Blake Dawson

AUSTRALIAN CONSTRUCTORS ASSOCIATION

INFRASTRUCTURE PARTNERSHIPS AUSTRALIA
BUILDING AUSTRALIA TOGETHER

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energy supply association of australia

Scope for Improvement 2011

Project risk – Getting the right balance and outcomes

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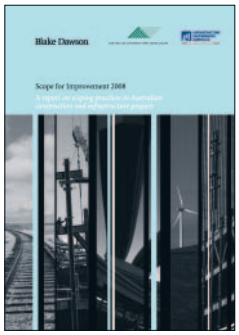
SCOPE FOR IMPROVEMENT 2006

A survey of pressure points in Australian construction and infrastructure projects



SCOPE FOR IMPROVEMENT 2008

A report on scoping practices in Australian construction and infrastructure projects

You can find our previous reports at: www.blakedawson.com/publications/scopeforimprovement

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Foreword

The last 18 months have seen the Australian construction, infrastructure, energy and mining sectors emerge from challenging domestic and global economic conditions.

Future growth is expected to be driven by increasing demands for commodities, less difficult access to capital and strong population growth.

With an increasing number of projects in the pipeline, in order to make the most of the dynamic environment it is extremely important for project participants to overcome obstacles to consistently deliver successful projects.

One of the key findings of the first report in the Scope for Improvement series was that risk allocation was a major pressure point for construction and infrastructure projects. The third edition of Scope for Improvement further investigates the importance of the treatment of risk to project outcomes.

This report provides project participants with an insight into how risk is identified, allocated and managed by industry players and provides organisations with guidance on procedures to promote appropriate risk allocation and effective risk management for the benefit of industry and the broader Australian economy.

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Background

PROJECT PRESSURE POINTS AND SCOPING PRACTICES

In 2006 and 2008, Blake Dawson undertook industry wide research in relation to Australian construction and infrastructure projects.

These studies formed the basis of the 2006 and 2008 *Scope for Improvement* reports which together surveyed $80 billion worth of projects. They each covered a cross-section of projects throughout Australia and considered the perspectives of diverse stakeholders.

The 2006 *Scope for Improvement* report focused on pressure points which arise during projects. Pressure points are obstacles standing in the way of the delivery of a project and incidents creating stress to a project or its participants.

The 2006 report indicated that scoping practices and risk allocation were two major pressure points for projects. The 2008 *Scope for Improvement* report delved deeper into scoping practices.

THE 2011 REPORT INTO PROJECT RISK

Building on the 2006 and 2008 key findings, Blake Dawson has undertaken further research to investigate the specific issue of risk in projects.

This research focuses on developing a better understanding of approaches to risk identification, risk allocation and risk management, and the impact of those approaches on project outcomes. In addition to reporting on approaches to project risk, this report considers how those approaches can be improved to secure better project outcomes.

The research for this report was sourced from a survey of industry participants throughout Australia, as well as interviews with industry figures from both the public and private sectors. The projects on which survey responses are based were undertaken in the five years preceding the survey, with an average project value of approximately $470 million and a total value of approximately $55 billion.

What is risk?

For the purposes of this report, "risk" refers to a potential event or circumstance which, if it occurs, could result in an adverse impact on the outcomes of a project.

WHY THIS RESEARCH IS NECESSARY

All projects involve risk. With a large number of projects in the national pipeline and limited funds available, better risk identification, allocation and management is fundamental to assist in the successful delivery of projects to improve Australia's productive capacity and competitiveness.

Accordingly, a broader discussion on risk is required to ensure capital is spent as effectively and efficiently as possible.

In 2010–2011, Australia and other countries have experienced extreme natural events and seen how such events can have a catastrophic impact, including on a country's infrastructure. As funds are already committed to specific new projects, the consequences of these events and the need to rebuild basic infrastructure has led to further demands being made on limited government funds, increased competition for private sector funds and created the need for new sources of funding.

Key features of demand for project funding include:

- **Infrastructure Partnerships Australia currently estimates the backlog of infrastructure projects to be valued at $770 billion.[1]**
- **It is estimated that there will be $5.6 billion in direct costs to the Federal Government along the Eastern Seaboard due to natural disasters (which includes rebuilding and financial assistance payments).[2]**
- **It is estimated that the costs of rebuilding Queensland alone will be $3.9 billion.[2]**
- **It is estimated that the costs of rebuilding other flood affected areas will be $1 billion.[3]**
- **At the end of April 2011, there were 94 energy and resources projects at an advanced stage of development, with a record capital expenditure of $173.5 billion. This represents a 31% increase from October 2010.[4]**
- **In 2010–11, exploration expenditure in Australia's minerals and energy sector is estimated to be $5.9 billion, broadly similar to expenditure in 2009–10.[4]**
- **New capital expenditure in the mining industry is estimated to be $55.5 billion in 2010–11, 53% higher than in 2009–10.[4]**

With such significant amounts required to be spent on major projects in the coming years, it is crucial that risk identification, allocation and management is as effective and efficient as possible for better project delivery and the efficient use of resources.

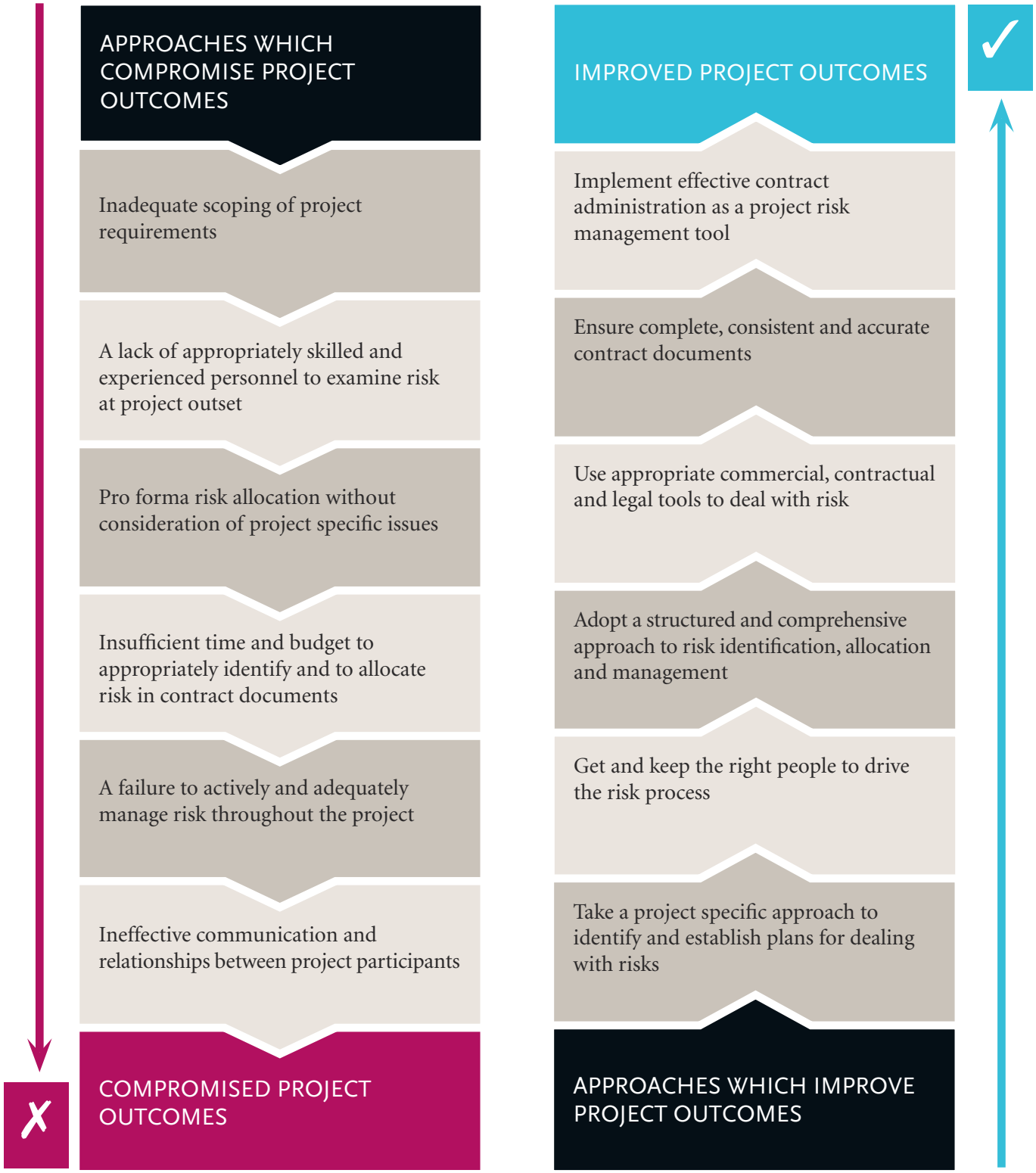
1 Brendan Lyon, Chief Executive Officer, Infrastructure Partnerships Australia – June 2011

2 The Prime Minister of Australia, Press office, "Rebuilding after the floods", (27 January 2011), http://www.pm.gov.au/press-office/rebuilding-after-floods

3 The Prime Minister of Australia, Press office, National Press Club Address – Julia Gillard, "I see what needs to be done and I will do it": Speech to the National Press Club (27 January 2011), http://www.pm.gov.au/press-office/i-see-what-needs-be-done-and-i-will-do-it-speech-national-press-club

4 New, R, Ball, A, Copeland, A et al. Minerals and energy, major development projects – April 2011 listing, ABARES-BRS, Canberra, May 2011.

