IT Governance Institute®

Leading the IT Governance Community

2nd Edition

IT Governance Implementation Guide

Using CobiT® and Val IT™

The Need for IT Governance

The Road Map to IT Governance

Implementation Action Planning

IT Governance Institute®

The IT Governance Institute (ITGI™) (*www.itgi.org*) was established in 1998 to advance international thinking and standards in directing and controlling an enterprise's information technology. Effective IT governance helps ensure that IT supports business goals, optimises business investment in IT, and appropriately manages IT-related risks and opportunities. ITGI offers original research and case studies to assist enterprise leaders and boards of directors in their IT governance responsibilities.

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Table of Contents

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Introduction to This Guide

INTRODUCTION TO THIS GUIDE

SUMMARY OVERVIEW OF COBIT AND VAL IT

Control Objectives for Information and related Technology (COBIT®) was introduced in 1996 and has been updated several times since. Together with Val IT™, the initial series of which was published in 2006, it provides business, IT and audit management with a generally applicable and accepted IT governance and control framework. The objective of this guide is to provide readers with a method for implementing or improving IT governance, using COBIT and Val IT. It will support the reader's role whether it relates to management, delivery of value, compliance, risk, performance, security or assurance of IT.

COBIT is a comprehensive set of resources that contains all the information organisations need to adopt an IT governance and control framework. COBIT provides good practices across a domain and process framework in a manageable and logical structure to help optimise IT-enabled investments and ensure that IT is successful in delivering against business requirements.

COBIT contributes to enterprise needs by:
- Making a measurable link between the business requirements and IT goals
- Organising IT activities into a generally accepted process model
- Identifying the major IT resources to be leveraged
- Defining the management control objectives to be considered
- Providing tools for management:
  - Goals and metrics to enable IT performance to be measured
  - Maturity models to enable process capability to be benchmarked
  - Responsible, Accountable, Consulted and Informed (RACI) charts to clarify roles and responsibilities

Within this framework, Val IT provides specific guidance enabling organisations to optimise the realisation of value from their IT investments. Specifically, Val IT focuses on the investment decision (are we doing the right things?) and the realisation of benefits while managing risks (are we getting the benefits?).

COBIT is focused on what is required to achieve adequate management and control of IT, and is positioned at a high level. COBIT has been aligned and harmonised with other, more detailed, IT standards and best practices, and acts as an integrator of these different guidance materials, summarising key objectives under one umbrella framework that also links to governance and business requirements.

Committee of Sponsoring Organisations of the Treadway Commission (COSO) (and similar compliant frameworks) is generally accepted as the internal control framework for enterprises. COBIT is the generally accepted internal control framework for IT.

The COBIT products have been organised into three levels designed to support:
- Executive management and boards
- Business and IT management
- Governance, assurance, control and security professionals

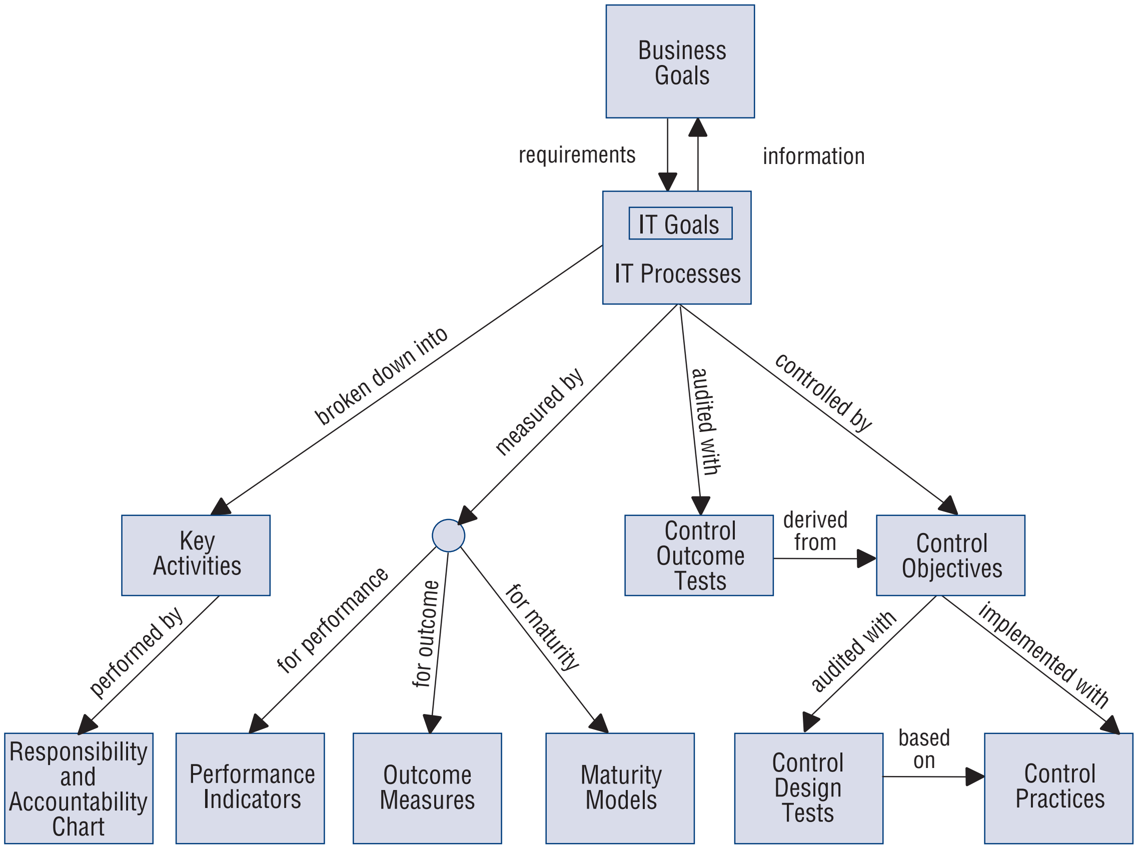
Primarily of interest to executives is the *Board Briefing on IT Governance, 2nd Edition*, designed to help executives understand why IT governance is important, what its issues are and what their responsibility is for managing it.

Primarily of interest to business and technology management are the management guidelines—tools to help assign responsibility, measure performance, and benchmark and address gaps between actual and desired capability. The guidelines help provide answers to typical management questions:
- How far should we go in controlling IT, and is the cost justified by the benefit?
- What are the indicators of good performance?
- What are the key management practices to apply?
- What do others do?
- How do we measure and compare?

The COBIT framework components interrelate, providing support for the governance, management, control and audit needs of the different audiences, as shown in **figure 1**.

The Val IT initiative focuses on the value dimension within COBIT to help management ensure that organisations realise optimal value from IT-enabled business investments at an affordable cost with a known and acceptable level of risk. Val IT provides guidelines, processes and supporting key management practices to assist the board and executive management in understanding and carrying out their roles related to such investments.

Figure 1—Interrelationships of CobiT Components

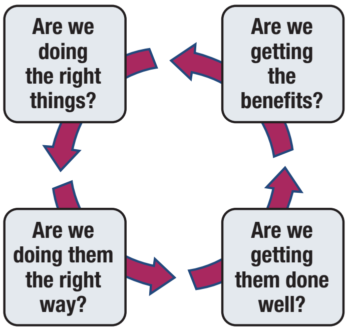


The foundation for Val IT is the 'Four Ares'[1] as illustrated in **figure 2**.

Figure 2—Four Ares

The ***strategic*** question. Is the investment:
- In line with our vision
- Consistent with our businesss principles
- Contributing to our strategic objectives
- Providing optimal value at an affordable cost and at an acceptable level of risk

The ***architecture*** question. Is the investment:
- In line with our architecture
- Consistent with our architectural principles
- Contributing to the population of our architecture
- In line with other initiatives


Are we doing the right things?
Are we getting the benefits?
Are we doing them the right way?
Are we getting them done well?

