

Optimising Value Creation From IT Investments



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Information Risks: Whose Business Are They?
Optimising Value Creation From IT Investments
Measuring and Demonstrating the Value of IT
Governance of Outsourcing
IT Alignment—IT Strategy Committees

1. Executive Summary

Successful acquisition and deployment of information technology often require significant allocation of resources and should therefore be subject to the same initial scrutiny and ‘before, during and after’ monitoring as any other type of investment. No investment, IT included, should be undertaken without full knowledge of the expected cost and anticipated return, as related to risk. High-risk projects have a higher likelihood of failure, so to compensate for those that do fail, high-risk projects should carry a higher return expectation.

To maximise the return on IT investments, techniques such as preparation of formalised, consistent business cases; use of hurdle rates; attention to portfolio management; and application of metrics such as internal rate of return, net present value and payback period can be helpful.

Ensuring that value is obtained from investment in information technology is an essential component of IT governance. It involves selecting investments wisely and managing them throughout their life cycle—from inception to final retirement. As with any facet of governance, without leadership, commitment and support from the top, it is less likely to realise success.

The behaviour of the equity markets and corporate IT spending have been closely linked in the last five years. Exuberant expectations of the potential benefits of IT-related spending went hand in hand with the late 1990s stock market boom, and retrenchment of IT spending was a central element of many companies’ response to the stock market slide of 2000–2003. Throughout that boom-bust period, the appraisal process for IT-related projects—both at the approval stage (ex-ante) and following deployment (ex-post)—was, in many companies around the world, lacking in discipline.

But now standing at an important juncture, many companies, as a result of the slashing of IT budgets in recent years, realise that they may have invested too little or might not have fully deployed a risk-based IT investment strategy. Corporate financial strength has improved and many companies now have the resources to invest more. At the same time, a greater emphasis on all aspects of corporate and IT governance means that stricter discipline is being applied to IT investment appraisal and to ensuring that the optimum investments are chosen and actual value is delivered.

Increasingly, today’s corporations and public sector bodies are becoming dependent upon IT, not just to support the traditional activities of the business but also to enable it to extend into new areas. Within many sectors, that dependence is becoming virtually total. At the same time, expenditure on IT and its supporting activities has grown to the extent that, within many businesses, the level of IT-related costs is second only to that of staff costs.

Ensuring that value is obtained from investment in information technology is an essential component of IT governance.

It is not easy to determine with any confidence the extent to which IT expenditure delivers real value.

It should be relatively straightforward for businesses to quantify and monitor how much they are spending on IT. However, it is far less easy to determine with any confidence the extent to which this expenditure delivers real value and contributes to corporate success or sustainable stakeholder value. This paper has been prepared to develop some hypotheses on value delivery from investment in IT and to promote further discussion and debate on how value might better be determined and measured. It does not provide all the answers, but it is intended to provide a good starting point for those charged with delivering, assessing and providing governance over value from IT-related business investments. It should be read in conjunction with the companion paper *Measuring and Demonstrating the Value of IT*, which contains further guidance on, in particular, the use of balanced scorecard techniques to help measure value obtained from IT.

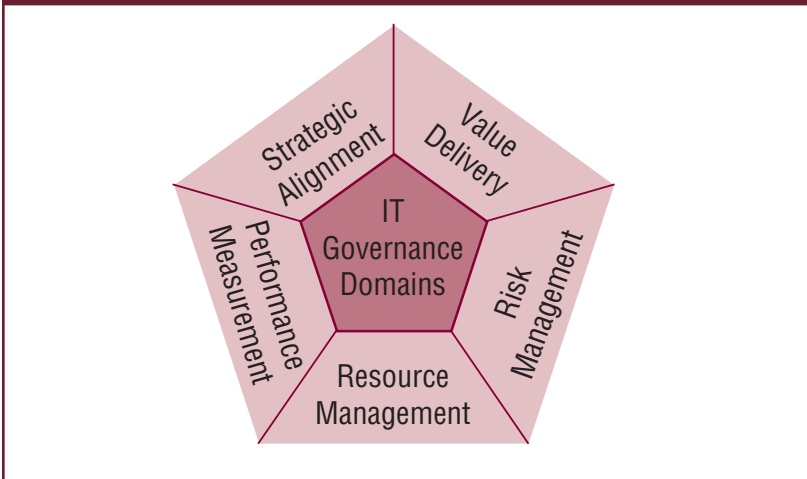
2. Why Is Value Relevant to IT Governance?

The IT Governance Institute regards value delivery as one of the five domains of IT governance alongside strategic alignment, performance management, resource management and risk management (**figure 1**). Indeed, it could be argued that unless success is achieved in the other four domains, achieving value delivery will remain elusive.

The essential components of IT governance might therefore be expressed as follows:

1. IT governance overall is about delivering value and managing risk.
2. Value delivery, which embodies the concept of risk-related returns, is perhaps the most important.
3. Value delivery is not possible without strategic alignment and resource management.
4. It is impossible to provide transparency of success or failure without performance measurement.