Scope for improving the treatment of risk



Key findings

GETTING BETTER

The majority of survey respondents (74%) indicated that organisations involved in major construction, infrastructure, energy and resources projects in Australia have well developed, well understood and consistently applied policies and procedures to identify, allocate and manage risk.

The majority of industry participants (64%) also believe that risk identification, allocation and management is improving. Many respondents indicated that they saw:

- a more detailed and sustained focus on risk issues throughout the course of a project
- improvements due to lessons learnt from experience
- a greater appreciation of the benefits that come from a good approach to risk issues.

HOWEVER THERE ARE STILL CONCERNS

Although the trend is generally positive, there remain significant differences in views on the appropriateness of the allocation of risks, depending on whether participants are principals or contractors

58% of contractors felt that all, or the majority of risk, were imposed on them and 43% thought risk allocation was inappropriate; while most principals thought risk allocation between parties was not imposed and was appropriate.

Key risks are commonly being allocated in an inappropriate manner

Respondents identified the following key risks as being commonly allocated in an inappropriate manner: time for completion/delay (51%), design (49%), scope inadequacies (49%), and site conditions (40%).

The key factor influencing risk allocation is what the principal requires

Respondents suggested that principals shift risk onto contractors because they have the power to do so. Principals may think this is the best commercial solution for them, even though responses indicate that inefficient, inappropriate risk allocation leads to poorer overall outcomes.

Contractors indicated that they will accept risk they cannot mitigate or manage. It would seem they do this because of the overwhelming desire to win work, possibly without securing an appropriate price to assist in managing that risk.

There are inconsistencies in how vigorously internal policies and procedures for risk identification, allocation and management are applied to projects, and there is also doubt about the effectiveness of those policies, even when applied

A substantial majority of respondents (87%) said they had risk policies and procedures in place but more than a third thought they were ineffective for their particular project or said they were not applied at all. 10% of respondents said they did not undertake any formal risk identification prior to contract entry.

In nearly 30% of projects, key risks were first identified after contract signing

Projects in which this occured included 25% of those projects which were considered to have effective risk identification processes.

Key risks most often missed related to scope inadequacies, third party interface risks, and health and safety risks. This indicates that a broader focus is needed at the time risks should be identified.

A range of factors lead to less than "best practice"

These include insufficient time to properly deal with risk identification and allocation at the outset of the project, ineffective communication among parties and across disciplines, and lack of appropriately skilled and experienced resources to manage risk throughout the project.

AND THERE ARE CONSEQUENCES

Failure to implement policies and procedures are significant contributors to compromised project outcomes

Survey respondents indicated that failure to effectively implement appropriate policies and procedures, or adopting inappropriate risk allocation are significant contributors to:

- delayed completion (32%)
- cost overruns (28%)
- reduced quality (21%)
- disputes (29%).

Less than 20% of projects that either did not have, or did not apply, risk policies and procedures were delivered on time, on budget and to the required quality.

When risk policies and procedures were applied and also risk allocation was considered appropriate, twice as many projects were reported to have better time, quality and cost outcomes than when it was not appropriate.

More generally, under half (48%) of the projects surveyed were delivered on time, on budget and to the required quality.

INDUSTRY CAN IMPROVE HOW IT DEALS WITH RISK

Step back and take a project specific approach

It is not enough to simply deal with risk only when negotiating the contract documents. Parties must step back and try to identify all the risks that could delay or impede successful project delivery and then plan how to deal with them – take pre-emptive action to eliminate them or at least reduce their significance, or most efficiently and effectively allocate, price and manage the risks.

Project participants should not take a "black and white" approach to risk, wholly allocating risks to one party or the other. The appropriate treatment of risk for each project will be different, depending on a variety of factors unique to that project.

Risks which are to be allocated must be priced and managed, and can provide opportunities to achieve outcomes which contribute to the success of a project.

Get and keep the right people involved to drive the risk process

In order to be able to successfully deal with risk throughout the project, the right people need to be involved and kept involved.

Experienced personnel and lessons from previous projects will provide guidance and education to others involved on a project.

Project experiences need to be learnt through debriefs and audits, as well as through the secondment or transfer of key project personnel to facilitate skills development, so there is a sharing of knowledge and experience.

Also, individuals who are to deliver a particular project should be included in the "bid team", and visa versa, to ensure project specific knowledge is retained and applied.

Adopt a structured and comprehensive approach

Structured and comprehensive risk workshops represent "best practice" in the identification and management of risks.

Sufficient time and budget need to be allocated and people from a wide range of backgrounds (from both the principal and contractor teams) need to be involved to bring varied viewpoints and expertise together.

In addition, a continual focus on risk throughout delivery for each project is essential. Reliance only on contractual protections is not enough and can result in missed opportunities to deal with risk in an efficient and timely way to avoid adverse project outcomes.

It is imperative that organisations ensure that proven and approved approaches to risk are implemented consistently and with appropriate flexibility.

Adopt a considered, informed and timely approach to using the "tools" available to deal with risk

A key point is to recognise that there is a variety of tools available for dealing with risk.

The key challenge is to select the most appropriate commercial and contractual tools for the risks in the project.

Ensure complete, consistent and accurate contract documents

Ensure effective assembly and completion of the contract documents, reviewing them as a whole to ensure internal consistency and coherence. Be absolutely clear which documents constitute the contract.

Where precedent documents are used (legal or technical) always take care that they are suitably adapted for each project.

Implement effective contract administration

When the contract documents are executed do not just put them away. Ensure project personnel know the relevant contract terms and mechanisms, undertake regular contract reviews and use the contractual provisions as an effective project management and communication tool.

Contract familiarity and effective communications enable risk strategies to be implemented to eliminate or reduce the impact of risks when they occur.

Where appropriate, robust contractual communication can be combined with facilitative "without prejudice" communications to find timely solutions when risks materialise.

Implement effective dispute risk mechanisms

It is essential that project participants be alert to the prospect of disputes.

Parties should agree in advance proactive mechanisms which facilitate project participants addressing risks in a timely manner when they emerge.

Such mechanisms can be a cost-effective solution in preventing or avoiding disputes.

The state of risk treatment in projects

Most organisations surveyed had risk policies and procedures in place, and responses indicate that approaches to risk are improving.

However, the situation is by no means perfect.

There remain significant differences in views on the appropriateness of the allocation of risks between project participants. Often material risks are only being identified when the project is well into the delivery phase. There are inconsistencies in how vigorously internal policies and procedures for risk identification, allocation and management are applied to projects. There is also some doubt about the effectiveness of those policies, even when applied.

Failure to implement effective risk treatment, or adopting inappropriate risk allocation, continues to have a significant impact on the time, cost and quality outcomes of major construction, infrastructure, energy and resources projects.

GETTING BETTER

The results clearly show that the majority (74%) of organisations involved in the major construction, infrastructure, energy and resources projects surveyed have well developed, well understood and consistently applied processes to identify, allocate and manage risk.

Industry participants (64%) also believe that risk identification, allocation and management are improving. Comparisons with data collected in 2006 also supports this view:

- The proportion of respondents who felt that risks were totally or predominantly imposed rather than negotiated fell (45% in 2011 compared with 58% in 2006).

PERCENTAGE OF RISKS TOTALLY OR PREDOMINANTLY IMPOSED

- The proportion of respondents who felt that risk allocation on their particular project had been inappropriate also fell (29% in 2011 compared with 44% in 2006).

RISK ALLOCATION WAS INAPPROPRIATE

In one sense, this is not surprising. Given the maturity of the industry, and the sophistication of organisations involved in the delivery of these significant and often complex projects, it would be expected that practices and procedures would not only have been in place but also have been refined over time to improve risk treatment.

Industry viewpoints

IS RISK IDENTIFICATION, ALLOCATION AND MANAGEMENT GETTING BETTER OR WORSE?

"Better, as experience increases and market conditions refocus the mind on avoiding losses."

"Better as the culture and systems continue to evolve."

"Better due to increased knowledge regarding the importance of both risk and opportunity identification and management."