The ***value*** question. Do we have:
- A clear and shared understanding of the expected benefits
- Clear accountability for realising the benefits
- Relevant metrics
- An effective benefits realisation process

The ***delivery*** question. Do we have:
- Effective and disciplined management, delivery and change management processes
- Competent and available technical and business resouces to deliver:
  - The required capabilities
  - The organisational changes required to leverage the capabilities

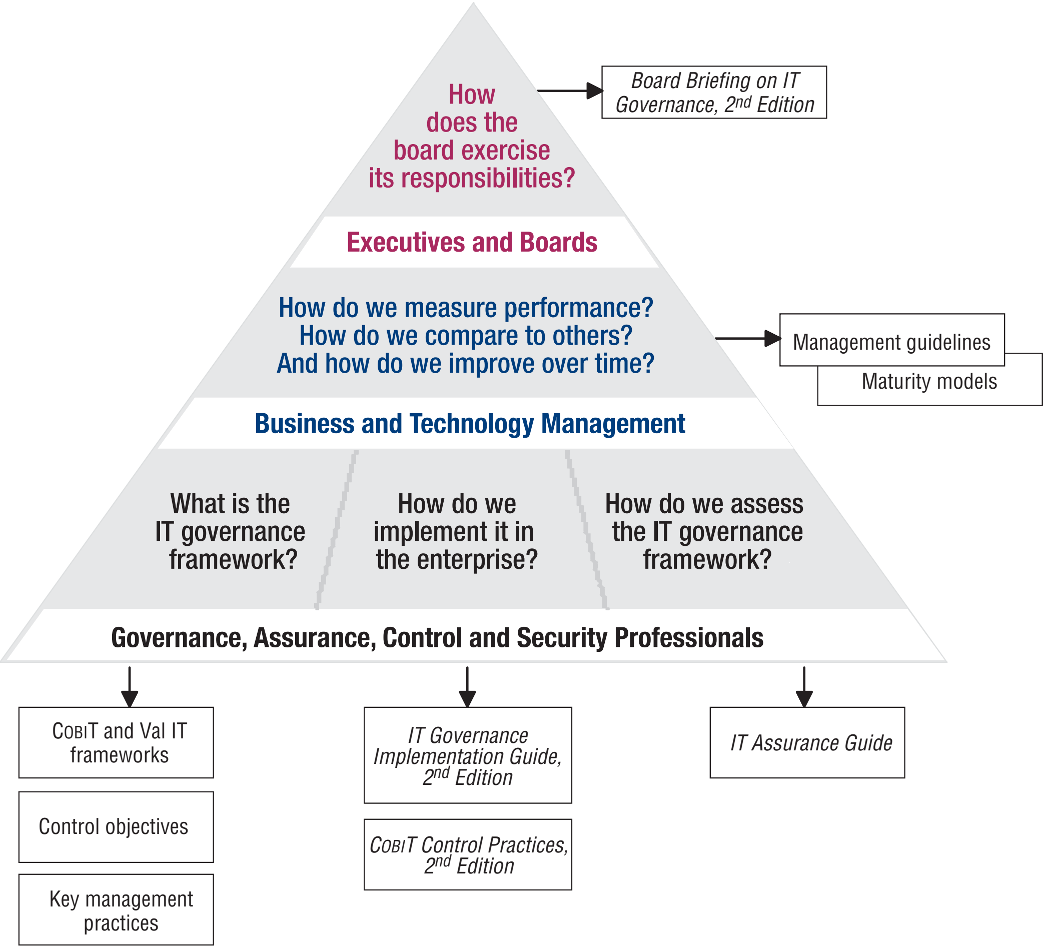
There is an increasing demand from boards and executive management for generally accepted guidelines for decision making and benefit realisation related to IT-enabled business investments. Up until now, however, management has not had a clear way to consider investments in IT or how to report on, or monitor, the potential success or failure of such investments. The best practices contained within CobiT, now complemented by the principles, processes and practices contained in Val IT, will make a significant contribution to the achievement of real business value from today's significant investments in IT-enabled change. Effective application of CobiT and Val IT will enable organisations to:
- Increase the understanding and transparency of costs, risks and benefits, resulting in better informed management decisions
- Increase the probability of selecting investments that have the potential to generate the highest return
- Increase the likelihood of success of executing selected investments such that they achieve or exceed their potential return

[1] Based on the 'Four Ares' described by John Thorp in his book *The Information Paradox*, written jointly with Fujitsu, first published by McGraw Hill in 1998 and revised in 2003

- Reduce costs by not doing things they should not be doing and taking early corrective action on, or terminating, investments that are not delivering to their expected potential
- Reduce the risk of failure, especially high-impact failure
- Reduce the surprises relative to IT costs and delivery and, in doing so, increase business value, reduce unnecessary costs and increase the overall level of confidence in IT

The chart in **figure 3** represents the COBIT family of products, including Val IT, as well as the audiences at which they are targeted and the purposes they serve.

Figure 3—Major COBIT-based Products


How does the board exercise its responsibilities?
Board Briefing on IT Governance, 2nd Edition
Executives and Boards
How do we measure performance? How do we compare to others? And how do we improve over time?
Management guidelines
Maturity models
Business and Technology Management
What is the IT governance framework?
How do we implement it in the enterprise?
How do we assess the IT governance framework?
Governance, Assurance, Control and Security Professionals
COBIT and Val IT frameworks
Control objectives
Key management practices
IT Governance Implementation Guide, 2nd Edition
COBIT Control Practices, 2nd Edition
IT Assurance Guide

This COBIT-based product diagram presents the generally applicable products and their primary audience. There are also derived products for specific purposes (*IT Control Objectives for Sarbanes-Oxley, 2nd Edition*), for domains such as security (COBIT *Security Baseline* and *Information Security Governance: Guidance for Boards of Directors and Executive Management*), or for specific enterprises (COBIT *Quickstart* for small and medium-sized enterprises or for large enterprises wishing to ramp up to a more extensive IT governance implementation).

For more details on each product, see appendix II, COBIT and Related Products. For the most complete and up-to-date information on COBIT and related products, case studies, training opportunities, newsletters and other COBIT-specific information, visit *www.isaca.org/cobit*.

OBJECTIVES, PURPOSE AND AUDIENCE

This guide provides a generic method for implementing IT governance, covering the following subjects:
- Introduction to IT governance, stakeholders and their interests
- Using COBIT and Val IT to implement IT governance
- A road map for implementing IT governance expressed as a task-based action plan

This second version of the guide reflects updates to align with the release of the COBIT 4 product, and incorporates the Val IT guidance, enhanced understanding of governance project scoping, and general improvements based on feedback from COBIT users.

This guide is supported by an implementation tool kit, containing a variety of resources, including:
- Self-assessment, measurement and diagnostic tools
  - Management Awareness Diagnostic 1
  - Management Awareness Diagnostic 2
  - Maturity Measurement Tool
  - MyCOBIT Control Objective Assessment Forms
  - Themes to Risk Factor Diagnostic
  - Themes to Control Objectives Diagnostic
- PowerPoint presentations
  - Introductory COBIT Presentation
  - IT Balanced Scorecard Example
  - IT Governance Implementation Templates—All the templates needed to support the activities identified in the implementation road map
  - Reporting Techniques
  - Risk Analysis Approach
- Related articles and further explanations
  - COBIT Frequently Asked Questions
  - Maturity Measurement Article

Appendix I, Generic Approach to IT Initiative Scoping, contains a description of the fuller generic scoping approach that was used for this guide. It could be useful to help scope large or complex implementations of IT governance.

Additional material available on the web site includes:
- *Board Briefing on IT Governance, 2nd Edition, www.isaca.org/boardbriefing*
- COBIT mapping publications, *www.isaca.org/cobitmapping*
- COBIT case studies, *www.isaca.org/cobitcasestudies*

There are many stakeholders interested in IT governance who need to work together to achieve a common business goal. This guide will help them find answers to their specific questions:
- **Board and executive**: How do we define business direction for IT, implement appropriate IT governance practices, and ensure that value is delivered and IT-related risks are mitigated?
- **Business management**: How do we define business goals for IT to ensure that value is delivered and risks are mitigated?
- **IT management**: How do we deliver IT services as required by the business and directed by the board?
- **IT audit**: How do we provide independent assurance on value delivery and risk mitigation?
- **Risk and compliance**: How do we ensure that we are in compliance with policies, regulations and laws, and new risks are identified?

