2008) studied the way that managers frame and re-frame their perception of a situation through dialogue to resolve ambiguity and uncertainty through a process she refers to as *framing contests*. She argues that the concept of framing contests moves beyond just being about arguing a point to try to gain acceptance of a particular position as a political act or even one of impression management. Rather, the process is an exploratory one of gathering data and information

through dialogue and cognitively working through ramifications and implications to resolve ambiguity as well as expose hidden meanings, for example in reducing uncertainty about an issue. When stakeholders are engaged in this kind of process they are involved in a co-creation of knowledge because as each party strives to benefit from alternative perspective taking they enlarge their repertoire of potential frames in which to cast or re-cast a perceived problem. Often, novel and unanticipated results can emerge by changing the nature of the question. This process is similar to how some people may use software that has been developed for one specific purpose. Users often adapt it in an entirely new and productively authentic way for a purpose never envisaged by the software developer: the process is referred to as co-invention (Bresnahan and Yin, 2017).

The popularity of the stakeholder concept may be traced back to Freeman (1984; 2010). Donaldson and Preston (1995) offered a view of stakeholders from an investor-owned corporation perspective and so much of the discussion was highly transactional and about the management of stakeholders, they acknowledged that non-investor owned entities such as government and not-for-profit agencies held a different view of the role of stakeholders in business transactions. They saw stakeholder theory evolving as being descriptive, helping us to understand how business operate in response to its stakeholders; instrumental, as a force or influence that impact upon corporate performance; and normative, relating to how business should react to and manage stakeholders to be successful. They also raised the question of legitimacy: Should stakeholder concerns be considered? Who are legitimate stakeholders? How should stakeholders be managed?

However, as Freeman later explains (Freeman *et al.*, 2010) stakeholder theory, developed over three decades ago, attempted to deal with issues relating to value creation and trade through expanding the economic and highly transactional view of the role of business and capitalism. It has more recently evolved to encompass consideration of value creation rather than just profit seeking.

More recent literature on stakeholders moves away from concerns about managing or coping with stakeholders to place emphasis on engagement inclusiveness (Eskerod *et al.*, 2015) and working with stakeholders to co-create value through their ability to influence others outside the project delivery team to help them shape agendas that result in positive project outcomes (Walker *et al.*, 2008a; Walker *et al.*, 2008b).

This chapter has its focus on IPD. Therefore we discuss stakeholders in terms of:

1. being potential co-creators of value through improved understanding of what may constitute value emanating from a project (value exploration and definition);
2. understanding and articulating value delivery processes (administrative, regulative etc.) to overcome impediments to effective project delivery or facilitate procedural enablers in delivering project outcomes; and
3. their capacity and extent of influence on project delivery outputs and outcomes.

Defining stakeholder characteristics

Given the generally accepted understanding of the term stakeholder provided earlier, we can now begin to categorise stakeholders and explore their characteristics. Key elements of any stakeholder categorisation are the nature of the interaction or interdependency and the impact that they have on a project or the project's output, and the impact the outcome has on them.

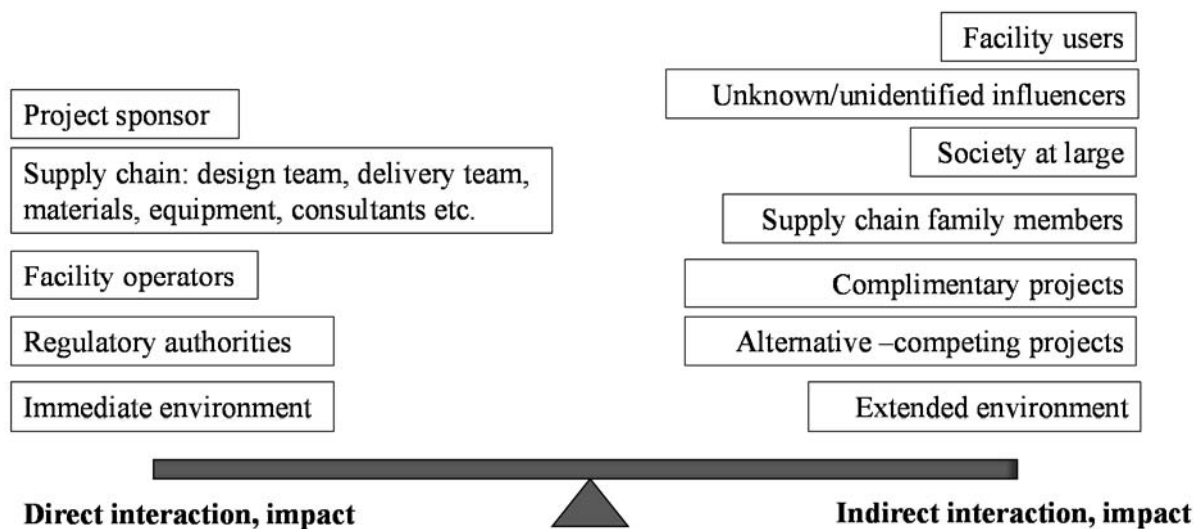


Figure 14.1 - Stakeholder spectrum

Figure 14.1 illustrates in broad terms the types of stakeholders that projects typically have to deal with. As illustrated, this is a balancing act between stakeholders who have direct interaction and impact and those who have indirect interactions and impact. Some have close impact proximity to the project while others are marginal influencers. Some have strong ability and capacity to exert influence while others hold weak power. This latter group often presents a greater challenge and is the most difficult to identify, making addressing any real or imagined concerns they may have challenging.

The direct stakeholders are usually close to the project management team (including of course the team themselves as stakeholders) and so they may be mapped, their concerns identified, and strategies to deal with their concerns developed and implemented. The indirect stakeholders are by definition distal and so their concerns may be very difficult to identify or address. For example the nature and demographic of *facility users* may change radically over time. We see this occur in the university education sector for example and in libraries where modes of learning and use of library resources have changed markedly over the past decade. We have seen in recent years more open meeting and discussion spaces in universities with higher levels of power access for computer devices and supporting Wi-Fi bandwidth. Unknown influencers may include for example influential relatives or friends of what may have been considered as a passive neighbour to a road or rail network modification project who may feel that the change is detrimental to them in some way. The influential party may have considerable background power to influence the project. As Engwall (2003) argues, no project is an island and so projects that are competing for attention and resources as well as complimentary projects also may have hidden impact and could be considered as having a legitimate potential influence on how the project proceeds.

We do not labour the point but Figure 14.1 serves to illustrate that stakeholder influence is a real constraint as well as a potential opportunity that should not be ignored. The stakeholder ‘management’ focus that was resonant a decade or so ago used tools and techniques offered to deal with stakeholder risk factors, for example the stakeholder interest intensity index (Cleland, 1999) that helps measure and assess stakeholder impact. Another tool, the stakeholder circle tool (Bourne, 2005; Bourne and Walker, 2005) helps to visualise more clearly the proximity, urgency and degree of stakeholder influence. These tools have given way to a stakeholder engagement focus that first views stakeholders as untapped sources of value co-generation. This form of stakeholder engagement is apparent in the transformation for example of VicRoads in Australia from a road authority expert

organisation that ‘called the shots’ to a community engagement organisation that seeks ways in which human transport systems are designed to fit with the natural and urban environment to add value by making the experience of travelling by car, bike or on foot more pleasant and rewarding as well as being more efficient and effective (VicRoads, 2017).

In discussing stakeholder characteristics we suggest that rather than *only* looking at them as a potential threat we should *primarily* look at them as an opportunity and learning asset. We do not reject the idea that stakeholders *can* pose a threat to a project or even that tools, useful though they may be, that help identify and visualise stakeholder impact are of limited value. Rather, we focus on the new and emerging intent in stakeholders as positive potential project partners in value creation. We later provide a case study example of how a set of direct and indirect stakeholders stalled a large urban redevelopment project in Australia. We do, however, also provide case study examples of how stakeholder engagement has been used as a value-adding opportunity search tool.

Stakeholder legitimacy

The notion of stakeholder legitimacy is wrapped up in understanding the nature (actual or potential) of the interaction and impact as well as the nature of the project performance. Stakeholders are perceived to have a legitimate claim to be heard, consulted and engaged with when they are interdependent with the project delivery team and when they may make an impact or are impacted by the project outcome (Carroll, 2012). Note that we use the term project *outcome* rather than *output*. A project may have an output that also results in an outcome with unintended positive or negative consequences. There are many examples of the delivery of government policy through projects that have resulted in unexpected negative outcomes in the way they were delivered. The Australian Building the Education Revolution mega project/program, for example, was aimed at stimulating the economy after the global financial crisis of 2007-8 while delivering much needed education facility improvements, extensions and repairs. However, the program was dogged by its agenda being hijacked by special interest groups and what may be considered waste in the construction of many of the school facilities (Kolar, 2017). The delivery of government policy initiatives through projects has been seen as having conflicting results (Young *et al.*, 2012; Young and Grant, 2015) with outcomes not matching the expected project output (i.e. policy realisation).

The study of policy realisation projects such as those cited above raises the question of stakeholder legitimacy. Which stakeholders held a legitimate stake and were these realised? Was there a form of hijacking taking place by groups of stakeholders to gain benefit at the expense of those intended to benefit? Kolar (2017) for example, cites agenda hijacking by Machiavellian stakeholders in his thesis on a major multi-billion dollar program of work undertaken as a series of projects where the original intent of the program was subverted and manipulated for political gain.