WAYS IN WHICH RISK IDENTIFICATION, ALLOCATION AND MANAGEMENT IS IMPROVING

Many respondents indicated that they have seen evidence of:

- better policies and procedures being developed
- a more sophisticated and detailed focus being placed on risk issues as part of the formal bidding and contract negotiation process
- more regular and structured reviews of risk throughout the project from conception through to completion.

There was a prevailing view that organisations have a greater appreciation and understanding of the benefits that come from a clear and structured approach to risk issues.

There was also an indication that the level of experience within the industry in identifying and managing risks is improving, with a focus, at all levels of project organisations, on improving future processes by indentifying "lessons learnt" from each project and looking at ways to improve in the future.

Industry viewpoints

HOW IS THE TREATMENT OF RISK GETTING BETTER OR WORSE?

"Getting better with improved tools and procedures in identification and management."

"More adoption of good risk practice. Regular risk reviews. Focus on risk management…"

"We now understand how to identify and manage risks on our major projects, you must have the fundamental skills within your own organisation to identify and manage risks."

BUT THERE ARE CONCERNS

While the responses to the survey indicate that the overall trend might be seen to be improving, a number of observations show that there remain areas of concern.

Nearly 30% of respondents feel that there are problems with approaches to risk that need addressing.

DIFFERENT PERCEPTIONS, DEPENDING ON WHO YOU ARE

Overall, a significant number of respondents (45%) indicated that they felt that all, or the majority, of risk was imposed.

The views of principals (both private and public sector) on the one hand, compared with contractors and consultants, clearly diverge on this issue.

- 58% of constructors and 47% of consultants felt that all, or the majority, of risks were imposed on them
- in comparison, only 25% of private sector principals acknowledged that all, or the majority of risks, were imposed. However a substantial 43% of public sector principals acknowledged that this occurred.

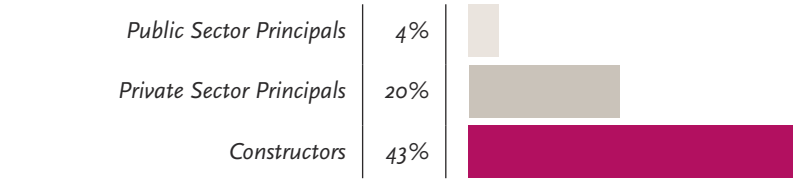
These differences in views as to whether risk is imposed or negotiated may go some way to explaining the following results:

- 87% of public sector principals, and 70% of private sector principals, felt that the risk allocation between the parties was appropriate, while only 55% of constructors felt the same.

RISK ALLOCATION WAS APPROPRIATE

- Only 4% of public sector principals and 20% of private sector principals felt that risk allocation was inappropriate, compared with 43% of constructors.

RISK ALLOCATION WAS INAPPROPRIATE

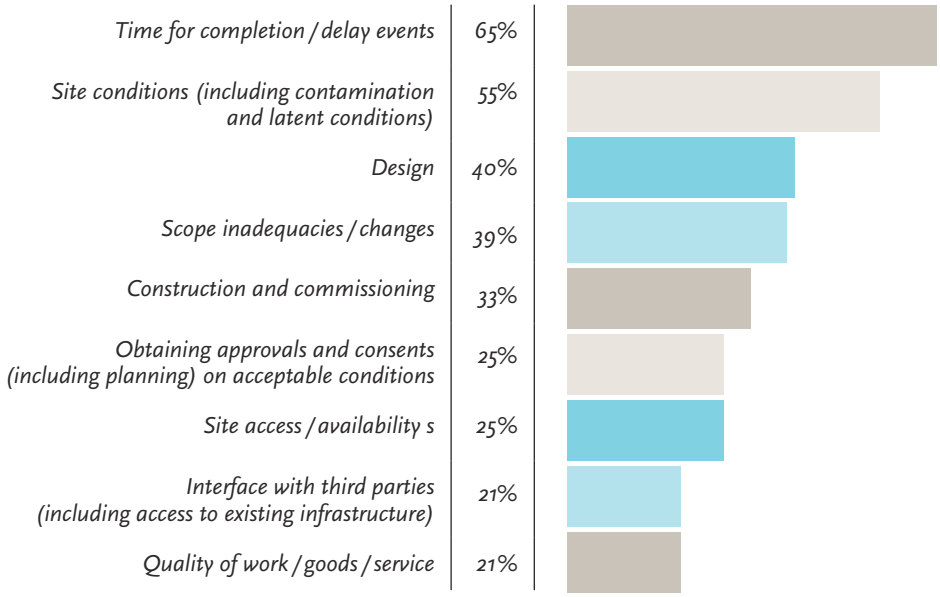


The findings also indicate that parties were only inclined to consider risk allocation was inappropriate where the allocation favoured the other party involved in the project. This suggests that some parties continue to take a view on risk allocation which is too narrow or confined, and may not recognise the potential impact on project outcomes that inappropriate risk allocation may have.

KEY RISKS THAT ARE BEING INAPPROPRIATELY ALLOCATED

When asked which risks were considered the "key risks" prior to contract signing, respondents identified the following:

KEY RISKS IN PROJECTS



Respondents who indicated that there had been inappropriate risk allocation on their project, noted a range of risks that were more commonly believed to have been allocated in an inappropriate manner. These were:

- time for completion / delay (51%)
- design (49%)
- scope inadequacies (49%)
- site conditions (40%).

It is interesting to note that the categories of risk most often identified as inappropriately allocated are also the risks which are most often identified at the outset of projects as being key risks.

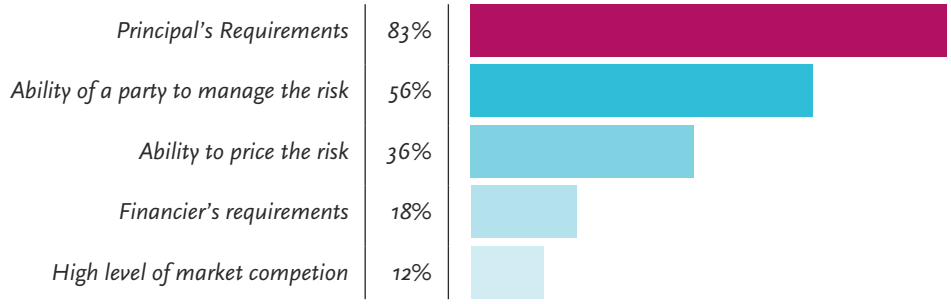
Industry viewpoint

"Ordinarily, risk is allocated according to who doesn't want it, rather than who can best manage it."

IT IS WHAT THE PRINCIPAL REQUIRES

When asked to identify the most common key factor influencing risk allocation, 83% of respondents indicated that it was what the principal required. This factor significantly outweighed other factors such as the ability of a party to manage the risk (56%) and the ability of the party to price the risk (36%).

KEY FACTORS THAT INFLUENCED RISK ALLOCATION



These results are interesting when 90% of contractors indicated that they understood the risk allocation that was agreed in the contract documentation. This means that contractors are knowingly accepting inappropriate risk. This is consistent with the results of the 2006 Report which found that 69% of contractors acknowledged accepting inappropriate risk.

The reason why contractors have had a continued preparedness to accept risk that they cannot effectively or efficiently mitigate or manage appears relatively straightforward. Contractors have a desire, or need, to continue to win work which may have driven them to accept what is proposed by principals.

Why do principals continue to seek to impose risks on parties that cannot mitigate or manage risks?

As one respondent put it:

"*[there is a] perception that pushing risk onto the contractor results in the best commercial solution.*"

However, given the poorer outcomes for projects where inappropriate risk allocation was felt to exist, this does not appear to reflect the reality of the situation and is a significant concern.

Industry viewpoint

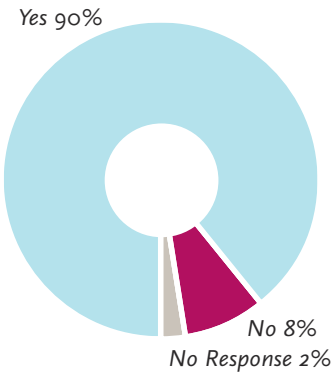
"It is definitely more risk shifting than a real improvement in risk allocation."

AVAILABILITY, USE AND EFFECTIVENESS OF POLICIES AND PROCEDURES

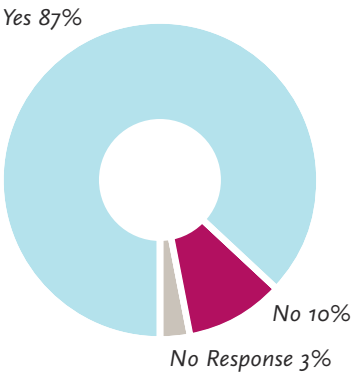
THERE ARE RISK POLICIES AND PROCEDURES IN PLACE

The research reveals that a substantial majority of respondents (87%) consider that they have risk processes which are applicable for their projects.

