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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 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 IT Project Governance has the potential to increase ROIs to 135-240%. A large organisation that spends $30M pa on IT might realise an additional $10.5M to $21M pa, and nationally GDP might be lifted by 1.6% to 3.1%. Further research is suggested.

Keywords

IT Project Governance, benefits realization, ROI, project success, project failure

INTRODUCTION

Recent evidence from KMPG (KPMG 2005) confirms earlier findings that few IT projects deliver the expected benefits (Clegg et al. 1997; Willcocks et al. 1994). Their evidence, based on a study of over 600 organisations in 22 countries, suggests that 98% of organisations are not achieving the targeted benefits. They suggest the issue is becoming more critical because the number of projects was increasing in 81% of organisations, with 71% budgeting more money for projects and 88% of projects having more complexity.

If their findings are generally applicable, there are major social and economic implications. Over a trillion dollars is invested annually in IT worldwide (Seddon et al. 2002) and around a third of this is spent on IT projects (CIO 2003). The KPMG data suggests 71% of new projects are undertaken for either new business opportunities or business improvement initiatives and that 40% of these projects are approved at the board level. Their findings show that IT project outcomes are often disappointing, with both customers and competitive advantage being affected (KPMG 2005).

The KPMG paper makes a valuable contribution by quantifying the use of 'best practice'. An unstated assumption is that the adoption of current best practices will improve results. A brief literature review will show that the case for best practice is far from convincing and that the credibility of IT advisors is an issue with decision-makers.

> *"With technocrats, the only three things you can be sure of are: nothing would get finished on time, it would always cost vastly more than predicted and it would never do what it was promised to do" (Young et al. 2002)*

This paper suggests an alternative approach that is less reliant on the credibility of IT advisors and the mantra of best practice. It attempts to shift the discussion from adoption of whether or not to adopt best practice to whether or not the benefits of best practice can be left unrealised.

The paper will synthesise the many credible studies on IT project success and failure and then use these as assumptions to estimate the value that could be realised by the adoption of best practice.

LITERATURE REVIEW

Unconvincing evidence for adoption of IT Governance

Many best practice guidelines have been developed to address the problem of IT project failure (Alter et al. 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 competing offerings and there has yet to be any widely accepted understanding of what actually constitutes IT Governance (Keyes-Pearce 2002). For the purpose of this paper, best practice will be understood to be captured by the broad term IT Governance.

However COBIT like other best practice standards[1] is being challenged because there is no evidence that following the recommended guidelines will lead to superior business performance (Checkland 1981; Lyytinen 1987; Strassmann 1995; Young et al. 2005). One of the main issues is that the guidelines, although sensible, overemphasise technical considerations and underemphasise considerations such as top management support which are more likely to influence success from a governance perspective (Markus 1981; Young 2005). Typical approaches focus on the lesser goal of project management success (Jiang et al. 2004) and overlook the finding that project success is more important i.e. the realisation of the expected benefits (Baccarini 1999; Cooke-Davies 2002).

A major problem is that few proponents of best practices appear to be cognisant that we have reached the limits of what traditional risk management techniques can achieve (Beck 1992; Bettis et al. 1990; Dumas 1999; Fama et al. 1992; Ruefli et al. 1999; Stern et al. 1996). 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). IT professionals persist with technological / engineering conceptions of the problem (Currie et al. 1999) in the face of clear evidence that it is better understood as a 'soft' organisational issue (Sauer 1999). Project management and technical methodologies are now in widespread use (Clegg et al. 1997) but some have concluded they have "little practical utility in coping with IS problems" (Lyytinen 1987) and "to have no consistent impact on the success of computing" (Kraemer et al. 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 explicitly recognises recent research showing that the solution to IT problems must start at the top management level and for success to be defined in terms of the realisation of business value (Young 2005).

Establishing Credibility

The effort represented by COBIT, Standards Australia, and the more established project management organisations (e.g. PMI, OGC, SEI) is surely to be commended, but a fundamental issue remains unaddressed – credibility. There is no convincing evidence that following any of the IT Governance guidelines will lead to superior business performance (Strassmann 1995; Young et al. 2005).

The issue of credibility is particularly important because the audience for most 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). The guidelines that have been developed for project management and other technical issues tend to be hugely demanding and exhaustive in scope; while the recommendations developed for top managers tend to be trivial (Emery 1990), unconvincing and naïve (Mähring 2002). Why should top managers and others adopt IT governance recommendations?

