Technology Evaluation and Comparison Report

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Butler Group
a Datamonitor Company

IT Governance

Managing Portfolios, Projects, Processes, and People

April 2007

Analysis without compromise

SECTION 2:
Business Issues

Butler Group
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▶ 2.1 REPORT INTRODUCTION

This Report has been written to provide business and IT decision makers, executive management, and IT professionals with information, knowledge, and insight into the subject of IT Governance. Driven by requirements such as regulatory compliance, corporate visibility and transparency, improved tracking of investments, risk management, and the search for cost efficiency, IT Governance has become an important priority for organisations in all sectors, whether public or private. For business leaders, the emphasis has been on achieving closer alignment between substantial investments in IT and corporate objectives, whilst IT leaders also see the opportunity to better demonstrate the value that IT brings to the organisation.

In all cases, there is a growing recognition that IT Governance is not a quick fix, and that a governance programme must evolve and mature over an extended period of time, addressing policy, people, and process. One of the key disciplines of IT Governance is Project Portfolio Management (PPM), and this Technology Evaluation and Comparison Report contains a detailed analysis of the capabilities of nine of the leading PPM solutions. Since around 2002, this market has evolved from standalone tools for managing individual projects and programmes, to a wider set of functionality that can support many aspects of IT Governance, including financial management, resource management (both supply and demand), and IT process management.

In recognition of the fact that this Report will be read by a broad range of individuals with varying degrees of interest, experience, and responsibility, we have structured the content into a number of self-contained Sections which can be read either together or separately.

A brief summary of each Section of the Report now follows to help and direct the reader to areas that may be of particular interest.

Section Two – Business Issues

This Section of the Report describes the drivers behind IT Governance, its purpose within the organisation, and its key characteristics. It discusses how IT spend can be categorised into three types – Run-The-Organisation, Change-The-Organisation, and Innovation – and how IT Governance applies to each of these. It then looks at how performance management techniques can be applied to the IT function, examines how to use governance as the basis for business and IT alignment, and considers the range of techniques that can be applied to measuring IT benefits. Finally, it studies the key areas of risk management, security, and compliance, and discusses how IT Governance can best address these requirements.

Section Three – Technology Capabilities

This Section of the Report details the types of technology that can be used to support IT Governance initiatives, combinations of which are found within PPM solutions. The technology areas discussed include Portfolio Management, Project Management, IT Process Management, Financial Management, Resource Management, IT Performance Management, IT Investment Management, Change Management, and Enterprise Architecture. There is also an analysis of reporting and deployment options.

Section Four – Methods and Implementation

This Section considers the practical aspects of implementing an IT Governance programme. It begins by talking about the relationship between the structure of the IT function and the governance requirements, and then looks at some of the popular governance and IT management frameworks that can form part of an IT Governance programme. It looks at the role of standards within IT, and finally provides advice on the specific steps required to begin implementing an IT Governance initiative.

Section Five – Market Analysis

The IT Governance tools market is currently in a state of rapid evolution, so this Section looks at the market dynamics, and then describes the detailed strategies of the leading players. It follows on to predict how the market is likely to evolve in future, and looks at some of the newer developments in this space.

Section Six – Tables

This Section provides a detailed side-by-side feature comparison of nine leading PPM solutions, with over 300 data points on each product. It then provides a graphical view of each solution's capabilities, and using Butler Group's Market Lifecycle Rating methodology, compares each vendor's standing in terms of product selection, both now and for the predicted position over the next five years.

Section Seven – Technology Audits

This Section contains detailed Technology Audits of nine leading PPM solutions: Borland Tempo, Business Engine BEN, CA Clarity PPM, Compuware Changepoint, HP Software PPM Center, IBM Rational Portfolio Manager, Planview Enterprise, Primavera, and Serena Mariner.

Section Eight – Vendor Profiles

This Section contains product and vendor profiles on a further 14 solutions that address important aspects of IT Governance.

Section Nine – Glossary

This Section contains a glossary of IT terms commonly used within the context of IT Governance.

2.2 THE PURPOSE OF IT GOVERNANCE

CATALYST

For senior management, IT requires formal control from both an investment and a risk management perspective. With IT accounting for up to 50% of capital expenditure in many organisations, formal disciplines must be in place to guide investment decisions, provide visibility into progress, assess and mitigate risk, and measure the return against strategic objectives.

SUMMARY

IT Governance must run throughout the entire IT value lifecycle, with the aim of maximising the value that an organisation derives from its use of IT, at optimal cost, and with appropriately managed risk. It therefore has both business and IT elements, and helps to align these two perspectives to a common set of objectives.

- **IT plays a significant role in creating value for an organisation.**
- **Without effective governance, the business value of IT is substantially impaired.**
- **IT Governance must address both business and IT perspectives.**
- **Successful IT Governance defines a clear framework for all IT-related decisions.**

ANALYSIS

IT plays a significant role in creating value for an organisation.

Irrespective of industry sector, the size of the organisation, or the way in which it operates, IT is one of the fundamental requirements of operating in the modern business world. In structural terms, it is informative that most organisations still talk about an IT department in much the same way that they would a marketing department or a finance department, but the reality is that IT is a supporting capability for every business function.

For some organisations, the perception of IT goes little further than this supporting role, and they are content to use information systems to automate repetitive tasks, provide basic office productivity applications, and act as a internal and external channel for communicating information. Whilst IT may not be perceived as a direct agent of value within this context, any disruption to the service, particularly if widespread and prolonged, indicates the degree of reliance on IT of both front- and back-office operations, and its contribution to the organisation is still substantial.

Increasingly, however, many businesses see IT as a positive enabler of business value, and seek opportunities to use IT as an agent of change within their organisations. Whilst some commentators have highlighted the growing commoditisation of IT capabilities as a constraint on differentiation, our practical experience shows that it is rarely the technology itself that is the agent of value, but the way in which the business understands how to apply the technology to a wide range of business processes and activities that distinguishes the innovators from the also-rans.

> *"...many businesses see IT as a positive enabler of business value, and seek opportunities to use IT as an agent of change..."*

The application of IT will depend on the type of strategy that the organisation has determined to reach its objectives. These can be split into three categories:

1. **Operational Excellence** – here the emphasis is on seeking cost advantage through highly-efficient business processes, often in manufacturing, logistics, or supply chain management. The role of IT here is as a process management and process automation tool, allied to effective and timely management information.
2. **Customer Intimacy** – here the focus is on creating value from increased customer relationships and reach, delivering excellence in customer service, and often using techniques of mass customisation. The role of IT in this strategy is to provide that mass customisation at low cost, to extend customer reach, and to process large volumes of information to generate customer intelligence and new customer propositions.
3. **Product Leadership** – here the emphasis is on product and service innovation, and creating a strong brand image. The focus of IT is on knowledge management and knowledge collaboration to support the innovation, product design, and brand communication.

Whilst the categories are not mutually exclusive, many organisations will have chosen to follow one of these strategies, and will benefit from shaping their IT capabilities accordingly. The reality, however, is very different, in that the development of IT has rarely been driven by these strategic objectives, but rather has grown up in a piecemeal fashion. This has been characterised by IT being used to create tactical solutions for specific business challenges, by rapid innovation leading to successive overlapping generations of technology, and by an *ad hoc* approach to IT delivery without formal controls or broadly-accepted methodologies.

Today, there is an understanding that if IT is indeed to deliver value, then it must be subject to a set of management disciplines designed to address these issues. Although it can be tempting to describe these disciplines as being similar to those applied to other business functions, IT still has many unique characteristics, not least the continued pace of change in both technology and delivery models.

Without effective governance, the business value of IT is substantially impaired.

As a result of these drivers, many IT departments now apply a much more professional and formal approach to managing their activities, but this does not, in itself, guarantee satisfying the corporate objectives for IT. The IT function may exhibit effective management of technology, the capability to deliver core IT services such as desktop management, user provisioning, and helpdesk support, and even a strong track record of developing new systems on time and to budget, and yet fail to meet the strategic objectives of the organisation as a whole. Figure 2.2.1 shows the stages of IT Governance maturity, and we believe that there is a glass ceiling between levels 3 and 4, which represents the transition from being an efficient technology provider to an effective creator of value.

We therefore define the purpose of IT Governance as the creation of a management framework by which an organisation maximises the value that it derives from IT in support of its strategic objectives. It is important that IT Governance is not confused with IT management, because whilst it must extend to governing the management of the IT function, it has a wider remit that covers the interaction and alignment of IT with the whole organisation.

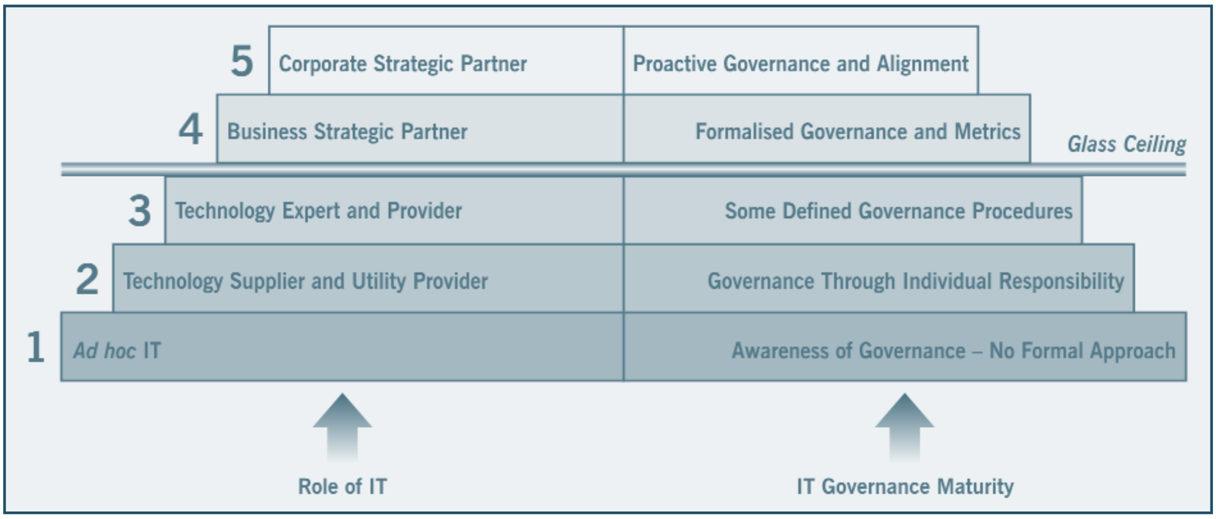

5
Corporate Strategic Partner
Proactive Governance and Alignment
4
Business Strategic Partner
Formalised Governance and Metrics
Glass Ceiling
3
Technology Expert and Provider
Some Defined Governance Procedures
2
Technology Supplier and Utility Provider
Governance Through Individual Responsibility
1
Ad hoc IT
Awareness of Governance – No Formal Approach
Role of IT
IT Governance Maturity

Figure 2.2.1: IT Governance Maturity (Source: Adapted from Martin Curley, Intel)

> *"A key element of IT Governance is to define an IT strategy that is led by business objectives..."*

When there is no IT Governance programme in place, several common issues arise which substantially impair the business value of IT. The first of these relates to IT strategy: either that it is poorly aligned to corporate objectives, but more often that it is either not defined at all, or is poorly communicated through the organisation. A key element of IT Governance is therefore to define an IT strategy that is led by business objectives, establish formal mechanisms for communication, and review both the strategy itself and the outcomes of IT activity against it, on an ongoing basis. Failure to achieve this will typically result, at best, in an IT function that is efficiently run but lacks a clear direction and mandate to add value (often to its own intense frustration), or, at worst, a free-for-all where individual departments proliferate IT initiatives leading to unmanaged chaos.