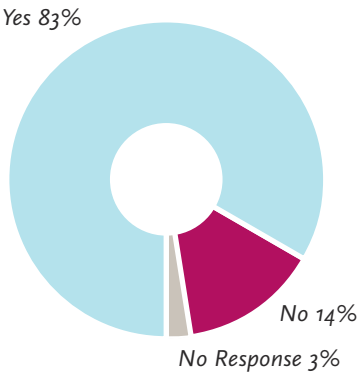
RISK IDENTIFICATION POLICY



RISK MANAGEMENT POLICY



RISK ALLOCATION POLICY



OFTEN RISK POLICIES AND PROCEDURES ARE INEFFECTIVE OR NOT USED

Different results were obtained when respondents were asked about the use and effectiveness of their approaches to risk.

- The majority of respondents (64%) report that they were involved in projects which had risk identification, allocation and management procedures that were available for use, were followed and were effective for their projects.
- However, this leaves more than one third of projects being delivered where relevant procedures were either not available or were considered by participants to be ineffective on their particular project.
- In addition, a small percentage (6%) of respondents indicated that while applicable risk procedures were available for their project, they were not applied. It is possible that in a number of these projects some form of risk procedure was followed.
- However, more concerning is that 10% of respondents indicated that they did not undertake any formal risk identification process prior to contract entry. These respondents included participants involved in $1 billion plus projects.

Industry viewpoint

"The biggest challenge is actually using the system… far too many times the documents sit on the shelf and don't get used, reviewed or revised."

OFTEN KEY RISKS ARE ONLY IDENTIFIED DURING PROJECT EXECUTION

Nearly 30% of respondents indicated that key risks on their project were identified after contracts were executed.

Further, in projects where respondents considered that there was an effective risk identification process in place, in 25% of those projects risks arose during the execution phase of the project which were different to those that were identified and allocated in the executed documentation. That is, even where risk identification policies and procedures were applied and thought to be effective, 25% of the time risks were still being missed at the outset.

MOST COMMON KEY RISKS

More than 70% of respondents indicated that key risks arising in the project were identified at the outset of the project.

The key risks most commonly identified were:

- time/delay events (65%)
- site conditions (55%)
- design (40%)
- scope inadequacies/changes (39%).

KEY RISKS WHICH ARE MOST OFTEN MISSED

Of the near 30% of respondents that indicated that key risks were first identified during project execution, the most common risks missed were:

- third party interface (27%)
- scope inadequacies (27%)
- health and safety (19%)
- approvals/consents (15%)
- design (15%)
- construction and commissioning (15%)
- quality of work (15%).

A BROADER FOCUS IS NEEDED FOR RISK IDENTIFICATION

These results suggest that at the outset of projects, the areas of focus for risk identification need to be expanded. Similarly, risk identification processes should include a wider cross-section of stakeholders who need to take a broader view of risk issues that may be relevant to each particular project to make risk identification more effective.

Industry viewpoints

"Blind spots exist in the identification of risks. The unidentified risks which materialise represent the greatest threat."

"Risks that aren't understood are underpriced or overpriced by the market."

FACTORS LEADING TO CONTINUING POOR RISK PRACTICES

A range of factors were identified as leading to less than "best practice" outcomes. These included:

Insufficient time and resources allowed to properly deal with risk identification and allocation at the outset of the project

"Being prevented from doing the risk evaluation and pricing the risk appropriately – whether because of tight timeframes or otherwise."

"The biggest problems occur where there is pressure to get a project moving. There is a real possibility that pressure is brought to bear which has an adverse impact on the quality of the risk workshop."

A failure to actively and adequately manage risk throughout the project

"*Lack of detail in the development of strategies…[for] on-going monitoring of risk.*"

Inadequate scoping of projects

"Not understanding what the project actually involves."

"*…lack of in-depth understanding of [a] project and therefore inability to identify all risks.*"

Poor communication and failure to develop appropriate relationships between participants and disciplines working on a project

"S*ometimes the true risks or potential ramifications are not adequately voiced by stakeholders or client groups. It can also occur that small risks are blown out of proportion.*"

"Results not conveyed further down the line to the work front."

"Principals being unwilling to disclose or holding back key information from tenderers."

"Silo mentality – no cross discipline approach."

A lack of availability of appropriately skilled and experienced resources to undertake thorough risk analysis at the outset of a project

"You are dealing with young and inexperienced operators who don't understand the relationship between contract risk and pricing."

Interestingly, when looking back at the 2008 Report, similar factors were seen to impact on best practice outcomes in project scoping. For example, insufficient time, insufficient experience and lack of competent personnel were all seen as among the top five causes of inadequate scoping of projects.

It is clear that many participants consider that the approach to risk identification and allocation regularly adopted by principals is one of risk shifting, rather than efficient and appropriate allocation.

There is also a view that there are often inconsistencies between the risks that contractors are being required to accept and the level of control that principals still expect to be able to exercise over those risks.

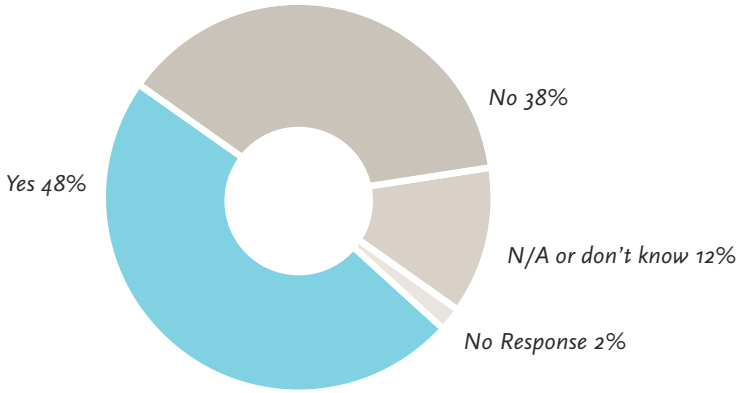
CONSEQUENCES OF POOR RISK PRACTICES

PRESSURE POINTS CONTRIBUTE TO ADVERSE OUTCOMES

Consistent with the 2006 and 2008 Reports, the survey has confirmed that inappropriate risk allocation strongly contributes to adverse outcomes — particularly cost overruns, delays and disputes.

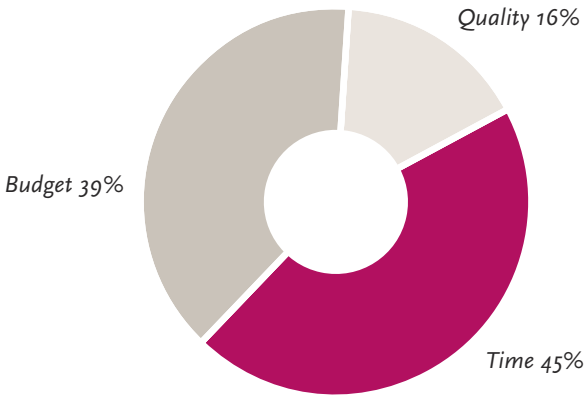
More generally, responses indicate that as a result of obstacles which stand in the way of the delivery of a project and create stress to the project and its participants (including risk), under half (48%) of the projects surveyed were delivered on time, on budget and to the required quality.

PROJECT DELIVERED ON TIME / BUDGET / TO REQUIRED QUALITY



In relation to adverse project outcomes, although reduced quality of the completed project was identified as a concern, significantly more respondents reported that their projects had suffered from delayed completion and cost overruns.

ADVERSE OUTCOMES IN PROJECTS



POOR TREATMENT OF RISK CONTRIBUTES TO ADVERSE OUTCOMES

Industry participants have confirmed that there is a clear connection between the treatment of risk in the early stages of a project and issues which arise in later phases and project outcomes.

Adversarial ("them and us") positions are often adopted by participants in projects, including throughout the competitive tendering process. Principals continue to seek to impose risks and constructors continue to accept those risks, either reluctantly and/or without proper appreciation of the consequences. As a result, risks are often transferred unnecessarily, at a cost, and to the wrong party. This creates pressure and is often to the detriment of project outcomes and all parties.

Industry viewpoints

"If parties are burdened with risk, they will simply price in for risks that do not need to be transferred."

"Attention is drawn away from the core task of delivery over to the protection of contractual positions."

INAPPROPRIATE RISK ALLOCATION IS A SIGNIFICANT CONTRIBUTOR TO DELAYED COMPLETION, COST OVERRUNS, REDUCED QUALITY AND DISPUTES

When asked whether inappropriate risk allocation led to adverse project outcomes, respondents indicated that it led to a delay (32%), a cost overrun (28%) and a reduction in quality (21%), and contributed to disputes (29%).

In those projects which suffered a delay caused by inappropriate risk allocation, most respondents (67%) reported a delay for a period of six months or less. However, 28% of respondents indicated that their projects were delayed by longer than 12 months.

