

Build it and they will come

Infrastructure development and corruption risk

Introduction

Mr Chairman - thank you for those introductory words

I was talking last year to a colleague (Sir Murray Rivers) about corruption risk, and he remarked that it seemed like we stood on the edge of a precipice – I spoke again to him last night, and he observed that we have taken a giant leap forward.

I am delighted to say a few words about infrastructure development and corruption risk.

In addressing this topic I intend to draw on my experiences in professional practice together with the findings of many corruption risk reviews I have undertaken within Hong Kong and Australia over a period of more than 15 years.

(Slide 2)

I shall outline some factors that make infrastructure projects “different” and present a smorgasbord of potential risk areas for your delectation. I will then leave you with a number of responses that may form the basis for further discussion. And I’ll leave you with a final snapshot summary of these risks.

Since other speakers will be dealing with specific cases, I have directed my comments more towards general principles and observations.

The impacts of corruption

Why might corruption in infrastructure development be particularly significant?

The most obvious effect is to directly increase the cost of development, which will ultimately be met by the end-user. In other words, that means the community pays – you and me.

The increase in cost is by no means the most serious aspect.

Once the possibility of personal gain becomes a factor, it rapidly becomes dominant — pushing aside quality and other legitimate considerations in the awarding and performance of contracts. The result is that economic decisions may become skewed; the wrong suppliers or contractors selected; and quality standards and safety compromised.

Project priorities may become distorted and projects that are not needed may be given priority for no reason other than the fact that they may benefit certain parties.

The high visibility of infrastructure development and the moral damage inflicted by the betrayal of public trust can have a very substantial negative impact on the fabric of government. It is no exaggeration to say that the aftermath of infrastructure corruption can topple governments.

Some background

(Slide 3)

You may have been intrigued by the title I chose for this presentation – “Build it and they will come”. It’s based on the general observation that corruption usually follows opportunities.

‘Build it and he will come,’ is a famous line from the 1989 movie *Field of Dreams*.

The story carries some important messages about vision, determination and faith.

Infrastructure development is somewhat like that. It’s based on vision, planning, determination, and overcoming challenges – some foreseen and others unknown.

Given the opportunities that abound, will corrupt influences want to come to the party and join in the game - or can they be dissuaded?

I’m reminded of former US Defence Secretary Donald Rumsfeld, who made a famously quoted statement in February, 2002 when referring to the unstable military situation in Afghanistan.

To refresh your memory he said:

(Slide 4)

“There are known knowns. There are things we know that we know. There are known unknowns. That is to say, there are things that we now know we don’t know. But there are also unknown unknowns. There are things we do not know we don’t know.”

At the time it was viewed by many as evasive and nonsensical, whilst others felt it reflected a profound understanding of risk. Indeed, the statement won him the 2003 Foot in Mouth Award from the Plain English Campaign.¹

To be fair to Mr Rumsfeld, the term “*unknown unknowns*” refers to circumstances or outcomes that are not envisaged by an observer at a given point in time. The meaning becomes clearer when one contrasts it with a “*known unknown*”, which refers to circumstances or outcomes that are known to be possible, but it is not presently known whether or not they will occur.

So Rumsfeld suggested three types of information ... that information known to be factual, that information for which there was a pretty good estimation, and information which they did not know, as it was as yet unforeseen.

While the language Rumsfeld used may have been cumbersome, it betrays a deeper understanding of strategy and risk than is held by many people.

Are you still with me?

There is yet another category of information Rumsfeld didn’t mention - that of “*unknown knowns*”

¹ http://www.plainenglish.co.uk/foot_in_mouth_award/past_winners.html

What are these?

Well that would be information that you're not aware that you know, or it's something you know but don't yet realise its significance.

It's like giving your partner the PIN number to your credit card.

It's information that is available to you, but you have either forgotten it, not taken it into account for some reason, or have completely overlooked it. It's a situation that should not occur.

To draw the parallel, it's like an organisation forgetting or choosing not to implement already well-known fraud and corruption measures.

Unfortunately, I've seen that happen only too often.