One argument is that IT Governance is a subset of corporate governance and a natural extension to the worldwide response to Enron, WorldCom and similar corporate scandals. There is some evidence to suggest that a higher standards of corporate governance leads to increases in share market value of between 10-12% in developed countries and much more in non-developed countries (Newell et al. 2002). However, there is little corresponding evidence in relation to IT governance and many board members are disinclined to make more than a token effort (Young et al. 2002). This 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)

This paper addresses these issues, by providing another reason that boards and top managers might accept as a good enough reason for adopting IT governance practices: a credible estimate of the likely financial benefits. For simplicity, the paper will focus only on a subset of IT governance: IT project governance. If it is found that audiences find the argument compelling, the approach can be extended to estimate the likely financial benefits of other aspects of IT governance.

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[1] Project management guidelines include: PMBOK, PRINCE2, CMM; IT Services guidelines include: BS15000, ITIL; Software development guidelines include: ISO/IEC12207, ISO/IEC TR16326; Security guidelines include: ISO/IEC 17799, the NIST handbook.

ESTIMATING THE BENEFITS OF IT PROJECT GOVERNANCE

Currently Reported Project Success Rates

This section synthesises the 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 et al. 2002). There are a few credible studies which report the extent to which benefits are realised. They are summarised below:

- 10-20% of projects successfully deliver the expected benefits (Clegg et al. 1997),

- 30-40% are implemented, but deliver no discernable benefits (Willcocks et al. 1994)

- At least 15% are complete failures (Standish 1999; Standish 2003).

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

Implied Cost of Project Failure

There is no way to know with any accuracy what percentage of the expected benefits are delivered by the challenged projects. Based on earlier findings (Garrity 1963) it seems reasonable to assume that they deliver half of the expected benefits. If this is the case, then this means that the overall benefit of investing in IT is being realised by a third of the projects that are undertaken and that two thirds of projects fail to perform.

The implied success and estimated failure rates of IT projects are shown schematically in the proportions of the vertical bar in Figure 1.
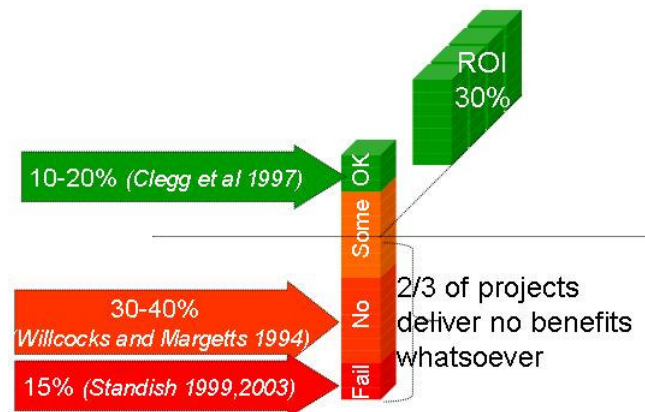

Figure 1: Reported project success rates

IT Governance – Assumptions

It is difficult to estimate the benefits realised by the successful third of projects. Brynjolfsson and Hitt (Brynjolfsson et al. 1998) have evidence that the multiplier could be as much as 10 times the original investment. However, they believe that this would overstate the effect of investment because it fails to account for the additional investment in organizational change that is usually needed over and above the IT project to realize the benefits of investing in IT. It will be assumed an earlier reported value of 30% is an appropriate conservative estimate of the ROI[2] (Garrity 1963).

This assumption has a number of important implications. If one third of IT projects deliver the 30% ROI from the overall investment in IT, then the multiplier for this third must be 400%. Using a numerical example: $10Bpa is invested on IT

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[2] 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.

projects in Australia to deliver $13B of benefits. Only one third of the money invested delivers the benefits, hence $3.3B dollars of effective investment delivered $13B dollars of benefits. Every effective dollar of IT investment generated four dollars of tangible financial benefit. This is shown schematically as the ROI above the line and to the right of the vertical bar in Figure 1.

The implications can be calculated by making a number of simple assumptions:

• The ratios illustrated in Figure 1, should be generally applicable because the cited project failure rates were derived from studies on all sizes of organisations.

• Current practice focuses on 'on-time on-budget' but no strong relationship has been found between this and the realisation of benefits (Markus et al. 2000). If project governance, such as that being developed by Standards Australia, shifts stakeholder focus onto the realisation of benefits, then it seems reasonable to assume more benefits will be realised.

• We cannot say how much more will be realised. It seems reasonable to expect:

    o The failure rate will probably remain around 15%. It is never likely to be 0% because predictions of future economic conditions are never likely to be made with perfect accuracy. Effective project governance should result in some projects not being undertaken.

    o The 35% of projects that currently deliver no benefits will be influenced to deliver some benefits or be cancelled earlier.

    o 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 (17.5%) will be influenced to deliver all the expected benefits. An influential source claims that with excellent IT governance, all these projects can be influenced to succeed with 80-90% overall success rates being realised (2003).