Further, where a project's budget was exceeded, 50% of respondents reported that budget was exceeded by 10% or less. However, 32% of respondents indicated that costs were exceeded by more than 20%.

More often than not, disputes were said to have been resolved within six months. However, a significant proportion (34%) took longer than 12 months to resolve.

Beyond the measureable consequences of inappropriate risk allocation, the intangible results are real and significant. Numerous respondents cited the breakdown of relationships and the damage caused to reputations when project risk is not addressed appropriately.

Industry viewpoints

"Poor risk allocation can turn projects into contractual battlefields (and) leads to all your time (being spent) resolving contractual claims."

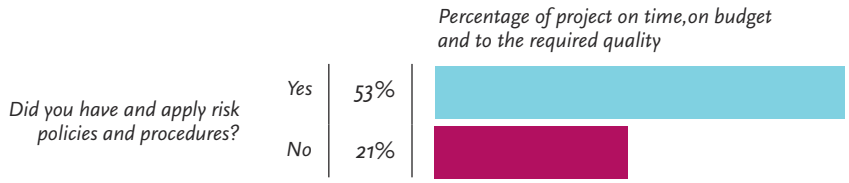
"Contractual claims, project delays, additional cost and a lot of heartache."

RISK POLICIES AND PROCEDURES WHICH ARE APPLIED AND EFFECTIVE IMPROVE PROJECT OUTCOMES

Results indicate that project outcomes are likely to be better when policies and procedures for risk identification, allocation and management are applied as compared to those projects that either do not have them or do not apply them.

- The majority (53%) of respondents who reported that their projects were delivered on time, on budget and to the required quality had and applied risk policies and procedures.
- Few projects (21%) which did not have risk policies and procedures, or did not apply them, achieved these results.

IMPACT OF APPLYING POLICIES AND PROCEDURES ON PROJECT OUTCOMES



TO BE EFFECTIVE, RISK POLICIES AND PROCEDURES MUST AIM FOR APPROPRIATE RISK ALLOCATION AND MANAGEMENT

Applying risk policies and procedures does not guarantee successful project outcomes. In projects where they were applied, significant delays (30%) and cost overruns (24%) as well as disputes (27%) still occurred.

When risk policies and procedures were not only applied but also risk allocation was considered appropriate, twice as many projects were reported to have better time, quality and cost outcomes than when it was not appropriate.

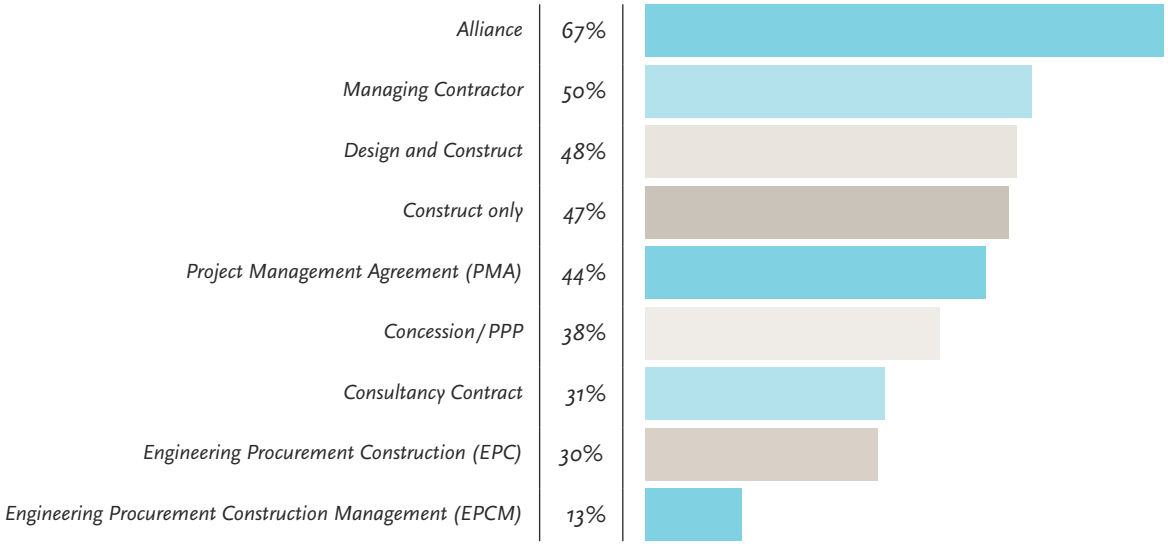
Using effective approaches which lessen, or preferably avoid, inappropriate risk allocation will reduce adverse project outcomes.

IMPACT OF PROJECT DELIVERY METHOD

An interesting result was reported by respondents in relation to the impact of a project's delivery methodology:

- A number of respondents indicated that the alliance model was one which, in their view, was improving the treatment of risk in projects and with it project results. Reasons offered included that alliances promoted more interactive tendering processes and promoted co-operative and collaborative relationships in contrast to conventional procurement.
- As noted, survey participants were asked whether or not their projects were delivered on time, on budget and to the required standard, and overall only 48% of respondents said they were.
- However, in relation to the alliance method 67% of respondents who adopted this model in their projects said they were. No other major delivery method was reported to have resulted in the majority of projects producing these outcomes.

PROJECT DELIVERED ON TIME / BUDGET / TO REQUIRED QUALITY



Industry can improve how it deals with risk

Ineffective and inappropriate approaches to risk often lead to inefficiencies and contribute to adverse project outcomes. Project participants need to look for ways to improve the treatment and management of risk.

What is the scope for improvement?

STEP BACK AND TAKE A PROJECT SPECIFIC APPROACH

While dealing with risk is a challenging exercise, and there is always pressure to get projects up and running as soon as possible, the survey results show that there is significant scope for industry to improve the way it deals with risk and that there are serious consequences of getting risk allocation wrong.

The old adage that risk in a project should be allocated to the party best able to manage it has, in some ways, hidden the reality that there is no set formula, or "right" or "wrong" answer, in terms of the way risk should be allocated. Indeed, it may also have led industry towards a blinkered, "black and white" approach to risk and into thinking that all identified risks need to be wholly allocated to one party or the other. A different approach is required.

Once a comprehensive list of risks for the project has been identified, an assessment of the significance of each risk is needed. The participants need to consider whether such risks can be eliminated altogether or substantially reduced before any of those risks are negotiated and allocated in contract documents.

In practice, in relation to those risks which are to be allocated, commercial decisions must be made, including decisions as to how to price and manage these risks. Identified risks have a cost which ordinarily will be "priced" into tenders or contract sums by the party allocated the risk and that party must then manage that risk. Management of risk may and often does require money to be spent by, for example, making changes to design, adopting different construction methods, implementing preventative engineering controls, finalising access arrangements with third parties or undertaking additional site investigations. Risks priced into tenders provide opportunities for constructors to manage risks effectively and achieve a "bonus" when cost is minimised.

It must be recognised that dealing with risk in a project is not something which can or should be done solely during the preparation of contract documents. Dealing with risk involves stepping back not only at the start of the project but also throughout its development, genuinely thinking about what factors could delay or impede successful project delivery and proactively seeking to establish plans for dealing with them.

GET AND KEEP THE RIGHT PEOPLE INVOLVED

As was noted in the 2008 Report – people make projects happen. It is necessary to get the right people involved – and keep them involved – in order to be able to successfully identify, eliminate or allocate project risks and then manage those risks throughout the project.

This need was identified by many respondents as being one of the most important factors in successfully dealing with risk.

There has been a common trend involving the use of "bid teams" to pursue and win projects. If a proponent is successful in being selected for the delivery of a project, the bid team is then moved to the next bid and a "delivery" team is assembled for that purpose.

The delivery team does not, however, possess the same knowledge of the project, the project documents or the risk allocation mechanisms within those documents which the bid team acquired during the course of the bid. This is often compounded by the appointment of a project director for the delivery phase at the later time when delivery (through design development) is actually commencing.

As a result, projects often encounter problems early in the project delivery phase, at a time when the project team members are inexperienced and administration systems are still being developed.

While the use of a separate bid team and delivery team within organisations may be in some ways inevitable, industry may be able to improve results by:

- involving prospective members of the delivery team in the identification, understanding and allocation of project risks from the outset. These people will need to "live and breathe" the project and may also have valuable insights on where and how previous projects have gone wrong and/or right during the delivery phase
- developing effective information transfer mechanisms which allow the members of the bid team to transfer information and learnings acquired during the bid phase to the delivery team
- retaining certain members of the bid team to have a continued role in the delivery phase of a project, thereby retaining much of the knowledge and context of the risk allocation in contract documents
- capturing and effectively sharing the accumulated knowledge within an organisation, including the positive and negative "lessons learnt" from past projects
- judging the key performance of bid team members not only on winning the bid, but also on the performance of the project in a delivery sense (for example, by assessing the success of the project and rewarding both bid team and delivery team members at project completion).

