

# What is the ROI for IT Project Governance? Establishing a benchmark.

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## Abstract

This paper synthesises prior research findings to highlight how few IT projects realise all their expected benefits despite the widespread use of project management and technical methodologies. Using brave but plausible assumptions derived from research the paper suggests only a third of IT projects currently deliver any benefits at all and that overall ROI is around 30%. It suggests detailed benchmarks for IT project success rates that might be achieved through IT project governance and shows that if they can be achieved the overall ROI for IT projects should be between 135-240%. The benchmarks have been validated to a limited degree and a program of further research is introduced.

## 1. INTRODUCTION

Many best practice guidelines have been developed to address the problem of IT project failure (Alter & Ginzberg, 1978; Boehm, 1991; Davis, 1982; McFarlan, 1982). Concurrent with this effort has been the development of other approaches to manage more general IT issues such as security, business continuity and strategy. This collective effort is gradually coalescing and starting to be understood as IT Governance. Among practitioners COBIT is emerging as the dominant standard but there a number of alternatives and there has yet to be any widely accepted understanding of what actually constitutes IT Governance (Keyes-Pearce, 2002).

However, COBIT like other best practice standards<sup>1</sup> is being challenged because there is no evidence that following the recommended guidelines will lead to superior performance (Checkland, 1981; Lyytinen, 1987; Strassmann, 1995; R. C. Young & Jordan, 2005). In the area of IT project governance, one of the main issues is that the guidelines overemphasise technical considerations (Currie & Galliers, 1999; Sauer, 1999) and underemphasise considerations such as top management support which are more likely to influence success from a governance perspective (L. M. Markus, 1981; McDonagh & Coghlan, 2003; R. Young, 2005). As early as 1975 it was pointed out that the emphasis on technical issues and project management was misguided because “the major reason most information systems have failed is that we have ignored organisational behaviour problems ...” (Lucas, 1975).

Project management and technical methodologies are now in widespread use (Clegg et al., 1997). However the reported failure rates (Clegg et al., 1997; Standish, 1999, 2003) suggest

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<sup>1</sup> Project management guidelines include: PMBOK, PRINCE2; IT Services guidelines include: BS15000, ITIL; Software development guidelines include: ISO/IEC 12207, ISO/IEC TR16326; Security guidelines include: ISO/IEC 17799, the NIST handbook.

these practices have not overcome concerns that they are of “little practical utility” (Lyytinen, 1987) and “have no consistent impact on success” (Kraemer & King, 1986).

Standards Australia is one group attempting to overcome the problem with the development of what they claim are the world’s first standards on the corporate governance of ICT (AS8015, 2005) and ICT projects (AS8016, forthcoming). Their approach encompasses the existing guidelines, but also explicitly recognises that the solution to IT problems must start at the top management level (HB280, 2006).

### **1.1 A need for credibility**

However, a fundamental issue remains unaddressed. There is no convincing evidence<sup>2</sup> that following any of the IT Governance guidelines will lead to superior business performance (Strassmann, 1995; R. C. Young & Jordan, 2005). This issue is particularly important because it seems the most important audience for IT governance prescriptions is the board and the senior management team. This audience is not naturally inclined to make a lot of personal effort relating to IT matters (Crawford, 2004; R. C. Young & Jordan, 2002) and their confidence has been undermined by earlier guidelines that were found by some to be trivial, unconvincing and naïve (Emery, 1990; Mähring, 2002). The issue is compounded because there is a growing concern that governance is over-emphasising risk and distracting boards from their real purpose (BRW Cover story, 2003; Hewson, 2003; Hilmer, 1993). Why should top managers and others adopt the more recent IT governance recommendations?

The emerging consensus of Standards Australia’s working group on IT project governance (IT-30-02) is to emphasise performance. Their charter is “to promote a substantial increase in the success rate of, and value delivered through projects involving ICT investment” There is good evidence to show “the way change is managed does make a difference to competitive performance” (Pettigrew & Whipp, 1991), but little progress has been made in quantifying the specific benefits that might be achieved. In the absence of strong evidence of the empirical value of IT governance, there is the risk that board members will remain disinclined to make more than a token effort.