Figure 1—Five Domains of IT Governance



ITGI defines value delivery as follows: ‘Value delivery is about executing the value proposition throughout the delivery cycle, ensuring that IT delivers the promised benefits against the strategy, concentrating on optimising costs and proving the intrinsic value of IT’.¹

A key responsibility for all directors and senior managers of any enterprise is to ensure that stakeholder value is obtained from the investments and the allocation of resources that are the subject of many of their key decisions. The

¹ IT Governance Institute, *Board Briefing on IT Governance, 2nd Edition*, 2003, USA, www.itgi.org

same principles apply for any type of investment, whether it is in, for example, real estate, merger and acquisition activity, equity investment or any other activity that involves the deployment of shareholder funds. Successful acquisition and deployment of information technology often require significant allocation of resources and therefore must be subject to the same type of initial scrutiny and monitoring as any other type of investment. However, there is much anecdotal evidence to suggest that IT-related investments often are reviewed and approved with significantly less vigour than other types of investment. There are many reasons for this, including what is regarded as the often esoteric nature of IT in all its forms and the consequent lack of confidence that non-IT specialists have in understanding both its opportunities and its risks.

A study carried out within global financial services group ING² indicates that IT-related business investments have the potential to deliver far greater returns than almost any other conventional investment. This research, carried out in the summer of 2004, indicated that, in comparison to more traditional investments such as commercial real estate, publicly traded equities and sovereign bonds, the return on a well-balanced portfolio of IT-related business investments can be expected to be significantly higher.

However, although the potential for large returns is self-evident, history does remind us that the actual achievement of that potential can be elusive and disappointing, highlighting the continued vigilance needed to ensure that all of the five domains of IT governance are given equal priority and attention. This is in contrast to the opinions of those IT professionals participating in a recent IT Governance Institute study,³ 71 percent of whom reported that they consider their organisation's ability to obtain real value from its investment in IT either 'excellent' or 'good'. An earlier survey by ITGI (March 2004),⁴ covering a broader base of both business and IT management, indicated that the inability to fully determine the value achieved from IT is one of the respondents' key issues and uncertainties (**figures 2 and 3**). The table in **figure 2** ranks the issues as identified by the respondents, showing clearly their concerns not only about proving the value obtained from IT but also the lack of understanding of how well IT is performing. The table in **figure 3** indicates the confidence that the respondents have in their ability to overcome these issues if a robust and comprehensive IT governance structure were properly implemented.

² ING, originally through its IT performance measurement and investment management department, and now in its new incarnation as SeaQuation, an ING spin-off, has invested significant research and development into IT's contribution to value creation from a risk-weighted perspective. Therefore, this publication contains a number of references to the work of SeaQuation.

³ In 2004, the IT Governance Institute, in conjunction with Lighthouse Global, surveyed 200 IT professionals from 14 countries in the Americas, Asia/Pacific and Europe. The respondents included CIOs, IT directors and IT managers from companies with a turnover in excess of US \$50 million.

⁴ IT Governance Institute, *IT Governance Global Status Report, 2004*, www.itgi.org

There is anecdotal evidence that IT investments are reviewed with significantly less vigour than other types of investments.

Figure 2—Problems Encountered With IT in Last 12 Months

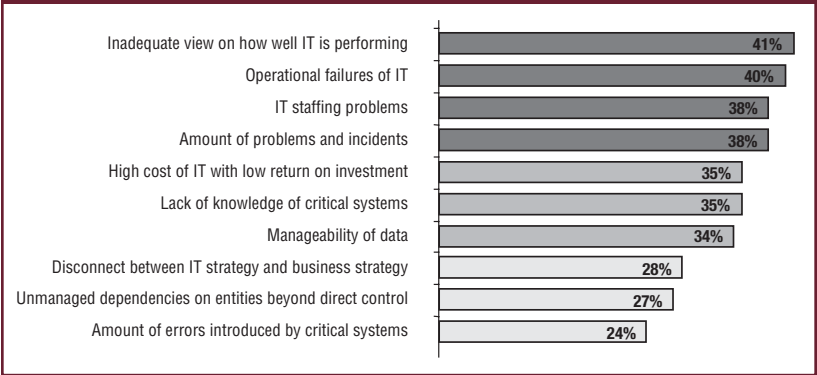
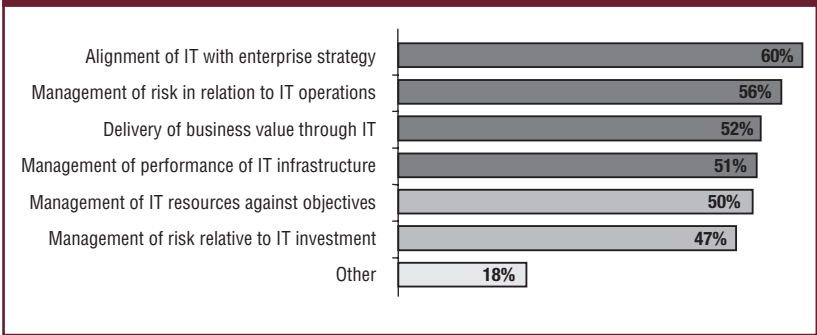


Figure 3—Issues Those Who Implement IT Governance Hope to Resolve



These issues are also highlighted in a META survey from July 2004⁵ where the conclusions included:

- Although 85 percent of organisations do demand business cases for change projects, only 40 percent of those projects that are approved have valid and realistic benefits statements.
- Fewer than 10 percent of organisations ensure that benefits are realised postproject.
- Fewer than 5 percent of organisations hold project stakeholders responsible for benefit attainment.