To continue to improve performance, industry needs to continue to invest in developing and sharing expertise, including by:

- teaming experienced and junior personnel on projects to develop a succession pipeline
- educating and encouraging staff to seek a deeper understanding of risk issues and the tools available to deal with risk
- conducting project debriefs involving both principals and contractors.

While not the subject of the survey, a further key issue in relation to the use of people is the inflexibility with which industry deals with successful project teams. For example, instead of moving teams between sectors, principals tend to retain delivery teams within a single sector. This leads to each delivery team re-learning lessons in relation to risk allocation which would otherwise be generic as between projects.

In order to facilitate cross-project learnings, industry participants could implement a greater number of programs involving:

- the conduct of debriefs and project audits to identify the risks which materialised in a project, the manner in which they were dealt with and the nature of the effect on project delivery
- the secondment or transfer of key project officials (including project directors) between organisations in order to facilitate the transfer of skills.

Industry viewpoints

WHAT IS BEST PRACTICE?

"Having experienced senior personnel as project managers."

"The employment of staff with suitable skills and experience."

"Get the structure and people you can trust into place as a priority."

"Inclusion of all stakeholders."

ADOPT A STRUCTURED AND COMPREHENSIVE APPROACH

In relation to risk identification, many survey respondents said the use of structured and comprehensive risk workshops as representing "best practice" in the identification and management of risks.

Two common themes ran through these responses. First, that the workshops need to involve people from a wide range of backgrounds to bring varied viewpoints together, and, secondly, that workshops need to be structured so that the project is thoroughly examined.

Risk workshops that involve both principals and shortlisted tenderers either together or separately may be effective in addressing a shared understanding of the risks to be managed. Again this involves allocating sufficient time and resources to accommodate this process.

Setting aside enough time and budget throughout the project lifecycle and undertaking these workshops at the appropriate time is critical. Doing so allows the parties to focus on identifying risks that could impact (either positively or negatively) on the key objectives of the project (in a timely and non-urgent manner) and hopefully avoid the situation noted by one respondent that:

> *"It seems it is not the risks you identify which cause problems, rather [it's] the ones that no-one thinks of, that come out of nowhere, which catch us out."*

In order to be able to effectively identify risks, project participants must first clearly understand the fundamental project objectives and overall project scope.

While risk identification naturally will focus primarily on the project at hand, any "lessons learnt" or risks which have arisen in similar projects in the past can be considered.

Industry viewpoints

WHAT IS BEST PRACTICE FOR RISK IDENTIFICATION?

"Very structured, considered analysis of every part and process of projects."

"Multiple, early and ongoing stakeholder workshops."

"Regular review of the risk profile."

"Formal risk analysis at various stages of project duration."

"Best risk identification occurs when internal user groups are involved in the process. External facilitators can help in point-in-time identification, however user groups and project stakeholders have an ongoing interest in risk issues."

> Get different skills and different parts of the business together to consider the risks. That way you get different perspectives.

In addition to workshops, organisations need to pro-actively manage the implementation of, and compliance with, risk policies and procedures.

Having gone to the time, effort and expense of developing these policies and procedures, only to have them not followed or implemented consistently across projects is a waste of time and money. Further, it exposes the organisation to risks which the organisation's management may believe are inappropriate.

Education as to the content of such policies and procedures, and mechanisms to ensure their consistent application, are crucial to ensuring that the benefits of risk policies and procedures are fully realised.

However, it is recognised that even the best policies and procedures may not be absolutely appropriate for every project. It is therefore important to ensure that internal mechanisms are available to allow for exceptions to be made where appropriate and to tailor the policies and procedures to the project. This would include ensuring that the right people are involved at an organisational level in making these decisions.

Once a contract is executed, it is not the 'end' of the risk process. A continued focus by all parties on risk throughout project delivery is crucial to positive overall project outcomes.

If a party to a contract ceases to take an interest in risk issues on the basis that it has been contractually allocated to another party, opportunities to deal with issues that arise in the most efficient and timely manner are missed. While the party might be contractually protected, the project's delivery may be negatively impacted and disputes, or even project failure, may be the outcome which is to no party's benefit.

USE THE RANGE OF TOOLS WHICH ARE AVAILABLE, RELEVANT AND NECESSARY

Consideration needs to be given to the most effective way of dealing with risks and protecting project objectives from the adverse impact of risks occurring.

Such an approach requires forward planning and, often the most precious and limited of resources, enough time to consider the tools which are available to deal with risk.

It is important that the parties consider the full range of commercial, contractual and legal tools that are available when dealing with a project's risks so as to enable informed and considered decisions about the treatment of those risks.

Set out below are a range of the more common categories of tools for dealing with risk. These categories and the examples listed are not exhaustive. Further, not all tools may be needed for a particular project.

However, the key challenge is to be aware of the variety of tools available and to select the most appropriate ones for the project in question.

TOOL	APPROACH	IMPLEMENTATION
SCOPE, SEQUENCE AND TIMING OF WORK	**Consider the extent and nature of work, the timing and packaging of work, and the sequencing of work.**	Examples: • early work packages or enabling works • reduce or increase the scope of work • early contractor involvement.
MAKING INFORMATION AVAILABLE	**Share information to aid understanding, with or without responsibility for the completeness and/or accuracy of that information.**	Examples: • allowing claims for variations should information prove unreliable • disclaiming responsibility or excluding liability in any circumstances for information provided, to the extent possible.
RULINGS, APPROVALS AND OVERARCHING CONDITIONS	**Obtain determinations and eliminate pre-conditions early.**	Examples: • conditions precedent • third party rulings • allocation of project approval conditions • enabling legislation.
SECURING PERFORMANCE	**Obtain third party back-up to help secure contract performance (or in the case of non-performance) or against the occurrence of other risks.**	Examples: • security bonds/bank guarantees • collateral warranties • parent guarantees • insurance • indemnities.

TOOL	APPROACH	IMPLEMENTATION
STAKEHOLDER AGREEMENTS	**Obtain the agreement of third party stakeholders to provide certainty.**	Examples: • obtain agreement for functional design requirements • obtain consent of adjoining property owners • obtain access to third party land • determine the location of public utility services and measures for their protection • establish noise and vibration controls and monitoring • establish environmental protections.
LIMITATIONS ON LIABILITY	**Agree limits on the enforcement of obligations and provide for protection from liability.**	Examples: • exclusion clauses • caps on liability.
TIME MECHANISMS	**Agree mechanisms for adjustment of time obligations, the benefits of their early completion and the consequences of failing to satisfy them.**	Examples: • Elements which comprise "practical completion" • bonuses • extensions of time • delay and disruption costs • liquidated damages.
KEY PEOPLE	**Require the involvement of key individuals during key phases.**	Examples: • the assessment of tenders and proposals by contractors on the basis of the key individuals offered by the contractors • nomination of key individuals within contract documents.
KEY PERFORMANCE INDICATORS (KPIs)	**Use KPIs to measure performance against agreed benchmarks with price adjustments for above or below standard performance.**	Examples: • time for completion • cost • quality • community impacts • environmentally sustainable development KPIs within contracts which are measured as part of practical completion and even after practical completion.
PRICE	**Provide for price adjustment should a particular risk occur.**	Examples, price adjustments as a result of: • specified changes in law • latent conditions • material adverse effects.

> A timely and thorough review of the project documents coupled with a detailed understanding of what the project involves.

ENSURE COMPLETE, CONSISTENT AND ACCURATE CONTRACT DOCUMENTS

Risk allocation which has been appropriate for one project may not necessarily be appropriate for another. The contract documents must be appropriate for the particular project in question. Accordingly, care needs to be taken when using precedent documents, both legal and technical.

One of the key requirements to ensure the contract documents are complete and accurate is effective completion and assembly. It is often the case that different elements of the documentation are prepared by different sections of an organisation or its advisors.

It is absolutely vital to ensure that the contract, viewed as a whole, is internally consistent and coherent. One person within the relevant organisation should have an oversight role for the contract's assembly.

Relying on provisions which determine a priority or "order of precedence" between different parts of a contract is a second best approach and no substitute.

It must be clear as to which documents constitute the contract:

- Those tender documents that are only intended for the tender process are not to be included in the signed contract documents (such as the conditions of tendering)
- Correspondence, such as letters and minutes of meetings, should not form part of a contract. Generally, these documents record each party's position, with the risk of unclear and competing interpretation when taken together as to exactly what is the "deal" between the parties. Further, they are not written in contractual language and may contain aspects which are not intended to have contractual force
- Any "value adds" from successful tenderers as well as agreed negotiated changes should be reflected in amendments in consolidated contract documentation. The time and effort taken to incorporate such matters into amended contract terms, technical scopes and specifications is well spent. It helps ensure clarity and consistency of understanding of the deal agreed between the parties.