Stakeholder legitimacy is bound up with the benefits realisation plan, benefits are identified on the basis of the perceived legitimacy and authenticity of the stakeholder’s needs (Zwikael and Smyrk, 2011). Central to the issue is what is the actual benefit that needs to be realised? This is part of the requirements definition process, deciding what the output, outcome and scope of the project should be. Engagement with stakeholders who have a legitimate need is central to framing the project to provide an output that delivers the desired outcome and minimises unintended negative consequences and maximises, if possible, unintended positive consequences through synergies (by considering complimentary projects or alternative competing projects as illustrated in Figure 14.1).

Legitimate project stakeholder characteristics

The following characteristics are focussed on legitimate project stakeholders. That is those who can legitimately be seen to affect or are affected in some way by a project. Table 14.1 illustrates a narrative for stakeholder X showing both positive and negative characteristics that may be addressed through stakeholder engagement. It suggests what action may be appropriate as part of an engagement strategy by the project team and project manager. In this table we take an actor network theory perspective (Linde and Linderoth, 2006) in which an actor (stakeholder) may be a system, artefact or even process rather than a physical thing such as an organisation or person.

Table 14.1 - Stakeholder identification and risk-opportunity characteristics

Stakeholder identification	As a potential threat (negative)	Value adding potential (positive)
Project team member	Misunderstands project goals, incompetent or acting counterproductively.	Is fully motivated and committed and able to mobilise energy for a best-for-project outcome.
Project sponsor/owner or client	Is disengaged, indifferent or lacking in consistency.	Is engaged, committed and supportive.
Suppliers (material, equipment or specialist advice)	Is unfocussed, opportunistic or disinterested in project performance beyond their part.	Is open and committed to focus on project value capture potential. Has a best-for-project mind-set.
Facility operator	Is disengaged or indifferent and likely to demand late design and delivery changes to accommodate operational needs.	Is engaged and active in not only providing advice on operational practicalities but suggesting improvements.
Immediate environment - physical, political, social etc.	Is hostile or at best passive.	Is open or active in suggesting how un-considered options may provide value capture or value adding.
Unknown or unidentified influencers	Has unmapped friends, relatives or others who may promote the interest of a low-power to influence stakeholders and have an unforeseen level of influence.	Sometimes project team members do not appreciate how influential actors who have not been identified can be to exert behind-the-scenes influence or have fresh and value adding ideas.
Other projects	The project outcome may pose harm or other detrimental impacts upon complimentary parallel projects (in a program for example) or from competing projects: resourcing implication for example.	There may be synergies that have not been recognised or captured from complimentary parallel projects or even competing projects. For example where an outcome that provides potential shared value.
The general environment	Projects exist within a general environment or 'system'. There may be unexpected disruptions caused by the project's delivery with negative unintended consequences.	The project may have potential spin-off positive consequences that provide intangible or tangible benefits to the general system with opportunities for value capture.
The general public	Underestimating public opinion may cause significant negative fallout as happened with the following case study example from the work of (Teo, 2009). The consequence may be creation of coalitions against a project.	Public opinion may also be used to form a supportive coalition of interest to apply pressures in unforeseen ways to support a project or to help release pressure points or barriers.

The above provides only a sample of possibilities relating to stakeholder influence and its impact upon how a project may be delivered. Sometimes, projects have the opportunity to be expanded or

extended into a program of projects where synergies may be possible thus both scope and value may be increased or else scope may be decreased yet the original value may be captured. On the negative impact side of the story, failing to recognise distal stakeholders and their potential influence to create barriers or blockages for a project poses a real threat. Sometimes, with additional insight and consideration these may be minimised or obviated. Other times the impacts have to be coped with.

Stakeholder management and engagement strategies

With regards to recent stakeholder theory, we can draw a distinction between different stakeholder management strategies (Freeman *et al.*, 2007). These are management *of* stakeholders and management *for* stakeholders. The underlying values, challenges and perceptions of those strategies vary and will be discussed in Table 14.2, as they depict opposite positions on a continuum (Huemann *et al.*, 2016).

Strategy: Managing of Stakeholders

A managing *of* stakeholders’ strategy sees stakeholders as providers of resources with a free will, that need to be managed and who can decide whether to provide the project with that resource or not. The stakeholders are thus divided into separate groups, looking at their potential to either help or harm the project. The higher their assessed potential is, the more attention they will receive from the project team. This is called the resource-based view of stakeholder management and combined with the issue-based view shows the two characteristics of an instrumental approach. The issue-based view allows a more fine-grained distinction, as stakeholders are not classified permanently, but instead rated in relation to an issue at hand, for example environmental impact. This enables situational relevance, as for some issues some stakeholders will be more important than for others.

In its extreme, it can be seen as rather manipulative also including purposefully ignoring stakeholder groups. Ethical consideration is not central, whatever is needed for the project should be done by the project manager, who solely represents the interests of the project owner.

Strategy: Managing for Stakeholders

This approach emphasises the importance and equal right of treatment of every stakeholder, independent from the assessment of their help or harm potential. This more ethical approach is framed by Freeman *et al.* (2007, p52) as: “The very idea of managing for stakeholders is predicated on the fact that the process of value creation is about finding the intersection of interests for primary stakeholders.” If conflicts between interests of stakeholders arise, the aim is to create win-win situations between the project and the stakeholders, so that both sides should benefit from the relationship, negative effects are minimized, and an advantage can be drawn for all parties. This approach builds on values such as transparency, especially in decision making processes, fairness and participation. Freeman *et al.* (2017) introduce a four-dimensional framework for stakeholder engagement, that consists of (1) Examining stakeholder relations, (2) Communicating with stakeholders, (3) Learning with and from stakeholders and (4) Integrative stakeholder engagement. Therefore, the fourth part aims to put all other parts together, while it discusses how the study of stakeholder engagement can enrich our understanding of stakeholder alliances and stakeholder value creation.

Table 14.2 – Difference between stakeholder approaches (Adapted from: Huemann *et al.*, 2016)

	Managing <i>of</i> project stakeholders	Managing <i>for</i> project stakeholders

Perception of stakeholders	Stakeholders are instruments for achieving project success or stakeholders are ignored.	Stakeholders are a source of ideas.
Range of stakeholder considered	The most important stakeholder is the project investor. Only the most important key project stakeholders are considered. Different project stakeholder interests are considered as obstacles for achieving the project outcomes, not explicitly managed.	Many/all project stakeholders are considered, and all their different interests are collected. Different stakeholders are explicitly invited as co-creators to achieve the project outcomes that benefit a broad range of stakeholders.
Understanding of conflict	Conflict is bad and needs to be prevented.	Conflict is inherent. Different stakeholders have different interests. Conflict is not only considered bad, but the culture to positively deal with conflicts and contradictions needs to be established on a project.
Values	Manipulative orientation, often with a lack of ethical consideration. Solely economic perspective. Rather short-term oriented. Reducing complexity.	Ethical consideration, fairness, transparency, and participation. Values that support sustainable development, such as balancing economic, ecological, and social interests. Short-term and long-term oriented; consideration of impact beyond the project. Increasing complexity.
Challenge	Short-sighted project outcomes which are not acceptable or do not provide sustainable solutions.	Overburdening of the project, slow decision-making processes or even cancellation of the project or under-ambitious project outcomes.

Of course these stakeholder management strategies are two extremes on a continuum and the table describes them in black and white terms, while there are many shades in-between. In the IPD context, however, we will find more of a managing for stakeholders approach, which also brings some prerequisites, such as that the project needs to be ready to deal with the complexity that is made visible by including different stakeholders and their interests.

Examples of stakeholder engagement

We saw in earlier sections that a critical part of ‘stakeholder management’ is to first identify stakeholders who may affect or be affected by a project process or deliverable, then to assess the positive or negative impact that these stakeholders may have and finally to plan and take prioritised action (Eskerod, 2017, p174). We also see that engaging and dealing with stakeholders has emerged as a significant and now highly valued part of a project delivery process.