Whatever the true level of confidence in these issues currently, it is hoped that the thoughts developed within this publication will help those charged with governance responsibilities over IT investments to better understand how value may be achieved and monitored, thus maximising value creation and avoiding value destruction.

⁵ META Group, 2004

Success in understanding cost and measuring value can be achieved only with business and IT working together in partnership. Martin Curley, director of innovation at Intel, in his book *Managing Information Technology for Business Value*⁶ states:

A strategic alignment between IT and the business is a crucial factor in business value generation. Good strategic alignment implies a virtuous circle, that is, a positive bi-directional relationship between IT and business strategy. Within this context IT and business alignment should be measured not only by the extent to which IT supports the business, but also by the extent to which business strategy capitalizes on IT capabilities.

In his book, Curley defines four strategies that can contribute to achieving and measuring business value from IT. These are:

- Manage for IT business value to maximise benefits such as corporate profitability and growth with existing and future IT investments.
- Manage the IT budget to enable continuous cost reduction and the flexibility to shift budgeted funds from low-yield investments to investments that will deliver competitive advantage.
- Manage the IT capability to enable sustainable competitive advantage to be delivered from IT.
- Manage IT like a business so that winning business practices enable IT organisations to succeed in their missions.

All of these strategies make sound sense. The right IT investments have to be chosen and managed throughout their life cycle if they are to create value. The IT capability must be understood, must be appropriate to the demands of the business, and must be leveraged to deliver that value.

⁶ Curley, M.; *Managing Information Technology for Business Value*, Intel Press, 2004

3. Categories of IT Investment

As a general rule, IT investments are subject to the same expectation that accrues to any other type of corporate expenditure: the expectation that they will generate a return. Sometimes that return may be easy to measure, sometimes it will be more difficult; indeed, sometimes it may be impossible. However, just because it may be difficult, that must never be accepted as an excuse not to make the effort to try to quantify the expected return in the first place. Getting into the habit of spending shareholder funds without having a close eye on the anticipated return will lead to unwise and badly directed spending, which ultimately will lead, at best, to corporate disadvantage or, at worst, to complete corporate failure. This general rule must apply to all types of IT-related spending.

It is acknowledged that the anticipated returns from different categories of expenditure will vary, depending on the type of investment made.

The META Group,⁷ for example, defines three categories of IT-related spending or investment:

- Run the business—The spending necessary to maintain existing operations at the existing level
- Grow the business—The spending necessary to, for instance, provide additional automation to improve efficiency or the consolidation of data centres to reduce costs and increase competitiveness
- Transform the business—The introduction of new areas of business, the expansion into new markets or any other radical transformation project designed to lead to significantly enhanced revenues and profits

Similarly, Peter Weill of Sloan CISR⁸ has suggested the following categorisation:

- Transactional investment—Transactional investments provide the information technology to process the basic, repetitive transactions of the business, e.g., mortgage processing, claims processing or account management. Their main purposes are to increase efficiency and reduce costs.
- Informational investment—Informational investments provide the information for managing and controlling the organisation. Systems in this category typically include systems for management and financial control, decision-making, planning, communication and accounting.
- Strategic investment—Strategic investments are usually designed to add real value to the business by increasing competitive advantage, enabling entry into new markets, or otherwise increasing or enhancing revenue streams. Examples include a new system to support an Internet-enabled banking initiative, or a cable TV-enabled insurance marketing channel.

Spending shareholder funds without having a close eye on the anticipated return will lead to unwise and badly directed spending.

⁷ META Group, 'Portfolio Management and the CIO, Part 3', March 2002

⁸ Weill, Peter; Marianne, Broadbent; *Leveraging the New Infrastructure*, HBS Press 1998

- Infrastructure investment—Investments in infrastructure can be costly and of long duration but they may not, in themselves, generate any directly quantifiable financial benefits, although the business applications that depend upon the infrastructure will benefit. Examples include implementation of a new or upgraded systems management product or the implementation of a new operating system.

The above are just two examples of the categorisation classifications used or suggested by different industry experts. There are clear similarities across them, although there are different nuances within each. Each organisation must select and adopt the categorisation scheme that is most relevant for it. It is important to understand the purposes of having some form of categorisation scheme for IT investments. These include:

- A greater ability to construct and monitor a balanced portfolio of IT investments. It is probable that a healthy, growing organisation will have investments in all categories. A proper mix is essential to ensure that risk is understood and managed, growth is encouraged and focus continues to be placed on essential ‘keeping the lights on’ activities as well as the longer-term strategic investments.
- The ability to better define risk and return targets for investments. For example, it is probable that a strategic investment will carry a higher risk and therefore an expectation of higher return than an informational investment, which will almost certainly be low-risk and will therefore be undertaken with an expectation of a lower return.