Key requirements for the successful implementation of IT governance are:
- For top management to provide the direction and mandate for IT governance
- For all parties, even at staff levels, to understand the business and IT objectives when supporting the governance process

ASSUMPTIONS

It is assumed that the readers of this guide are familiar with COBIT and Val IT and have a level of knowledge equivalent to at least the COBIT foundation level (which can be tested online to obtain the COBIT Foundation Certificate, *www.isaca.org/cobitcampus*). If this is not the case, it is recommended that the reader undertake the COBIT Foundation Course™, available from ISACA. In addition, ISACA provides an Implementing IT Governance Using COBIT course that follows this guide and includes practical case studies. Information is available from *education@isaca.org* and at *www.isaca.org/cobitcampus*. COBIT and Val IT are freely downloadable from *www.itgi.org* and *www.isaca.org*.

The guide also assumes that the organisation is already considering the need for adopting sound IT governance practices. (If this step still needs to be taken, the *Board Briefing on IT Governance, 2nd Edition,* can be helpful.) This consideration can be driven by general enterprise governance initiatives and/or IT-related issues identified by business or IT management, through a number of symptoms of problems, facts and figures. Some of these issues might include core governance problems, such as a poor understanding of the value contribution of IT, risks not recognised, lack of management direction or effective oversight committees, and/or symptoms such as poor time-to-market results relative to software development, projects running over budget, frequent security incidents and applications lacking in functionality. IT audit reports will typically confirm or complement these findings.

This publication provides general guidance for improving IT governance. Hence, the road map provided is not prescriptive and should be tailored to the needs of the enterprise.

SCOPE OF THE DOCUMENT

This guide assists various stakeholders with a detailed road map that can help the enterprise to identify and address its IT governance needs. It provides the identification of COBIT and Val IT components to be leveraged, from initial needs identification through envisioning and planning stages all the way to the implementation of a solution. Implementing IT governance involves organisational change—often significant change—and the management of a number of change projects. This guide does not elaborate on specific organisational change or project management skills. Rather, it is focused on IT governance and control activities, and associated organisational change issues.

The guide does not provide 'the solution'. It provides an approach for implementing IT governance using COBIT and Val IT, in such a way that stakeholders can get started quickly and go through the process efficiently.

Board Briefing on IT Governance, 2nd Edition, is an excellent tool for helping top management understand and appreciate why IT governance is important and what it entails. Furthermore, COBIT *Quickstart*™ provides a baseline of control objectives for many small to medium-sized enterprises and other entities in which IT is not strategic or absolutely critical for survival, and for enterprises starting to move toward an appropriate level of control and governance of IT. For all enterprises, COBIT *Quickstart* can be used as the first step in launching an IT governance initiative.

The *COBIT Control Practices: Guidance to Achieve Control Objectives for Successful IT Governance, 2nd Edition*, provides guidance on the practices to be considered when improving processes and implementing solutions for control objectives. It also provides risk and value statements to help understand and justify the need to implement each control objective.
The control practices provide the more detailed guidance at the control objective level on *how*, *why* and *what to implement* needed by:

- Implementers of IT governance: management, service providers, end users and control professionals to help them with justifying and designing the specific controls needed to address IT project and operational risks and improving IT performance. By providing guidance on why controls are needed and what the best practices are for meeting specific control objectives, *COBIT Control Practices, 2nd Edition* help ensure that solutions put forward are more likely to be completely and successfully implemented.
- Assurance professionals who may also be asked for their opinions regarding proposed improvements

The *IT Assurance Guide Using COBIT* provides assurance professionals with guidance on how to use COBIT to support a variety of assurance tasks, supported by suggested testing steps aligned with the control practices. The guide can support audit teams that need to provide independent assurance that IT governance practices have been implemented effectively.

In addition, COBIT *Security Baseline*™ and *IT Control Objectives for Sarbanes-Oxley, 2nd Edition,* provide easy-to-understand guides for addressing the security and regulatory aspects of IT governance. A more detailed description of the COBIT components can be found in appendix 2, COBIT and Related Products.

THE ROAD MAP TO IT GOVERNANCE

The road map for using COBIT and Val IT to implement control and governance over IT (**figure 4**) is a generic approach for implementing IT governance. It ensures that the focus is on **business** needs when improving control and governance of IT processes. The road map is applicable regardless of the size of the initiative; it encourages management commitment and involvement and follows good project management practices. The road map is a continuous improvement approach that is followed iteratively, building a sustainable 'business as usual' process over time.

Building sustainability entails:

- Integrating IT governance with enterprise governance
- Ensuring accountability for IT throughout the enterprise
- Defining appropriate organisational structures
- Drafting and clearly communicating policies, standards and processes for IT governance and control
- Effecting cultural change (commitment at all levels in the enterprise—from the board to the 'shop floor')
- Driving a process and culture of continuous improvement
- Creating optimum monitoring and reporting structures

"Governance happens where the decisions are made."
—*Simon Shapiro, Investec CIO*

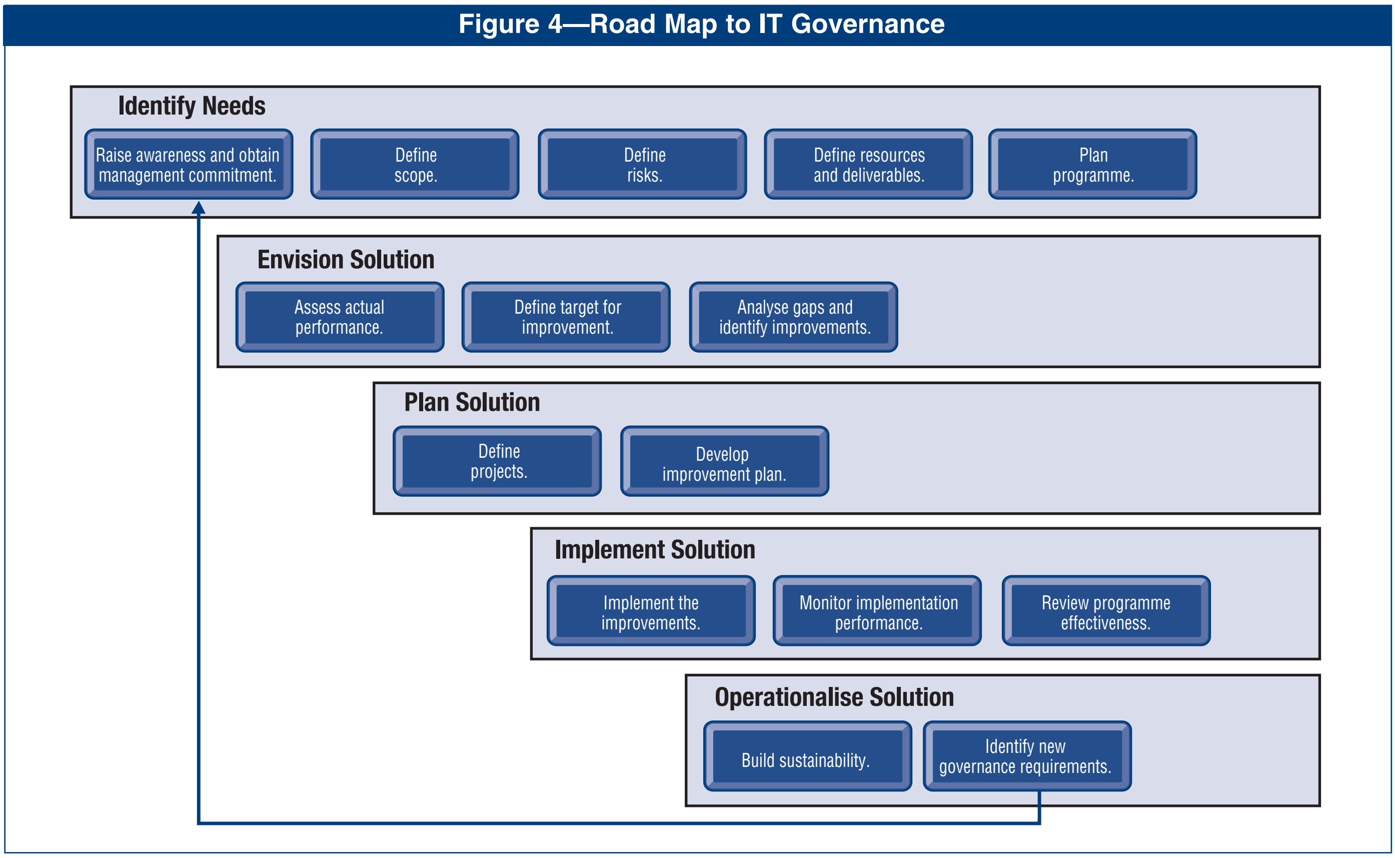
"Every time you insert another level of management in an enterprise's hierarchy, the noise is doubled and the message is cut in half."
—*Peter F. Drucker*

An enterprise implementing IT governance will need to do so in phases based on business priorities and IT risks. The road map achieves this by prioritising the IT goals and processes (including controls) based on the consideration of business goals and risks (**figure 4**). To help with this selection process, COBIT provides a generic mapping of business goals to IT goals to IT processes.[2] Risks associated with implementation of the IT governance programme itself will be described in the programme's business case and managed throughout the road map.