Where organisations have progressed to the stage of defining a coherent IT strategy, another source of impairment is an inability to optimise the use of IT resources. As multiple IT projects compete for limited resources, whether financial, human, or physical, a lack of visibility into the status of both projects and resources can result in delays and poor overall utilisation. This situation is frequently exacerbated when resource conflicts involve multiple departments, or when there are cross-project dependencies in complex business programmes. Consequently, an IT Governance framework must provide clear visibility for all stakeholders into project and programme status, help the organisation to forecast IT supply and demand, and define an arbitration mechanism to resolve potential conflicts.

Even when an IT strategy has been drawn up, delivery of IT value can also break down due to unclear roles and responsibilities. For example, it is vital that each IT-enabled business project has a business sponsor with clear accountability for the outcomes, and the IT Governance framework should mandate that role and the associated responsibilities, such as regular project meetings and lines of reporting. Many roles are involved across the whole IT value chain, including investment decision-making, compliance and risk management, project and programme management, technology oversight, and business change management. Defining the roles and assigning the individuals to them is a prerequisite for successful delivery.

IT Governance must address both business and IT perspectives.

There is a risk, however, that IT Governance can become too focused on business value. Whilst optimising the way that the business uses IT is certainly the goal of IT Governance, concentrating on high-level investment decisions and priorities is doomed to failure if the IT function itself is incapable of producing high-quality, efficient services to deliver on those plans.

A further consideration is the division of IT expenditure between routine IT operations (i.e. keeping existing systems running), and new IT-enabled business projects designed to deliver new or improved business functionality.

This ratio, often described as the Run-The-Organisation/Change-The-Organisation ratio, varies across different company sizes and industry sectors, but even in the most IT-intensive organisations, it rarely exceeds 70:30, and Butler Group research has shown that the Change-The-Organisation portion averages out at around 18% of total IT expenditure across all companies. Understandably, the attention of senior executives is primarily drawn towards the new and improved business functionality, but as this only accounts for a minority of IT spend, the long-term value of IT investments cannot be properly understood without also taking into account the Run-The-Organisation portion. The succinct point to be highlighted to senior management is that by optimising spend on existing IT operations, a greater proportion of the existing IT budget can be invested in business improvement.

> *"...by optimising spend on existing IT operations, a greater proportion of the existing IT budget can be invested in business improvement."*

We believe that the IT Governance framework must therefore take an end-to-end view of the IT value chain, including both business and IT perspectives, and in doing so, make sure that the objectives of both are fully aligned. The IT Contribution Model in Figure 2.2.2 gives an example of the IT value chain – it takes inputs from both business (in terms of corporate strategy, structure, systems, and resources) and IT (in the form of the IT strategy, IT processes, and IT systems) to deliver project objectives and value outcomes. The most critical piece of this model is the feedback loop, which is used to monitor and improve both alignment and execution.

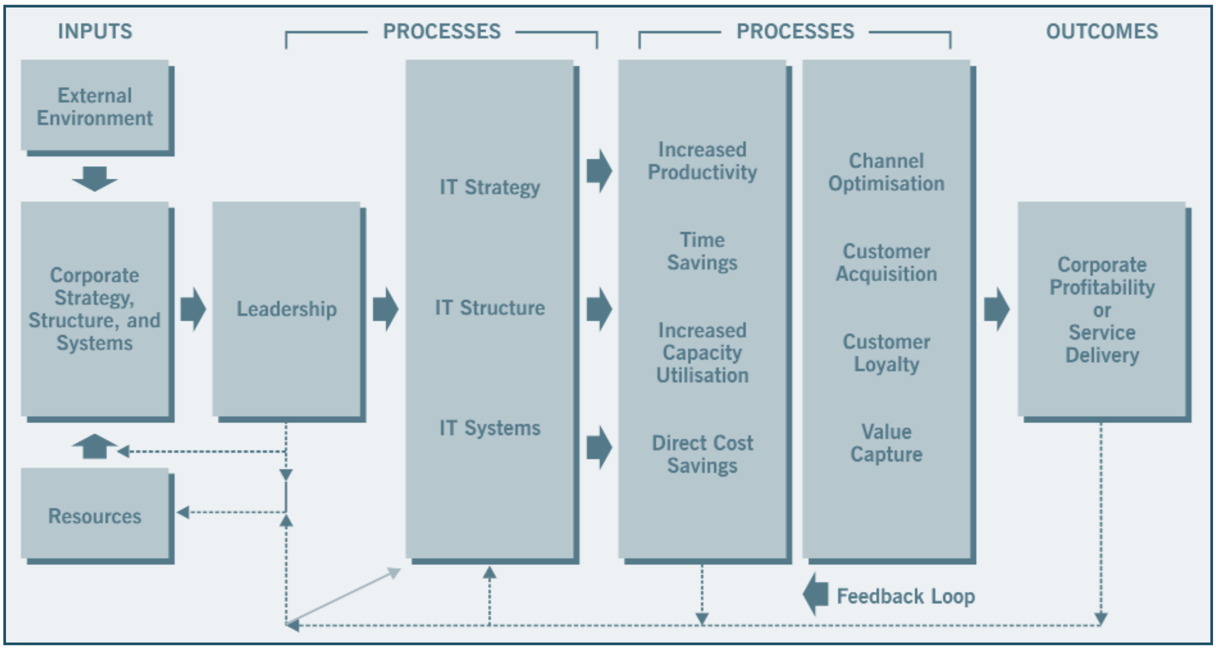


Figure 2.2.2: IT Contribution Model (Source: CMA)

Successful IT Governance defines a clear framework for all IT-related decisions.

If the IT Governance framework is to meet these aims of optimising the business value of IT and aligning IT activities with strategic objectives, then we believe that it must address the following disciplines and decision-making areas:

- **Strategic Alignment.** There is a requirement to define the business goals for IT and the role that the business expects IT to play. As discussed, it is equally acceptable for IT to be positioned as a support service operated at lowest cost, or as a competitive differentiator. The vital aspect is that the expectation is defined and understood, so that there are clear objectives against which the IT function can deliver. This activity must take place at board level.

- **IT Investment Planning.** The framework must specify the processes involved in the overall planning of IT investments – the set of information required for assessment, who has input, and who ratifies the final decision. This process should include both short-term and longer-term budget planning and creation, with the goal of achieving a stable and reusable model for IT investment.
- **Financial Management.** This element involves developing appropriate financial metrics to help the organisation better understand the forecast and actual return on its IT initiatives, and as the basis for cost and value measurement over the entire system lifecycle. Financial management also provides monitoring of IT expenditure against budget, helps to make the business more aware of how it incurs IT costs, and optionally enable the implementation of a chargeback mechanism.
- **IT Portfolio Management.** This requirement is closely linked to investment planning, and should provide overall visibility into the set of IT initiatives, including projects, services, and applications, that the organisation is currently planning, developing, or using. Its purpose is to support regular reviews of project and programme alignment, resolution of any cross-project conflicts, and most importantly, to support cost and value measurement over the entire system lifecycle. It should also detail the process for submitting and taking decisions on both new business applications, and on new infrastructure investments.
- **Demand Management.** Achieving visibility into the overall resource capacity of the IT function, and the balance between IT supply and demand, requires the capture of all the potential sources of demand, including projects, change requests, service support, service delivery, application enhancements, integration, maintenance, and unscheduled demand. There must be an element of the overall governance framework which collates information from all these sources for review as a parameter in portfolio planning.
- **IT Project and Programme Management.** At this level, the requirement is for effective management of individual projects and programmes, often overseen by a Project Management Office (PMO). Key elements of governance relate to effective project initiation based on the organisation's existing project knowledge base, adherence to standard or organisation-specific project methodologies (such as PMBoK or PRINCE2), and timely reporting of project status, issues, and exceptions.
- **Risk Management, Security, and Compliance.** The governance requirement here is to ensure a formal assessment of risk is carried out at both project and portfolio levels, that risk mitigation plans are prepared, and that visibility of risk forms part of portfolio and investment planning. The framework should also ensure that compliance and security requirements are clearly understood, and that security policies, audit trails, and process controls are an integral part of every project and service.
- **Change Management.** One aspect of governance that is often overlooked is that most new IT-enabled initiatives also involve a substantial element of business change. Consequently, the framework must ensure that the IT project is synchronised with the business change, and help to orchestrate all the required steps across the organisation.
- **Enterprise Architecture.** A mandate for enterprise architecture is, we believe, a critical part of IT Governance. Whilst we do not advocate a 'big-bang' approach to governance, documenting the logical structure of the organisation, the IT architecture, the business applications, the existing information models, and the relationships between these, is essential to guiding the long-term process of fully aligning IT capabilities with business objectives. Enterprise Architecture also has an important role to play in supporting standardisation and consolidation of a frequently heterogeneous IT environment.
- **IT Service Management.** There is substantial benefit in considering all aspects of IT activity other than work on specific new projects in a services context. This should include applications, infrastructure, and support services, and we believe that this is the key to understanding the true cost and value of the Run-The-Organisation portion of IT spend.
- **IT Process Management.** As in other business disciplines, formally-defined, repeatable processes that support quality monitoring and improvement, are an essential part of delivering an effective IT service. Methods such as ITIL should be used to clearly define the processes involved in Service Support and Service Delivery, and Service Level Agreements (SLAs) should be used as part of the governance mechanism.

- **Resource and Skills Management.** A fundamental requirement for the successful delivery of IT capabilities is to recruit and retain the necessary human resources and ensure development of appropriate skills. Increasingly, this will involve developing an IT supply strategy that blends internal and external resources and services. IT Governance should consequently monitor the overall development or resources, with the aim of optimising the delivery of services, and building sufficient resource flexibility into the IT function.
- **IT Performance Management.** One of the primary objectives of IT Governance is to promote the set of behaviours at all levels, which lead to the desired business outcomes. Performance management is often a target at the 'top of the pyramid' – i.e. as part of strategic planning and portfolio management, but is less emphasised within the IT function itself. In practice, performance measurement and management throughout the IT value chain are part of a hierarchy of needs, such that high-level performance is dependent on that of the lower level components.
- **IT Capabilities and Metrics.** Finally, at the level of IT assets, the governance framework should ensure that the IT function has the appropriate capabilities to execute its strategy, and that management tools and metrics are available to provide increased automation, rapid visibility, and troubleshooting of the IT infrastructure.

The framework must also include a feedback loop that is required to improve the performance of all the other components, This ranges from reviewing investment choices and outcomes, or reusing the methods applied on successful projects, through to developing new IT services, or improving IT processes using techniques such as Six Sigma. It also requires evolving the techniques of governance to reflect the growing maturity of the IT function.

Clearly, no organisation can expect to implement all these disciplines from scratch within an IT Governance framework, and neither is there a predefined starting point that suits all environments. Instead, individual businesses should begin by addressing the pain points that allow a quick time-to-value for IT Governance, whether this is, for example, portfolio management to capture details of all IT initiatives, improved project reporting to aid visibility, or developing a service catalogue to gain better control of routine IT operations. These starting points can then evolve into a broader IT Governance framework in a series of incremental steps.

▶ 2.3 THE THREE ROLES OF IT

CATALYST

Much of the focus on IT Governance has been on new projects, but this portion of the IT budget only accounts for a minority of total spend. The activities involved in new IT-enabled business projects are often quite different in nature from routine IT operations, and it is, therefore, important to examine whether the same governance mechanisms are equally applicable to all aspects of the IT department's work.

SUMMARY

The work of the IT function can be split into three roles – Innovate, Change-The-Organisation, and Run-The-Organisation, each of which has distinct characteristics, and different governance requirements. Furthermore, IT systems progress through these roles over the course of their lifetime, and optimising value involves recognising and aiding these transitions.

- **Managing Run-The-Organisation spend focuses on availability, scalability, and ongoing cost optimisation.**
- **The emphasis of Change-The-Organisation spend is on business process improvement and demonstrable Return on Investment (ROI).**
- **Innovation spend attaches greater importance to outcomes and risk management.**
- **Styles of governance must be tailored to meet the requirements of different IT roles.**

ANALYSIS

Managing Run-The-Organisation spend focuses on availability, scalability, and ongoing cost optimisation.