Within certain industries—in particular, the public sector and financial services—there may be a need for an additional classification of legislative, regulatory or mandatory investments. This category would include those projects that need to be undertaken just to stay in business by implementing the requirements of industry regulators, environmental agencies or governmental bodies. Examples would include the US Sarbanes-Oxley Act of 2002 and, for financial services companies, Basel II requirements. However, although undertaking IT-related investments to satisfy regulatory requirements may not obviously or immediately lead to any noticeable value-added return, thought should always be given to how these initiatives might also be used to deliver value beyond just the ability to stay in business. An example might include the adoption of Sarbanes-Oxley requirements not just to satisfy the regulators but also to enable more robust business processes, thus enhancing efficiency or reducing the incidence of errors or downtime.

Each organisation must select and adopt the categorisation scheme that is most relevant for it.

4. Setting Value Return Targets

It is probable that within almost all organisations, whether public or private sector, the demand for IT investment far exceeds the resources (human and financial) available to deliver and maintain it. Difficult decisions have to be made regarding those projects selected for approval and those to be declined or deferred. Within many organisations, this decision-making process becomes very subjective, often clouded in political uncertainty, and not always based on totally reliable, objective, complete or consistent underlying data and analysis.

Therefore, there needs to be a 'level playing field' process whereby the optimum investments are chosen for approval, free of political or personal bias. Of course, as noted previously, there will be certain projects that may circumvent the usual selection processes because of their nature as mandatory or regulatory initiatives. These projects just have to be done to stay in business although no significant return may be expected. They will, however, use resources that might otherwise be spent on what might be regarded as more profitable ventures. Therefore, the extent of such projects must be understood to establish the level of resource that will remain available for discretionary projects. The selection process, therefore, will apply primarily to discretionary projects, i.e., those projects that do not have to be undertaken but that have the potential to deliver real, measurable value to the organisation if they are delivered successfully.

The key components of an IT investment approval process include:

- Preparation of a comprehensive business case based upon a consistent corporate standard and agreed assumptions (e.g., tax rates and inflation rates)
- An approval board or committee with appropriate representation from both business and IT to ensure that decisions are made with neutral bias and with proper transparency of all business case components, particularly including strategic alignment and financial returns
- Proper consideration of key financial metrics on the proposed return from the candidate investments, including key indicators such as net present value (NPV), internal rate of return and payback period
- Provision for proper accountability for the delivery of results. If the corporate culture is one whereby there is no actual accountability (e.g., no impact on personal bonuses and other incentives), then no one will take seriously the requirement for accurate and reliable financial metrics in the first place. This means that there must be a reliable process to measure the actual returns that are achieved from each investment.
- Definition of appropriate hurdle rates for IT investments. This process is described later.

If IT-related business investments consistently overrun their original budgets by 20 percent, this 20 percent overrun must be factored into the expected return for each business case.

- Assurance that proper project management processes will be followed, including the full involvement of skilled and experienced resources to deliver and manage the project, together with appropriate reporting to a properly qualified and representative project governance board or committee
- Assurance that all parts of the business that will be affected by the outcome of the project are properly involved and will commit the resources necessary to maximise the chances of success
- An understanding of the potential impact on the value return from this investment from previous solutions delivery experience. For example, if IT-related business investments consistently overrun their original budgets by 20 percent, this 20 percent overrun must be factored into the expected return for each business case. This 'solutions delivery effect' can often have the effect of turning an expected profitable outcome into a negative one. This is always a useful and essential sanity check on any proposed project. Without building in the expected impact of an overrun, the business case will be overstated. Keeping this constant focus on solutions delivery performance will also help the organisation improve, perhaps through undertaking the steps necessary to increase its capability maturity model (CMM) level for systems development and implementation. Of course, past experience in other factors such as time overrun or underdelivery of functionality must similarly be factored in.

5. A Focus on Risk-adjusted Returns

Introducing the concept of the hurdle rate can also be helpful in selecting the most advantageous projects and improving the actual value obtained from investments in IT—whilst also introducing improved consistency. The term ‘hurdle rate’ is common—particularly in the financial services sector—in determining the expected returns from investments at different levels of risk. For example, it is possible to make a zero-risk investment by, perhaps, putting money into Euro-denominated Interbank deposits. This may produce a fixed annual return of, say, 2.5 percent after tax. Therefore, the hurdle rate for zero-risk investments may be set at 2.5 percent after tax. Any investment that is zero-risk and exceeds 2.5 percent is said to exceed the hurdle rate and therefore passes the financial return acceptability test. Similarly, any proposed investment regarded as low- (but not zero-) risk may have a hurdle rate of, say, 8 percent after tax. Hurdle rates would also be set for medium-risk, high-risk and maximum-risk projects, with the maximum-risk projects having a hurdle rate set at perhaps 40 percent or even higher. Provided a consistent method is established for predicting and classifying risk, the hurdle rate methodology helps ensure that consistent rules are applied for measuring and comparing the expected returns from IT and other business investments. Of course, the rates need to be under regular review to ensure that they are appropriate to the business and to the business and economic environment generally. Higher rates, for example, may be set during periods of strong economic growth whilst lower rates might apply during weaker growth periods.