Given the critical IT goals defined in the first phase, the enterprise should identify what should be managed and controlled to ensure successful outcomes. Therefore, management needs to know its current capability and where deficiencies may exist. The road map uses maturity modelling to perform an as-is and to-be capability assessment relative to the controls selected, followed by a gap analysis. The gap analysis is likely to require considerable experience in IT management techniques to develop practical solutions.

Some solutions will be quick wins and others more challenging, long-term tasks. Priority should be given to projects that are easier to achieve and likely to give the greatest benefit. Longer-term tasks should be broken down into manageable pieces.

Figure 4—Road Map to IT Governance


Identify Needs
Raise awareness and obtain management commitment.
Define scope.
Define risks.
Define resources and deliverables.
Plan programme.
Envision Solution
Assess actual performance.
Define target for improvement.
Analyse gaps and identify improvements.
Plan Solution
Define projects.
Develop improvement plan.
Implement Solution
Implement the improvements.
Monitor implementation performance.
Review programme effectiveness.
Operationalise Solution
Build sustainability.
Identify new governance requirements.

The road map plans solutions by defining projects supported by justifiable business cases and developing a change plan for implementation. The accuracy and detail in the business case are important to ensure that the project's benefits are realised, hence the need for a well-developed business case. Val IT provides an example template and guidance for preparation of a business case.[3] The road map provides for the implementation of the proposed solutions into day-to-day practices and the establishment of measures and monitoring to ensure that business alignment is achieved and performance can be measured. Success requires engagement, awareness, understanding and commitment of top management; ownership by the affected IT process owners; and sustainable transition of the improved management practices into normal business operations.

[2] See appendix I in COBIT 4.0.

[3] ITGI, Val IT, *Enterprise Value: Governance of IT Investments—The Business Case*, 2006, *www.itgi.org*

Over time, the road map will be followed iteratively whilst building a sustainable approach to IT governance. This becomes business as usual when the steps in the road map are everyday activities and continuous improvement occurs naturally to ensure that IT successfully supports the business strategy.

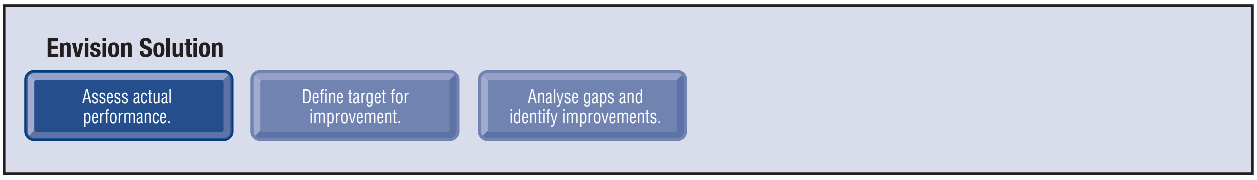
All the steps in the road map are presented in detail, with navigation aids, detailed tasks and objectives, and inputs for which (in some cases) templates and tools are provided to develop and/or record the results of the tasks at hand. **Figure 5** illustrates an example step in the road map.

While this guide does not elaborate on specific organisational change and project management skills and practices, these are critical to the success of any IT governance implementation process. The road map is structured to align with good project management practices, with the preparation of project initiation documentation prepared as an output from earlier stages in the processes and clear decision and review points defined in the road map.

There are some obvious, but pragmatic, rules that management should follow:

- Treat the implementation initiative as a programme activity with a series of phases rather than a 'one-off' step.
- Remember that implementation involves cultural change as well as new processes. Therefore, a key success factor is the effective management of organisational change.
- Make sure there is a clear understanding of the objectives.
- Manage expectations. In most enterprises, achieving successful oversight of IT takes time and is a continuous improvement process.

Figure 5—A Road Map Step Example Process


Envision Solution
Assess actual performance.
Define target for improvement.
Analyse gaps and identify improvements.

Process step	**Assess current capability maturity.**
Process objective	Determine the current capability maturity of the selected processes.
Process description	Previously, the understanding of business and governance drivers and a risk assessment were used to focus on the processes critical to ensuring that IT goals are met. Now, it is necessary to establish how well these processes are managed and executed, based on process descriptions, policies, standards, procedures, technical specifications, etc., to determine whether they are likely to support the business and IT requirements. This is achieved by using the capability maturity assessment technique for each IT process, considering CobiT's and Val IT's maturity models, control objectives, control practices and key activities.
Tasks	1. Define the method for executing the assessment (consensus meeting or via interviews, with or without facilitation by an external expert, etc.). 2. For each IT process, create a worksheet for analysing capability maturity, using the attributes described in the CobiT and Val IT frameworks. 3. Document the understanding of how the current process actually addresses the control objectives and practices selected earlier. Record the actual capability for each attribute on the capability worksheet, at the current level of maturity. 4. Compare to the maturity model for reasonableness of the specific process in the management guidelines. 5. Define the process maturity rating based on the level attained for the different attributes in the capability maturity scorecard. 6. Note that the assessment can be supported by a tool provided in the implementation tool kit.
Input	Process descriptions, policies, standards, procedures and technical specifications
Using CobiT and Val IT components	• Management guidelines' key activities, process maturity models and maturity attribute table • Control objectives • Control practices • ME1 *Monitor and evaluate IT performance*
Output	Current maturity rating for selected processes
Tool kit support	Templates (capability worksheet, capability maturity scorecard), maturity measurement folder, reporting techniques, maturity assessment tool

- Focus first on where it is easiest to make changes and deliver improvements, and incrementally build on successes from there.
- Obtain top management buy-in and ownership. This needs to be based on the principles of managing the investments in IT and IT-enabled change.
- Avoid the initiative becoming perceived as a purely bureaucratic exercise.
- Avoid the unfocused, checklist approach.

To be successful, a clear sponsor for the IT governance implementation process is needed, as well as active ownership and effective oversight from initiation through the establishment of a programme and/or project steering committee or board containing appropriate representation from affected stakeholders.

THE NEED FOR IT GOVERNANCE

The effective management of information, information systems and communications is of critical importance to the success and survival of most enterprises. This criticality arises from:

- The pervasiveness of and dependence on information and the services and infrastructure that deliver the information
- The increasing scale and cost of current and future technology-related investments
- The potential for technologies to enable the transformation of enterprises and business practices

As previously noted, there is an increasing demand from boards and executive management for generally accepted guidelines for decision making and benefits realisation related to IT-enabled business investments. The management practices that traditionally have been applied are no longer sufficient. There is a clear incentive for management to ensure that effective governance and management processes are in place to create value through optimising benefits at an affordable cost with an acceptable level of risk.

A recent Gartner study shows that IT management and governance occupied five of the top 10 priorities for CIOs in 2005 (**figure 6**). Many of the other priorities are also governance-related. *IT Governance Global Status Report 2006*, results of a survey conducted by ITGI, confirms the problems executive management attaches to IT.

For IT governance to be successful, it should be a workable solution able to deal with the challenges and pitfalls presented by IT. It should not only prevent problems but also enable competitive advantage. IT risks are closely related to business risks, because IT is the enabler for most business strategies. The management and control of IT should, therefore, be a shared responsibility between the business and the IT functions, with the full support and direction of the board. IT governance provides the oversight and monitoring of these activities within a wider enterprise governance scheme.