From a project viewpoint, Rumfeld's statement makes perfect sense. It explains why our view of the future is informed by information that is currently available and, as such, one may face substantial unknown risks and need to plan accordingly.

One sees that all the time in infrastructure development.

What will be the traffic volumes ten years hence? What will be the population and resulting electricity and water demands? How many hospitals and schools will be needed and how should these be funded?

What hidden geological conditions will be met as construction proceeds on a tunnel, dam or bridge, and what design changes will be needed to resolve them (and at what cost)?

Recent history shows us how quickly economies can change from boom to bust conditions, interest rates see-saw wildly, sources of funding dry up, and companies and banks end up being amalgamated, subsidised and nationalised overnight.

These events can have a dramatic impact on infrastructure projects, and affect the profitability and viability of organisations – all creating circumstances that provide incentives for corruption.

At the same time, we have seen how the stresses created by harsher economic times have unmasked many formerly revered individuals as being inept and sometimes corrupt fraudsters.

For some excellent comments on risk and the impact of cascading unknowns, I refer you to the 2001 Chairman's letter to Berkshire Hathaway shareholders in which Warren Buffett observed:

(Click Slide 5)

“After all, you only find out who is swimming naked when the tide goes out”

So what are we talking about?

Australia now stands at the beginning of one of the most intense periods of infrastructure development in its history. Already facing the need to invest heavily to renew aging infrastructure and to meet growth and capacity demands, the Global Financial Crisis has seen the introduction of a broad range of stimulus initiatives which incorporate fast-tracked infrastructure programs. **(Slide 6 SEQ and transport projects)**

From the \$43B National Broadband Network to multi-billion dollar hospital and transportation projects, down to individual local government and school maintenance programs, the coming years will see infrastructure expenditure touching nearly every sector of the community – not only in Australia but internationally.

Close to home, South East Queensland is the fastest growing region in Australia. New roads, tunnels, bridges and other projects are being built to accommodate a burgeoning population.

Given that scenario, if we don't deal effectively with the range of possible corruption risks, it is frightening to envisage the scale of potential losses from corruption. But need that be the case?

Lessons from Hong Kong

(Slide 7 HK Airport shots overlays)

Infrastructure development has long been an important element in Hong Kong's economy. The construction industry has experienced rapid and sustained growth since the early 1970's and one of the largest infrastructure projects of the 90's was the construction of the new airport at Chek Lap Kok and its ten related core projects.

The individual core projects were among the largest of their kind in the world and included reclamation works, the Lantau Link (HK\$17B), and the North Lantau Expressway (HK\$6.7B). The Airport Railway alone cost some HK\$34 billion when completed in 1998.

The work was primarily government-funded, with the Western Harbour Crossing (HK\$6.5B) the only project procured on a Build-Operate-Transfer (or BOT) basis using private finance.

Hong Kong public sector projects normally involve advance publication of construction programs, pre-qualification of bidders, and open competitive tendering. Project execution is subject to stringent quality and safety requirements, on-site supervision and third party certification.

However, because of its significance, the Airport Core Projects were treated from the beginning as a special programme, with the contract conditions and tendering procedures developed in close consultation with the ICAC.

Particular emphasis was placed on processes to ensure equitable consultant and contractor selection, successful contract execution, effective claims and dispute resolution processes and close monitoring of all performance aspects.

In other words, every effort was made to *minimise the potential unknown knowns*, by implementing established anti-corruption measures and thereby diminishing the likely corruption risks.

The outcomes show that this approach was successful, with few allegations of corruption associated with the public sector works, although some nearby private sector projects did suffer from very serious and life-threatening corruption.

Transparency International has also highlighted the HK Airport development as an example of what can be achieved by implementing appropriate anti-corruption measures.²

Procurement on steroids

(Slide 8 bodybuilder)

Infrastructure development can be thought of as procurement on steroids.

(Advance Click - list risks)

The usual procurement risks are all present, and they loom larger than life.