If one accepts the concept of an IT-related business project being an investment in the same way as real estate or mergers and acquisitions, it is clear also that those sponsoring or approving such projects must equally understand the basic financial terms that form the basis of any properly constructed business case. This implies the need for an understanding of terms such as ‘net present value’, ‘internal rate of return’ and ‘payback periods’ and how to apply them in the context of IT-related investments. (A glossary is provided as an appendix to this paper, defining the more common financial terms). It also implies the need to understand the concept of risk, insofar as it applies to IT projects, as risk is an essential factor in determining the level of return expected from the investment. It is not the purpose of this publication to discuss risk and its management in any detail but, in the same way that an insurance company sets a higher motor insurance premium for, for example, a younger driver (where the risk is regarded as higher), a business sponsor expects a higher return from a project that is regarded as high-risk. Therefore, a consistent process is needed for measuring potential risk that may be based on, for example, such factors as extent of use of new, unproven technology, the extent of organisational change, and project duration and size.

Provided a consistent method is established for predicting and classifying risk, the hurdle rate methodology helps ensure that consistent rules are applied for measuring and comparing the expected returns from IT and other business investments.

The obvious danger is that business cases will be designed to ensure that the right returns are incorporated regardless of the real level of confidence in actually achieving them.

Using these techniques, and applying, for example, a five-point risk level rating scale of zero (no risk) to 4 (maximum risk), a project with an anticipated risk level of 3 (high risk) may, according to corporate guidelines, have a hurdle rate of, say, 30 percent annual return after tax. Therefore, those who are charged with sponsoring and approving projects understand up front what the expectations are and can ensure that projects are submitted for approval only if they are confident that the hurdle rates can be met and, hopefully, exceeded. Of course, the obvious danger is that business cases will be designed to ensure that the right returns are incorporated regardless of the real level of confidence in actually achieving them. Therefore, there has to be proper after-the-event accountability to measure the actual returns achieved and compare them with the original stated intentions. This is the benefits realisation phase of the project. It is not the purpose of this publication to discuss benefits realisation and measurement in any detail other than to highlight their importance in the total cycle of value delivery from IT investments. Measuring benefits realisation takes time and requires defined processes but, unless it exists and is seen to operate properly, the whole business case process has fundamental flaws and may possess the potential for being abused.

6. Defining and Quantifying Expected Benefits

A comprehensive business case for any proposed IT-related business investment should have clearly articulated business benefits defined to enable the expected return to be calculated. These benefits usually fall into two main categories: direct and indirect (or soft). The direct benefits usually comprise the quantifiable financial benefits that the new system is expected to generate. These are usually a combination of:

- Cost savings through, for example, reductions in staff numbers, stockholding cost reduction, lower cost of production, and improved cash flow through quicker billing and cash collection
- Enhanced revenues through, for example, the ability to enter bigger and more diverse markets, or the launch of a new product or service

The potential cost savings are usually easier to quantify, whilst the revenue growth is often more of an 'act of faith'. However, no matter how difficult, it is essential that prudent estimates be made of the potential positive impact on revenue streams. Given the difficulty in the precise prediction of the realisable benefits, it can be helpful to introduce the concept of base-case, worst-case and best-case scenarios whereby the predicted outturn is modelled using different assumptions varying from optimistic to pessimistic.

Far more difficult to quantify are the indirect or 'soft' benefits. However, this should never be regarded as an excuse not to attempt to quantify them. Soft benefits often include factors such as enhanced reputation, enhanced staff morale and improved customer retention. Given some thought, most of these benefits can be quantified to a certain extent. For example, improving staff morale should lead to lower staff turnover, resulting in higher productivity and lower training and recruitment costs. Similarly, improving customer retention should reduce the costs (often very high) associated with obtaining new customers. Therefore, the message on soft benefits is: do not assume that they cannot be quantified, as some creative thinking usually can result in a reasonable degree of quantification.

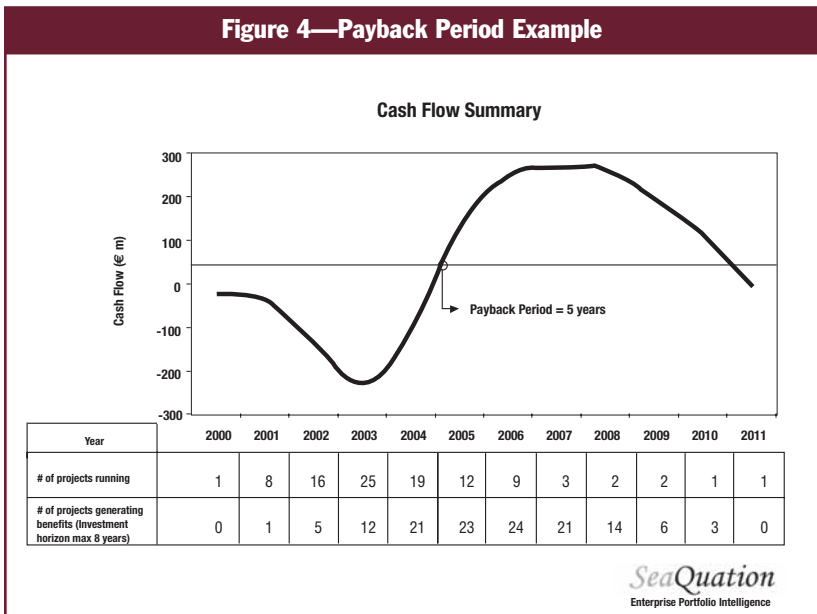
It is essential that prudent estimates be made of the potential positive impact on revenue streams.