As the successful use of IT becomes more and more critical to an enterprise's success, the cost of doing nothing will far outweigh the cost of implementing IT governance, which can reduce the losses caused by, for example, failed projects, security incidents and operational outages, and increase the financial and intangible benefits created by IT-enabled operational efficiency and competitive advantage.

These top management concerns need to be resolved by effective and timely measures, promoted by the governance layer of an enterprise.

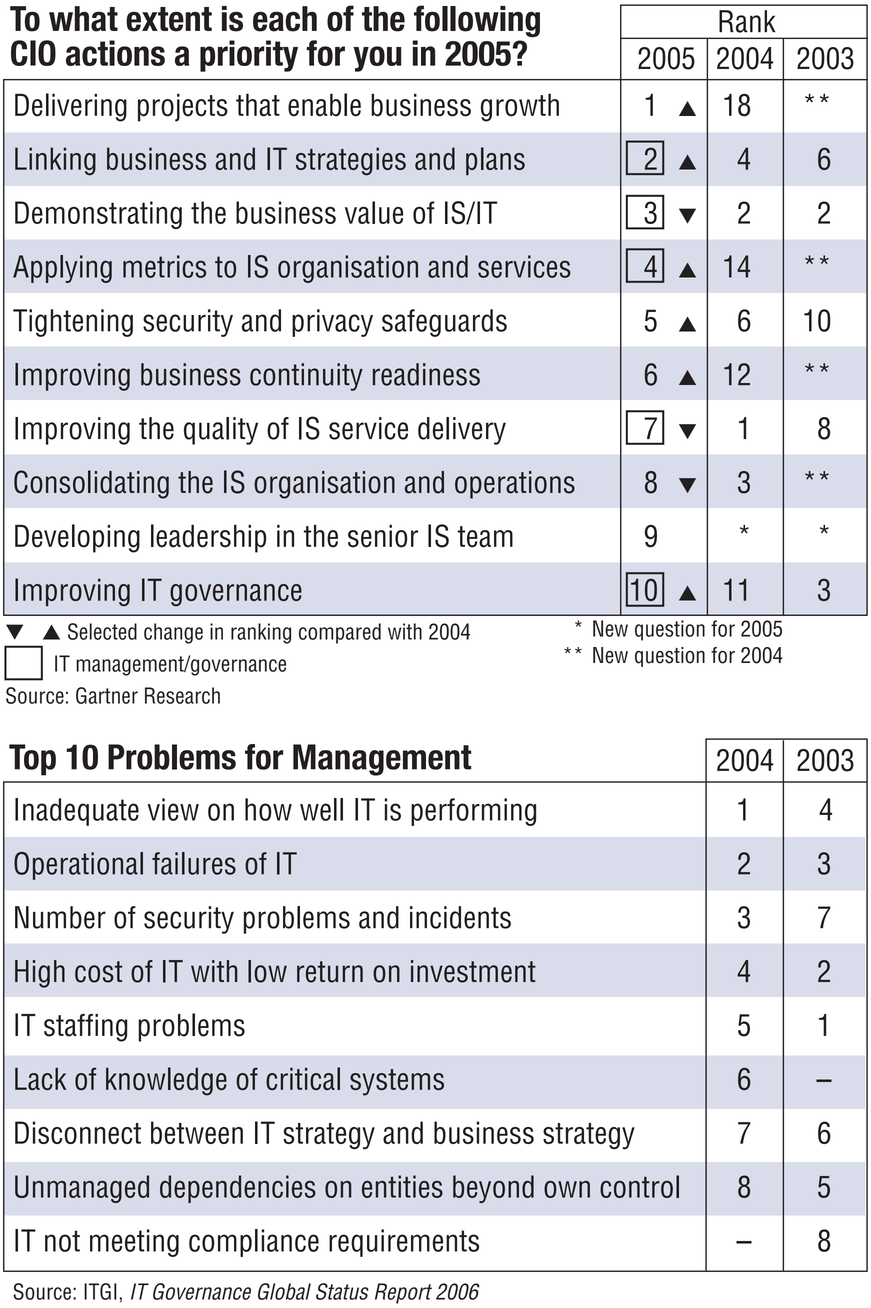
Enterprise governance is the set of responsibilities and practices exercised by the board and executive management with the goals of providing strategic direction, ensuring that objectives are achieved, ascertaining that risks are managed appropriately and verifying that the enterprise's resources are used responsibly.

While governance developments have primarily been driven by the need for transparency of enterprise risks and the protection of shareholder value, the pervasive use of technology has created a critical dependency on IT that calls for a specific focus on IT governance.

IT governance is the responsibility of the board of directors and executive management. It is an integral part of enterprise governance and consists of the leadership and organisational structures and processes that ensure that the enterprise's IT sustains and extends the enterprise's strategies and objectives.

IT governance can be seen as a structure of relationships and processes to direct and control the enterprise use of IT to achieve the enterprise's goals by adding value while balancing risk vs. return over IT and its processes. IT governance provides the structure that links IT processes, IT resources and information to enterprise strategies and objectives. Furthermore, IT governance integrates and institutionalises good (or best) practices of planning and organising, acquiring and implementing, delivering and supporting, and monitoring and evaluating IT performance to ensure that the enterprise's information and related technology support its business objectives. IT governance thus enables the enterprise to take full advantage of its information, thereby maximising benefits, capitalising on opportunities and gaining competitive advantage. IT governance also identifies control weaknesses and assures the efficient and effective implementation of measurable improvements.

Figure 6—CIO Priorities



To what extent is each of the following CIO actions a priority for you in 2005?	Rank		
	2005	2004	2003
Delivering projects that enable business growth	1 ▲	18	**
Linking business and IT strategies and plans	$\boxed{2}$ ▲	4	6
Demonstrating the business value of IS/IT	$\boxed{3}$ ▼	2	2
Applying metrics to IS organisation and services	$\boxed{4}$ ▲	14	**
Tightening security and privacy safeguards	5 ▲	6	10
Improving business continuity readiness	6 ▲	12	**
Improving the quality of IS service delivery	$\boxed{7}$ ▼	1	8
Consolidating the IS organisation and operations	8 ▼	3	**
Developing leadership in the senior IS team	9	*	*
Improving IT governance	$\boxed{10}$ ▲	11	3

▼ ▲ Selected change in ranking compared with 2004

□ IT management/governance

* New question for 2005

** New question for 2004

Source: Gartner Research

Top 10 Problems for Management	2004	2003
Inadequate view on how well IT is performing	1	4
Operational failures of IT	2	3
Number of security problems and incidents	3	7
High cost of IT with low return on investment	4	2
IT staffing problems	5	1
Lack of knowledge of critical systems	6	–
Disconnect between IT strategy and business strategy	7	6
Unmanaged dependencies on entities beyond own control	8	5
IT not meeting compliance requirements	–	8

Source: ITGI, *IT Governance Global Status Report 2006*

IT GOVERNANCE FOCUS AREAS

Strategic Alignment

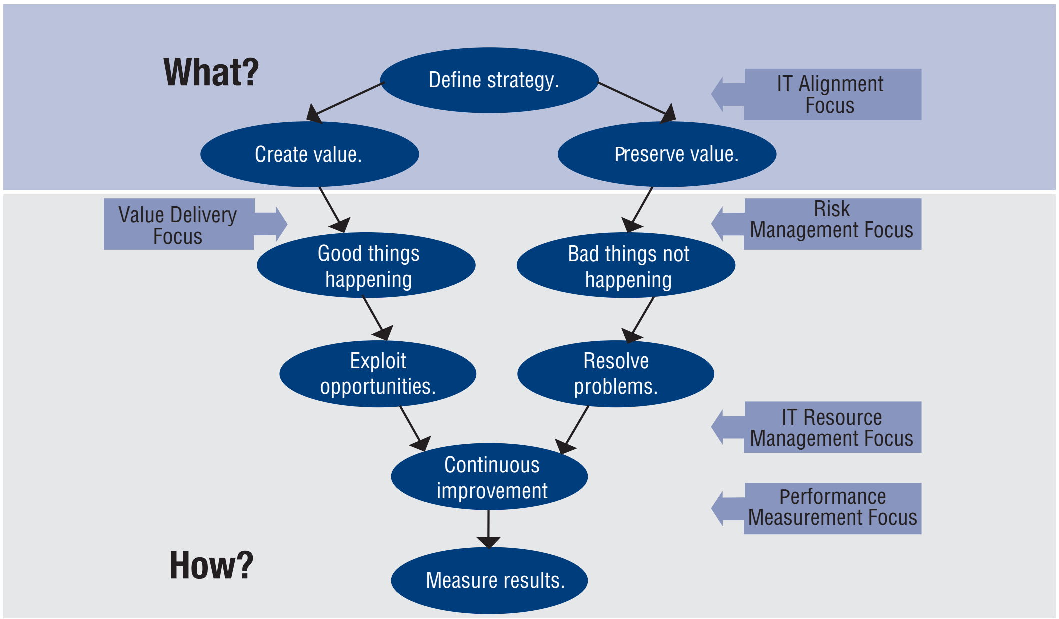
A clear understanding of the internal and external business environment provides the required input for setting the IT function's mission, vision and strategy whilst ensuring that the IT function's services are aligned to all elements of the enterprise's environment. This is important to ensure that common values and strategic direction are shared and subscribed to throughout the enterprise.