This paper tries to progress the issues by attempting to quantify the specific benefits of IT project governance. The paper specifically focussed on IT project governance, a subset of IT governance. If audiences find the argument compelling, the approach can be extended to estimate the likely financial benefits of other aspects of IT governance.

## **2. ESTIMATING THE BENEFITS OF IT PROJECT GOVERNANCE**

### **2.1 Currently Reported Project Success Rates**

This section synthesises prior research to provide estimates of current project success and failure rates. The synthesis takes into account the many different definitions of success and failure and emphasises a definition with the most relevance for boards and senior managers: the realisation of benefits (HB 280, 2006; Seddon, Graeser, & Willcocks, 2002).

It was noted earlier that most guidelines overemphasise technical and project management definitions of success. Unfortunately most research also reflects this bias and there are relatively few studies that report the extent to which benefits are realised (R. Young, 2005). This is a problem because it has been found that there is not a strong relationship between technical or project management success and true project success, the realisation of benefits

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<sup>2</sup> In a personal communication the ISACA representative on IT-30-02 said “I have checked with ISACA and they agree with your conclusion about [lack of] supporting evidence”. He added “I am surprised re lack of evidence but my own personal experience supports the benefits of best practice”. His comments reflect the widespread but unstated assumption held by most experts in the IT field: ‘adoption of best practice will improve results’.

(Baccarini, 1999; Cooke-Davies, 2002; M. L. Markus, Axline, Petrie, & Tanis, 2000). Of the few relevant studies, the most credible are listed below:

- 10-20% of projects successfully deliver the expected benefits (Clegg et al., 1997),
- 30-40% are implemented, but deliver no discernable benefits (Willcocks & Margetts, 1994)
- At least 15% are complete failures (Standish, 1999, 2003).

It seems reasonable to assume that the remainder represent challenged projects that deliver some but not all of the expected benefits. If we use averages of the above statistics (15% deliver, 35% don't deliver, 15% fail outright), it can be inferred that 35% of projects are challenged.

## **2.2 Implied Cost of Project Failure and current ROI<sup>3</sup>**

There is no way to know with any accuracy what percentage of the expected benefits are delivered by the challenged projects. It seems reasonable to assume that the challenged projects deliver about half of their promised benefits because this would be consistent with earlier findings. These earlier findings reported that two thirds of projects fail to perform and that the overall benefit of investing in IT is being realised by only a third of the projects that actually perform (Garrity, 1963). There is no particular reason to suspect this ratio has improved and if we accept that only 15% of projects deliver all the expected benefits (Clegg et al., 1997) it implies the remaining 18% of benefits must be delivered by the challenged projects (i.e. 15% + 18% = 33%). This supports the assumption that the 35% of projects that are challenged deliver about a half of their expected benefits.

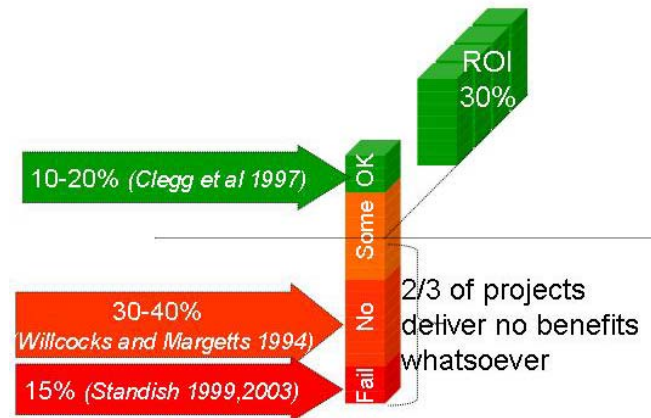
It is difficult to estimate the ROI realised by the successful third of projects. There was some doubt on whether IT added any value at all (Solow, 1987) but there is now clear evidence that the overall ROI from IT investment is positive (Brynjolfsson & Hitt, 1998). This evidence suggests that the multiplier could be between four to 10 times the original investment (but the higher estimate would probably overstate the effect because it fails to account for the additional investment in organizational change that is usually needed over and above an IT project to realize the benefits of investing in IT).