7. Realising the Benefits

The clarity and precision of anticipated benefits as defined in the business case are key to the actual and demonstrable achievement of value. Experience demonstrates that, within most organisations, this process is inconsistent and imprecise. This is particularly true of those organisations (as noted previously) that have no reliable process for ex-post tracking of benefits and the related accountability, feedback and learning processes.

It should become standard practice for organisations to track the actual benefits achieved from the development and implementation of IT-related business solutions. Only in this way will it be possible to establish the extent to which the investment has paid off and to ensure appropriate accountability. The tracking of benefits needs to be ongoing from the date of implementation of the project. In the case of larger projects, a reliable picture of the achieved benefits may be possible only many months, or even years, following implementation.

Figure 4—Payback Period Example



As the graph in **figure 4** illustrates (using a total portfolio view), IT-related investments can be modelled as a traditional S-curve over the total life of the investment. In the early stages (the development and implementation phases), the investment usually results in negative cash flow but, as the resulting application becomes implemented and matures, it starts to repay the investment through the reduction of costs or the enhancement of revenues. The timescale of the S-curve and the cumulative cash flow peaks and troughs will vary according to the specific investment being modelled and the corporate

appetite for payback periods. On the graph, the investment achieves payback at the point that the cumulative cash flow line reaches the central, neutral point.

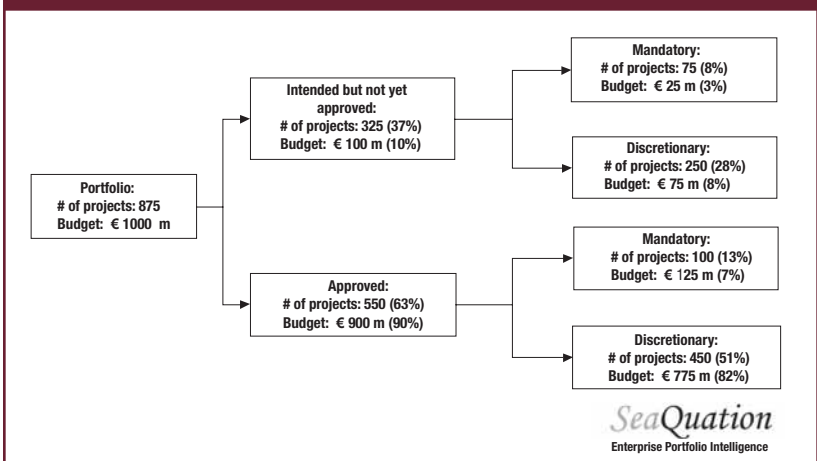
As part of the postimplementation monitoring it can be helpful to use a graphic such as this to compare the original expectations with the final outcome. This will show at a glance the extent to which original expectations were actually met.

8. Managing the IT Investment Portfolio

In the same way that a traditional equity investment portfolio needs active management, so too does an IT investment portfolio. The traditional equity portfolio requires constant monitoring to maximise performance. This involves making decisions on increasing or reducing individual stock holdings and, in particular, making disposals of nonperforming investments. Precisely the same scrutiny needs to be applied to corporate IT investments.

The first issue often is to understand the size and shape of the total portfolio. This may be quite easy in a single company but it can be extremely difficult in a globally diverse business. However, to ensure that the right resources are directed to the right investments, it is always advisable to obtain a proper, holistic view of the portfolio (**figure 5**). For completeness, the inventory of projects should include not only the currently approved projects but also, where possible, those that are intended by the business that are not yet through the approval process. This will provide a more comprehensive view of the likely need for resources and for management's ability to provide proper monitoring and governance.

Figure 5—The Total IT Investment Portfolio Example



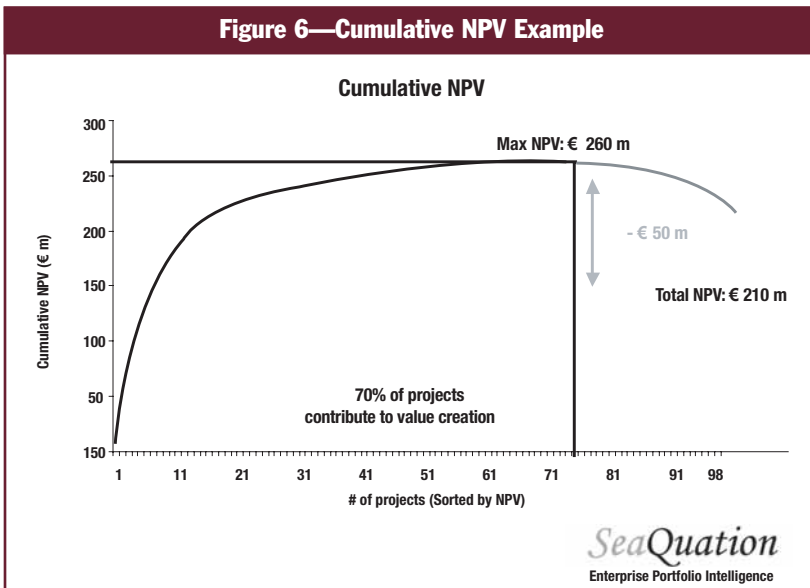
From a governance and value perspective, the prime attention is on the discretionary projects, although it is important to remember that the real achievement of value is heavily dependent upon satisfactory delivery of all projects. Nondiscretionary projects consume resources and often have to be given priority to meet regulatory or other imposed deadlines, so it is helpful to understand the impact of these projects on the delivery of the discretionary projects.