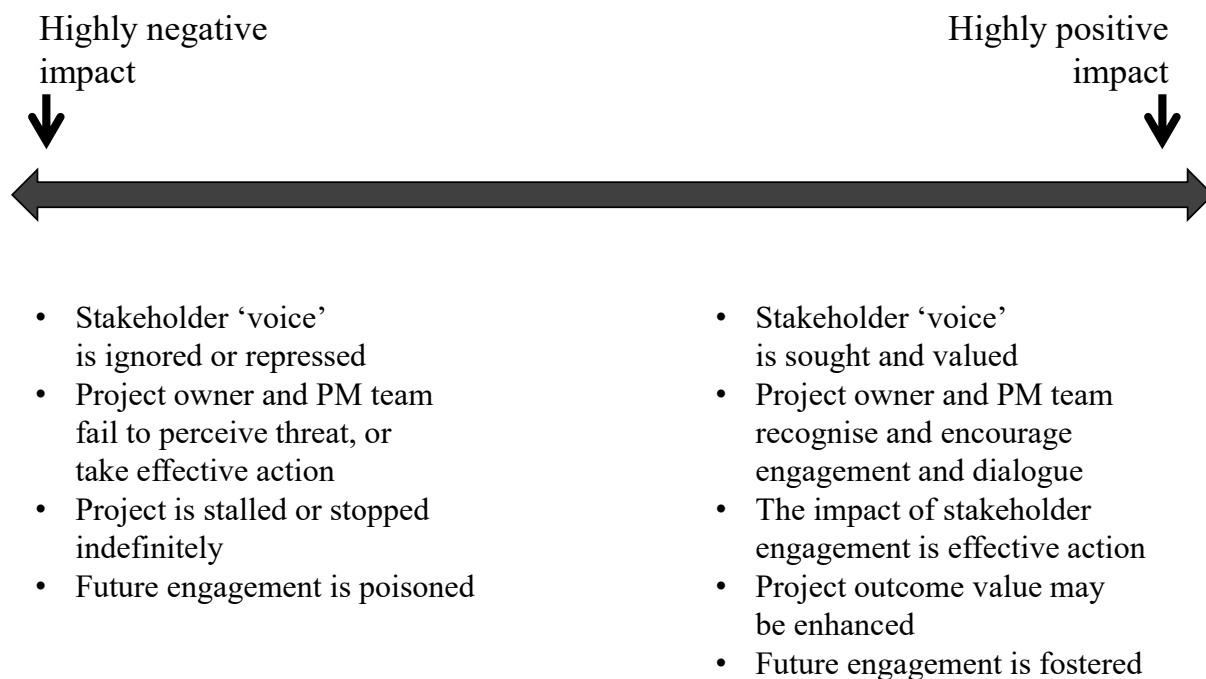


Figure 14.2 - Stakeholder engagement-action spectrum

In Figure 14.2 we see stakeholder influence from two ends of a spectrum ranging from a totally negative experience to a highly positive one. This provides us with an opportunity to illustrate the impact of stakeholder engagement and management from both ends of the spectrum.

An important part of the management of stakeholder expectations is the strength and impact of the stakeholders’ ‘voice’. The negative end of the spectrum shows stakeholders with little or no potential to influence what they may consider a vital impact from a project outcome to their interests. Their voice, their opinions and arguments, may be not sought, ignored or repressed. The project owner or leadership team may not even have considered engagement with these stakeholders and not perceiving them and their actions to be a potential threat to the project. If the stakeholders can marshal power and influence to counter the project’s aims and development then this may result in the project being stalled or stopped for an indefinite period. It is likely that outright confrontation and direct action by both sides might poison their relationship.

This may be contrasted with the other end of the spectrum illustrated In Figure 14.2 where we see stakeholder influence both sought and valued. In this situation the project owner and leadership team perceive stakeholder engagement as being a vital positive part of the project design and delivery process and they encourage collaboration and engagement to define and refine plans for the project. They perceive the stakeholder engagement processes as value adding and they foster the collaborative nature of their relationship.

We will now provide concrete examples of these two extremes to illustrate our point.

Stakeholder impact from a negative end of the engagement and impact spectrum

Some level of stakeholder engagement is inevitable in project management sectors such as construction and building development because there are legal and governmental requirements in place that must be conformed to. For example most, if not all, building and construction projects need an environmental impact process to be put in place in order to present a case that the project will have

negligible negative impact and a possible positive impact. The ‘environment’ and those stakeholders who may ‘have a voice’ relating to the environment would be considered as significantly influential stakeholders in such cases. These projects also require planning permission that involves considering another set of stakeholders, ‘neighbours’ and members of the public who may consider themselves to be impacted by the project’s outcome or building process. On many social infrastructure projects such as transport, water supply, sewerage and other waste disposal projects, the general public may be seen as front-and-centre key stakeholders.

The way that project definition, planning and delivery is undertaken can vary between being highly technocratic to being highly socially orientated. This may significantly affect the way that stakeholder management takes place. For example a highly technocratic approach may result from the project owner believing that the project proposal is logical and ‘must be done’ and that the owner and delivery team are best qualified to exercise their managerial prerogative. This may trigger resentment and resistance by stakeholders. The root cause of this mind-set of ‘prerogative’ is the project owner and/or delivery team’s understanding and perception of what constitutes value. The ‘owner’ of a road, rail or utility pipeline project for example (that is the responsible government department) may see the value as efficiently delivering the infrastructure on a value for money basis. Value is discussed in more depth in Chapter 4. If the mind-set is that the facility *must* be delivered to provide the public in the most *efficient* way then the owner and project delivery team may well be best qualified to technically deliver the project. However, there may be relevant aspects of the project such as the exact route or whether the facility is built at ground level or below or above ground that could gain more value from stakeholder input and engagement. The issue of ethics is also relevant here. Chapter 23 discusses ethics in great depth. For other areas, such as new product development, the stakeholders that are considered are restricted to mainly project output users and supply chain providers (Pons, 2008).

Projects may easily be delayed or stalled without careful preparation and stakeholder engagement planning action. Evidence of this happening on an Australian study extends our understanding, from a project management perspective, of how protest movements mobilise and maintain political pressure when aggrieved by controversial projects (Teo and Loosemore, 2010). The study revealed the power of community collective action and, as the authors highlight, ‘The development was the subject of a long-standing, and sometimes bitter and violent protest that spanned over 20 years that included the establishment in 2001 of Australia’s longest standing 24-community picket that was controversially destroyed by arsonists in 2006’ (Teo and Loosemore, 2010, p220). Figure 14.3 illustrates a key events map from 1998 to 2006.

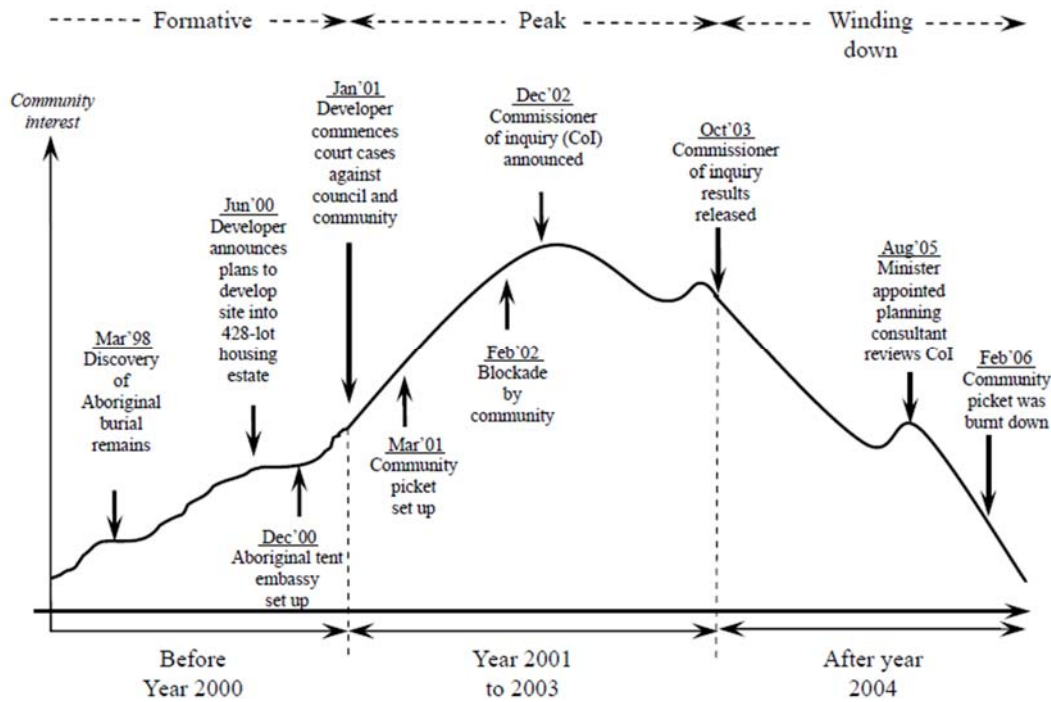


Figure 14.3 - Stakeholder case study engagement-action event map (Source: Teo, 2009, p126)

Teo's study (2009) showed how intractable collective action can be when stakeholders believe that justice and ethics are being trampled upon and when they believe that 'the system' is so corrupt, or its integrity so compromised, that violent action is their only meaningful and valid response. In that case study the trigger was a developer's actions concerning discovery of the 6,000 old remains of an aboriginal man. The site was also an environmentally sensitive one and the planning process was found to be compromised with various officials being subsequently prosecuted for corruption. This triggered a perfect storm of stakeholder resistance to the development.

Teo's study (2009; Teo and Loosemore, 2010) shows a tragic but highly visible progression towards conflict and negative stakeholder action. The problem started with vague disquiet about the project development approval from various community groups because the site was considered a local beauty spot and a natural environment common asset that had considerable recreational and environmental value. The burial remains of an aboriginal elder were found that were subsequently assessed by experts as being 6,000 years old. The area was part of an aboriginal settlement and had been occupied for many thousands of years. One highly visible and disruptive stakeholder action was the establishment of a 'tent embassy' by protesters who successfully picketed the project. This picket lasted for many years. Readers interested in this case study can access it and the time line account in particular. Appendix A and B of Teo's (2009) PhD thesis provides interesting reading from both an ethics and stakeholder engagement perspective.