The strategic alignment processes include:
- Business strategy planning involving IT
- IT strategic planning
- IT operational planning
- Stakeholder analysis: services (current and future requirements), performance expectations and satisfaction, and risks

There are two ways to look at control (**figure 7**). Once there is an understanding of strategic alignment, one can take the value creation approach and identify what needs to be done to make things happen. This is often the approach favoured by managers. Another approach is to look at what needs to be done to prevent (or at least detect and act upon) things that could go wrong. That is the approach often taken by those with assurance and audit responsibilities. Both are needed in the right balance and in line with the enterprise's strategy and risk appetite.

Value Delivery (Value Creation)

Figure 7—Two Views of Control



The basic principles of IT value are delivery on time, within budget and with the benefits that were intended. Hence, IT processes should be designed, deployed and operated in an efficient and effective way that meets these delivery expectations and objectives. These expectations and objectives are determined by the business value drivers, which are also influenced by environmental factors.

The value that IT delivers should be aligned directly with the values on which the business is focused, and be measured in a way that transparently shows the impact and contribution of the IT investments in the value creation process of the enterprise.

The level of efficiency and effectiveness of the IT processes depends on their maturity level, i.e., their level of capability and, if necessary, how they need to be improved to an appropriate or desired level.

Finally, successful delivery of value requires a partnership between the business and the IT providers, and shared responsibility and decision making by business and IT management on sourcing decisions.

Risk Management (Value Preservation)

Whereas value delivery focuses on the creation of value, risk management covers the value preservation processes. Internal control requirements and the need to demonstrate sound enterprise governance to shareholders, customers and other stakeholders are the main drivers for increased risk management activities in enterprises. In addition to traditional financial risk management, regulators are increasingly concerned about operational and systemic risks. Hence, integrated risk management becomes more important to create transparency and improve accountability.

Risk management should be a continuous process that starts with the identification of risks (impact on assets, threats and vulnerabilities). Once identified, risks must be mitigated by countermeasures (control). But attention still needs to be paid to, and acceptance formally made of, residual risk. The performance of the risk mitigation process (including risk acceptance) should be managed, i.e., measured and monitored.

Resource Management

Resource management is about establishing and deploying the right IT capabilities for business needs. It primarily targets human resources, including knowledge, skills and infrastructure. This issue deals with strategic sourcing of processes, considering both in-house and outsourcing models, using evaluation criteria derived from the enterprise's strategic intent and critical success factors. In this way, it enables the enterprise to leverage knowledge and skills internally and externally.

Resource management ensures that an integrated, economical IT infrastructure is provided, new technology is introduced as required by the business, and obsolete systems are updated or replaced. It recognises the importance of people, in addition to hardware and software, and, therefore, focuses on maintaining availability, providing training, promoting retention and ensuring competence of key IT personnel.

Resource management includes dealing with such issues as outsourcing, trusted suppliers, training and competency, skills development and retention.

Performance Measurement

Without establishing and monitoring performance measures, it is unlikely that the previous focus areas (strategic alignment, value delivery, risk management and resource management) will achieve their desired outcomes. The performance measurement phase includes audit and assessment activities and continuous performance measurement, and provides a link back to the alignment phase by providing evidence that the direction is being followed. This also creates the opportunity to take timely corrective measures, if needed.

Balanced scorecards translate strategy into action to achieve goals with a performance measurement system that goes beyond conventional accounting, measuring those relationships and knowledge-based assets necessary to compete in the information age: customer focus, process efficiency, and the ability to learn and grow.

Each perspective is designed to answer one question about the enterprise's way of doing business:

- **Financial perspective**—To satisfy our stakeholders, what financial objectives must we accomplish?
- **Customer perspective**—To achieve our financial objectives, what customer needs must we serve?
- **Internal process perspective**—To satisfy our customers and stakeholders, in which internal business processes must we excel?
- **Learning perspective**—To achieve our goals, how must our organisation learn and innovate?

By using the balanced scorecard, managers rely on more than short-term financial measures as indicators of the company's performance. They also take into account such intangible items as level of customer satisfaction, streamlining of internal functions, creation of operational efficiencies and development of staff skills. This unique and more holistic view of business operations contributes to linking long-term strategic objectives with short-term actions.

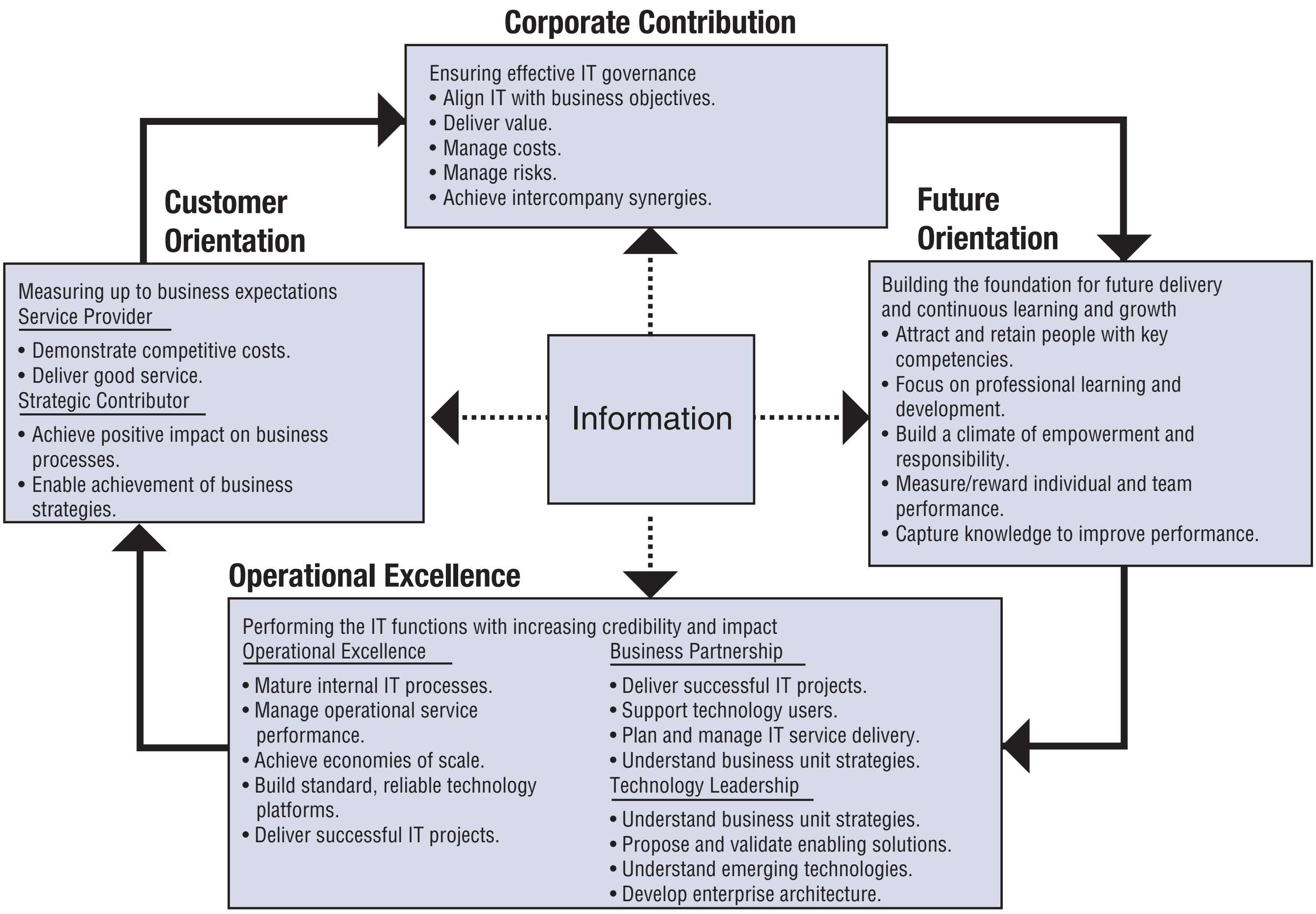
IT not only contributes information to the business scorecards and tools to the different dimensions being measured, but also—because of the criticality of IT itself—needs its own scorecard. Defining clear goals and good measures that reflect the business impact of the IT goals is a challenge and needs to be resolved in co-operation amongst the different governance layers within the enterprise.