An early estimate reported the ROI for IT investments to be around 30% (Garrity, 1963). This estimate is also consistent with the 4 times multiplier recommended by Brynjolfsson & Hitt (1998). We can see this in a numerical example: Around \$10Bpa is currently invested on IT projects in Australia. If the ROI is 30% then the benefits delivered would be \$13B. However this \$13B of benefits is being delivered by only one third of the projects, the successful projects. If this successful third consumes one third of the total IT project investment, then we can assume \$3.3B dollars of effective investment is delivering the \$13B dollars of benefits. Every effective dollar of IT investment must therefore be producing four dollars of tangible financial benefit. This convergence of findings from two independent studies provides some support that current ROI for IT projects is around 30%.

The ROI and implied success and estimated failure rates of IT projects are shown schematically in Figure 1.

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<sup>3</sup> Return on Investment (ROI) is an accounting valuation method. It is expressed as a ratio comparing the net benefits of a project against its total costs.



**Figure 1: Reported project success rates**

### 2.3 ROI for Project Governance – Assumptions and Implications

A number of further assumptions can be made to estimate what ROI might be achieved by using Project Governance to improve the success rates:

The first major assumption is that the adoption of proper project governance will shift stakeholder focus onto the realisation of benefits. Considerations of length prevent a detailed discussion of what constitutes Project Governance but this assumption is consistent with the recent work of Standards Australia (AS8015, 2005; AS8016, forthcoming; HB280, 2006) and it is significant that these Standards are currently under consideration for fast-tracking for adoption by ISO.

If proper project governance shifts the focus of key stakeholders onto the realisation of benefits, then it seems reasonable to assume that this will result in more benefits being realised. This is reasonable because as was noted earlier that current practice focuses on technical or project management issues (which do not strongly relate to the realisation of benefits) and current practice is not considered to be of concern to key stakeholders like the board or senior management. It has long been accepted that top management support is crucial for success (L. M. Markus, 1981) but absent in practice (Jarvenpaa & Ives, 1991) and this assumption should not be considered controversial.

The second major assumption is that the cited project failure rates are generally applicable. This seems reasonable because the cited statistics were derived from studies on all sizes of organisations. However the studies were conducted mainly in North America, UK and Europe and it is possible they are biased towards larger sized companies.

We cannot know how much more benefit will be realised. An estimate will be made by making a number of assumptions about the change in success rates of the various categories of projects because of Project Governance:

It will be assumed the failure rate will remain around 15%. Projects by nature involve some risk hence the failure rate is unlikely to ever be 0% because predictions of future economic conditions are never likely to be made with perfect accuracy. Some of these projects should be cancelled earlier once it is realised that the expected benefits are unlikely to be realised. Some of the projects that currently deliver no benefits should also be cancelled earlier. On balance it seems reasonable to assume the failure rate will remain at 15% of the total investment in IT projects.

It will be assumed that all of the 35% of projects that currently deliver no benefits will be influenced to deliver some benefits or be cancelled earlier.

It will be assumed that some of the 35% of projects that are currently challenged will be influenced to deliver all the targeted benefits. We have no way of knowing how many of these projects will be influenced to be more successful. It seems reasonable to hope that half of the currently challenged projects will be influenced to deliver all the expected benefits so it will be assumed that 17.5% of the challenged projects will now deliver all of the expected benefits. This and the earlier assumptions are likely to be achievable because an influential practitioner claims to be using project governance to realise 80-90% overall success rates (Thorp, 2003). The final assumption follows from this to assume excellent project governance will lead to 85% of projects delivering all the expected benefits.

### **3. DEVELOPING AND VALIDATING R.O.I. BENCHMARKS**

These assumptions in section 2.3 have laid the foundation to propose a benchmark of the potential financial benefits of IT project governance.