The interesting thesis content relevant to this chapter is the explanation of how stakeholder management was so completely mismanaged. As recently as February 2018 newspaper reports document the acrimonious atmosphere and of the dispute about the development (see <http://www.illawarramercury.com.au/story/5222876/sandon-point-aboriginal-tent-embassy-to-be-cleared-out-by-council/>). Clearly, this is a prime example of poor stakeholder engagement. One can only speculate about the impact of this misjudgement by the original project developers. The cost of

legal fees, wasted management energy that could have been productively deployed on other projects, and the costs associated with wasted time, materials, damaged equipment represents just the tip of the iceberg. Community anger, indeed *communities'* anger was palpable. This dispute enraged not only the aboriginal community but also local residents, environmentalists and other groups that believed that justice had been subverted and that this was a totally unethical project. Parties associated with the project bore a stigma of being considered at best complicit, and at worst exhibiting corrupt ethical values and reprehensible behaviour. The thesis written by Teo and several subsequent academic papers (2009; Teo and Loosemore, 2010) take a measured view in writing this case study. However, it is clear from newspaper reports cited in that thesis and various other available internet sources (perhaps of questionable value due to possible bias) that this case study illustrated a lack of consideration of stakeholders that were assumed to be powerless. Despite their lack of formal power, they managed to influence a broad coalition of interests that were similarly ignored but proved to be a powerful and effective restraining force to the project execution. This case provides a salutary lesson in how *not* to manage stakeholders.

Stakeholder impact from a positive end of the engagement and impact spectrum

Chapter 23 in this book has its focus on ethics. Of particular interest to this chapter is the issue of ethical perspectives and how that may impact stakeholder management. In that chapter several salient stakeholder issues are discussed. One issue is the perspective of ethics as 'the greater good' in which it is believed that the interests of those that benefit from a project's outcome and the process of its output are of greater value than that of those who may be adversely affected but are in the minority. This classic 'end justifies the means' approach has some ethical foundation from a utilitarian perspective but is totally lacking in validity from the perspective of justice ethics.

The justice ethics perspective favours due process and respect for an individual's rights despite that being potentially in conflict with the wishes of the majority. Taking a stakeholder perspective this ethical argument can be framed as follows. Is it reasonable to trample on the rights of some stakeholder groups to facilitate a benefit or advantage to a majority stakeholder group? In the above case study this question may be re-phrased as: why should a housing development that provides shelter for a great number of people be held up or stalled by a vocal minority group of protesters who are concerned about some 'old bones' and infringement of a local beach access when Australia has thousands of kilometres of coastline and as an island-continent has abundant environmental habitat for wildlife? We do not attempt to answer this provocative question here but raise it as an issue often raised when taking a stakeholder perspective on the validity of concepts of value and what type of value may be delivered to stakeholders of a project. Chapter 23 discusses a project undertaken in Australia, the Sugarloaf North-South water pipeline, in which a wide range of stakeholder issues were considered and addressed. An important point to be made here is that the case study discussed in Chapter 23 presented a totally different mind-set to that of the above case study reported upon by Teo (2009). The Sugarloaf North-South water pipeline project explicitly sought out ways in which engagement with a wide range of stakeholders could not merely risk-manage the project but to add value (Smith *et al.*, 2010; Lloyd-Walker and Walker, 2017).

We now discuss in more detail the mind-set that supports a stakeholder as a value-adding, or value-creation activity. The collaboration of project designers and implementers with stakeholders in terms of better understanding true needs and details of how projects may be delivered has been well documented in the organisational learning literature where learning from users of a project's output contributes greatly in refining details of how the project is managed (Leonard-Barton, 1992;1995; Leonard and Straus, 1997). Supply chain member stakeholders and operational users of a facility

often best know the intricacies of how systems may interrelate and how to avoid unintended adverse consequences. This is what Leonard-Barton refers to as empathic learning (Leonard-Barton, 1992;1995). However, not only supply chain stakeholders have knowledge of the context of a project that may be highly valuable in value adding to an infrastructure project outcome as was revealed in the way that another Australian project delivery agency has transformed itself.

VicRoads is the government instrumentality that manages the public road system in Victoria, Australia. Its website home page states ‘VicRoads plans, develops and manages the arterial road network and delivers road safety initiatives and customer focused registration and licensing services.’ <https://www.vicroads.vic.gov.au/about-vicroads> accessed April 2nd 2018. In 2017 it published its 5 year engagement strategy (VicRoads, 2017). An important new development in the way that VicRoads sees its mission can be observed from its comment:

*‘The road network is for everyone, and we need to make the smartest use of it. Whether you live in the growing outer suburbs, small rural towns or in the centre of Melbourne. We believe communities and stakeholders are best placed to identify and understand the challenges, and co-design and implement solutions.
Engage VicRoads is the start of a continuing conversation with citizens and communities to drive a culture of high-quality engagement at VicRoads to get better outcomes for people’ (p2)*

The comment best illustrates two points with this government agency’s attitude towards stakeholders. First, it places people at the centre of its focus. The engagement strategy also refers to the importance of commuters and freight sharing the use of roads. The tone of the document is inclusive and responsive. Second, it acknowledges that the agency has much to learn from others and cites several other jurisdictions that have developed engagement strategies that VicRoads learned from. It also makes clear that people and the values of people are a vital focus of the agency’s efforts. The engagement strategy explains its seven guiding strategy principles (VicRoads, 2017, p6-7).

Table 14.3 - Engagement strategy principles

Principle	Explanation of the principle
We know why we are engaging and we communicate clearly	VicRoads uses terms such as genuine, authentic and innovative pointing out that it is clear about the extent to which customers and communities may influence the outcome with ideas and feedback on proposals.
We deliberately include as many people as we can	Their wording includes ‘Our aim is to hear the views and ideas of the quiet majority, not only the noisy minority.’ They also talk about targeting their messages to fit their audience and they identify interested stakeholders as ‘non-government organisations, advocacy groups, universities and think tanks, whose insights can add to the first-hand experience of people directly affected.’
We are sensitive to the history and know the context	They acknowledge the different approaches to the agency’s past actions and how that may have shaped opinions and perspectives. It also speaks to wanting to understand the values of stakeholders and communities.
We engage early on the challenges and not the solutions	They stress that early involvement and engagement opens up options to better identify challenges rather than advocate pre-held solutions. This principle is about the art of listening and perspective taking.
We listen at every stage and we keep coming back	The use the term ‘active listening’ and co-designed solutions and mobilising ideas to be talked and thought through for ramifications and consequences.
We are genuine	VicRoads dismisses a ‘tick-the-box’ approach to engagement. It also promises to openly acknowledge its mistakes when made rather than hide them.
We are relevant and purposeful	They opened up an on-line hub forum for ideas and discussion sharing in addition to a range of other forms of community and stakeholder engagement to avoid people’s voices being drowned out by noisy interest groups or others who have the resources to advocate with slick presentations.

The language used in this document is interesting in that it is set, in both power and information symmetrical terms, in a situation in which VicRoads and stakeholders are connected as collaborative participants contributing to the intended project design and delivery. This is consistent with IPD ideals.

The engagement strategy is also presented with an interesting illustrated figure to explain its five year journey with milestones along the way. The starting point is marked with a quote-bubble containing the words 'starting point', 'less engaged', 'lower performing' and the implementation of 'change'. This image clearly acknowledges past failures that are typical made by many bureaucratic organisations that appear to dehumanise service delivery. They illustrate a similar quote-bubble marker at the end of the 5-year journey. This bubble contains words such as: 'realised benefits of high performance' and 'high engagement'. Each bubble has a list of statements below it to illustrate the bubble content. Along the journey path are milestone events: develop an engagement plan; build our capability; develop our relationships; put community and stakeholder programs into place; and passionate and capable staff (VicRoads, 2017, p11).

This plan demonstrates a willingness and plan to radically address the way that stakeholders may be engaged with as collaborators. It acknowledges that in the past VicRoads staff tended to spend most of its time, energy and committed resources on infrastructure projects' issue management with considerably less effort on project stakeholder engagement and very little effort on strategic engagement and relationship management. This model was reflected upon as being ineffective, wasteful and representing poor value for money. The proposed new model for the 5-year plan shows most of the effort, resources and energy being committed to relationship engagement and partnerships with a significant focus on strategic engagement. This results in far smaller effort and resources being needed for issue management. The plan is ambitious. Less than 12 months after its publication there is considerable effort being applied that we cite and discuss below.

The model of engagement is instructive. It fits the high positive end of the spectrum illustrated in Figure 14.2. The VicRoads strategic engagement plan presents three case studies to illustrate how their principles were applied in practice. Case Study 1 recounts how, on a 55 kilometre highway duplication project to improve road safety and a more efficient route, the *estimated* removal of 221 mature large trees turned into the *reality* of removing 1,600 trees. This consequently triggered community outrage. The traditional approach would be to engage with stakeholders to manage the issue. The sequence would follow a stakeholder engagement, planning, seeking and approving the funding, then actually commencing the project sequence. However, this proved disjointed and consequently the reasons for making various decisions (and no doubt compromises) were lost in the mists of time. When the fact that 1,600 trees had been removed became known, nobody was able to explain why and how this could have happened. The lesson that VicRoads learned from that experience informed their conviction to change their stakeholder engagement approach. The approach to planning for the next stretch of highway duplication is being handled radically differently with a more open, transparent and collaborative approach with stakeholders. This helps to present contextual knowledge about how decisions were previously made and how the process was changed to inhibit repeating errors.