Infrastructure development carries the risks of regulation and licensing, with conflicts of interest and misuse of information prominent. It embraces the likelihood of collusion, the risks of manufacturing and quality control, exposure to potential fraud, the misuse of resources and all the other operational risks that can afflict normal business operations.

And all this may happen on a single project on a remote or extended site using itinerant workers and within a compressed time frame.

(Slide 9)

Risks also vary over time, and tend to fall into different categories depending on the progress of the project - broadly within the following stages:

- Preparation / planning / approvals
- Financing / bidding / negotiation
- Contract execution
- Commissioning
- Operation

The types of risk and appropriate prevention strategies will vary between each of these stages. Let's explore some of the special distinguishing features of infrastructure a little more closely.

Exploring some of the special aspects of infrastructure development

1. Size and sensitivity

To use an old phrase – size does matter – at least in infrastructure.

(Slide 10 - bucket loader)

The larger, more complex or technologically advanced a project, the more opportunities there are to hide dubious costs and payments.

(Slide 11 – Dubai multiple overlays)

² How to Build a Mega-Airport Without Corruption

http://www.transparency.org/news_room/latest_news/press_releases/2000/2000_01_28_hongkong_airport

The incentives for corruption may appear obvious for major contracts, but the risks still remain for smaller projects or at subcontractor level, where more rigorous prevention strategies may be overlooked (*as potential unknown knowns*).

Given the number and scope of lower value activities within major projects, the cumulative exposure to risk may be as significant as that for the larger contracts, and the negative impacts equally corrosive and damaging.

Corruption-free project procurement is underpinned by effective risk management, and one therefore should not lose sight of the potential for corrupt activities at the local level.

Primary areas of corruption risk arise wherever there is commercially or politically sensitive information, decision making or the exercise of discretionary powers. The more opportunities there are that involve licensing, approvals, changes in land use, quality control issues or the presence of hidden works, the greater will be the corruption risk

When it comes to the exercise of professional discretion in managing subcontractors and resolving issues also carries the potential to hide corruption – so effective claims and dispute resolution procedures are of crucial importance.

2. Complexity

Hand in hand with size goes complexity. In many cases, major projects are beyond the financial and technical capacity of a single organisation, and joint venture and other collaborative arrangements are adopted to ensure the necessary financial, physical and human resources.

(Slide 12 EADS Airbus 380 overlays)

One may imagine the challenges facing the European Aeronautic Defence and Space Company (EADS NV) which employed a workforce of about 118,000 in 2008.

The Group includes Airbus which has created a global supply chain of more than 1,500 contractors in over 30 countries - all working together to deliver components, systems and hardware within stringent quality standards and timeframes. One can only surmise the many opportunities there are for corruption, and the safeguards needed within such a massive and complex undertaking.

(Slide 13 – Hale Street link)

Closer to home, the local Brisbane Hale Street Link is only some \$370M, but to undertake this project, a consortium has been formed comprising several organisations.

(Slide 14 Hale Street Link consortium)

The concepts of co-ordination, project management and communications take on new dimensions in such circumstances. The different company operational and financial systems, different organisational capacities and different cultures make for greater risk of corruption at the operational interfaces.

Making it all work successfully requires management skills of the highest order and is another reason for the creation of a single core operational entity to progress the works.

I've purposely contrasted the Airbus 380 and the Hale Street Link. While both are complex and may cost in the order of \$350M, with the infrastructure project you have only one chance to get it right.

This might also help to explain why engineers sometimes are seen to be a little cautious and conservative. You generally don't get a second opportunity with infrastructure.

3. Diversity and uniqueness

Expanding that concept further, another area where major infrastructure projects generally differ from more general procurement activities is in their combination of diversity and uniqueness.

Infrastructure works are typically one-off and subject to widely variable on-site conditions and the vagaries of sub-contracting.

(Slide 15 – Gateway Bridge duplication)

Even when there might appear to be equivalent projects - (say) - the duplication of the Brisbane Gateway Bridge - they are usually quite different.

Separated by several years, they employ different companies and personnel; there are different economic and time constraints; different design and construction methodologies; and different geological and foundation factors to be considered.