Use of an IT balanced scorecard (IT BSC) is one of the most effective means to help the board and management achieve IT and business alignment. The objectives are to establish a vehicle for management reporting to the board; foster consensus among key stakeholders about IT's strategic aims; demonstrate the effectiveness and added value of IT; and communicate about IT's performance, risks and capabilities.

To apply the balanced scorecard concepts to the IT function, the four perspectives need to be redefined. An IT BSC (**figure 8**) can be developed by considering the following questions:

- **Enterprise contribution**—How do business executives view the IT department?
- **User orientation**—How do users view the IT department?
- **Operational excellence**—How effective and efficient are the IT processes?
- **Future orientation**—How well is IT positioned to meet future needs?

Figure 8—Sample IT BSC Measures



Corporate Contribution

Ensuring effective IT governance
- Align IT with business objectives.
- Deliver value.
- Manage costs.
- Manage risks.
- Achieve intercompany synergies.

Customer Orientation

Measuring up to business expectations

Service Provider
- Demonstrate competitive costs.
- Deliver good service.

Strategic Contributor
- Achieve positive impact on business processes.
- Enable achievement of business strategies.

Future Orientation

Building the foundation for future delivery and continuous learning and growth
- Attract and retain people with key competencies.
- Focus on professional learning and development.
- Build a climate of empowerment and responsibility.
- Measure/reward individual and team performance.
- Capture knowledge to improve performance.

Operational Excellence

Performing the IT functions with increasing credibility and impact

Operational Excellence
- Mature internal IT processes.
- Manage operational service performance.
- Achieve economies of scale.
- Build standard, reliable technology platforms.
- Deliver successful IT projects.

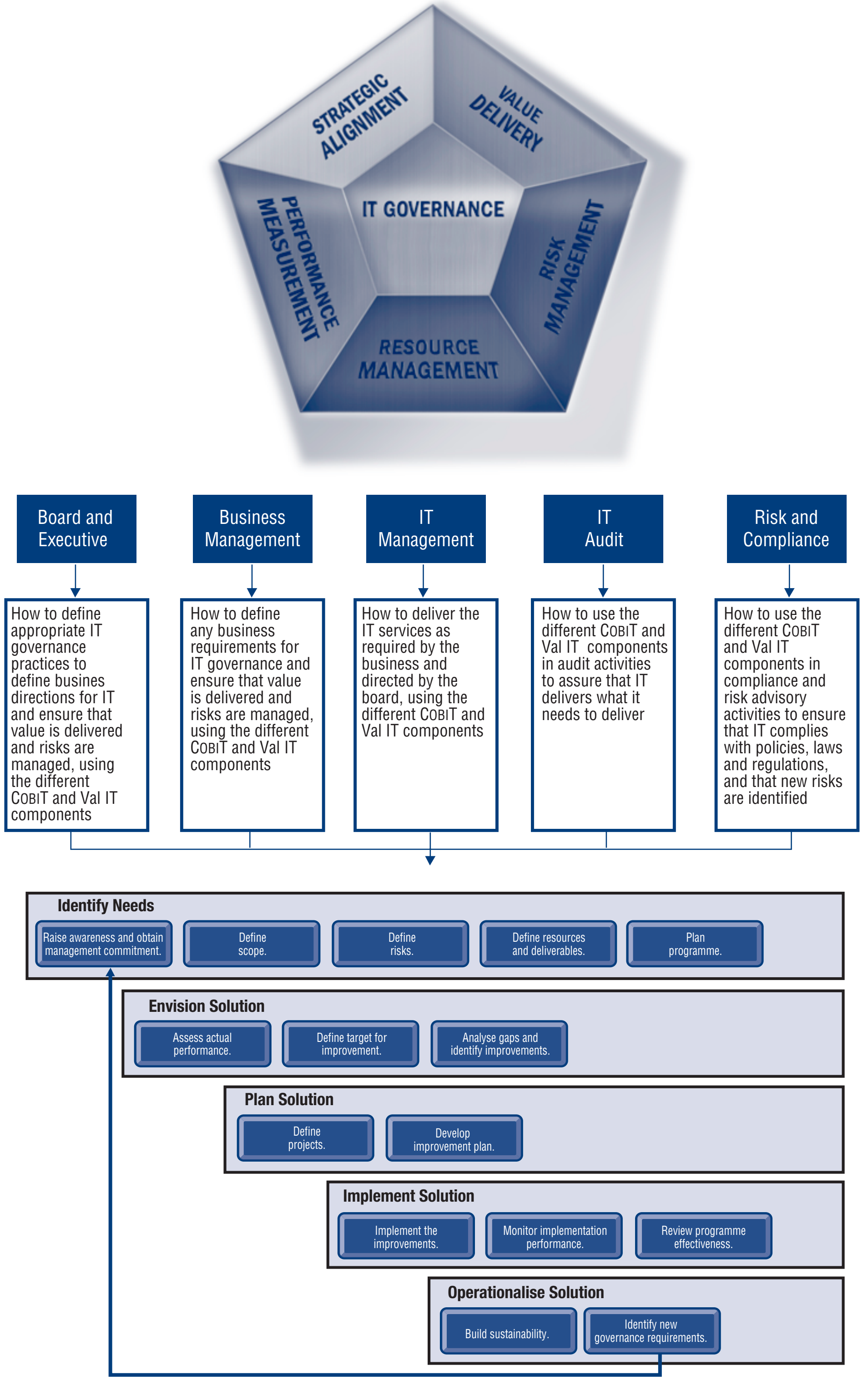
Business Partnership
- Deliver successful IT projects.
- Support technology users.
- Plan and manage IT service delivery.
- Understand business unit strategies.

Technology Leadership
- Understand business unit strategies.
- Propose and validate enabling solutions.
- Understand emerging technologies.
- Develop enterprise architecture.

> **“It’s a method, not the solution!”**
>
> —*Luc Kordel*

All the elements mentioned previously in this guide—the scope of IT governance, the stakeholders and their needs, and the implementation road map—link together in **figure 9**.