- Better IT project governance will eliminate the projects that deliver no benefits (35% - > 0%) because they will now deliver some benefits (+35%) or have been cancelled.
- Half of the projects that previously delivered some benefits would now deliver all their promised benefits, so the percentage of successful projects increases to 32.5% (15+17.5)
- The percentage of projects that deliver at least some benefits should therefore be 52.5% (i.e. 35% + 17.5%)
- Mature governance will result in further improvement and the projects that deliver all the promised benefits will increase to 85%

#### **3.1 Case Study**

An opportunity<sup>4</sup> arose to validate these derived benchmarks when a large Australian organisation invited the author to present his research findings from an earlier study on IT Project Governance. The earlier research was based on five major case studies conducted over a four year period of how boards and top managers had influenced IT projects to succeed or fail (R. Young, 2006).

The author took advantage of the opportunity by applying the benchmark to the actual IT spending of the organisation (\$160M pa on IT overall, 15% of this on IT projects i.e. \$24M pa). A number of presentations were made, but the most relevant was a specific presentation to a senior management team consisting of the CIO, a few of his peers and a few of his direct reports.

It was suggested that the \$24M spent on IT projects should be realising around \$31.2M of benefits (i.e. 30% ROI). This benchmark was accepted by all present based on their intuition but also perhaps with some gratitude because the organisation was weathering significant criticism at the time in regard to the effectiveness of their IT spend. It was then suggested that IT project governance had the potential to improve outcomes based on the ROI benchmark assumptions above and the further assumption that each effective dollar invested produces four dollars of benefits. The argument that was presented was as follows:

- \$12.6M invested in projects (52.5% \* \$24M) will deliver 'some benefits'. The benefits delivered will be \$25.2M (12.6/2 \*4)
- \$7.8M invested in projects (32.5% \* \$24M) will deliver 'all benefits'. The benefits delivered will be \$31.2M (7.8 \*4)

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<sup>4</sup> It is too much to claim at this stage that the benchmarks are being rigorously tested through a carefully planned research program. Hence this section is not 'dignified' with a methodology. It is simply a report of an exploratory study that was conducted opportunistically.

- The value of good project governance for this organisation is therefore \$56.4M. (This is an ROI in dollar terms of \$32.4M i.e. \$56.4M - \$24M). This implies the ROI for good IT Governance is 135% (\$32.4M/\$24M).
- Excellent IT project governance is assumed to result in 85% of projects delivering all the targeted benefits. In our numerical example 85% of \$24M is \$20.4M. The benefits are therefore \$20.4M \* 4 = \$81.6M which is \$57.6M more than the \$24M invested. This implies the ROI for excellent project governance is 240% (\$57.6M/\$24M).

The results are presented in Table 1.

**Table 1: Estimating the value of project governance for an organisation**

**Example 1: A large Australian organisation**

Annual IT spend	\$160,000,000	<b>Assumptions</b>				
Estimated amount on IT projects	\$24,000,000	Some -> All: 50%				
		<b>Current Performance</b>	<b>Better Project Governance</b>	<b>Excellent Project Governance</b>		
Terminated	15%	\$3,600,000	15%	\$3,600,000	15%	\$3,600,000
No Benefits	35%	\$8,400,000	0%	\$0	0%	\$0
Some Benefits	35%	\$8,400,000	53%	\$12,600,000	0%	\$0
All Benefits	15%	\$3,600,000	33%	\$7,800,000	85%	\$20,400,000
total invested	100%	\$24,000,000	100%	\$24,000,000	100%	\$24,000,000
Estimated ROI	30%	\$31,200,000	135%	\$56,400,000	240%	\$81,600,000
Additional value created by project governance				\$25,200,000		\$50,400,000

The executives found the analysis credible and are now participating with the author to seek Australian Research Council (ARC) funding to explore whether the suggested benefits can actually be realised. They could not be considered an unbiased audience, but they were prepared to commit \$42,000 over a three year period (\$18,000 in cash and \$24,000 in kind relating to the commitment of senior management and other staff time). This is not insignificant and is an initial suggestion that the proposed benchmarks might be valid.

It is worth noting that another four organisations also collaborated in the submission of the ARC grant and committed \$560,000 to the research project. Almost \$100,000 of this was in cash and the remainder related mainly to the commitment of dedicated senior staff. They are all interested in realising the potential benefits of IT project governance and they will all be involved in evaluating the benchmarks, but their commitment was not based on the proposed benchmarks. It is therefore inappropriate to do more than mention the relationship. Their participation might indicate they believe the benchmarks are valid, but they have not considered them in any detail and it is too much to make the claim.