The singular nature of many infrastructure projects thus often limits the opportunities for developing long-term vendor relationships under controlled supply chain conditions. It is more difficult to identify anomalies and there are often no trends or industry averages to fall back on when undertaking a corruption prevention review or to assist in detecting corruption.

To combat corruption one must work from first principles in establishing strong systems of managerial accountability, reporting and responsive feedback.

4. Competitiveness and subcontracting

The principles of competitive tendering are widely used and most infrastructure projects are extensively sub-contracted.

In many cases it doesn't matter who wins the lead contract because the sub-contractors and material suppliers may be the same in the end.

Given that the main contractor may have been selected on a "lowest-bid" basis, an essential factor for subsequent profitability is the ability to sub-contract works at lower prices.

To put this into perspective, the next time you're taking off in a plane give some thought to the fact that most components in the aircraft - including the wing bolts - were probably supplied by the lowest bidder!

I'm reminded of a couple of old contractor definitions: **(Slide 16 statements)**

Bid Opening - A poker game in which the losing hand wins.

Lowest Bidder - A contractor who is left wondering what he/she left out.

Poor performance by a sub-contractor, leading to delays and the imposition of liquidated damages, can have a major impact on the main contractor.

The main contractor, having delegated some or all of its obligations to a sub-contractor, is typically less generous in its contractual conditions since it wishes to offset any risk to the extent feasible. Of course, there are many deals done to enable these smaller subcontractors to participate in the exercise - advance loans, back-to-back agreements etc.

The execution of the works by a sub-contractor further down the chain and at ever-lower prices and tougher conditions thus creates the temptation to adopt short-cuts and corrupt practices to enhance or achieve profitability. At the same time, the problems of maintaining quality control are exacerbated by these layers of subcontractors. Both quality and safety may be compromised through expediency and corrupt payoffs anywhere along the chain.

The fault does not lie solely with the subcontracting model, but with the combination of cascading lower prices and extended control mechanisms, uncertain or ill-defined accountability, poor communications, contractual inequity and unbalanced risk – all of which may contribute to financial, time and quality pressures that help to promote corruption.

(Slide 17 - Grappling with accountability -)

I suggest an important principle in minimising infrastructure corruption risk is to embrace the concepts of cooperative partnering and enduring contractual relationships. The multiple layers of independent subcontractor firms need to be transformed into interdependent teams where the outcomes are seen to be mutually beneficial.

Here, as elsewhere, transparency, good communications and teamwork play an important role.

5. Measurement and hidden works

Infrastructure projects commonly contain substantial amounts of “measured work”, where the actual quantities are determined as the work progresses. For example, excavation quantities for civil works are typically based on different rates for different geological materials, with rock excavation being paid for at much higher rates than for decomposed materials or soil.

There are many examples where the measurement of quantities determines the payment outcomes or the works are later hidden and can't be examined or measured and therefore provide opportunities for false claims and corruption. **(Slide 18 – Tower of Pisa - transition)**

Hong Kong provides an excellent example of these corruption risks in the Yuen Chau Kok Short-piling Case.³

In December 1999, monitoring surveys showed abnormal foundation settlements at two major Housing Authority buildings during construction. **(Slide 17 – Yuen Chau Kok overlays)**

Independent investigations found that out of 36 large-diameter bored piles for two buildings, only four met the contractual requirements. Twenty-one were shorter than the prescribed length by between 2 m to 15 m, while eleven were resting on soft mud instead of bedrock. Ninety percent or so of the bored piles failed to comply with requirements.

³ Yuen Chau Kok Short-Piling Case. http://www.icac.org.hk/new_icac/eng/cases/piling/p03b.html

When the short piling was discovered, the two 41 storey buildings were already constructed to their 33rd and 34th floors. The case aroused huge concern with more than 650 households affected. The two buildings were demolished with the site eventually turned into a leisure park. In this one incident alone, public funds estimated at some HK\$605 million were wasted.