Case Study 2 is a project underway at the time of writing this chapter (April 2018). The Hoddle Street and Punt Road stretch of continuous road each side of the Yarra River in Melbourne is a major arterial traffic road that has been neglected for decades in terms of how to increase its carrying capacity.

Various schemes were proposed over the years including demolition of hundreds of homes to make way for road widening, building a tunnel road beneath the road and a range of other contested and rejected proposals. In April 2016 the State Government committed \$60 million to fund the first stage of the *Streamlining Hoddle Street* project to upgrade four key intersections between the Eastern and Monash freeways. Explaining the traffic flow complexities and various technical engineering and safety issues proved a challenge because gaining stakeholder input into addressing conflicting interests, seeking an ethical and just solution and rectifying the increasingly escalating traffic flow problems required some breakthrough thinking. The problem faced is essentially a ‘wicked problem’.

A wicked problem is one in which there is no ‘right answer’ and all solutions are in some way unsatisfactory (Rittel and Webber, 1973; Finegan, 2010; Hancock, 2010). Addressing a wicked problem requires sophistication, goodwill, trust between parties to the decision and their having highly advanced negotiation skills. One major challenge is to create a meaningful dialogue in which bias is minimised, relevant information is made freely available and a just and authentic conversation is had about options - including the impact of procrastination on the wicked problem situation. Case Study 2 followed an approach to make the debate and discussion as open and inclusive as possible. VicRoads held numerous ‘town hall’ meetings, face-to-face sessions, expert panels with participants from various communities (academic, local and others) as well as creating an on-line forum to post and follow discussion points. Every effort was made to communicate in simple terms because the technical issues were complex and not easy to explain without expert background knowledge. There was a high need for credible and honest communication styles and forms and delivery platforms. The VicRoads document indicates that:

‘A live, online community event on the design of the Swan Street intersection was held on 6 September 2016. More than 400 people visited the broadcast page, and 173 people tuned into the live stream - listening, watching, providing feedback and asking questions for 45 minutes. The session received extremely positive feedback from members of the community and key stakeholders, with colloquial descriptions of the “glorified u-turns” and pen markings on maps giving people a much better sense of what is being proposed.’ (VicRoads, 2017, p18)

This project is still not without its critics and there remains the inevitable political point scoring in the Victorian Parliament but the process followed, as illustrated above, highlights how engagement can at least lead to a sensible understanding of a project’s aims, design, expected delivery complications and likely potential consequences.

Case Study 3 discusses the stakeholder engagement process for another over-due project: a bridge crossing. This process is important according to the VicRoads Chief Executive because VicRoads wanted to find out ‘what was really going on at the family level, and what matters to most people’. The engagement plan included hiring an independent research company to conduct a door-to-door community survey that reached 87% of households in the area with a 59% response rate. The existing bridge was notoriously difficult and dangerous for cyclists. This degraded an amenity for bike riders as the area is set among beautiful riverside parklands and a large nature reserve. The engagement plan focus is now on ‘*supporting the best local design solutions to on-road cycling lanes on both sides of the highway, separating the shared user paths and celebrating local heritage and the environment through the public open space designs.*’ (p21). This illustrates how additional (communal and recreational amenity) value from a project may be achieved through taking an integrated collaborative approach. Feedback was gained directly from a cycling group. The report states ‘*Tessa Salmon from Metro Projects joined in a morning ride to understand the group’s views and concerns. They wrote. “The old VicRoads were about roads: the new VicRoads seems to be much more about people... Your*

willingness to see things from other perspectives to a variety of views makes you a great ambassador for the organisation.” (p21).

Each of these three case studies illustrates a mind-set that has shifted from the left end of Figure 14.2 to the right hand side. Different techniques were deployed to engage with identified stakeholders and the VicRoads 5 year priorities 2016-2020 of:

1. Developing an engagement framework with the Engage VicRoads specialist team and interactive website <https://engage.vicroads.vic.gov.au/> ;
2. Building capability with regional plans, capability audits, funding models for early engagement and processes;
3. Broadening the VicRoads stakeholder audience through applying a range of processes, tools, training career development and performance accountability of staff;
4. Listening and learning through reflection, auditing improvement initiatives and learning through coaching and mentoring; and
5. Developing passionate and capable staff through engagement by embedding the stakeholder engagement culture and community development programs in the strategic planning process.

While the 5-year plan may appear at one level to be highly effective ‘spin doctoring’ to some observers, it nevertheless documents evidence to demonstrate that VicRoads is progressing along that journey. Further evidence of this being an institutionalised organisational change is apparent with another major infrastructure program of works being undertaken in Melbourne in which VicRoads is a participant.

Digitisation as a game changer for project stakeholder engagement

In several chapters in this book we discussed the Victorian Level Crossing Removal Program (LXRP) and various innovations developed, supply chain management (SCM) and lean construction aspects and other illustration of how the program is engaging more fully with not only the direct alliance internal stakeholder team (the alliance owner participant (OP) but also alliance non-owner participants (NOPs) such as the facility operators, design and delivery team) but also affected residents adjacent to the project sites and the wider community. An important part of engagement process increasingly involves digital sources. A relevant example that clearly illustrates the use of visualisation and virtual emersion digital technologies is the use of simulators to help stakeholders better understand what they may expect of the project and how it may affect their work for facility operator stakeholders.

LXRP-1 interviewee explained how the design and development team were designing the details of the signalling systems by working with experienced train drivers who used the simulator to assess the practicalities of the proposed design.

This is Sky Road. This is what it will look like just before we start our occupation. So, this is the point cloud survey ... you set up all these things around the place, you don't have to get into the rail corridor. ... they setup little scanners all over the place and they just take images for two days. ... The reason we've done this video, that's a signal there, so we want to show the train drivers, 'This is what it will look like just before this closure, can you still see the signal there? Are you happy with that?'

So, we're building this all in 3D, fully offline, so you know how far your clearances are to all the powerlines here ... We're going to start planning our future occupations in here, so when we go and talk to a stakeholder we say, 'Okay, let's push the button and we'll see what happens on day one and day two.' That's already paying dividends, particularly with talking to stakeholders, so you can go and show stakeholders where this service is in the ground, 'Here's where the piles are

going to be, here's where we set up our piling rig, here's where the concrete is going to arrive,' and it gives them a bit of comfort that their service is going to be protected.

This clearly shows two important aspects of stakeholder engagement for value added activities. First, the simulation helps the designers and delivery team to identify potential dangerous hot-spots to design-out such problems as well as to visualise the work being undertaken. Second, by engaging with the train operators, drivers or managers or specialists of one kind or another, the *practicalities* of the proposed design can be explored so that fine tuning, radical change even through new bright ideas can be made at the early design stage at far less cost and time interference than would be the case afterwards. Love (Love *et al.*, 2004; Love *et al.*, 2008) for example has demonstrated the value of preventing re-work and even how that may lead to reduction in safety breaching incidents (Love *et al.*, 2018). Stakeholder participants engaged in a simulation dialogue such as that described above gain value through better understanding what the new facilities will look and 'feel' like but more importantly they can flag concerns and trigger improvements before the design has been finalised.

Another example of early stakeholder involvement can be seen in projects that use gamification for stakeholder engagement. Digitalisation has enabled construction projects to use digital infrastructure for games, which can directly relate to the concept of managing for stakeholders presented earlier in this chapter. Game thinking can be used to engage people, motivate action, promote learning and solve problems while integrating stakeholder groups to participate in early planning phases (Kier and Huemann, 2018).

The Werken aan de Ring, i.e. the work on the Brussels Ring Road provides a European example of gamification in stakeholder communication. The project involves about 20 kilometre of renovated road, 20 kilometre of new cycle lanes and 60 kilometres of new tram lines around Brussels in Belgium. The Brussels Ring Road has a long history, with parts being 65 years old, in general not able to cope with the today's volume of traffic. The renovation wants to inject new life into the Ring Road, making it ready for today's traffic while making the surrounding more liveable for the communities, but changes the concept of how to utilise the ring road. To get the municipalities or communities involved into the project, the project not only set up several information sessions to give stakeholders the opportunity to share and engage, but the project also opened their digital models for a broad audience. The digital models were used to program a driving simulator, to give all stakeholders a look and feel of the project and introduce them to the new traffic situation after the reconstruction of the Brussels ring road, while playing a game.

The user can see the dashboard of a virtual car on the Simulator Website, while choosing a departure point (Dilbeek, E40 Gent, A12 Antwerp, E19 Antwerp, E40 Brussels or Wezembeek-Oppem). The online driving simulator is based on a preliminary design and therefore does not correspond 100% to the future ring, but it is used to get a first acquaintance with the structure of the ring. With the online driving simulator, the Flemish government wants to introduce drivers to the parallel structure of the future Ring, where lanes are separated from each other via a main and parallel runway. The road will consist of main and parallel lanes and several nodes or junctions, a completely new concept and structure for the road network in Flanders, which therefore needs new ways of stakeholder communication.