Portfolio management helps overcome the disconnect in communications between the business and IT communities. It is an excellent way to deal with the perennial questions about IT value and IT alignment with the business.

—*Bill Rosser, Gartner*

A key factor in active portfolio management is understanding the extent to which each discretionary project is likely to contribute to value creation, remembering that circumstances change during the life cycle of a project and those changes may impact certain assumptions in the original business case. This implies a need for each project to report through the project manager, perhaps on a monthly basis during the development phase, to update the financial, risk and other relevant components of the business case. This will help ensure that portfolio management and governance are performed on the latest, most up-to-date information.

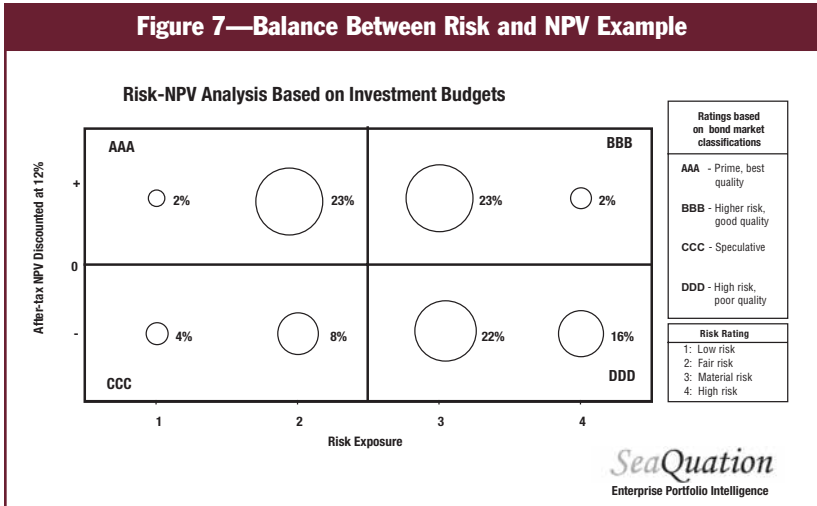
For some years ING has used the cumulative NPV graph illustrated in **figure 6** to indicate value creation (and destruction) from its IT investment portfolio. The example in **figure 6** contains dummy data but it demonstrates in a very visual way how the total portfolio is intended to deliver value.



In this illustrative example, it can be seen that from a total of almost 100 discretionary projects, positive value is expected to derive from little more than half and fewer than 20 will deliver 80 percent of the positive value of the portfolio. On the negative side, there are around 30 projects that look to be delivering zero or negative value. A picture such as this suggests two key actions:

1. Review all negative NPV projects to determine whether they should be cancelled, rationalised or rescoped.
2. Ensure that the ‘crown jewel’ projects are properly resourced and managed and really will deliver the value intended—you may be ‘betting the farm’ on these projects.

As discussed earlier, anticipated returns must always be related to risk. The higher the risk, the higher the return that should be generated. **Figure 7** shows an example upon which the risk and return spread of the portfolio might be modelled. Again, this is from the ING portfolio management process and is based on dummy data.



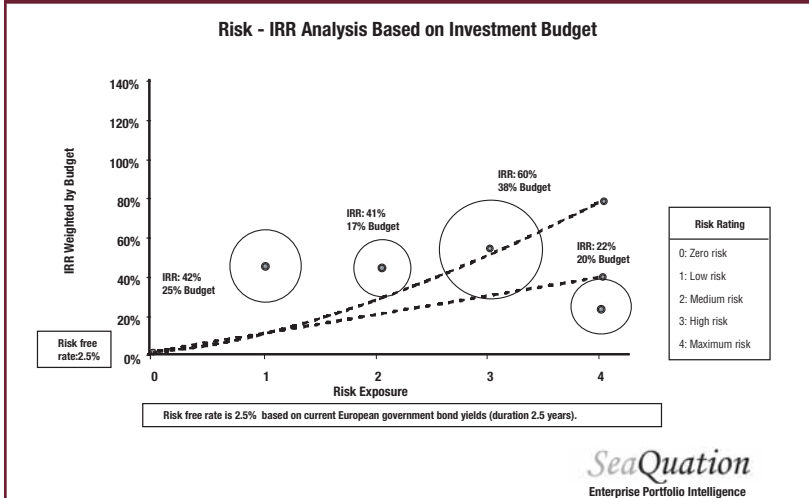
From this illustrative example the following observations may be made:

- A significant proportion of the portfolio is in the high- and maximum-risk categories but with negative anticipated returns. Being discretionary rather than mandatory projects, this begs the question why they are being undertaken at all. Review of these projects is advised. Perhaps the benefits have been understated and/or the risk overstated, or perhaps they should never have been approved in the first place.
- There are some projects in the high-risk and high-return categories. Depending on the corporate appetite for risk, this is probably fine as some high-risk projects are likely to form part of any balanced portfolio.
- The low-risk and negative-return projects also should be reviewed for their continued viability.
- Standard financial services credit risk indicators of AAA, BBB, CCC and DDD have been used. This demonstrates the advisability of using a common language with which the users—in this case, financial services—are familiar.