[\(Advance to final development photo – Click\)](#)

6. Timing, weather, penalties and liquidated damages

Infrastructure projects commonly are subject to tight construction schedules resulting in extended working hours. Adverse weather conditions can worsen the situation and contractors often forge ahead because the contracts will have stipulated penalties or liquidated damages for any delays in the contract deliverables.

These factors provide strong incentives to take short cuts and produce substandard works whose approval may be facilitated by corruption.

Normally a quality assurance plan will call for major work procedures to be supervised or certified but this may be made more difficult because of the need to meet deadlines and with major work performed at night. Night work also may be required because that is the only time that disruptive work (e.g. traffic flows) can be performed.

Extended working hours may be used to mask non-compliant practices or inadequately performed hidden works. This was a particular contributing factor in the Yuen Chau Kok case. The contractor's ruse was to install permanent linings at night while supervisory staff were absent, thus preventing examination and verification of the extent and quality of work.

7. Negotiated, Outsourced, franchised and PPP projects

Notwithstanding a competitive award policy, negotiated contracts are sometimes employed, but this practice is normally restricted to specific contracts because of the extensive documentation and time required, contractual difficulties, perceived corruption opportunities and overall costs of the process.

Another practice is the growing prevalence towards outsourcing and privatisation, with an increasing number of infrastructure projects being constructed under various forms of Public-Private Partnerships (or PPP).

These practices bring greater demands for overall co-ordination and improved relationships between the various parties with a consequent shift towards new forms of control.

In my view the use of PPP contracts may convey certain financial benefits and provide access to specialist expertise, but does not reduce the corruption risks and may introduce additional information, conflict management and control issues that have corruption implications.

The initial stages of a PPP project holds the same corruption risks as traditional contracting models, but the execution and later stages of the project simply transfers these risks to the private sector. The risks are still there but no longer within the purview of the public sector. That aspect means that greater emphasis needs to be placed on the development of "self-regulatory" systems. The initial selection, appointment and administration of the contractors, consultants and suppliers assume even greater importance.

In some jurisdictions (e.g. HK) this shift of risk is catered for by the integrity agency having the capacity to recommend the “declaration” of the franchise holder (or PPP Partner) as a “Public Body” thus bringing their operations under public sector ethical constraints and the jurisdiction of the integrity agency.

Exploring a selection of specific risks and prevention measures

With that background, I will now take you on a series of snapshot views of some of the risks and available anti-corruption measures so you will retain a set of subliminal images that show that there are prevention strategies that can be employed. These will be reproduced in the written paper. These slides are reproduced below and represent only a selection of the opportunities and risks that can be identified..

Planning and development

- | | |
|--|--|
| <ul style="list-style-type: none"> ■ Unauthorised or selective release of sensitive information | <ul style="list-style-type: none"> ■ Good planning policies and procedures ■ Transparency and consultation ■ Appropriate defined procedures and appeals processes ■ Stringent ethical standards and confidentiality requirements ■ Strong conflict of interest management |
|--|--|

Tender and bidding preparation

- | | |
|--|---|
| <ul style="list-style-type: none"> ■ Inappropriate contractors and suppliers in the shortlist | <ul style="list-style-type: none"> ■ Objective criteria for pre-qualification of bidders ■ Short-listing of tenderers by a representative committee ■ Performance monitoring / feedback ■ Periodic review of status |
| <ul style="list-style-type: none"> ■ Inappropriate risk assessment and | <ul style="list-style-type: none"> ■ Employ independent probity auditor to review processes / procedures |

Compromised tendering processes

- Disclosure of privileged information to facilitate tender bid
- Transparency - essential information provided in the documents and briefing sessions
- Effective procedures / safeguards to protect sensitive information
- Realistic tender period that enables information collection & preparation
- strong organisational integrity and staff adherence to rigorous ethical guidelines

Uneconomic tenders

- Contractor under pressure to cut cost to maintain profitability
- Contractor exposed to excessive financial risks under the contract terms
- Maintain realistic expectations for cost / performance / market prices
- Be wary of tender bids that are unrealistically low
- Analyse bids to identify anomalies / mistakes – work cooperatively
- Don't be opportunistic, but identify and allocate risks appropriately
- Monitor / supervise project closely
- Ensure good resolution procedures