Figure 14.4 – Driving Simulator at the interchange of Groot-Bijgaarden, an interchange of two junctions (picture taken from the simulator) (Kier and Huemann, 2018)

This form of stakeholder communication enables stakeholder engagement in a more informal way and allows stakeholders also to provide contributions by for instance providing feedback to the plans. It allows integrating stakeholder groups, that one is not so easy able to reach with roadshows and other information events. Gamification can be considered as a medium to reach out to stakeholder groups to become members of the project coalition to allow for value co-creation based on their voluntary involvement.

Stakeholder engagement from an IPD-Alliancing Perspective

We have now explored and explained stakeholder management and engagement in general terms and provided examples of both good and bad practices. In this section we will provide insights purely from an IPD, and more specifically an alliancing, perspective based on experiences of alliancing in Australia and Finland.

Stakeholder engagement experiences from an Australian alliancing perspective

The level crossing removal program (LXRP) (see <https://levelcrossings.vic.gov.au/projects>) is an initiative to remove 50 of the most dangerous road-rail crossings at a current estimated cost of \$8.3 billion at July 2017 (Victorian Auditor-General's Office, 2017, p9). The program commenced in 2015 and is scheduled to remove the 50 crossings plus associated works that includes new or refurbished railway stations and urban parkland works by 2022. This program is discussed in more detail in Chapter 17 from a supply chain management and lean construction perspective of IPD in which links to a number of you-tube videos are provided to illustrate how the project was delivered. Those videos are part of an open and transparent communications strategy to allow stakeholders to better understand the purpose and progress of the program of work.

The following discussion aims to provide further evidence of the shift in mind-set towards stakeholder engagement as a seriously undertaken project management process that is clearly present in Victoria. It provides a concrete example of measures and initiatives that are explored, experimented with and enacted. This shifts the stakeholder practices to the right hand side of the continuum illustrated in Figure 14.2.

The LXRP has a substantial staff of dedicated stakeholder engagement professionals and each alliance participant is keenly aware of their need to effectively engage with stakeholders as part of the alliancing approach adopted to deliver these projects. According to a recent study of the program, key alliance team members interviewed observed that each alliance member is made aware of the importance of the way that project participants interact with its stakeholders (Walker *et al.*, forthcoming). The program is managed through a series of 11 project alliance work packages. All but two packages involve work on a multi-site basis with 4 to 9 sites being worked on (Victorian Auditor-General's Office, 2017, p48). The following high-level benefits were identified that indicate the range of stakeholders to be engaged (p61):

- **‘Improved productivity from more reliable and efficient transport networks**—addressing the congestion and delays caused by level crossings will improve the efficiency of Melbourne’s transport networks.
- **Better connected, liveable and thriving communities**—removal of level crossings will reduce delays and increase the attractiveness of living and investing in areas surrounding the crossings.
- **Safer communities**—removing rail and road intersections will eliminate the conflict points between trains and road users, and trains and pedestrians, reducing the number of crashes.’

The stakeholder engagement process has been extensive and intensive. The Level Crossing Removal Authority (LXRA) website (<https://levelcrossings.vic.gov.au/media/publications#>) page for Media > Publications provides readers with some idea about the range, style and content of publications that are freely available. Readers who wish to explore that web site further would find a series of videos (<https://levelcrossings.vic.gov.au/media/videos>) as well as updates on disruptions, news and general information and communication about the various projects. The website also has a platform to provide feedback and commentary.

One initiative that is illustrative of the way that this program of works presents itself to the public was the ‘Super-sized machines on show at Scienceworks’. Scienceworks is a science and technology museum in Melbourne. The show held between 31st March and 15th April 2018 showcased the big blue ‘monster machines’ that were used to remove level crossings on a narrow part of the Cranbourne/Pakenham rail line in Melbourne’s south east.’ A replica of specialist equipment comprising two gantry cranes, a straddle carrier and 90-metre support beams made up of 5,000 Lego bricks shows how they combine to lift, shift and install the ‘building blocks’ for the new 2.4 kilometre section of elevated rail. Also, engineers who had worked on the project gave short talks for children on 10, 11 and 12 April 2018 (10:30am and 11:30am each day). Regular updates on progress on the LXRP are provided by subscriber email delivery so that interested stakeholders could be kept automatically informed.

The engagement strategy also was highly collaborative in nature in terms of shaping the design. Most of the stations’ design development, for example, comprised an iterative process of initial design ideas being presented in ‘town hall’ type meetings and other similar forums to gather feedback, for the design and delivery team to better understand the issues of local residents’ concern so that as many concerns could be addressed as possible through dialogue. Community involvement is particularly focussed on by viewings of environmental impact statements for comment being made available through online access. Projects have viewing platforms being constructed. Events are scheduled to showcase work being undertaken. In general there is a wealth of information and communication made highly accessible through a variety of media vehicles.

Discussion through interviews with key senior alliance participants involved in Program Alliance 1 work package, that was considered particularly successful, confirms that stakeholder engagement was also vital for internal stakeholders. The rail operator for example was a central and highly engaged non-owner participant (NOP) of that alliance. The operator's alliance management team representative stated in a recorded interview, that the rail operator's role was critical in helping the design and delivery team understand critical issues affecting the operator. The highly intensive interaction with the rail operator being an active part of the alliance team meant that significant innovations were identified and experimented with and that process and other innovations became possible through the integration of this participant in the alliance (Walker *et al.*, forthcoming).

Stakeholder experiences from an IPD alliance perspective in Finland

The number of IPD and project alliances has increased significantly in the Finnish infrastructure and construction sector over recent years. The first project alliance was Liekki, a 100-million-euro railway renovation project started in 2011. According to the latest statistics, since year 2011, altogether 50 integrated project deliveries have been or are being executed, and the overall value of these is three billion euros (Petäjaniemi, 2018). The results and experiences of the use of integrated forms of project delivery have been highly encouraging, particularly in the context of complex and uncertain projects. For example, in the delivery of a highly complex 180-million-euro tunnel construction project, Rantatunneli, all the owners' targets were met or outperformed, and the project alliance that consisted of five organisations was able to implement the project in a manner that made effective use of collaborative practices and platforms as well as lean construction methods (Finnish Transport Agency, 2018).

The introduction of more integrative and collaborative methods for delivering projects has also brought about a significant philosophical change in how both internal and external stakeholders are engaged with the project planning and decision-making processes in the Finnish construction sector. Instead of the management of stakeholders' perspective prevalent in traditional project delivery models, stakeholders are now being considered more and more as knowledge co-creators, with and for whom the value is produced through multi-stakeholder collaborations in the project system.

The paradigm change, from management *of* stakeholders to systemic stakeholder engagement and management *for* stakeholders, involves extensive integration of clients, designers, contractors, and other specialist suppliers relatively early on in the project life cycle and also the use of novel and sophisticated methods of engaging with end-users and external stakeholders. Over the course of these integrated project deliveries in Finland, various new methods and tools have been introduced and implemented in order to facilitate proper stakeholder engagement processes and optimize the value of the whole system, rather than creating a zero-sum games between actors (Hietajärvi *et al.*, 2017). Selected methods for more in-depth internal and external stakeholder engagement include the following:

- Novel visualisation and simulation techniques to improve stakeholder communication and to help with receiving stakeholder inputs
- Early and constant integration of various stakeholders into the project planning processes and use of joint co-locational project working spaces to facilitate stakeholder collaboration and dialogue
- Value planning and mapping processes to facilitate value co-creation processes and ensure value-for-money and value-for-stakeholders thinking
- Implementation of incentive systems that incorporate a strong stakeholder value perspective and KPIs related to stakeholder engagement

- Extensive, inclusive, and transparent engagement of stakeholders through social media channels and special events and workshops organised for diverse stakeholders
- Assigned resources and roles for external stakeholder engagement and communication in complex projects
- Establishment of collaborative project identity to facilitate stakeholder identification with, loyalty to, and commitment to the project
- Formal demonstration and reporting of the benefits that can be achieved through stakeholder engagement

For example, in a 500-million-euro university hospital construction and renewal program in Northern Finland¹, “The Future Hospital OYS 2030,” different kinds of visualisation processes and tools were utilised as a method for stakeholder engagement (<http://www.oys2030.fi/english.php>). Computer Aided Virtual Environment (CAVE), a virtual environment, is one example of the use of visualisation for stakeholder engagement that has been employed extremely beneficially for interactive end-user engagement. With CAVE, designs can be explored at their real scale while the users of the space evaluate them under the guidance of an architect. Different user groups can explore the building at its real size and engage in planning the spaces intelligently based on their future use needs. The exploration of alternative futures through advanced visual means and technologies also supports stakeholders in the development of their own future operating processes.

The early integration of designers, contractors, clients, and other relevant stakeholders through collaborative contractual, organisational, and technical arrangements has been one of the cornerstones of the Finnish integrated project deliveries (Hietajärvi *et al.*, 2017; Hietajärvi and Aaltonen, 2018). For example, in the Rantatunneli project alliance, the elements that produce value for the owners and for different stakeholders were mapped, and a Target Value Design process was systematically implemented to support and ensure the guidance of the project toward its target value. This value engineering process also supported the balancing process between different stakeholders’ claims. Furthermore, stakeholders were engaged with the value creation processes through an idea-and-innovation-management program and system that aimed at crowdsourcing widely novel ideas and innovations from the stakeholder network and implementing them efficiently. According to the project’s value-for-money report, the generated innovations resulted in a total savings of approximately 20 million euros in connection with the setting of the target outturn cost during the development phase (Finnish Transport Agency, 2018). Overall, a well-planned incentive system that also encourages more peripheral stakeholders such as suppliers at sites to generate and voice their innovations related to, for example, work processes or safety management, as well as replicating these innovations across sites, has been considered important in the Finnish alliances. To ensure that long-term perspectives and the needs of the operational phase are also incorporated into the project development scheme, representatives from service providers, operators and the respective authorities are typically integrated into the project management team early on.