Traditionally, the IT department has been organised very much along functional lines, including operations teams, development teams, front-line support, business analysts, plus a number of specialist roles. However, the business perspective of IT is very different, and indicates one of the significant reasons for the gap in understanding that exists between the two. Research first published in 'What Business Really Wants From IT', Terry White (2004) Elsevier, shows that business leaders see three roles for IT, and this has been supported by other recent studies. The first of these is to maintain existing business momentum: i.e. were there to be no change in the scale or scope of the organisation, for IT systems to keep business activities running efficiently with maximum availability and the minimum degree of fuss. In this Report, we describe this as Run-The-Organisation spend.

The second role of IT, in the eyes of the business, is to improve business results, by enhancing existing processes and activities. For example, this might involve a greater degree of automation, and reduce the head count required for a particular business process; reducing the time taken to bring new products or services to market, or providing incremental revenue-generation opportunities from existing products or services. In this Report, we describe this role as Change-The-Organisation spend.

The third role of IT is described by business as providing information leadership, and involves taking advantage of technology to create new products and services, or to take the company into new markets. An example here would be a Business-to-Consumer (B2C) organisation that used its e-commerce expertise to offer new on-line services to Business-to-Business (B2B) customers. In this Report, we describe this role as spend on Innovation. The three roles are shown in Figure 2.3.1.

> *"...there is a huge perception gap between business and IT, with regard to the relative spend on the three roles."*

Terry White has shown that there is a huge perception gap between business and IT, with regard to the relative spend on the three roles. For the average IT function, the proportion is approximately 75%+ Run-The-Organisation, 20% Change-The-Organisation, and less than 5% on Innovation. Business leaders are often frustrated by this ratio, and feel that the split should be closer to 20% Run-The-Organisation, 60% Change-The-Organisation, and 20% Innovation, with an even greater shift demonstrated for corporate IT functions in a large enterprise.

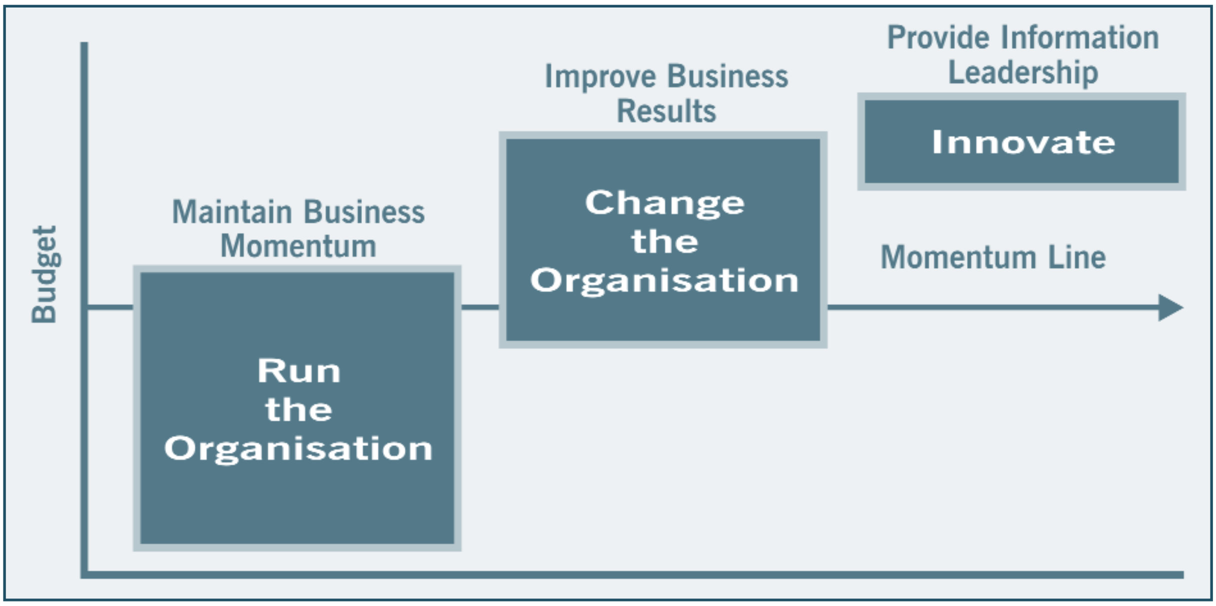


Figure 2.3.1: The Three Roles of IT (Source: Terry White, MarketWorks)

Put simply, once a system is an established part of running the business, it becomes a ‘hygiene’ function: the business wants to see it continue running with no fuss, and as with other processes such as manufacturing, expects to take advantage of incremental cost reductions as technology and associated management skills become cheaper or commoditised. The emphasis of governance in this area must therefore be on reliability and availability of systems, and also on scalability to accommodate any changes in business momentum (such as increases in business volumes, new territories, or even acquisitions).

This is an area where the efficiency of IT processes is paramount, and Butler Group believes that a vital part of this is the transition from managing assets and applications, to providing services. By aggregating all relevant costs into a service, it provides the business with much better visibility into the cost of Run-The-Organisation spend and can, of course, provide the basis for a chargeback scheme if required.

The emphasis of Change-The-Organisation spend is on business process improvement and demonstrable ROI.

Change-The-Organisation spend is what is typically thought of as work on new, IT-enabled business projects. Many organisations now understand the importance of measuring the value of these projects, but struggle to find the appropriate methods and disciplines required. From a business perspective, business unit leaders are looking to the IT function to become a trusted advisor on new initiatives and new business applications, and to provide reliable delivery and execution. The drivers for this type of expenditure are therefore business-related, including customer satisfaction, productivity improvements, competitive insight, or cost advantage.

The role of governance in this category is to formalise the process of collaboration between business and IT to deliver these objectives. This will involve specification of requirements, development of a business case, visibility into initial and ongoing costs including any capital expenditure required, identification of appropriate business metrics, management of associated business process change, effective reporting on the status of the project during development, and ongoing tracking of the benefits. From an enterprise perspective, portfolio management techniques should be used to consider the set of proposed projects, and select and prioritise these according to strategic objectives, investment requirements, and resource capacity.

The increased use of a Project Management Office to oversee this process offers a significant improvement in the management and governance of this type of spend, but we believe that further steps are required to achieve higher levels of maturity in delivering business value from IT. The first of these relates to the development of the business case and the appropriate business metrics by which the value of projects will be measured: where benefits relate to clearly identifiable ‘hard’ metrics, that measurement works well, but where less tangible benefits are involved, organisations often shy away from quantifying benefits. We argue that this issue can be overcome by developing a standard framework for business benefit and outcome measurement as part of the IT Governance process, which formalises both the set of metrics that will be applied, the units of measurement, and the process used to collect the required data.

The second issue is a frequent failure to measure the benefits of a project over its entire lifetime, and this is particularly important in the context of the three roles of IT. In many cases, best practice is still seen as carrying out a post-implementation review, a few months or a year after deployment, but we feel that the norm should be to continue this review process right through until the system is withdrawn from use. Because today’s new project becomes tomorrow’s core system, a long-term view of the costs and value of a system, viewed from an IT service perspective, helps to bridge the gap between the different categories of spend.

Innovation spend attaches greater importance to outcomes and risk management.

Sometimes, particularly when a project is designed to take a business into uncharted territory, the data is not available to measure that project in the way that we have previously described. It may be that the business has decided to launch a new product (think Apple and iPods for example), to provide a new service to a different customer base (typical of the converging communications and media market), to attempt a disruptive change in its existing market, or to enter a new market through acquisition. In these cases, the emphasis is more on the outcome rather than the improvement of an existing business activity: did the new product or service succeed in breaking into or opening up a new market, or did it fail?

> *…a mature IT Governance framework should provide senior executives with visibility into the innovation pipeline…*

The business case for these projects is often constructed on a risk-and-return basis, and the financial management aspects of IT Governance and portfolio management become particularly important. It also goes without saying that reliable project delivery is essential, as the value of many such initiatives is time-sensitive. The emphasis of IT Governance for this category of spend must be on excellent planning, alignment with strategic objectives, effective risk assessment, and ensuring that there is early notification of potential issues.

There are an increasing number of companies that see innovation as one of their key competitive differentiators, and a mature IT Governance framework should provide senior executives with visibility into the innovation pipeline, the status of current projects, and an overall measure of the company's innovation achievement.

Styles of governance must be tailored to meet the requirements of different IT roles.

We believe it is important that senior business and IT management take account of these IT roles when developing an IT Governance framework, particularly since this model acts as a powerful basis for communication and understanding of IT expenditure. In the early stages of developing IT Governance, organisations will generally focus on the activities that deliver immediate benefits, and do not tend to differentiate between styles for each category. However, one of the dilemmas facing IT leaders as they think about governance is how they can marry the differing perspectives of IT and business: we believe it is useful to understand that as governance develops, different types of IT activity can be treated in different ways.

Figure 2.3.2 shows a more detailed profile of the IT spend categories; it should also be noted that Run-The-Organisation spend extends a little way above the existing business momentum line, and Change-The-Organisation extends below it: this reflects the spend that is necessary to strengthen the IT delivery engine, in areas such as infrastructure renewal, business continuity, and security, and in the case of Change-The-Organisation to strengthen the application delivery capability – in effect, to continuously improve the IT capability. An effective governance framework helps to relate the costs of this expenditure against the potential risks involved in not doing so.

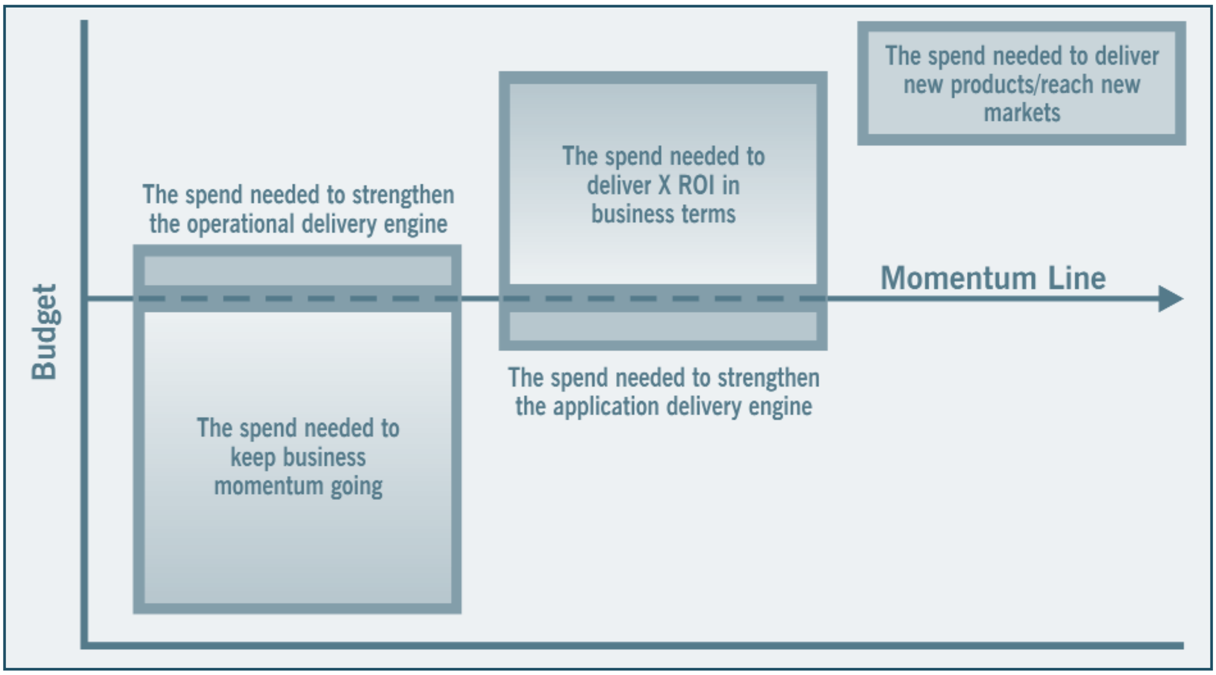

The spend needed to deliver new products/reach new markets
The spend needed to deliver X ROI in business terms
The spend needed to strengthen the operational delivery engine
Momentum Line
Budget
The spend needed to strengthen the application delivery engine
The spend needed to keep business momentum going

Figure 2.3.2: IT Spend Categories (Source: Terry White, MarketWorks)

One of the most important considerations is to manage the transition of systems from one category to another. Innovation often takes place on an initially small scale to prove a concept, with the intention of scaling up once it is shown to be viable – at this point, it moves into the Change-The-Organisation category. The governance framework should therefore ensure that the larger scale project has the appropriate business case and metrics applied, including effective transfer of accountability to those responsible for implementation.