### 3.2 ROI Benchmarks

The benchmarks that have been developed are now summarised below, tabled and presented schematically. These benchmarks serve as hypotheses for further research to evaluate whether they represent the norm and whether they can be achieved.

- The proportion of the total IT spend that is spent on IT projects should be around 30%.
- The current performance of the IT project investment should be: 15% terminated, 35% delivering no discernable benefits, 35% delivering some benefits and 15% delivering all the expected benefits
- The overall ROI on IT projects should be around 30%. The ROI for successful IT projects will be around 400%.
- Better project governance should
  - Eliminate projects that deliver no discernable benefits to 0%
  - Increase the proportion of projects that deliver some benefits to 53%
  - Increase the proportion of projects that deliver all the expected benefits to 33%
- Excellent project governance should
  - Increase the proportion of projects that deliver all the expected benefits to 85%

**Table 2: ROI Benchmarks for IT project governance**

ROI benchmarks		Assumption: some - all		
Annual IT spend	Estimated amount on IT projects	30%	50%	
		<b>Current Performance</b>	<b>Better Project Governance</b>	<b>Mature Project Governance</b>
Terminated		15%	15%	15%
No Benefits		35%	0%	0%
Some Benefits		35%	53%	0%
All Benefits		15%	33%	85%
Estimated ROI		30%	135%	240%



**Figure 2: ROI Benchmarks for IT Project Governance**

## DISCUSSION

The paper has attempted to progress an impasse in the adoption of IT best practice by non-IT stakeholders. It suggests that the enduring problem of IT project underperformance attributable to the incompatible mindsets of executives and IT-communities may finally have been overcome. The latest Project Governance Standards guide all stakeholder groups to focus on the realisation of the expected benefits rather than any intermediary success factors.

The paper has not developed in detail what constitutes Project Governance and referred instead to pioneering work by Standards Australia. This work suggests that the majority of the necessary tools may already exist (e.g. project management and other best practice guidelines) and the key to success is to focus them on governance criteria of success. There is a hint that these tools may have to be supported by additional tools from change management, organisational development, psychology and the like, but there is no suggestion that the majority of these additional tools do not already exist. Early indications suggest that the more holistic framework provided by the Standards will guide decision-makers to more effectively select from the complete range of available tools to accommodate particular organisational contexts and achieve the desired results (HB280, 2006).

The basic premise of the paper is that if all the key stakeholders, and especially executives and their IT advisors, focus on the realisation of benefits, they will find a way to realise more benefits. It appeals to a basic belief that ambitious and capable people can achieve what they set out to achieve, as long as they can agree of what they are trying to achieve. The paper, instead of getting bogged down in the detail of how it can be achieved, addresses the issue of what can be achieved and whether this is compelling enough to answer the question why should we try? It seeks to provide a credible and compelling argument for executive

stakeholders in particular, why best practice as it is captured by Project Governance should be adopted.

The body of the paper has presented the best available data to suggest what ROI benchmarks might be achieved within an individual organisation. This discussion will explore the national and global implications if the ROI benchmarks were generally applicable.

### National Benefits

IT project governance is being championed at a national level by many organisations e.g. Standards Australia, OGIT in the UK. If they are effective at a country level, the implications can be estimated by applying the benchmarks developed earlier.

Within Australia, approximately \$30B pa is spent on IT. If a third is spent on IT projects (\$10B) then approximately \$13B of benefits is currently being realised each year. Following the suggested benchmarks we can estimate that national adoption of IT project governance regimes should initially produce an additional \$10.5B pa to GDP, and might eventually add around \$21B pa to GDP. This is the equivalent of lifting Australian GDP 1.6% - 3.1%. This analysis is shown in Table 3.