Broader and inclusive stakeholder engagement also requires incentives and performance metrics that ensure that the voices of the stakeholders are truly heard and appreciated (Kivilä *et al.*, 2017). Integrated project deliveries typically incorporate key result areas that have an effect on how the bonuses and sanctions are shared in the project. What has been highly positive from the perspective of external stakeholder engagement is that more and more stakeholder-related key result areas, such as the public image of the project or the level of stakeholder collaboration, have become areas that are

¹ For a summary of the project see <http://www.oys2030.fi/english.php>

measured and controlled. For example, the 280 million euros Tampere Tramway project, which is delivered through a project alliance, regularly measures the public image of the project (level of positive, neutral, and negative communication regarding the project in the media) and, for example, the effects of the construction work on the local community and citizens (<https://raitiotieallianssi.fi/in-english/>). Engagement of diverse groups has also taken innovative forms; for example, children's drawings on the tramway have been used for the project's Christmas cards and blogs, with children's experiences of and stories about the construction sites published on the project website. Collaboration and the embrace of diverse stakeholders are therefore truly part of the lived values of the project.

The Rantatunneli project also used various novel channels for building a dialogue with stakeholders, such as the development of social media groups (Facebook, Twitter) for exchanging information and ideas about the project, organizing special visiting events and collaborative workshops at the co-locational spaces of the project, and organising memorable visits of the actual tunnel construction sites. Extra coordination resources were assigned to manage and take care of the external communications and stakeholder relations.

The establishment of a strong, collaborative project identity is one means for overcoming silos and boundaries across stakeholders and ensuring identification with and commitment to the project. An 'us versus them' mentality should be transformed into the mentality that everyone is in the same boat. Visual signs such as joint symbols, logos, and badges in addition to a joint co-locational space 'Big Room' (for a detailed explanation of how a big room works, see Alhava *et al.*, 2015; Dave *et al.*, 2015) are visible means of building an understanding of who everyone is as unified by the project. In the first Finnish alliance, the Liekki project, the importance of establishing a strong collaborative identity was considered crucial, and various socialization mechanisms were used to facilitate this. Informal gatherings and the joint development and explication of collaborative values, for example, supported the development of an alliance ambience and joint cooperation in the project (Aaltonen and Turkulainen, 2018).

Engaging stakeholders in a value-adding manner is not only a question of introducing novel tools and processes for stakeholder management. More importantly, it is a question of a deep cultural change demanding new kinds of attitudes, mentalities, mind-sets, and values toward stakeholder engagement. The transformation process from more closed project set-ups to transparent, collaborative, and open processes may take time and may also, at first, pose socialisation tensions and struggles affecting daily project work that need to be resolved. The findings from the Finnish project alliances imply that proper collaborative facilitation for working in co-locational spaces and crossing disciplinary boundaries is needed to ensure that stakeholders and actors do not revert to old ways of working and establish sub-groups across disciplines (Matinheikki *et al.*, 2018). Particularly, the roles of the project manager and the client's representatives are crucial in rooting the new, open ways of sharing information and building transparent dialogues with diverse stakeholders. However, when collaboration is persistently fostered within the project, stakeholders gradually learn to really value the new ways of integrating and collaborating and start valuing the learning benefits of, for example, designer-contractor collaboration. In addition, the formal demonstration (e.g. in value-for-money reports) of how the involvement of diverse stakeholders can actually produce valuable innovations and even improve the well-being at work is important for the legitimacy of broad stakeholder engagement. As one interviewee from the Finnish alliance project researched by Hietajärvi and Aaltonen (2018) stated, "Now that I can see what can be achieved through stakeholder engagement, it will be highly challenging for me to return to working in more traditional projects with their negative atmosphere." The level and spirit of collaboration has clearly changed in the Finnish construction sector because of the introduction of project alliancing principles and lean thinking, but more work is

still needed in terms of integrating the wider supply chain more extensively into collaborative project processes.

Chapter Conclusion

This chapter began by providing an explanation of what the literature has to say about stakeholder engagement and the entities that may be considered legitimate stakeholders. It went on to present a stakeholder spectrum in Figure 14.1 ranging from those with direct to those with indirect impact and interaction, and the discussion led towards stakeholder legitimacy with Table 14.2 describing differences between stakeholder approaches and Figure 14.2 illustrating the stakeholder engagement spectrum. The discussion then moved from a general to a specific IPD stakeholder perspective.

The chapter's aim in shaping the discussion of current best practice in stakeholder engagement was focussed by posing two questions:

1. What processes best facilitate stakeholders engagement and action with both external and internal stakeholders to successfully realise a project?
2. How are these stakeholder engagement processes enacted in practice within an IPD-alliancing context?

The first question was answered by analysis of the general stakeholder engagement processes reported upon in several case study examples. The first case study example illustrated an extremely negative stakeholder impact upon a project and the consequences of this level and type of engagement. The case study that followed discussed stakeholder impact from the positive end of the stakeholder engagement spectrum with Table 14.3 illustrating six engagement strategy principles adopted by VicRoads in Australia who are participants in a number of project and program alliances that were also highlighted in the chapter. The following section discussed digitisation as a game changer with examples of how augmented reality and visualisation may be used to help stakeholders better understand various elements of the project design through using digital visualisation technologies. This provided an answer to question one by detailing practices used for stakeholder engagement in a dialogue to try to co-develop greater value for a range of project stakeholders. We saw that this value was delivered through the following best practices:

1. True dialogue to share ideas and opinions on how stakeholders may perceive value. The process of dialogue helps uncover aspects of value to one party or another that may not have been understood or even considered without that process. Social value, environmental value as well as cost and time savings may be identified and achieved through dialogue;
2. Practices we saw implemented included intense stakeholder engagement through a variety of mechanisms including 'town hall' discussion, panel presentation and question and answer sessions, interview surveys through face-to-face and door-to-door means, extensive on-line web site interaction and making available You-tube videos, reports and discussion documents and a range of other relevant publications and literature;
3. Ensuring that the organisation delivering the projects have a shared mind-set that values stakeholder involvement and welcomes and fosters it;
4. We also saw that augmented reality tools such as simulators and virtual reality digital systems can help stakeholders better *feel and experience* the project output than is possible using many traditional modelling tools;
5. In terms of *bad* practice, our illustration of the Teo PhD study (2009), and particularly Figure 14.3, showed how far things can go wrong and get out of control when stakeholder engagement is ignored or poorly handled; and

6. Figure 14.2 illustrates a continuum of negative to positive stakeholder engagement processes.

This last chapter section answered research question two by provided examples of how stakeholder practice takes place in alliancing with case study insights from both Australia and Finland.

The chapter provides a valuable new contribution to the stakeholder literature as it has its specific focus on stakeholder engagement from an IPD-alliancing perspective.

References

- Aaltonen, K. (2010). Stakeholder Management in International Projects. PhD, *Department of Industrial Engineering and Management*. Espoo, Helsinki University of Technology.
- Aaltonen, K. and Turkulainen, V. (2018). "Creating relational capital through socialization in project alliances." *International Journal of Operations & Production Management*. **38** (6): 1387-1421.
- Aapaoja, A. (2014). Enhancing value creation of construction projects through early stakeholder involvement and integration. D.Sc. (Tech.), *Faculty Of Technology, Industrial Engineering And Management, University of Oulu Graduate School*; Oulu, Finland, University Of Oulu.
- Alhava, O., Laine, E. and Kiviniemi, A. (2015). "Intensive big room process for co-creating value in legacy construction projects" *Journal of Information Technology in Construction (ITcon)*. **20** (11): 146-158.
- Ang, K. C. S. (2018). Multi-stakeholder perspectives of value in project portfolios. *School of Systems, Management and Leadership Faculty of Engineering and Information Technology*. Sydney, University of Technology Sydney.
- Bourne, L. (2005). Project Relationship Management and the Stakeholder Circle. Doctor of Project Management, *Graduate School of Business*, Melbourne, RMIT University.
- Bourne, L. and Walker, D. H. T. (2005). "Visualising and Mapping Stakeholder Influence." *Management Decision*. **43** (5): 649-660.
- Bourne, L. M. (2009) *Stakeholder Relationship Management*, Farnham, Surrey, UK, Gower.
- Bresnahan, T. and Yin, P.-L. (2017). "Adoption of New Information and Communications Technologies in the Workplace Today." *NBER Innovation Policy & the Economy (University of Chicago Press)*. **17** (1): 95-124.
- Carroll, A. B. (2012) *Business & society : ethics, sustainability, and stakeholder management*, Mason, Ohio, South-Western/ Cengage Learning.
- Cleland, D. I. (1999) *Project Management Strategic Design and Implementation*, Singapore, McGraw-Hill, Singapore.
- Dave, B., Pikas, E., Kerosuo, H. and Mäki, T. (2015). "ViBR – Conceptualising a Virtual Big Room through the Framework of People, Processes and Technology." *Procedia Economics and Finance*. **21**: 586-593.
- Donaldson, T. and Preston, L. E. (1995). "The Stakeholder Theory of the Corporation: Concepts, Evidence, and Implications." *Academy of Management Review*. **20** (1): 65-91.
- Engwall, M. (2003). "No project is an island: linking projects to history and context." *Research Policy*. **32** (5): 789-808.
- Eskerod, P. (2017). Chapter 12 Stakeholders. *Cambridge Handbook of Organizational Project Management*. Sankaran S., R. Müller and N. Drouin. Cambridge, UK, Cambridge University Press: 172-185.
- Eskerod, P. and Huemann, M. (2014). Managing for Stakeholders. *Gower Handbook of Project Management* R T. J. Aldershot, UK, Gower: 217-232.
- Eskerod, P., Huemann, M. and Ringhofer, C. (2015). "Stakeholder Inclusiveness: Enriching Project Management with General Stakeholder Theory." *Project Management Journal*. **46** (6): 42-53.
- Eskerod, P. and Jepsen, A. L. (2013) *Project Stakeholder Management*, Farnham, UK, Gower.
- Finegan, A. D. (2010). *Wicked Projects in Land Management - Case Studies from Climate Change and Disaster Recovery*. Project Management - Creating a Future, Darwin, 10-13 October, Meyer P., Australian Institute of Project Management: 11pp.