Similarly, new business initiatives in the Change-The-Organisation category become Run-The-Organisation spend once the solution is deployed and established. This, of course, has the effect of pushing up the Run-The-Organisation portion of IT spend, and is why it is so important to monitor the application portfolio, and to measure value over the entire lifecycle. In the Run-The-Organisation phase of a system's life, organisations must focus on systematic cost reduction on an ongoing basis, both for individual solutions, and through establishing and improving common shared services.

This perspective on different categories of IT spend has also led to an increased interest in viewing the IT capability as having both supply and demand aspects, and further tailoring the business's use of IT, and its governance, to match. Demand comes from the business's requirement for IT-enabled projects and innovation, and requires staff with both business and IT understanding to translate and communicate these requirements to the supply side. Supply may be delivered by a combination of in-house IT and external services, and creates economies of scale and common services or competencies for the organisation as a whole.

As organisations define and develop their IT Governance programmes, it should be understood that this is definitely not a 'one size fits all' scenario. Industry sector and corporate objectives also have a significant impact. For example, in the Financial Services sector, IT Governance is often closely tied into operational governance and risk management; in Small and Medium Sized Businesses (SMB), the overall touch of IT Governance is relatively light but business continuity has a high priority; in High-Tech Manufacturing, there is a strong focus on IT as a source of innovation, and the Governance programme must support value measurement. The detail of IT Governance, and the structures to support it, must therefore be shaped to match these objectives.

▶ 2.4 IT PERFORMANCE AND CAPABILITY

CATALYST

If IT is to be an effective creator of value for the organisation, and be seen internally as a trusted business service, then the execution of the underlying IT capabilities must be of a consistent quality, and subject to continuous improvement. IT departments trying to move up the value scale without these firm foundations are liable to experience failure.

SUMMARY

Performance management techniques should be applied to ensure standardised and consistent IT processes and desirable behaviours within the IT function. These metrics can be aggregated into an overall view using a balanced scorecard or similar methodology.

- **A formal programme for managing performance is an important motivator for quality improvement.**
- **Frameworks such as the IT Infrastructure Library (ITIL) help to establish a clear definition of IT services.**
- **A balanced scorecard approach combines four different perspectives of the IT function.**
- **Performance measures must be selected in a systematic fashion that maps to the desired IT objectives.**

ANALYSIS

A formal programme for managing performance is an important motivator for quality improvement.

Applying performance management techniques to the IT department is an important element of IT Governance, providing a measure of overall effectiveness of the IT function. It requires the collection and analysis of data on the performance of IT staff, IT processes, and IT systems, including attributes such as availability, reliability, responsiveness, capacity, flexibility, and skills. Analysing and communicating this performance through the IT organisation is an important motivator for quality improvement, and baselining/benchmarking techniques can help to demonstrate this progress to the rest of the organisation. Methodologies such as a balanced scorecard can help to integrate performance information on different perspectives including operational excellence, user orientation, business alignment, and future orientation.

> *"...senior management wants to ensure both the efficient running of the IT capability, and the effectiveness of investments made in this area."*

Whether IT is seen as a competitive differentiator for an organisation or merely a necessary cost of doing business, as a function it is embedded within most operational processes. It is understandable, therefore, that senior management wants to ensure both the efficient running of the IT capability, and the effectiveness of investments made in this area. As IT matures as a discipline, attention is focusing on applying the same performance management techniques used in other areas of the business, but care must be taken in developing a performance management framework appropriate to this domain.

Work done by Rolstadas (1998) on the performance of organisational systems identified criteria of effectiveness, efficiency, quality, productivity, quality of work, innovation, and profitability, and the relationship between these, to be of paramount importance. Within the IT department, these criteria must be applied to the technical performance of IT systems, to the processes used to deliver the IT service, and to the activities of IT staff.

Raw measurements of system performance are now relatively easy to derive, but it is the impact of these systems on the performance of business processes that is of far greater interest. Consequently, systems management tools have evolved to map the relationships between leading measures of systems operation, and the lagging measures of the processes that are dependent on those systems. For many IT departments, this tends to be the most mature area in terms of collecting performance management information, but one of the least mature in terms of understanding and analysis.

Clearly, this requires joint efforts between IT and business analysts to define the processes and to detail the business applications and infrastructure components that support them. Furthermore, as both processes and infrastructure are dynamic entities, this relationship mapping is an ongoing requirement. We firmly believe, however, that this effort is worthwhile, since it provides clearer insight into the dependencies between IT systems and business processes, and allows improved impact analysis and change management to be applied to IT decision-making.

Frameworks such as the IT Infrastructure Library (ITIL) help to establish a clear definition of IT services.

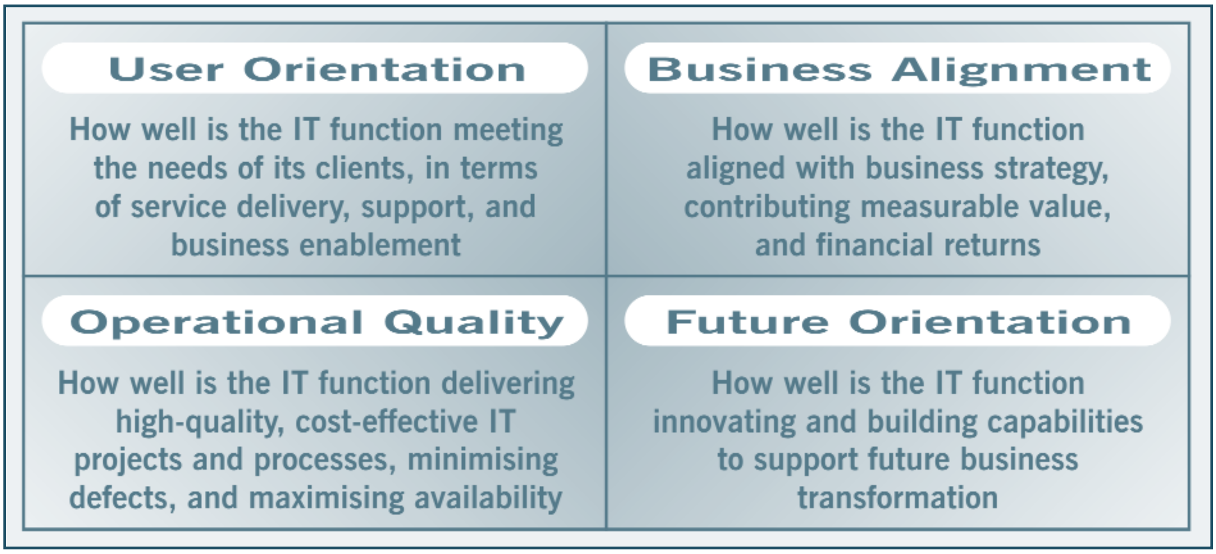
From an IT process perspective, attention must be paid both to ongoing operations and to new projects. The key here is to have a clear definition of the processes involved, making it easier to specify the outcomes sought and the appropriate methods of measurement. Many organisations have measures in place that relate to common IT activities such as helpdesk, software development, and user provisioning, but these measures are often lacking the context of the process to which they relate, so it is difficult to understand the causal relationships, or to undertake performance improvement initiatives. Again, the key is to establish a clear definition of IT processes, and this is one of the benefits provided by frameworks such as ITIL.

The least well-developed area is measuring and managing the performance of IT staff: for sure, many IT departments have a set of criteria against which employees are appraised, but again these are rarely linked to the overall performance of the IT function, or to the set of behaviours that should be encouraged to improve that performance. Given that this is the area of highest expenditure, and has the greatest impact on the operational capability of the IT function, it is unsurprising that performance management initiatives are less likely to achieve genuine change when they ignore this dimension.

If performance management is to provide the basis for effective reporting and improvement, then these different perspectives must be joined together within a coherent framework or system that defines the organisation's process for managing performance, and helps managers to understand the relationships between them. Whilst frameworks such as ITIL and the Control Objectives for Information and Related Technology (COBIT) provide valuable advice on IT processes and their management, they do not offer a holistic view of performance across the IT function. The most commonly used technique is that of the balanced scorecard, which has the advantage that it is not IT-specific, is often already a familiar management tool, and can easily be integrated into a wider corporate performance management initiative.

A balanced scorecard approach combines four different perspectives of the IT function.

A number of researchers have proposed techniques for applying the four quadrants of the standard balanced scorecard to the IT environment, most notably Willcocks (1995) and Van Grembergen (1997, 1998), all of which share broadly similar themes, summarised in Figure 2.4.1. The first quadrant relates to Operational Quality: it focuses particularly on the areas of technical performance, IT process performance, IT service support, and IT service delivery. Measurement in this area includes system and network availability, average helpdesk response and resolution times, application and user provisioning response times, and software development efficiency. Increasingly, we see measures in this quadrant relating more directly to IT services, often in support of specific business processes.



User Orientation

How well is the IT function meeting the needs of its clients, in terms of service delivery, support, and business enablement

Business Alignment

How well is the IT function aligned with business strategy, contributing measurable value, and financial returns

Operational Quality

How well is the IT function delivering high-quality, cost-effective IT projects and processes, minimising defects, and maximising availability

Future Orientation

How well is the IT function innovating and building capabilities to support future business transformation

Figure 2.4.1: The Four Quadrants of an IT Balanced Scorecard

The second quadrant is associated with User Orientation: it considers the degree to which the IT function meets the needs of its customers (both internal and external), and the strength of relationships between IT and other business departments. Measurement in this area can include customer satisfaction levels (typically gathered via user survey), compliance with user-related SLAs, and the proportion of new business initiatives where IT acts as an adviser. As the supply of IT services becomes more distinct from business demand for those services (for example, through the increased use of managed services or outsourcing), we believe this quadrant increases in importance: it must accurately reflect the effectiveness of the interface between business units and the IT supply organisation.

The third quadrant relates to Business Alignment, and focuses on the outcomes of IT investments, the alignment between IT and business objectives, the maturity of running IT as a business unit, and the management of IT-related risk. Measurement in this quadrant includes macro measures that take a holistic view of IT expenditure and value, such as IT spend per employee or IT costs as a percentage of total costs, outcome measures such as percentage of IT initiatives delivered within time and budget, and alignment measures such as ratio of IT spend on Change-The-Organisation versus Run-The-Organisation.

The fourth quadrant is associated with the Future Orientation of the IT function, and considers the development of IT skills, the potential to recommend and apply new technologies, and the capture of project expertise to apply to future initiatives. Measures here include the amount of training provided to staff, the level of reuse of existing expertise, and staff development and retention rates. Additionally, we believe it is important that this quadrant also captures measures of IT flexibility, evaluating whether the existing hardware infrastructure, software portfolio, and delivery capability, can readily adapt to meet a range of new and existing business requirements.

Performance measures must be selected in a systematic fashion that maps to the desired IT objectives.