**Table 3: Estimating the value of project governance for a country**

**Example 2: A country - Australia**

Annual IT spend	\$30,000,000,000	<b>Assumptions</b>				
Estimated amount on IT projects	\$10,000,000,000	Some -> All: 50%				
		<b>Current Performance</b>	<b>Better Project Governance</b>	<b>Excellent Project Governance</b>		
Terminated	15%	\$1,500,000,000	15%	\$1,500,000,000	15%	\$1,500,000,000
No Benefits	35%	\$3,500,000,000	0%	\$0	0%	\$0
Some Benefits	35%	\$3,500,000,000	53%	\$5,250,000,000	0%	\$0
All Benefits	15%	\$1,500,000,000	33%	\$3,250,000,000	85%	\$8,500,000,000
	100%	\$10,000,000,000	100%	\$10,000,000,000	100%	\$10,000,000,000
Estimated ROI	30%	\$13,000,000,000	135%	\$23,500,000,000	240%	\$34,000,000,000
Additional value created by project governance				\$10,500,000,000		\$21,000,000,000

### Global Benefits

It is an interesting exercise to extend the discussion and apply the benchmarks at a global level. However, it is difficult to imagine how one could effectively influence IT project governance practices globally and one suspects this analysis is only for academic interest.

By starting from the estimate that one trillion dollars is spent annually on IT (Seddon et al., 2002), and continuing to assume that one third of this or \$333B pa is spent on IT projects, it can be estimated that good IT project governance should add another \$350 billion per annum of benefits, and excellent IT project governance should produce an additional \$700 billion per annum (Table 4). The implications are staggering and it is a pity if this analysis is conducted mainly for academic purposes. Perhaps a global initiative could be considered if it could be shown the benefits can be realised at a national level.

**Table 4: Estimating the world wide value of project governance**

**Example 3: Worldwide**

Annual IT spend	\$1,000,000,000,000	<b>Assumptions</b>				
Estimated amount on IT projects	\$333,333,333,333	Some -> All: 50%				
		<b>Current Performance</b>	<b>Better Project Governance</b>	<b>Excellent Project Governance</b>		
Terminated	15%	\$50,000,000,000	15%	\$50,000,000,000	15%	\$50,000,000,000
No Benefits	35%	\$116,666,666,667	0%	\$0	0%	\$0
Some Benefits	35%	\$116,666,666,667	53%	\$175,000,000,000	0%	\$0
All Benefits	15%	\$50,000,000,000	33%	\$108,333,333,333	85%	\$283,333,333,333
	100%	\$333,333,333,333	100%	\$333,333,333,333	100%	\$333,333,333,333
Estimated ROI	30%	\$433,333,333,333	135%	\$783,333,333,333	240%	\$1,133,333,333,333
Additional value created by project governance				\$350,000,000,000		\$700,000,000,000

### LIMITATIONS

The paper assumes the different studies can be meaningfully synthesised to understand the financial implications of IT project failure and the possible benefits of adopting IT project governance. It also assumes that the project success and failure statistics are generally

applicable. It also assumes that the amount invested in IT projects follows the reported success and failure rates. These may be brave assumptions, but they are based on credible data and they have been made to provoke serious consideration of an important issue.

## CONCLUSION

This paper attempts to quantify the benefits that might be achieved from IT project governance. It makes a number of brave but plausible assumptions derived from prior research to suggest that currently only a third of IT projects deliver any benefits at all. The assumptions were validated informally by a large Australian organisation that spends around \$160M pa on IT overall and around \$24M on IT projects.

It suggests as an initial benchmark that the overall ROI for IT projects should be around 30%. By implication this means that every dollar invested in a successful project should deliver around four dollars of tangible financial benefits. The paper does not, for obvious reasons, attempt to benchmark any additional intangible benefits that are likely to accrue from IT projects.

It suggests the following benchmarks for the different categories of projects: Projects that deliver no discernable benefits 0%, Projects that deliver some benefits 53%, projects that deliver all the expected benefits 33%. If assumptions are valid and these benchmarks can be realised the overall ROI benchmark for IT projects should be 135%.

It suggests that if the benchmark is set at same level as what some are already reporting as achievable (projects that deliver all the expected benefits 85%) then the overall ROI benchmark for IT projects should be 240%.

Further research is needed to evaluate the extent to which such benefits could be realised. Currently five Australian organisations have committed \$550,000 over a three year period (\$100,000 in cash, \$450,000 in-kind) to support an ARC research grant to explore the benefits of IT project governance.

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