- Finnish Transport Agency (2018). Rantatunneli - Value for Money Report. Finnish Transport Agency/Projects, Helsinki, Finland, ISBN: 978-952-317-535-8 64pp.
- Freeman, R. E. (1984) *Strategic management: A stakeholder approach* Boston, Pitman.
- Freeman, R. E. (2010) *Strategic management : a stakeholder approach*, Cambridge, Cambridge University Press.
- Freeman, R. E., Harrison, J. S. and Wicks, A. C. (2007) *Managing for Stakeholders: Business in the 21st Century. Managing for Stakeholders: Survival, Reputation, and Success*, New Haven, Yale University Press.
- Freeman, R. E., Harrison, J. S., Wicks, A. C., Parmar, B. L. and de Colle, S. (2010) *Stakeholder theory the state of the art*, Cambridge, U.K., Cambridge University Press.
- Freeman, R. E., Kujala, J. and Sachs, S. (2017) *Stakeholder Engagement. Issues in Business Ethics*, Zurich, Springer, Cham.
- Hancock, D. (2010) *Tame, Messy and Wicked Risk Leadership*, Farnham, UK, Gower.
- Hietajärvi, A.-M. and Aaltonen, K. (2018). "The formation of a collaborative project identity in an infrastructure alliance project." *Construction Management and Economics*. **36** (1): 1-21.
- Hietajärvi, A.-M., Aaltonen, K. and Haapasalo, H. (2017). "What is project alliance capability?" *International Journal of Managing Projects in Business*. **10** (2): 404 - 422.
- Huemann, M., Eskerod, P. and Ringhofer, C. (2016) *Rethink! Project Stakeholder Management*, Newtown Square, PA, Project Management Institute.
- Kaplan, S. (2004). Framing the future : cognitive frames, strategic choice and firm response to the fiber-optic revolution. Boston, Massachusetts Institute of Technology
- Kaplan, S. (2008). "Framing Contests: Strategy Making under Uncertainty." *Organization Science*. **19** (5): 729-752.
- Keeyes, L. A. and Huemann, M. (2017a). Chapter 22 Organizational Project Management and Sustainable Development (SD) Managing the Interface of Organization and Project SD Benefits. *Cambridge Handbook of Organizational Project Management*. Sankaran S., R. Müller and N. Drouin. Cambridge, UK, Cambridge University Press: 326-343.
- Keeyes, L. A. and Huemann, M. (2017b). "Project benefits co-creation: Shaping sustainable development benefits." *International Journal of Project Management*. **35** (6): 1196-1212.
- Kier, C. and Huemann, M. (2018). Digitalization as game changer in Project Stakeholder Management. *2018 IRNOP - A skilled hand and a cultivated mind*. Walker D. Melbourne, RMIT: 18pp.
- Kivilä, J., Martinsuo, M. and Vuorinen, L. (2017). "Sustainable project management through project control in infrastructure projects." *International Journal of Project Management*. **35** (6): 1167-1183.
- Kolar, D. (2017). Improving the Link between Project Management and Strategy to Optimise Project Success. PhD, *School of Property, Construction and Project Management*. Melbourne, RMIT University.
- Leonard-Barton, D. (1992). "The Factory as a Learning Laboratory." *Sloan Management Review*. **34** (1): 23-38.
- Leonard-Barton, D. (1995) *Wellsprings of Knowledge - Building and Sustaining the Sources of Innovation*, Boston, MA, Harvard Business School Press.
- Leonard, D. and Straus, S. (1997). "Putting Your Company's Whole Brain to Work." *Harvard Business Review*. **75** (4): 110-121.
- Linde, A. and Linderoth, H. (2006). An Actor Network Theory perspective on IT projects. *Making Projects Critical*. Hodgson D. and S. Cicmil. Basingstoke, UK, Palgrave MacMillan: 155-170.
- Lloyd-Walker, B. M. and Walker, D. H. T. (2017). The Sugar Loaf Water alliance - An Ethical Governance Perspective. *Governance & governmentality for projects - Enablers, Practices and Consequences*. Muller R. Abingdon, Oxon, Routledge: 197-220.
- Love, P. E. D., Edwards, D. J. and Irani, Z. (2008). "Forensic project management: an exploratory examination of the causal behaviour of design induced rework." *Engineering Management, IEEE Transactions on*. **55** (2): 234-247.
- Love, P. E. D., Irani, Z. and Edwards, D. J. (2004). "A rework reduction model for construction projects." *Engineering Management, IEEE Transactions on*. **51** (4): 426-440.

- Love, P. E. D., Teo, P., Ackermann, F., Smith, J., Alexander, J., Palaneeswaran, E. and Morrison, J. (2018). "Reduce rework, improve safety: an empirical inquiry into the precursors to error in construction." *Production Planning & Control*. 1-14.
- Matinheikki, J., Aaltonen, K. and Walker, D. H. T. (2018). "Politics, public servants, and profits: Institutional complexity and temporary hybridization in a public infrastructure alliance project." *International Journal of Project Management*. **in press**.
- Petäjaniemi, P. (2018). Alliancing in Finnish Transport Agency, Finland. Baarn, Netherlands, NETLIPSE, Network for the dissemination of knowledge on the management and organisation of large infrastructure projects in Europe: 25pp.
- PMI (2013) *A Guide to the Project Management Body of Knowledge, 5th Edition*, Sylva, NC, USA, Project Management Institute.
- Pons, D. (2008). "Project management for new product development." *Project Management Journal*. **39** (2): 82-97.
- Rittel, H. W. J. and Webber, M. M. (1973). "Dilemmas in a General Theory of Planning." *Policy Sciences*. **4** (2): 155-169.
- Senge, P. M. (1990) *The Fifth Discipline - The Art & Practice of the Learning Organization*, Sydney, Australia, Random House.
- Smith, S., Anglin, T. and Harrison, K. (2010) *Sugarloaf Pipeline A Pipe in Time*, Melbourne, Sugarloaf Pipeline Alliance, Melbourne Water.
- Teo, M. M. M. (2009). An investigation of community-based protest movement continuity against construction projects. PhD, *Built Environment Faculty of Built Environment* Sydney, University of New South Wales.
- Teo, M. M. M. and Loosemore, M. (2010). "Community-based protest against construction projects The social determinants of protest movement continuity." *International Journal of Managing Projects in Business*. **3** (2): 216-235.
- VicRoads (2017). Engage VicRoads, Strategy. Melbourne, Victoria State Government: 18pp.
- Victorian Auditor-General's Office (2017). Managing the Level Crossing Removal Program, Melbourne, ISBN 978 1 925226 58 4 101.
- Walker, D. H. T., Bourne, L. and Rowlinson, S. (2008a). Stakeholders and the Supply Chain. *Procurement Systems - A Cross Industry Project Management Perspective*. Walker D. H. T. and S. Rowlinson. Abingdon, Oxon, Taylor & Francis: 70-100.
- Walker, D. H. T., Bourne, L. and Shelley, A. (2008b). "Influence, Stakeholder Mapping and Visualisation." *Construction Management & Economics*. **26** (6): 645-658.
- Winch, G. M. (2004). Managing Project Stakeholders. *The Wiley Guide to Managing Projects*. Morris P. W. G. and J. K. Pinto. New York, Wiley: 321-339.
- Young, R. and Grant, J. (2015). "Is strategy implemented by projects? Disturbing evidence in the State of NSW." *International Journal of Project Management*. **33** (1): 15-28.
- Young, R., Young, M., Jordan, E. and O'Connor, P. (2012). "Is strategy being implemented through projects? Contrary evidence from a leader in New Public Management." *International Journal of Project Management*. **30** (8): 887-900.
- Zwikael, O. and Smyrk, J. (2011) *Project management for the creation of organisational value*, London, Springer