Implementation of this type of performance management framework requires incremental development. Firstly, it is essential to define the strategic objectives of the initiative – this includes defining high-level business objectives, and the contribution that IT should make to these, as well as specific outcomes related to the individual organisation. This should be followed up by defining the lagging indicators that can be used to measure success in meeting these objectives, and the leading measures that contribute to this success, right from the starting point of the IT value chain. As an example, for an organisation that undertakes a significant amount of in-house software development, one instance of this chain might be to train developers in the use of Agile development techniques (Future Orientation), to introduce Agile methods into the development process (Operational Quality), in order to increase the involvement of business customers with development projects (User Orientation), with the aim of delivering completed software systems more quickly (Business Alignment). A strategy map is a useful tool to help define the causal relationships between objectives and the principal IT processes and capabilities.

“A strategy map is a useful tool to help define the causal relationships between objectives and the principal IT processes and capabilities.”

The next step is to identify the information that is required for each measure, how this will be collected, and who is responsible for providing it. There may well be existing IT measures in place that already fit in with the framework, or which can readily be adapted to do so. Rather than attempting to produce all measures in one go, these should be approached in stages, and the reliability of the information verified in each case. The appropriate number of measures is always a moot point for discussion, and whilst there is no right or wrong answer, we firmly believe that these should be counted in tens, rather than in hundreds; suffice to say that it is considerably easier to develop additional measures when a requirement becomes apparent, rather than try to cover every conceivable measurement dimension from the outset. Where appropriate, thresholds for the selected measures may also be defined at this stage, particularly where these relate to outcomes or lagging measures (e.g. a target for the proportion of projects delivered on time).

The procedures for analysing the information generated, again including the responsibility for doing so, can then be defined. In practice, defining and reviewing these procedures often takes place iteratively in the early stages. Further work will be required at this point on setting thresholds, and this should be supported by creating a baseline of existing performance, as a foundation for subsequent performance improvement initiatives. A key step is to communicate the objectives, the measures, and the review procedures to all staff that fall within the remit of the performance management framework. We believe that establishing lower-level scorecards for individual teams or team members, whilst ultimately valuable, tends to overcomplicate matters in these early stages, and that staff can work effectively in support of broader measures, provided their contribution to those measures has been communicated and understood.

“A key step is to communicate the objectives, the measures, and the review procedures...”

The performance management system itself must constantly be reviewed and evolve. Once the measurement mechanisms are established and well-proven, the framework can improve as more data becomes available to test the relationships between different metrics; thresholds and alerts can also be refined. Finally, the performance management system must also be continually assessed against strategic objectives as these change, and adjusted as required.

▶ 2.5 BUSINESS AND IT ALIGNMENT

CATALYST

The demand for closer alignment between IT and business strategy will see a much closer scrutiny of the way the IT organisation operates.

SUMMARY

There is increasing prominence being placed on the ability of IT deliverables to match organisation objectives. Unfortunately, there still appears to be a lack of focus by IT management on understanding the organisation's main value drivers. Without this, it is impossible to formulate an IT strategy that will meet the organisation's needs. IT must improve the flexibility of operations, and be accountable for performance related to these value drivers.

- **IT organisations are more competent at prioritising incoming work requests than they are at understanding the big picture.**
- **Formal decision-making processes and allocation of responsibility are required to enable a joint business and IT approach.**
- **Organisations need to evolve to an infrastructure that provides IT services that can support rapidly changing business requirements.**

ANALYSIS

IT organisations are better at prioritising incoming work requests than they are at understanding the big picture.

An on-line survey of 125 IT managers worldwide, conducted by Borland in 2006, found that 91% of all respondents had at least some system for prioritising incoming work requests, whereas only 40% reported formal processes for actually launching projects. Significantly, for most questions in the survey, roughly half the group gave themselves mediocre reviews, rating their performance in various IT management and governance tasks as 'somewhat effective'.

For instance, 54% claimed clear views of the goals of their enterprise software portfolios. The same 54% also stated some degree of effectiveness at developing rigorous project plans. Meanwhile, 52% rated themselves somewhat effective at planning staffing levels for projects. And 55% said they were somewhat effective at collecting the right data to make a go/no-go decision regarding incoming project requests.

According to Borland, organisations were more confident when it came to handling the short-term tactical decisions than they were about longer-term strategic planning. Consequently, whilst most felt confident about setting short-term goals, they were lukewarm about their ability to manage projects, IT resources, or technology portfolios. For instance, the results were not too bad when it came to tracking project progress, with half claiming they were 'somewhat effective', whilst 28% rated themselves 'effective' or 'very effective'. But when it came to balancing portfolios, only 42% rated themselves 'somewhat effective', whilst only 20% considered themselves 'effective' or 'highly effective'.

Roughly half the sample tracked progress against plans, whilst just over 20% were more ambitious in also tracking cost and scope creep. For measuring the performance of overall project portfolios, half the group graded themselves as failing. As to choosing which projects to fund, the results were quite varied. 40% claimed to have minimum cost/benefit criteria, another 33% said their decisions factored in risk/return, while 27% said that the only requirement was if the sponsoring department comes up with the funding.

However, are IT teams adequately managing financial risk? Evidently, three-quarters felt they had a handle on project costs, although that group was split roughly half-and-half in terms of distinguishing between capital costs and expenses attributed to projects. If there is one question that is even more loaded than costs, it is compliance. Only a third gave themselves failing grades when it came to ensuring that audits captured compliance or regulatory issues.

Formal decision-making processes and allocation of responsibility are required to enable a joint business and IT approach.

The implementation of a structured process to manage IT investment can provide significant benefits. Accenture has found that savings in the IT budget of 10-15% are possible within one year, whilst better IT decision-making can improve IT productivity by up to 20%. The ability to deliver on the requirements of a strategic IT agenda will fail without well-organised execution. In order to achieve this, an organisation needs to have efficient IT processes, clear roles and responsibilities, skilled people with the right incentives, and a value-focused culture. The creation of IT capability that provides flexibility, quality, and quick turnaround is challenging and needs constant focus on all the various elements. However, recent software vendor developments have made this easier by beginning to offer integrated tools to assist management in implementing the IT agenda.

For many organisations, the IT investment cycle has been severely hampered by the lack of any formal strategic approach. The result is that project and asset investments are often prioritised according to the available resource, rather than taking into account the business goals of the organisation. Factors such as immediate demand, internal politics, or even the personal agenda of the individual also contribute to sub-optimal project decision-making.

Effective strategic planning must take into account the aggregate demand on the IT function, including new projects, maintenance and upgrades, IT operations, and support. This must be factored into the total resource available and the current programme of work. The process begins with formal portfolio management, which allows the impartial consideration of all IT investment initiatives within the context of corporate strategic objectives.

> ***"Effective strategic planning must take into account the aggregate demand on the IT function, including new projects, maintenance and upgrades, IT operations, and support."***

It is important that IT projects are not viewed in isolation but looked at holistically as one element for improving the effectiveness of the whole organisation. What has been found to work well is incorporating IT projects as part of organisation-wide initiatives, where the IT element is an enabler rather than the main driver. A good Portfolio Management solution helps an organisation select the right blend and balance of IT investment, as it is critical that those projects are selected that make the best use of both limited financial and human resources, and provide the maximum value.

Another significant aspect for IT management to consider is the need to make sure that the level of investment being made in IT is delivering value for money, in comparison with industry peers and the wider environment. To meet this requirement, benchmarking is increasingly being employed as a way of ensuring that the best possible value is being realised from IT investments. The use of benchmarking can bring a number of benefits, including being a vehicle for better performance and collaboration, along with helping to identify gaps in operational effectiveness.

In order to provide the required levels of transparency, IT management must put in place the foundations of well-managed IT assets, comprising infrastructure, processes, and skills, along with the use of automation, which form very important enablers for successful measurement processes.

Ad hoc manual methods based on spreadsheets are no longer acceptable or a practicable solution; especially as data quality for accurate and comprehensive IT reporting is now crucial. In order to reach the required level of consistency, the deployment of an integrated toolset and common repository must be an area of focus, as is the setting up of feedback loops and dashboards within the IT Governance framework.

Organisations need to evolve to an infrastructure that provides IT services that can support rapidly changing business requirements.

We should take cognisance of famous words probably falsely attributed to Charles Darwin – "It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is the most adaptable to change." There is more than enough evidence to point to adaptability being a key competence of organisations, and their supporting IT infrastructures. Whilst there has been more focus on aligning IT with the business, perhaps we are missing the point, and it is the capacity to change which is the most important attribute.

The reality is that change, change, and more change is the norm for practically every organisation. Whether this is driven by internal factors such as the search for revenue or profit growth, and continued generation of value for shareholders, or by external factors such as increased competition or a changing social, political, or regulatory climate, the flexibility to respond to changing demands and conditions has become a prerequisite for a successful organisation. Just like the extinction of creatures unable to adapt quickly enough, the business environment is littered with those who were not sufficiently flexible, and have fallen by the wayside. In the public sector too, agencies come and go, even if their functions re-emerge in a different guise.

> *"Organisations need to evolve to an infrastructure that provides IT services that can support rapidly changing business requirements..."*

Organisations need to evolve to an infrastructure that provides IT services that can support rapidly changing business requirements, enabling the adoption of a more pragmatic approach. The most important aspects, after the stabilisation and reduction of costs, are to provide a flexible foundation on which new services can be quickly deployed, and to optimise the IT infrastructure for adaptability.

Efforts to increase flexibility in order to distribute applications more easily across heterogeneous systems, to reduce costs, and to scale the infrastructure upwards (and downwards) more quickly to meet new business requirements, are a protracted initiative for most organisations. These efforts typically progress through phases of standardisation – establishing a desired common architecture and accepted criteria for future investments; consolidation – identifying and removing redundancy within the existing infrastructure and improving utilisation; and virtualisation – creating an abstraction layer that overcomes the physical boundaries of IT assets, and breaks the dependency between applications and infrastructure.

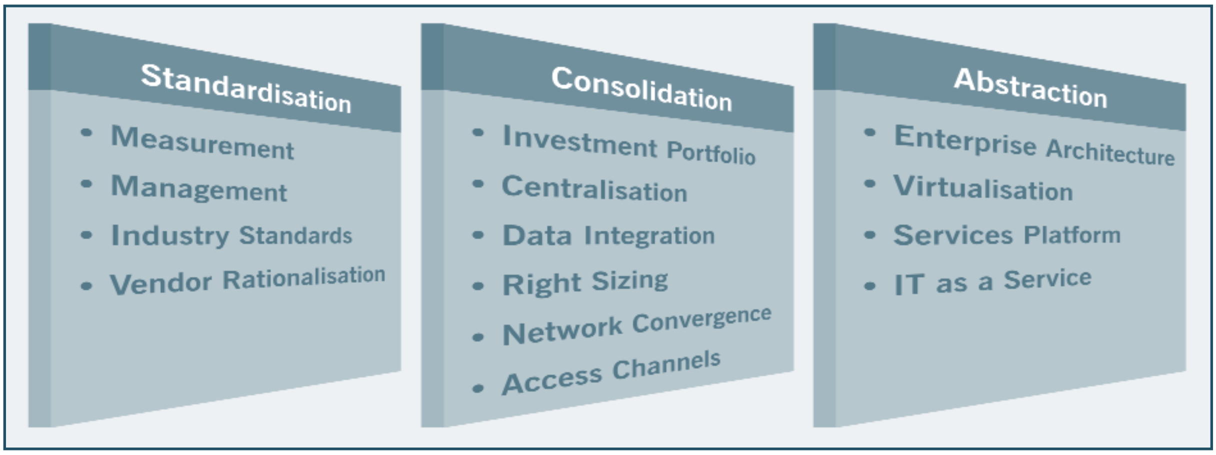


Figure 2.5.1: IT Infrastructure Flexibility Maturity

Organisations must start the evolution to a flexible infrastructure with the key initial objectives of standardisation, along with enhancing and centralising management processes. The journey continues with the aim of consolidation, and the provision of a common platform to provide a balanced, optimised environment and enabling the smooth progression to a service-centric infrastructure, eventually progressing to service enablement, which can bring benefits such as better adaptability and quicker deployment.