A similar graphic used by ING to demonstrate risk and return in relation to the already discussed hurdle rates might look like the example depicted in **figure 8**.

In this example, which uses dummy data, it can be seen that the higher-risk elements of the portfolio do not fully clear the hurdle rates as indicated by the dotted lines: the upper line indicating ‘boom economy’ expected returns and the lower line indicating ‘depressed economy’ expectations.

Figure 8—Efficient Frontier Risk-adjusted Returns Example



These are examples of the typical metrics and graphics that may be used to manage effectively and actively the value of the IT investment portfolio.

In looking at a complete IT project portfolio, care should be taken to ensure that project dependencies and links are taken into account. For example, infrastructure changes (which may be defined as separate projects) may be needed to provide a platform for a new customer relationship management (CRM) system. On their own, the infrastructure changes may not deliver sufficient specific, quantifiable value, but without the changes, the CRM implementation will not be possible. Therefore, relevant costs of the infrastructure need to be factored into the CRM project to obtain a complete and reliable picture of the real combined costs and benefits. Therefore, it can often be sensible to look at the portfolio in terms of a series of programmes, each containing a number of linked projects, rather than as a collection of totally independent, stand-alone projects.

Of course, active management is effective only if, from time to time, projects actually are cancelled because of actual or anticipated nonperformance. This is not always easy, but it is essential if proper governance is to be achieved. Indeed, a Gartner research paper from 2002⁹ encourages corporations to ‘kill projects early and often’ to enhance value delivery from the total IT investment portfolio. However, the problems to be overcome often include:

- The propensity of projects to develop a momentum of their own once approved and underway. History and current experience tell us that this momentum can be dangerous and needs to be tempered with regular, independent and objective review followed by positive action.

⁹ Gartner, ‘The Elusive Business Value of IT’, August 2002

Cancelling or rescoping a project as soon as it becomes apparent that it cannot be delivered satisfactorily is a sign of good governance

- Project cancellations being seen as a sign of failure and weakness. In fact, cancelling or rescoping a project as soon as it becomes apparent that it cannot be delivered satisfactorily should be seen as a sign of strong management and good governance.
- The profit-and-loss (P&L) statement impact can be significant if the project under scrutiny is large and previous costs have been capitalised. Cancelling the project is likely to lead to these costs having to be written off in one P&L account hit. This may not be popular with the CEO and CFO, but it is likely to be absolutely necessary for accounting integrity, financial prudence and regulatory compliance.

9. Conclusions

Ensuring that value is obtained from investment in information technology is an essential component of IT governance. No investment, whether IT-related or not, should be undertaken without full knowledge of the expected cost and the anticipated return. Expected return should always be related to risk as, given the higher likelihood of failure, high-risk projects should always have an anticipation of a higher return. Ensuring that the right projects are approved in the first place implies a need for accurate predictive costing of the total project across its lifetime and robust predictions of the potential return, including quantification of the direct and indirect benefits. To ensure that the total process works and becomes part of the culture of the organisation, it is essential to establish proper tracking mechanisms to determine the actual value delivered and enable accountability.

Given the volatility of a portfolio of IT-related business projects, it is essential to embed active portfolio management into the organisation to maximise value creation and minimise the risk of value destruction. As with any aspect of IT governance, to be successful, the process needs visibility, leadership and commitment from the top.

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Appendix—Glossary of Financial Terms

Amortisation: The process of cost allocation that assigns the original cost of an intangible asset to the periods benefited; calculated in the same way as depreciation

Capital expense: An expenditure that is recorded as an asset because it is expected to benefit more than the current period. The asset is then depreciated or amortised over the expected useful life of the asset.

Chargeback: The redistribution of costs to the units within a company. Without such a policy, misleading views may be given as to the real profitability of a product or service, as certain key costs will be ignored or calculated according to an arbitrary formula.

Depreciation: The process of cost allocation that assigns the original cost of equipment to the periods benefited. The most common method of calculating depreciation is the straight-line method, which assumes that assets should be written off in equal amounts over their lives.

Hurdle rate: Required rate of return, above which an investment makes sense and below which it does not. It is often based on the cost of capital, plus or minus a risk premium, and often varied based upon prevailing economic conditions. Also known as required rate of return.

Internal rate of return (IRR): A discounting rate that can be used in establishing whether to implement a project, even if the NPV is zero. The higher the IRR, the more acceptable the project. It makes no allowance for the fact that the largest IRR may be for a very small project that may not give the maximum total return.

Net present value (NPV): The value the project will return over a set period, with future cash flows being discounted at the cost of capital (opportunity cost) appropriately. It is measured over an arbitrary set period and should be undertaken if the project returns a positive value.

Net return: The revenue after tax and other deductions that a project or business makes. Often also classified as net profit.

Return on investment: A measure of operating performance and efficiency, computed in its simplest form by dividing net income by average total assets