Industry viewpoint

"Clear, concise documentation that is project specific."

IMPLEMENT EFFECTIVE CONTRACT ADMINISTRATION

There is a tendency after contract signing to put the contract documentation to one side and lose sight of its precise terms in the course of daily performance. This practice heightens risk.

Contracting parties should not only be fully conversant with the totality of the contract but should also regularly review the contract so that it is administered in a way consistent with its terms. For example, managers need to understand all of the contract mechanisms which may be triggered by a claim and also need to understand some of the basic legal principles surrounding the contract.

By having a good working knowledge of the contract provisions relevant to risk allocation, both principals and contractors can develop effective strategies to deal with risks as they materialise and anticipate next steps so as to eliminate or reduce their impacts. One example relates to the contractual program. Having a working knowledge of the program is essential to early determination of timing impacts on critical paths.

Parties also commonly forget the benefits of combining robust contractual communication with facilitative "without prejudice" communications designed to find solutions to problems. Time is a key element, with effective results being more likely when parties communicate quickly and formulate strategies as risks materialise.

In this context, it should be remembered that no contract exists in a legal vacuum. It operates within an extensive body of contractual legal principle which may dramatically affect the ultimate allocation and burden of risk.

Industry viewpoints

"Regular review of the risk profile."

"Formal risk analysis at various stage of project duration."

IMPLEMENT EFFECTIVE DISPUTE RISK MECHANISMS

It is essential that project participants be alert to the prospect of disputes and provide effective means for dealing with dispute risk in a manner which minimises the impact on the delivery of the project and the relationships of the parties.

In the course of a project and in the process of administering a contract, there will inevitably be issues that arise due to interpretation of the contract documents and specification, changes which occur on the project that might not have been anticipated, or risks that materialise in ways which were also not expected.

How these issues are addressed in the administration of contracts for a project will often determine whether or not there is a successful project outcome.

Communications outside the contract on a "without prejudice" basis have been identified as an approach which can facilitate the parties addressing issues in a timely manner to achieve agreed solutions (although this approach may not be appropriate in all projects in the private and public sectors).

However, parties and their relationships often determine whether such communications ever occur. It can often happen that a party will not initiate these communications so as to avoid any perception of "weakness" even though motivated by a genuine desire to resolve issues. As a result, mechanisms which enable or require communications to occur are at least desirable, if not essential.

The vast majority of traditional dispute resolution processes, including alternative dispute resolution processes, are reactive or retrospective; that is, they only operate after a dispute has arisen. Maintenance of project relationships are enhanced and disputes minimised if there are proactive mechanisms pre-agreed between the principal and the contractor to address risks and prevent disputes.

Having pre-agreed mechanisms in place to address and deal with issues before they become disputes on a project can resolve these issues, often cost effectively. Examples include the use of Project Control Groups, Senior Executive Groups or Dispute Resolution Boards.

Methodology

Blake Dawson, supported by the Australian Constructors Association, Energy Supply Association of Australia and Infrastructure Partnerships Australia, undertook research through a survey of industry participants and a number of interviews with leading industry figures from the public and private sectors. The construction, infrastructure, energy and mining projects surveyed were completed over the previous five years and had a minimum project value of $20 million. In total, survey responses were received from 121 participants across Australia representing approximately $55 billion worth of projects.

The survey opened in May 2010 and closed in December 2010. Interviews with a cross-section of industry participants were also undertaken during this time. Questions in the survey were divided into the following two sections:

- the first section used four free response questions regarding:
  - market trends
  - factors which enable risk identification, allocation and management
  - factors which impede risk identification, allocation and management
  - the consequences of getting risk identification, allocation and management wrong or right.
- the second section of the survey required participants to answer 35 multiple choice questions on their experiences on a specific construction, infrastructure, energy or mining project.

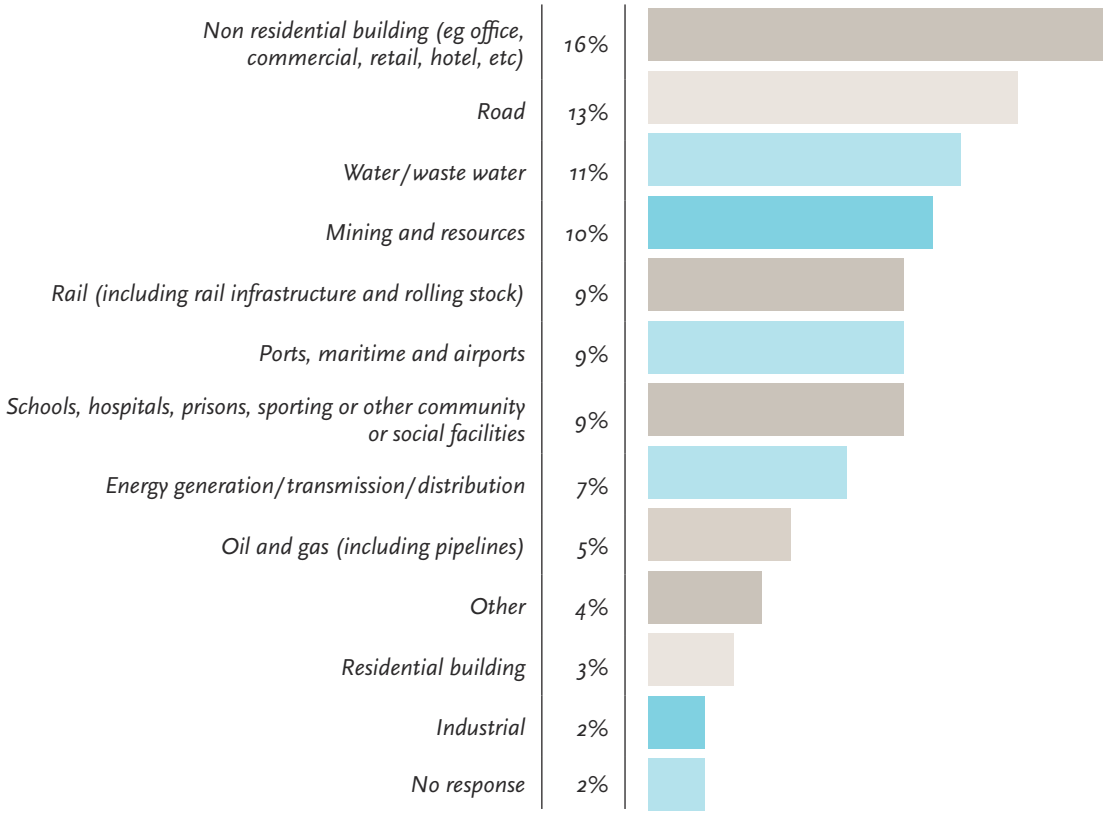
No incentive was offered to encourage participants to respond.

Statistics from survey responses were generated by external consultants Ekas Market Research Services, who were engaged specifically for the survey.

The industry viewpoint quotes included in this 2011 Report are sourced from the survey and interview responses without identification or attribution.

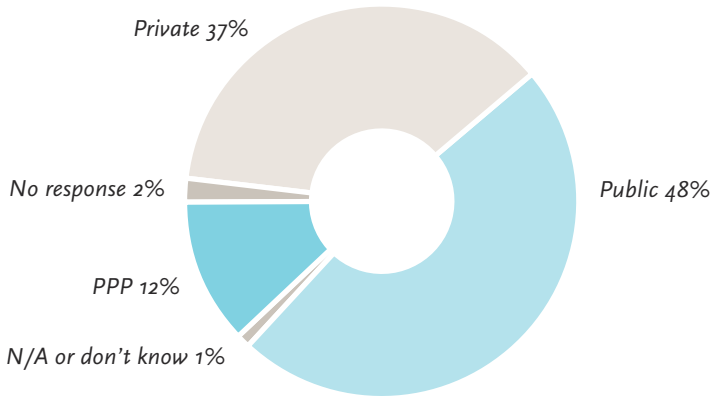
INDUSTRY SECTORS SURVEYED

Responses were received from a wide range of industry sectors in Australia.