IT Governance – Potential Benefits

These assumptions lay the foundation to calculate the potential financial benefits of IT project governance. The potential ROIs are summarised below and shown schematically in Figure 2.

    o Better IT project governance will eliminate the projects that deliver no benefits (35% -> 0%) because they will now deliver some benefits (+35%).

    o 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)

    o The percentage of projects that deliver at least some benefits should therefore be 52.5% (i.e. 35% + 17.5%)

    o Mature governance will result in further improvement and the projects that deliver all the promised benefits will increase to 85%
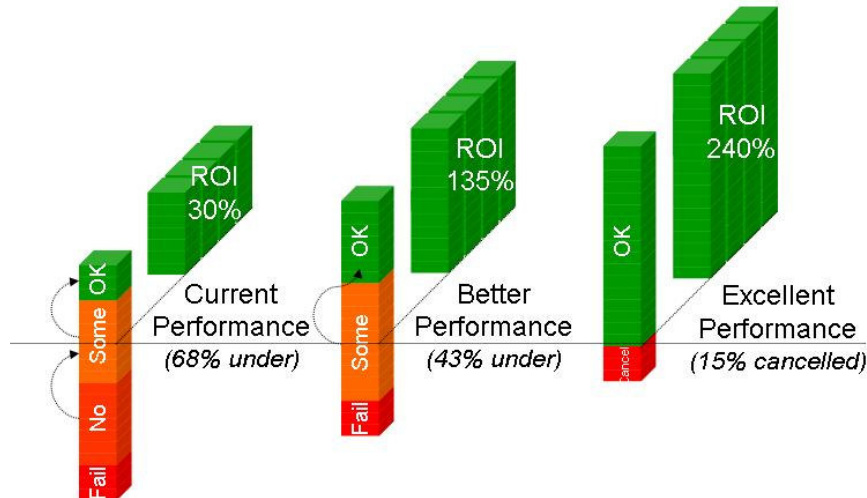
Figure 2: The likely benefits of better Project Governance

We can apply this to a hypothetical large organisation spending say $30M pa on IT overall with one third of this spent on IT projects ($10M pa). They should be realising around $13M of benefits from their investment (i.e. 30% ROI). The improved success rates relating to IT project governance and the assumption that each effective dollar invested produces four dollars of benefits suggests:

o $5.25M invested in projects (52.5% * $10M) will deliver 'some benefits'. The benefits delivered will be $10.5M (5.25/2 *4)

o $3.25M invested in projects (32.5% * $10M) will deliver 'all benefits'. The benefits delivered will be $13M (3.25 *4)

o The value of good project governance for this organisation is therefore $23.5M. This implies the ROI for good IT Governance is 135%.

• Excellent IT project governance is assumed to result in 85% of projects delivering all the targeted benefits. In our numerical example $8.5M * 4 = $34M. This implies the ROI for excellent project governance is 240%.

The numerical example is presented in Table 1.

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

National Benefits IT project governance is being championed at a national level by many organisations e.g. Standards Australia, OGIT. If they are effective at a country level, the implications can be calculated by applying the same ratios. Within Australia for example, approximately $30B pa is spent on IT, and if a third is spent on IT projects ($10B) then approximately $13B of benefits is currently being realised each year. Following exactly the same ratios as above, 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%. The analysis is shown in Table 2.

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Table 2: Estimating the value of project governance for a country

Global Benefits It is an interesting exercise to apply the same ratios at a global level. 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. The implications are staggering but unfortunately this analysis (Table 3) is conducted mainly for academic purposes because it is difficult to imagine how one could effectively influence IT project governance practices globally.

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Table 3: Estimating the world wide value of project governance

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 synthesises prior research findings to highlight the low project success rates previously reported. Despite the widespread use of project management and technical methodologies, projects infrequently realise all their expected benefits. This paper suggests recent project governance initiatives might have significant impact on this situation.

Using plausible assumptions derived from prior research this paper highlights potentially large improvements in ROI that could result from modest improvements in project governance practice.

It finds that currently only a third of IT projects deliver any benefits at all and that the ROI for IT projects is around 30%. It suggests IT Project Governance has the potential to increase ROIs to 135-240%. Numerical examples were provided to show a large organisation that spends $30M pa on IT might realise an additional $10.5M to $21M pa. At a national level, GDP might be lifted by 1.6% to 3.1% and a staggering value might be realised if IT Project Governance practice could be improved globally.

Further research is suggested to evaluate the extent to which such benefits could be realised. Firstly critical feedback could be sought from academics and practitioners on the overall validity of the analysis. Critical feedback could also be sought from organisational decision-makers such as boards and top managers to evaluate whether the implications are compelling enough for them to consider personally supporting the adoption of best practice IT project governance.

Secondly, a programme of research could be undertaken to evaluate the extent to which the ratios used in the analysis apply to specific organisations and the extent to which the potential benefits of IT Governance can actually be realised.

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