▶ 2.6 MEASURING IT BENEFITS

CATALYST

Before any value judgements can be made on IT performance, it is imperative that the relevant measurement processes and metrics are put in place.

SUMMARY

There is continuing difficulty in accurately measuring the effectiveness of IT spending. Measuring the returns from investments in information and computer systems requires a level of rigour that most organisations are unfamiliar with. However, as information costs continue to take a bigger percentage of all costs, this measurement becomes more critical.

- **It is important to identify those initiatives that bring the most value to the organisation.**
- **Utilising a governance framework for measuring IT benefits assists with greater understanding.**
- **IT investment must be measured not only at the inception of initiatives but also throughout the project lifecycle.**
- **The Val IT framework can make a significant contribution to balancing the value, risk, and cost of projects.**

ANALYSIS

It is important to identify those initiatives that bring the most value to the organisation.

Measuring the cost and value of IT investments is a major undertaking that cannot simply be left to the IT or finance function. It needs commitment from the very top of the organisation, as without it things will remain as they are – confusing, opaque, and dogged by political infighting. Those IT departments which continue to use technology purely as a means of cost reduction will be the losers, whilst the more enlightened that also employ IT as a means of value and knowledge creation will ensure continued investment in IT. It is, therefore, imperative that IT management deploy performance indicators and metrics that identify the benefits that IT delivers in similar terms to those employed by the rest of the organisation.

Butler Group believes there are three main types of benefits that can be derived from IT systems – these being projects to support running the organisation, changing the enterprise, and initiatives focused on innovation. Run-The-Organisation usually entails cost efficiencies, in many instances achieved through labour displacement. This has been the dominant use of IT for the last 30 years, and is very much focused on the transactional aspects of the operation and processing data. Examples include operational systems such as Enterprise Resource Planning (ERP) applications, database management, and content management.

Using IT to actually change the way the enterprise operates is not really understood by organisations, mainly due to the difficulty in adequately measuring, along with the lack of metrics in this area. Value creation can be achieved through making available IT solutions that improve the effectiveness of the organisation with the provision of enhanced capability such as enabling new channels to market, and enhanced services to stakeholders, along with improved information processing capabilities, such as BI, data warehousing, and data mining. In the current environment, one of the most pertinent issues for IT management is to provide IT services that enable organisation growth and increase competitive advantage. This can be achieved through effective IT spending on services that will transform the way the organisation operates.

Research conducted by Accenture into the characteristics of organisations that out-perform the market points towards one of the differentiators being not how much is spent on IT, but the way the investment is focused on business value. Companies with superior earnings growth tend to invest less than their peers on IT, but are able to make available more IT spending for new innovative business initiatives. Further indication of the link between IT investments focused on innovation in the UK is found where the most successful insurance companies have been able to dedicate resources to product design, new distribution channels, and innovative solutions to differentiate themselves from the competition.

Aviva, which has the largest insurance market share in the UK, has pioneered the use of 'Pay as You Drive' insurance, where the charge is levied on mileage rather than on an annual basis. Skandia has invested in componentised product design functionality, which allows remote agents access to on-line calculations. Maximising the level of Change-The-Organisation spending can be seen as one of the main catalysts for business growth.

Utilising a governance framework for measuring IT benefits assists with greater understanding.

IT Governance has three fundamental roles: firstly, to implement corporate governance and the associated controls in the context of IT systems; secondly, to actively foster the alignment of IT with organisation strategy; and thirdly, to act as an IT management framework. Driven by the needs of compliance, it is clearly the first of these that has compelled the increased adoption of a formal IT Governance approach, particularly in respect of risk management and system integrity.

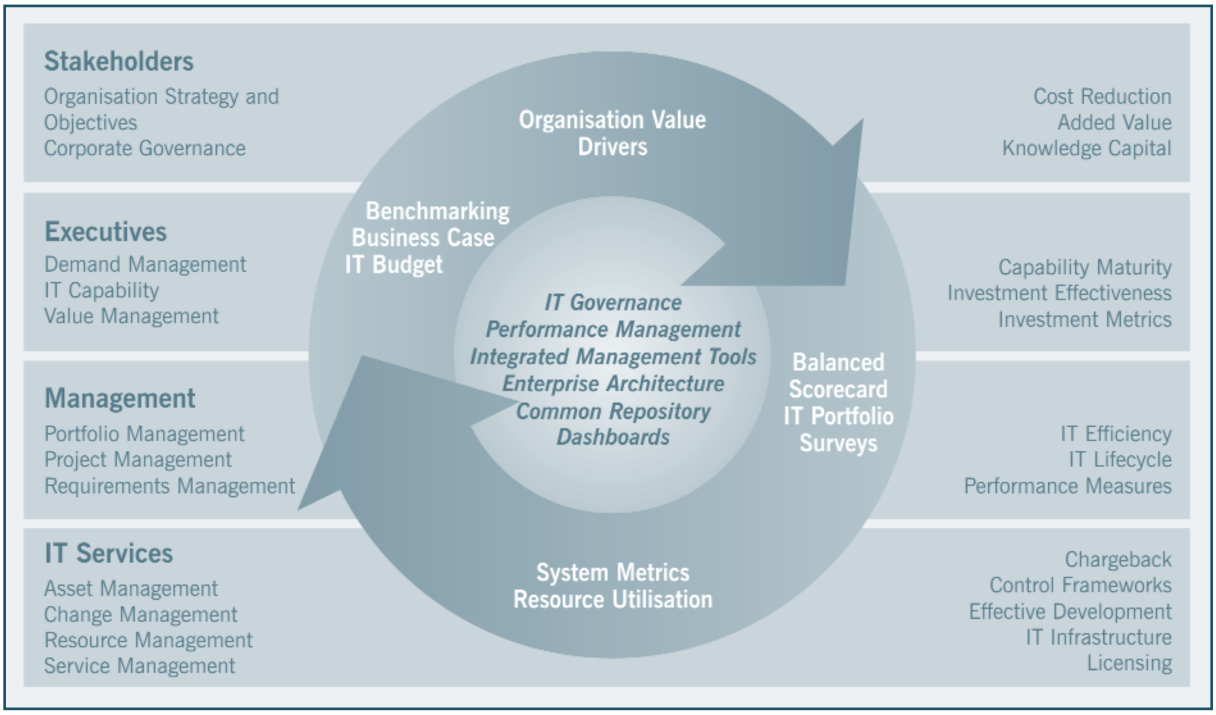


Figure 2.6.1: Measuring IT Cost and Value Framework

However, it is the second role that is critical to enable the measurement of IT value. Within the IT function the practice of IT Governance often begins, understandably enough, from an IT management perspective, addressing issues such as enterprise architecture, system integrity, resource management, project management, service quality, and operational continuity. It is when IT Governance is broadened to include an IT value perspective that it reaches its full potential, encompassing areas such as strategic alignment, value creation, performance measurement, investment planning, and IT audit.

By adopting this approach, the IT function can become more of a strategic partner, capable of developing new solutions that provide the organisation with competitive advantage, and where IT is seen as a core competency that the enterprise can exploit as the basis for competitive differentiation. The one proviso for this advancement is, of course, that the leadership of the organisation has the inclination to incorporate IT into its vision in the first place. From this perspective, IT value could be expressed as: *organisation input + organisation metrics + IT capability = organisation value outcome.*

IT investment must be measured not only at the inception of initiatives but also throughout the project lifecycle.

IT investments are one of the largest single elements of capital expenditure an organisation has, but unfortunately IT management continues to struggle to articulate the business value of IT to the organisation. Currently, very little time and resource is spent on managing IT value as a process. There are a number of reasons for this, although the fact that it is difficult and costly, requiring ongoing resources and commitment, are major contributing factors. This lack of understanding means that organisations have no real idea whether they are benefiting from their IT investments, or if they are, in fact, contributing to value destruction and actually having a detrimental effect on the enterprise.

All organisations monitor the cost of the IT environment because that is the easy part, with no shortage of number crunching done in spreadsheets and accounting systems. Moving forward with IT depends upon a much better appreciation of the value being delivered. Regrettably, much of the investment in IT continues to be wasted due to poor understanding of objectives and current capability, as well as the lack of an effective framework or guidelines.

> “*It is very rare indeed to find an organisation that is still measuring ROI at the end of the payback period…*”

It is somewhat ironic that in many organisations, ROI and other financial measures are calculated in the project feasibility and assessment stage, and that project success is gauged either at the point of deployment or very soon thereafter. It is very rare indeed to find an organisation that is still measuring ROI at the end of the payback period (often measured in years). Therefore, it is essential that the metrics continue to be collected and analysed over this period, and that the enterprise carries on assessing the value that the project is delivering.

Both IT and enterprise executives require an overall measure of the efficiency and value of the IT function. Deploying investment management, and adopting a formal methodology to manage the associated processes, are the most effective steps that an organisation can take to improve the accuracy and validity of its IT investment strategy. The key to understanding value is to develop business metrics for all IT-enabled projects, with data collected and analysed over the entire project lifecycle, which are linked to business objectives and performance metrics.

The Val IT framework can make a significant contribution to balancing the value, risk, and cost of projects.

Delivering value is an important component of IT Governance. Within the IT function the governance often begins, understandably enough, from an IT management perspective, addressing issues such as enterprise architecture, system integrity, resource management, project management, service quality, and operational continuity. It is when IT Governance is broadened to include an IT value perspective that it reaches its full potential, encompassing areas such as strategic alignment, value creation, performance measurement, investment planning, and IT audit.

The IT Governance Institute (ITGI) has addressed the IT investment issues with the Val IT initiative – Enterprise Value: Governance of IT Investments – which is a public domain governance framework consisting of a set of guiding principles and processes. It complements COBIT, an IT Governance and control methodology also developed by the ITGI. COBIT provides a framework for the management and delivery of IT services, whereas Val IT provides the means to measure, monitor, and improve the value gained from IT investments. Val IT complements COBIT from business and financial perspectives where COBIT is a framework for the means of creating value. Val IT now provides guidance on meeting the end objective.

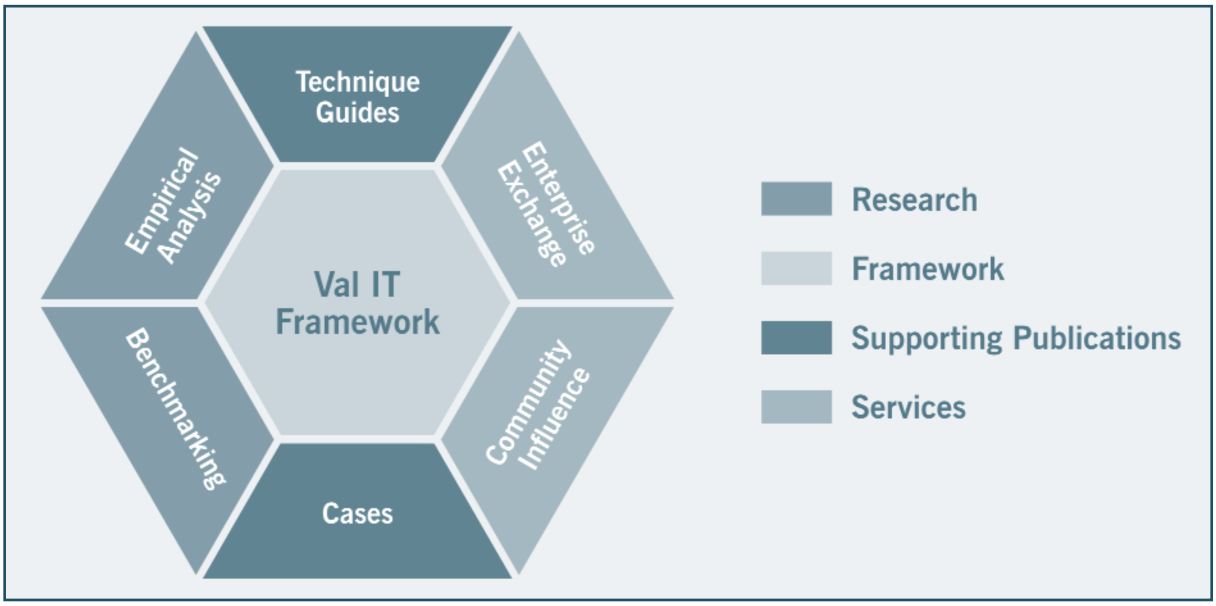


Figure 2.6.2: Val IT Framework (Source: ITGI)

Val IT recommends that IT-enabled projects are managed as a portfolio of investments, focused on business value, and supervised through their economic lifecycle. The initiative is also designed to meet the demand for guidelines to assist management to attain an appropriate ROI for IT investments. The first phase of the guidelines consists of a framework, taking up the use of the business case and a case study from the financial services company ING. The framework consists of three main processes: Value Governance, where the objectives are to optimise value; Portfolio Management, which aims to make sure all IT-enabled investments match and contribute to the organisation's value drivers; and Investment Management, with the goal of delivering the best value at lowest cost and risk.