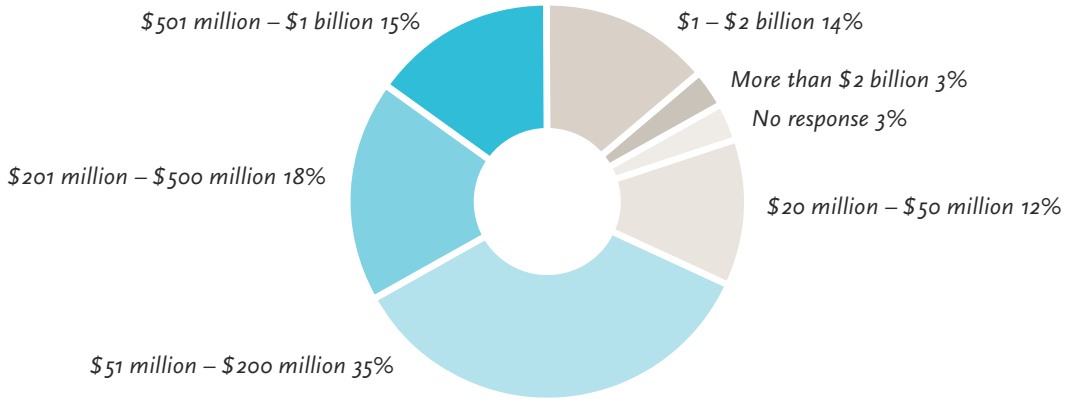
PUBLIC OR PRIVATE PROJECT

Projects were carried out by both the public and private sectors



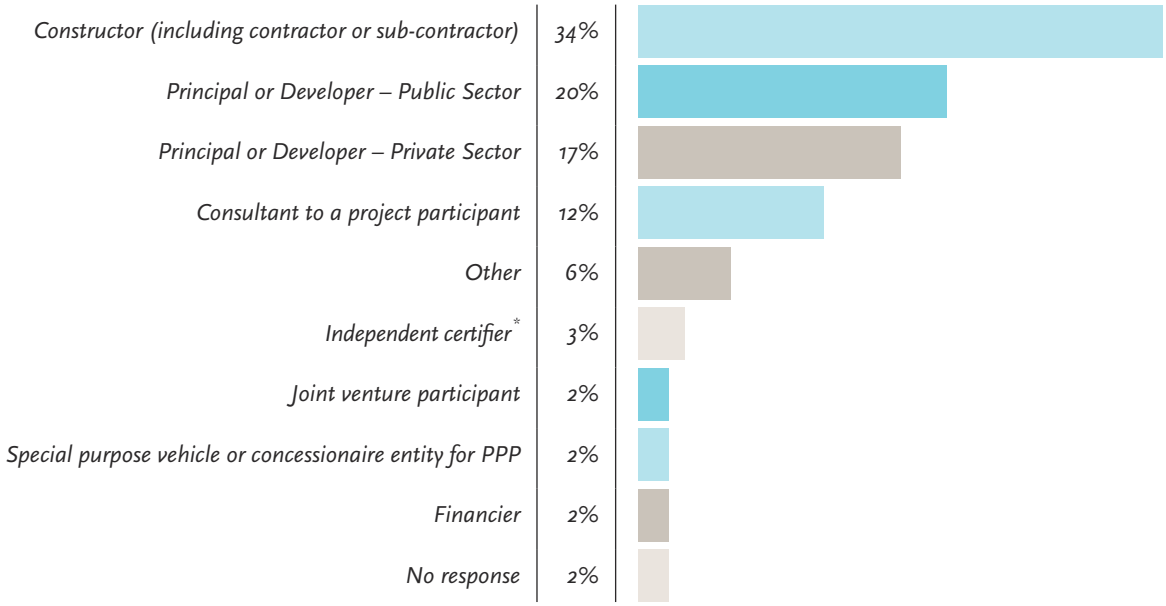
OVERALL PROJECT VALUE

Each project surveyed had a value over $20 million, with an average project value of approximately $470 million. The total value of projects surveyed was approximately $55 billion.



RESPONDENT'S ROLE IN THE PROJECT

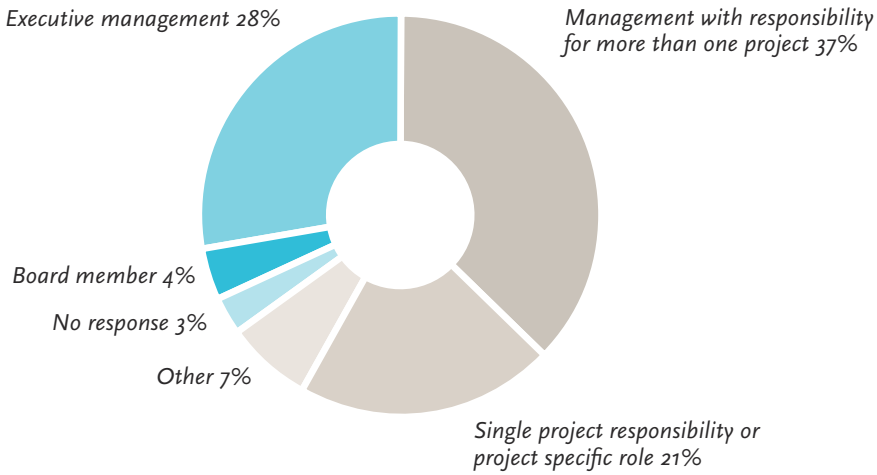
A similar proportion of principal and constructor responses were received, along with a significant proportion of responses from a cross section of other industry participants.



*(meaning somebody who is responsible for certifying variations/extensions of time, payment claims, etc)

RESPONDENT'S POSITION WITHIN ORGANISATION

The majority of responses were received from key decision makers with project and organisational responsibility.



AUSTRALIAN CONSTRUCTORS ASSOCIATION

The Australian Constructors Association (ACA) was formed in 1994. Its mission is to make "the construction industry safer, more efficient, more competitive and better able to contribute to the development of Australia".

ACA has 20 member companies who have a combined annual revenue in excess of $40 billion and collectively employ over 86,000 people in their Australian and international operations.

ACA member companies operate in a range of markets, including residential and non-residential building, engineering construction, process engineering, contract mining, engineering design, infrastructure development and maintenance, oil and gas operations and maintenance, telecommunications services and environmental services.

The ACA has, for many years, been active in promoting improvements in the commercial life of the industry and has used its energies to inform, to identify issues and to propose strategies to improve performance.

BLAKE DAWSON

Blake Dawson gets to the core of its clients' legal needs and delivers commercially astute and practical solutions. It has a proud history, long standing client relationships, a passion for challenging conventions and thrives on cutting edge work.

The Construction, Infrastructure, Energy & Resources teams are recognised as leaders in their fields and provide top tier legal expertise and practical solutions to client needs, based on an in-depth understanding of the enablers of positive project outcomes. Their experience is second to none, as they have worked on most of Australia's significant PPP, mining, energy, infrastructure and construction projects.

Blake Dawson offers an 'end to end' project solution for clients, from feasibility/procurement and contracting to implementation and delivery, together with dispute risk management and resolution throughout the project's lifecycle. They work with clients to ensure the right contract is in place, create project delivery strategies and management processes, minimise risk and meet commercial objectives.

With a national pool of resources, Blake Dawson acts for many of Australia's largest privately and publicly listed companies, government agencies, project consortia, contractors and financiers, on a broad range of projects.

ENERGY SUPPLY ASSOCIATION OF AUSTRALIA

The Energy Supply Association of Australia (esaa) was established in January 2004 as the peak national industry body for Australia's energy supply sector. esaa promotes the policy interests of the electricity supply industry and downstream natural gas sector. Its focus is on strategic, whole-of-industry policy issues affecting Australia's energy supply sector.

esaa membership comprises the Chief Executives of more than 40 electricity and downstream natural gas businesses with $121 billion in assets, more than 50,000 employees and estimated investment needs of up to $100 billion to 2020. Together these businesses contribute more than $14.5 billion directly to Australia's Gross Domestic Product.

esaa is committed to working constructively to achieve the policies, regulatory arrangements and market reforms that genuinely contribute to securing Australia's energy future. esaa actively engages with governments, policy makers and opinion shapers to ensure Australia's energy and related policy settings are informed by the expertise, analysis and views of its members. esaa also communicates the industry's agreed policy positions and other work to key stakeholders, including governments and politicians, regulatory bodies, the media and broader community.

INFRASTRUCTURE PARTNERSHIPS AUSTRALIA

Infrastructure Partnerships Australia (IPA) is the nation's peak infrastructure organisation. IPA's membership is comprised of Australia's most senior business leaders and public sector executives from across the infrastructure sector. IPA is the only body which brings together the public and private sectors in a spirit of partnership, to build Australia together. Infrastructure is the lifeblood of the national economy. It is the key to how Australia does business, how we compete in the global economy and how we sustain the quality of life of a growing population. IPA's mission is to develop and articulate the best public policy solutions needed to deliver the assets and services that will secure Australia's productivity and prosperity. IPA is committed to ensure that governments retain all procurement options for the delivery of infrastructure. IPA believes that procurement models must be selected case by case, with a guiding principle of sustainably delivering better value, better quality infrastructure.

The Australian Constructors Association, Blake Dawson, the Energy Supply Association of Australia and Infrastructure Partnerships Australia would like to thank all industry participants who responded to the research survey and all who were interviewed for the purpose of this report.

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