Materials, quality control & testing

- | | |
|---|---|
| ■ Contractor uses substitute or sub-standard products | ■ Ensure adequate project supervision |
| ■ Test samples are substituted | ■ Ensure proper identification of products / materials / services |
| ■ Test results are falsified | ■ Independent witnessing and security measures in handling and identifying test results and samples |
| ■ Testing agency has commercial conflict | ■ Direct dispatch of test results to client / consultants for review |
| | ■ Direct appointment of any testing agency by clients / consultant |

Claims and variations

- | | |
|---|---|
| ■ Unnecessary or overpriced changes ordered | ■ Claims must be justified under the Conditions of Contract |
| ■ Inappropriate (excess) claims approved | ■ Keep comprehensive site records |
| ■ Excessive valuations or quantities | ■ Checking by independent persons |
| | ■ Delegated limits on authority to order and approve variations |
| | ■ Variations must include detailed estimate(s) of cost |
| | ■ Technical auditing |

Supervisory corruption

- Collusion to over-claim work based on exaggerated or false records
- Supervisors ignore sub-standard performance & quality
- Deliberate delay or acceleration of payments
- Lump sum contract vs. Re-Measurement contract
- Rotate staff to minimise collusion
- Regular (random) checks by senior staff or independent persons
- Ensure full documentation of site inspections and measurements
- Prescribed time limits / procedures for processing payments
- Technical auditing

Let's quickly recap those points of difference for infrastructure projects – each of which tends to introduce particular corruption risks

(Slide 27 reproduced below)

- **Size / uniqueness (one off)**
- **Political issues / planning / land use approvals / discretionary powers**
- **Selection of consultants / contractors**
- **Number & complexity of sub-contracts**
- **Negotiated contracts and franchises**
- **Complex joint venture teams**
- **Interface / organisational culture issues**

(Slide 28 reproduced below)

- **Fast-tracking of construction**
- **Diverse skills, languages, personnel**
- **Multiple / isolated / extended sites**
- **Diverse / unknown site conditions**
- **Hidden works and QA/QC issues**
- **Time / weather / environment**
- **Measurement / progressive payment / variations and claims**
- **Interface / organisational culture issues**

Let's rethink the fundamental issues and lessons

Back to Fundamentals

(Slide 29)

- **Prevention is better than prosecution**
- **Good management underpins prevention**
- **Adopt a risk-based perspective**
- **Assess and allocate risks appropriately**
- **Be prepared to supervise, inspect, validate & audit**
- **Plan for all the “unknown”**
- **Implement the “unknown knowns”**

Minimise the “unknown known”

(Slide 30)

- **Codes of conduct / transparency**
- **Management of Information / Conflict**
- **Functional segregation / approvals**
- **Documentation / record keeping**
- **Supervision / accountability**
- **Early warning indicators**
- **Financial & technical audit systems**

Conclusion

During this conference you have no doubt heard about various cases - generally based on successful investigations, followed by varying degrees of prosecution success. We seldom like to talk about the failures ... but that's often how we learn best.

We'll have shared ideas about the great investigatory and complaint systems that agencies have developed - necessary perhaps, but in their own way an admission of failure - that we've actually failed in some way as managers or professionals or even as a society - perhaps not personally, but collectively.

Sometimes it almost seems like we're on a witch hunt to apportion blame and find a culprit rather than to find out what were the underlying causes and the best practice prevention measures.

So we probably haven't talked too much about the ones that got away ... and believe me ... I am sure they are there ... we just never found them ... I'm above all a realist. As Shakespeare would say - "*Aye .there's the rub ...*"

So I leave you with a perspective based not on the various corruption cases that have been found, but on the observation that -

Despite the heightened risks associated with infrastructure projects ... if approached in the right way from the beginning, it is possible to develop a strong ethical environment and integrated management systems so you can say with a high degree of confidence, that...

Slide 31 end statement)

*Build it ... and they will come
Plan ahead ... and they will be frustrated*