A case study on ING is used to underline the benefits of many of the techniques included in the framework. IT is vital to the way the company operates and in recognition of this, senior management takes IT Governance and associated investment decisions very seriously. This commitment is an indication of the importance placed on IT in terms of revenue contribution, and the competitiveness of the organisation. The case study highlights the correlation between ING's industry-leading performance and the use of IT Governance, along with IT portfolio analysis based on an investment fund management approach to enterprise IT, allied with effective deployment.

ING has been using an annual IT dashboard process for a number of years. The original idea behind the dashboard was to give visibility of IT-related costs and KPIs. The process is intended to identify how much is being spent on IT, whether this is enough or insufficient, and how this compares with peer organisations. The dashboard is also used to gauge the impact of IT investment on business performance and value delivery. The benefits of using approaches in the Val IT framework for ING includes more transparency, fewer false positives, quick identification of non-performing investments, an improved approach to risk management, and more focus on better performing investments.

It is senior management's responsibility to ensure investments provide expected returns. This includes IT-enabled projects where balancing value, risk, and cost must be a visible and integral part of an organisation's processes. Val IT makes a significant contribution in this regard, as long as the guidelines are not used prescriptively, but applied intelligently to meet the specific requirements of the enterprise.

2.7 RISK MANAGEMENT AND SECURITY

CATALYST

Risk and security should not be perceived as always having negative connotations. It is essential to have the capability within IT Governance processes to be able to recognise and manage risk as an opportunity, as well as a threat.

SUMMARY

The increased focus on all aspects of IT Governance requires that risk and security management can no longer be left to be handled in isolation. Senior IT executives, managers, and staff not only need to be aware of the issues, but also take an active role in the process. Another essential element is the incorporation of feedback, especially from IT operational activities. The ability to compare and contrast previous performance and events during strategy formulation enables earlier mistakes to be learnt from, and the effectiveness of the risk management processes to be evaluated.

- **Too many projects are significantly delayed or go over budget due to insufficient focus being put on the risks involved.**
- **Integrating portfolio, project, and risk management is extremely important to the success of projects.**
- **Vulnerabilities need to be proactively managed to reduce risk and to ensure a safe environment.**

ANALYSIS

Too many projects are significantly delayed or go over budget due to insufficient focus being put on the risks involved.

There are a number of issues with current practices for assessing project costs and the associated risks. The traditional process typically encompasses estimating the size of project (perhaps in the number of lines of code, or now more commonly in function points), estimating the time resource that is required in person days or weeks, factoring in resource availability to arrive at a calendar schedule, and then deriving the cost for the project according to the nature of the resources consumed.

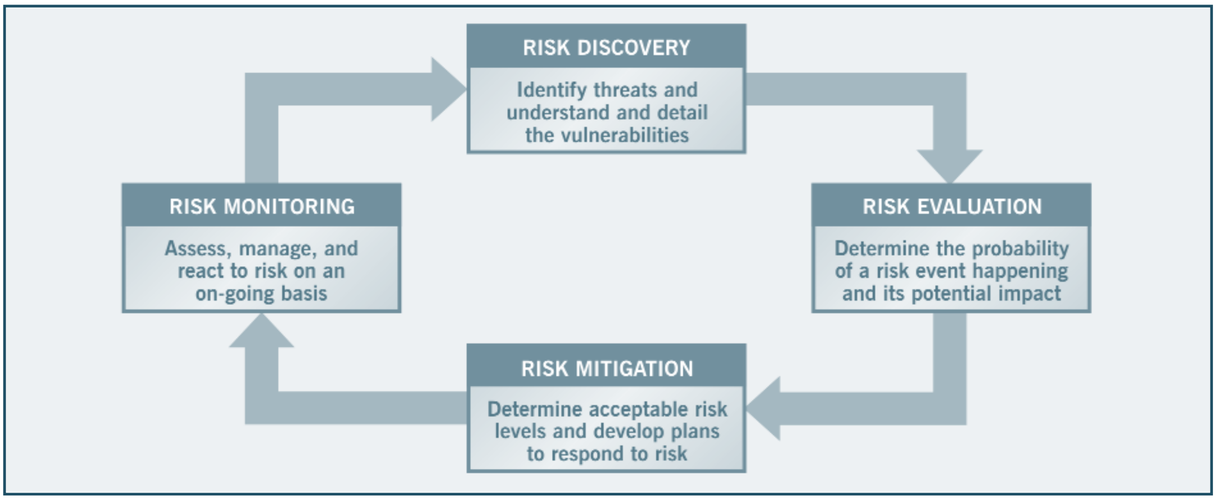

RISK DISCOVERY
Identify threats and understand and detail the vulnerabilities
RISK EVALUATION
Determine the probability of a risk event happening and its potential impact
RISK MITIGATION
Determine acceptable risk levels and develop plans to respond to risk
RISK MONITORING
Assess, manage, and react to risk on an on-going basis

Figure 2.7.1: Risk Management Lifecycle

However, there are two distinct problems with this approach. Firstly, it generally takes place at the very beginning of the project lifecycle, sometimes even before any detailed requirements capture has been carried out. Secondly, it is rarely iterative, with perhaps the worst case being when a ‘fixed price’ model is used. In this scenario, IT management is caught in a difficult position, either over-estimating to make sure that there is less chance of an overrun and risk the project being cancelled or sub-contracted to an external provider; or making a realistic estimate based on the limited available information, and joining the long list of projects that end up over budget and fail to meet requirements. Risk management must be a continual process with the following main capabilities:

Risk Discovery

The first step is that of threat identification and detailing the vulnerability. The controls that potentially need to be put in place are defined. For example, what is being done now to ensure that more people are trained, or to increase the resources available? Additionally, reactive controls should also be identified and taken into consideration, such as monitoring the increase in productivity or tracking the availability of key staff.

Risk Evaluation

The next step is to determine the probability that the risk will actually happen. One example is trying to determine the probability that everyone capable of designing a new system will be unavailable to the organisation simultaneously. This probability would be based on the threat itself, the vulnerability, and the current controls that are in place. After which, the impact of such an event happening is determined: will it affect the organisation in a minor or insignificant way, or would it be worse than that, ranging up to catastrophic? Butler Group suggests a range of five levels of impact (insignificant, minor, moderate, major, and catastrophic), but these can vary according to organisational requirements. The level of the risk can then be assessed, using three levels such as high, medium, and low.

Risk Mitigation

Some organisations will want to play IT risk management ‘close to the edge’, with a very fine line between the point at which risks are prevented and the cost of preventing those risks. Other organisations will be more risk averse, putting as much resource as possible into ensuring that the risks are mitigated. In consultation with senior executives, the IT manager needs to determine what level of risk the organisation can accept. The remainder is the input of the IT manager in understanding the particular circumstances of the organisation and the factors that go into running IT to deliver organisation objectives.

Risk Monitoring

An IT manager should not see monitoring risk within the project portfolio as a burden. There is no doubt that it can be cumbersome and time-consuming, although this can be considerably eased by using an integrated PPM tool. IT Governance should certainly be viewed as a key enabler, with IT risk management being implemented as part of the IT Governance framework. Furthermore, controlling the risks that IT faces will support the business objectives and ultimately improve the effectiveness and value provided by IT to the organisation. There will always be a level of uncertainty when it comes to responding to the risks that the IT department faces. The exact level of risk will not always be known, hence IT risk management is not a one-off project. It must be an ongoing process, reassessed regularly, and integrated in the relevant PPM procedures, to cater for changes in circumstances and to ensure that the IT department is able to support the organisation in its objectives.

Integrating portfolio, project, and risk management is extremely important to the success of projects.

The reality is that too many projects are significantly delayed due to insufficient focus being put on the risks involved, with consequent losses to business or escalating costs. Project success is elusive. It is clear that making the right choices concerning the essential trio of people, time, and budgets, will yield competitive benefits and help control risk. There are a number of initiatives taking place that aim to make IT management less of a black art, and make IT more transparent to business executives.

It is only through better visibility and availability of information that the IT operation can improve transparency and that risks are more widely understood. PPM, combined with risk management within an IT Governance framework, allows project resources to be marshalled optimally, the risks fully understood, and lessons learnt in post-deployment to be fed back to development. Throughout project management, the emphasis is now on delivering business value.

Integrating the functionality requirements of portfolio, project, and risk management is critical to the success of projects, especially now that value must be delivered and balanced with risk. For most organisations the problem is not so much a shortage of information but a tendency to suffer from information overload. The most important issue is data relevancy, ensuring that the correct information is recorded, stored, and made available to authorised users.

> *"Integrating the functionality requirements of portfolio, project, and risk management is critical to the success of projects..."*

Incorporating risk management into the PPM process will benefit the organisation in a number of important ways. Firstly, it reduces the probability of encountering unexpected risks by creating an understanding of the cause-and-effect relationships that are at work. It also delivers an improved understanding of the impact of risk and supports the mitigation of that impact. In more advanced cases, businesses can also look to develop parameters for acceptable risk, just as with KPIs, thus ensuring that ongoing actions remain within those parameters and the changes in risk exposure, and/or mitigation costs, are fully exposed in a timely fashion. However, there is a cost associated with risk mitigation – this needs to be balanced against the cost of absorbing risk.

Vulnerabilities need to be proactively managed to reduce risk and to ensure a safe environment.

An array of different types of threats to IT forms a very real and serious danger to many organisations' operational capabilities. Denials of Service, viruses, Worms, and Trojans are just part of a long list of threat types, and whilst each has the potential to do harm this comprises an extent of risk to the organisation that must be addressed with appropriate urgency and effectiveness. Recent regulatory and legislative pressures have brought increased focus to bear on the management of risk, and in some industries a mandatory capital commitment to cover the assessed risk levels brings about a direct financial impact of the risk itself.

At the same time, IT security threats are arising in greater numbers, spreading more rapidly, changing constantly in nature, and becoming both more cleverly conceived and potentially damaging – the rising levels of risk from these threats itself becomes a problem, due to the direct financial impact. Bearing in mind that this unhappy scenario does not involve any of the threats actually wreaking its technical chaos within the organisation, things could be worse still.

Part of the reason that threats vary so widely, and are difficult to counter, is that IT infrastructures have become so complex and heterogeneous. Most large organisations have an IT estate with a number of operating systems, databases, systems, applications, and client devices, within which elements that are outwardly identical can actually be different due to the release versions installed and patches applied. Threats are often devised to take advantage of vulnerabilities within particular code sets (product versions, or even combinations of inter-operational products), and commonly gain a lifecycle as their perpetrators adapt them to work around measures taken by software product companies trying to remove known vulnerabilities.

> *"Part of the reason that threats vary so widely, and are difficult to counter, is that IT infrastructures have become so complex and heterogeneous."*

The task of protecting an IT infrastructure against the increasing threat population is dependent on two fundamentals – knowledge of the nature of the threats that are in existence, and the conditions that they exploit and which therefore comprise a vulnerability; and accurate details of the infrastructure assets that must be protected. Details of the vulnerability can then be compared with the infrastructure characteristics, and any match identified as a risk. This undertaking is made far more challenging due to involving large volumes of detailed information on both vulnerabilities and infrastructures, and the fact that these information sets are both subject to continual change.

Each individual organisation has its own unique security and protection requirements, but to ensure that these are effectively dealt with it is imperative that every enterprise establishes a comprehensive security strategy that encompasses:

- Business Continuity Planning.
- Systems and Network Management.
- System Access Control.
- System Development and Maintenance.
- Regulatory Compliance.
- Personal User Protection.
- Organisational Security.
- Cost Management at all levels.

In order to achieve all of the above objectives, it is important to make use of secure technology solutions that do more than just deliver levels of protection. Enterprise organisations have had enough of pulling together a patchwork of security solutions in order to protect networks, systems, and applications. They are now looking to achieve the integrated delivery of their protection facilities, and for vendors that are capable of achieving or facilitating this level of service. Achieving this level of service involves the integrated and unified use of a wide range of protection solutions from protection systems such as firewalls at various points of the network, down to the use of user-focused Identity and Access Management (I&AM) solutions. However, there is little chance of such services being delivered to the efficient benefit of end-user organisations unless systems administrators have the tools in place that allow them to understand the IT environment and security picture on an ongoing basis across their systems and networks.

The role of an Intrusion Prevention System (IPS) is part pre-emptive and part protective. In systems and network security environments IPS solutions are used to identify potential new threats (pre-emptive) and because such threats can have the potential to deliver their payload in real-time, the bottom line value of IPS comes from its ability to respond swiftly by preventing suspect packages from entering end-user systems (protective). IPSs monitor network traffic and take appropriate action when required.

Network Behaviour Analysis (NBA) solutions are used to unify and optimise behaviour-based anomalies as they are detected across systems and network operations, and then to go further by protecting systems and ensuring network continuity by preventing costly downtime. In operational use, NBA services can be used to detect activities and behaviours that may be missed by other detection and control technologies, such as IPS, Intrusion Detection Systems (IDSs), and firewalls. As a result, experienced security administrators can get better visibility into a network to address Worms, Botnet activity, unauthorised protocols, or suspicious connections. Additional value can also be gained by using the NBA approach to assist end-user organisations with their network monitoring requirements. Such usage can be supported by a combination of deterministic (signature) and non-deterministic (anomaly) detection to alert network and security managers of suspicious actions, and present a picture of network activity for analysis and response.

▶ 2.8 COMPLIANCE

CATALYST

With a raft of legislation relating to corporate and IT Governance being implemented both internationally and at a country level, compliance by the IT organisation has gone from being important to critical.

SUMMARY

Complying with the flood of legislation and regulations affects every organisation, whether profit-based, not-for-profit, or in the government sector. But compliance is not just about being seen to have procedures and systems in place. It is also about actively demonstrating that an IT department is using its operational processes to best effect to improve the way the business functions. Many regard compliance as a cost centre, but it is about running a better IT department, and those that do it well will gain significant competitive advantage.

- **Compliance is about having effective processes, and the ability to demonstrate to stakeholders that they are monitored.**
- **Delivering IT services has never been more complicated in terms of the regulatory minefield that surrounds these activities.**
- **There is a need to build a common compliance platform to meet the multiple regulatory requirements.**

ANALYSIS

Compliance is about having effective processes, and the ability to demonstrate to stakeholders that they are monitored.

The subject of compliance with legislation, regulations, or standards has never had a higher profile in organisations, whether businesses or government/not-for-profit companies. Whilst there are direct costs in achieving compliance through the establishment of recording and reporting processes, the financial and opportunity costs of not complying can be even higher. Fines from regulators may dent the bottom line, but the damage to an organisation's reputation may be even larger. Sadly, many organisations have deployed a combination of Word documents, Intranet content, spreadsheets, and significant quantities of paper, and at best some level of content management to help them address their respective risk management and compliance issues, normally on a single-department or single-topic basis.

> *"Compliance is a whole-organisation issue, and organisations are finding that the piecemeal approach – without defined processes, controls, and records – is ironically itself another risk."*

Compliance is a whole-organisation issue, and organisations are finding that the piecemeal approach – without defined processes, controls, and records – is ironically itself another risk. There is also an issue of maturity in the attitude to compliance; being compliant can become a competitive advantage for organisations, through controls on risks, and improvements in reputation from the transparency of business operations that compliance brings.

Compliance presents organisations, and those who run their IT with many opportunities, some of which are about building the organisation's strengths. All regulation and legislation labelled 'compliance' is about dealing with information effectively: from creation, through storage, retrieval, and analysis, to eventual destruction. This is commonly referred to as Information Lifecycle Management (ILM), and requires not only that defined processes are in place, but that there is an auditable trail through those processes to validate their effectiveness, and if necessary to support investigation of failure. Information is now the major asset in most organisations, exceeding the value of traditional fixed and variable assets. Accurate accessible information is key to organisations' operational processes, and rapid retrieval and analysis is a basic requirement for organisational agility to respond to business demands.

The requirements contained in much of the legislation and regulations to manage the security of, and access to, information are self-evident, but this is not always given priority until an incident, such as misuse or damage, occurs. Security studies have repeatedly shown that the majority (consistently about 80%) of IT-related security breaches are committed by employees, yet organisations tend to be lax about defining appropriate access levels to systems, or even implementing techniques such as strong authentication.

To achieve a high level of compliance, an organisation must undertake a greater analysis of its processes and acquire a greater understanding of how they work. Compliance requires the monitoring of those processes to measure effectiveness of business as a whole. These are the steps involved in Corporate Performance Management (CPM), the continuous cycle of planning, measuring, and amending business processes to achieve the organisation's strategic objectives.

Delivering IT services has never been more complicated in terms of the regulatory minefield that surrounds these activities.

The drivers behind regulation are diverse. The corporate and accounting scandals at Enron, WorldCom, and others, have contributed to (if not accelerated) enhanced regulation on both sides of the Atlantic. The Sarbanes-Oxley Act 2002 in the US and the Companies (Audit, Investigations and Community Enterprise) Act 2006 in the UK are just a couple of the more prominent examples. Changes in technology, in particular the growing use of the Internet as a medium for carrying-on business, have prompted regulations like the Electronic Communications Act 2000, the Electronic Commerce (EC Directive) Regulations 2003, and the Electronic Signature Regulations 2002.

Legislation
Data Protection Act 1998 (UK)
Human Rights Act 2000 (UK)
Access to Health Records Act 1990 (UK)
Sarbanes-Oxley (US)
International Accounting Standards
SEC 17a-3/4, NASD 3010/3110 (US)
DoD 5015.2 (US)
Proceeds of Crime Act (UK)
Patriot Act 2001 (US)
Financial Modernization Act 1999 (Gramm-Leach Bliley) (US)
Money Laundering Regulations 2003 (UK)
Regulation of Investigatory Powers Act 2002 (UK)
Electronic Communications Act 2000 (UK)
Electronic Signature Regulations
Electronic Commerce (EC) Regulations 2002
Privacy and Electronic Communications (EC Directive) Regulations 2003
Health Insurance Portability and Accountability Act (US)
Companies (Audit, Investigations, and Community Enterprise) Act

Regulations
Basel II (International)
BS7799/ISO IEC 17799 (UK and International)
National Archive (Public Records Office) II (UK)
Australian Standard AS ISO 15489 (Aus)
Dublin Core (International)
electronic Government Interoperability Framework (eGIF)
UK Meta Data Framework (UK)

Figure 2.8.1: Key Compliance Legislation and Regulations

The compliance burden may take a number of forms. Most obviously, it will be legislative, in the form of statutes or statutory instruments, but it could also be in the form of international accords, such as the Basel II Accord in the banking sector, or in applicable standards, such as ISO 17799, the information security standard. Some aspects of business are regulated by a combination of different means; for example, UK corporate governance is regulated by a combination of statutory rules and self-regulation in the form of codes of best practise.

It is imperative to the success of an organisation that it is in a position to comprehend and assimilate regulatory change in a manner that ensures both compliance and the future of the business or delivery of public services. For many organisations, this may require a level of investment in resources and rigour in business processes that has previously been thought unnecessary.

We live in the age of the e-mail alerter and the Internet search engine. If one knows where to look and what to look for, it is possible to obtain hard information on, for example, the Data Protection Act 1998. What is not so readily available is the ability to distil from that information what is relevant to a particular business or best practise, and how this needs to impact on the business in the context of its own unique compliance burden.

A common complaint of businesses, particularly those operating in highly-regulated sectors, is the difficulty of drawing all the strands together to enable them to assess their exposure to risk. However, ignoring regulation is not an option. The 21st century has already seen a number of high profile executives, particularly in the US, appearing in the courts on charges relating to failures in corporate governance that could result in a custodial sentence. In the UK, the latter part of the 20th century and the early part of the 21st saw spectacular growth in the number of regulatory organisations affecting day-to-day business activities and individual rights.

There is a need to build a common compliance platform to meet the multiple regulatory requirements.

First and foremost, there is no ‘one size fits all’ solution for compliance, but there are common elements, and using IT to support the addressing of compliance issues requires a strategic view of an organisation’s technology infrastructure. At its simplest, from an IT perspective, supporting compliance is about the recording and storing of the information that is required for managing, monitoring, or reporting on business processes, and then retrieving such information when required, either operationally, or for a regulator.

The technologies that can support this can be grouped into three types:

1. **Information Management** – To ensure that information is captured and stored appropriately, that it is retained for the period required, and from creation to destruction any changes are recorded to ensure transparency. This should be automated wherever possible, to ensure consistency and minimise the risk of non-compliance.
2. **Information Analysis** – Enabling the information to be retrieved, not only when requested, but also in a scheduled and automated manner, and in the appropriate format required.
3. **Information Security** – Ensuring that only appropriate and authorised persons can access information, and just as importantly, that appropriate and authorised persons have recorded the information.

These technology requirements translate into:

- Robust and scalable storage for electronic information.
- Workflow or Business Process Management (BPM) to automate as many of the tasks as possible.
- Effective search and retrieval tools.
- Identity and access management for the network and systems.
- Effective and tested disaster recovery.

Organisations have a range of options to meet the IT demands of legislative and regulatory compliance:

- **Build** – 'Do it yourself' in-house, utilising existing or contract skills to create a bespoke solution for the organisation.
- **Buy** – To implement solution(s) created by software vendor(s) along with a level of services to help the implementation.
- **Use a managed service** – Let a third-party provide all, or part, of the technology and service, for a fee.

Each has its attractions and benefits, and conversely each has associated risks and costs. The correct choice will be specific to the individual business. IT management, when addressing the compliance agenda and constructing the organisation's strategy for creating the framework, needs to consider all the possible options, with potentially a case for migration between options as skills develop or costs change.

The compliance agenda is a major opportunity to drive organisational change and improvement. It places IT management at centre of the organisation and demonstrates the value of the effective management of information. The role of IT management in compliance is not just to ensure that the business stays within the law, but to support fellow managers and others, in improving business processes and procedures. Compliance is not an option, but it can be turned to business advantage.

This Report reveals:

- How effective governance maximises the business value of IT.
- Why rights and responsibilities must be established for all IT decisions.
- How to improve business and IT alignment through a joint IT Governance framework.
- How Project Portfolio Management solutions support IT Governance, and which are the leading vendors.
- Why IT Governance must be tailored to the different roles of IT, and to different organisational structures.
- How to approach implementing an IT Governance initiative.
- When standards such as COBIT and ITIL can accelerate effective governance.
- The role of the Project Management Office in IT Governance.
- Why an IT service catalogue improves visibility into IT costs.
- How defining and managing IT processes is an essential part of IT Governance.

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Analysis without compromise

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