Figure 9—Implementation Guide Elements



How to define appropriate IT governance practices to define busines directions for IT and ensure that value is delivered and risks are managed, using the different COBIT and Val IT components

How to define any business requirements for IT governance and ensure that value is delivered and risks are managed, using the different COBIT and Val IT components

How to deliver the IT services as required by the business and directed by the board, using the different COBIT and Val IT components

How to use the different COBIT and Val IT components in audit activities to assure that IT delivers what it needs to deliver

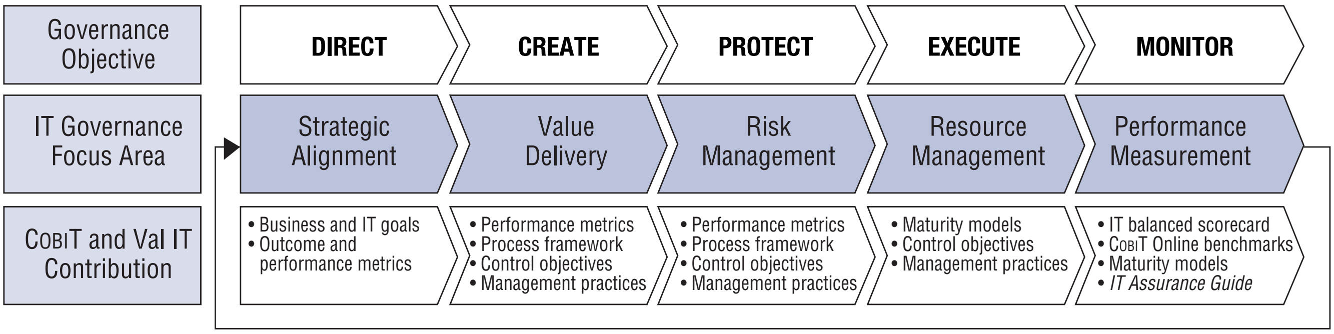
How to use the different COBIT and Val IT components in compliance and risk advisory activities to ensure that IT complies with policies, laws and regulations, and that new risks are identified

Identify Needs
Raise awareness and obtain management commitment.
Define scope.
Define risks.
Define resources and deliverables.
Plan programme.
Envision Solution
Assess actual performance.
Define target for improvement.
Analyse gaps and identify improvements.
Plan Solution
Define projects.
Develop improvement plan.
Implement Solution
Implement the improvements.
Monitor implementation performance.
Review programme effectiveness.
Operationalise Solution
Build sustainability.
Identify new governance requirements.

IT GOVERNANCE LIFE CYCLE

IT governance is a life cycle (**figure 10**) that, for a specific objective, can be entered at any point but is best started from the point of aligned business and IT strategy. Then, the implementation will be focused on delivering the value that the strategy promises and addressing the risks that need to be managed. To support this implementation, management should manage its IT resources such that the enterprise is capable of delivering business results/value at an affordable cost with an acceptable level of risk. At regular intervals (some say continuously), the strategy needs to be monitored and the results measured, reported and acted upon. The strategy should be re-evaluated and realigned as required.

Figure 10—IT Governance Life Cycle



Governance Objective	DIRECT	CREATE	PROTECT	EXECUTE	MONITOR
IT Governance Focus Area	Strategic Alignment	Value Delivery	Risk Management	Resource Management	Performance Measurement
COBIT and Val IT Contribution	• Business and IT goals • Outcome and performance metrics	• Performance metrics • Process framework • Control objectives • Management practices	• Performance metrics • Process framework • Control objectives • Management practices	• Maturity models • Control objectives • Management practices	• IT balanced scorecard • COBIT Online benchmarks • Maturity models • *IT Assurance Guide*

IT GOVERNANCE ENVIRONMENT

IT governance does not occur in a vacuum. Each implementation of IT governance using the COBIT and Val IT frameworks takes place in different conditions and circumstances determined by numerous factors, such as:

- The community's and enterprise's ethics and culture
- Ruling laws, regulations and policies, both internal and external
- The mission, vision and values of the enterprise
- The enterprise's models for roles and responsibilities
- The enterprise's governance policies and practices
- Industry practices
- The enterprise's business plan and strategic intentions

In practice, there are specific, current business concerns and issues on which IT has a significant influence, e.g., cost reduction, competitive advantage and mergers/acquisitions. A good understanding of the business environment, risk appetite, business strategy and IT organisation should be obtained, and critical IT-related issues and the change drivers for the use of IT should be identified.

A change driver is an internal or external event, condition or key issue that serves as a stimulus for change. Events, trends (industry, market or technical), performance shortfalls, software implementations and even the goals of the enterprise can act as change drivers. Examples include:

- Dissatisfied customers
- Changing market position
- Competition
- New product/service introduction
- High operating costs or other fiscal issues
- Inefficient or ineffective business processes
- Security or privacy breach
- Major business operational or IT outage
- Obsolescence of IT or information systems
- Merger or acquisition
- Shareholder demand for short-term results
- Regulatory or legislative changes
- New chief executive officer (CEO)
- Privatisation/regulation

In addition, there may be IT-specific change drivers, such as:
- Enterprise resource planning
- Outsourcing
- Best-of-breed IT systems
- Common IT architecture
- Shared services
- Cost reduction
- Quality of IT service provision
- Technology innovation
- IT enablers to assist enterprise business goals
- Transaction growth
- Realignment with available IT skills

IT GOVERNANCE STAKEHOLDERS

Many stakeholders exist within the enterprise in relation to IT governance, as illustrated in **figure 11**. Each of these stakeholders will find answers in this guide to the questions: How do I use COBIT and Val IT to implement IT governance? Which elements within COBIT and Val IT can help me implement IT governance? Each stakeholder has primary interests that COBIT and Val IT can help address (**figure 12**).

Figure 11—IT Governance Stakeholders and Results

When you are…	➜	IT governance can serve the following objectives for you
Board and executive	➜	Set direction for IT, monitor results and insist on corrective measures
Business management	➜	Together with IT, ensure that business objectives have been stated with sufficient clarity to enable translation into business goals for IT. Ensure that value is delivered and risks are managed.
IT management	➜	Define IT goals. Ensure that IT services are delivered and improved as required by the business and directed by the board.
IT audit	➜	Align the audit process to business objectives. Provide independent assurance that IT delivers what it needs to deliver.
Risk and compliance	➜	Measure whether policies are complied with and focus on alerts to new risks

Figure 12—Stakeholder Issues Aligned With the CobiT and Val IT Frameworks

Top Management Issues Based on the CobiT Framework	Who Has a Primary Interest? Board/ Executive	 Business Management	 IT Management	 Audit/ Compliance
Plan and Organise				
Are IT and the business strategy in alignment?	✓	✓	✓	
Is the enterprise achieving optimum use of its internal and external resources?	✓	✓	✓	✓
Does everyone in the enterprise understand the IT objectives?	✓	✓	✓	✓
Is IT's impact on enterprise risk understood and is the responsibility for IT risk management established?	✓			
Are IT risks understood and being managed?		✓	✓	✓
Is the quality of IT systems appropriate for business needs?		✓	✓	
Acquire and Implement				
Are new projects likely to deliver solutions that meet business needs?		✓	✓	
Are new projects likely to deliver on time and within budget?		✓	✓	✓
Will the new systems work properly when implemented?		✓	✓	✓
Will changes be made without upsetting the current business operation?		✓	✓	
Deliver and Support				
Are IT services being delivered in line with business priorities?		✓	✓	
Are IT costs optimised?		✓	✓	✓
Is the workforce able to use the IT systems productively and safely?		✓	✓	
Are adequate confidentiality, integrity and availability measures in place?		✓	✓	✓
Monitor and Evaluate				
Can IT's performance be measured and can problems be detected before it is too late?	✓	✓	✓	
Are internal controls operating effectively?	✓			✓
Is the enterprise in compliance with regulatory requirements?	✓	✓	✓	✓
Is IT governance effective?	✓	✓	✓	✓
Top Management Issues Based on the Val IT Framework	**Who Has a Primary Interest? Board/ Executive**	**Business Management**	**IT Management**	**Audit/ Compliance**
Value Governance				
Are responsibilities and accountabilities assigned for IT investments?	✓	✓	✓	✓
Is it clear how the investment portfolio should be goverened?	✓	✓	✓	
Portfolio Management				
Is the investment portfolio managed adequately?		✓	✓	✓
Is programme performance evaluated and optimised?		✓	✓	✓
Investment Management				
Is there a sound business case for the programme?	✓	✓	✓	✓
Are responsibilities and accountabilities assigned?	✓	✓	✓	✓
Is there a benefit realisation plan?		✓	✓	
Is programme performance monitored?		✓	✓	✓

USING COBIT AND VAL IT TO IMPLEMENT IT GOVERNANCE

For IT to be successful in delivering against business goals for IT, management should put an internal control system or framework in place. The COBIT control framework contributes to filling these needs by:
- Making a link to the business goals
- Making performance against these requirements transparent
- Organising IT activities into a generally accepted process model
- Identifying the major IT resources to be leveraged
- Defining the management control objectives to be considered

The business orientation of COBIT links business goals to IT goals, provides metrics and maturity models to measure their achievement, and identifies the associated responsibilities of business and IT process owners.

The process focus of COBIT is illustrated by a process model that subdivides IT into 34 processes in line with the responsibility areas of plan, build, run and monitor, providing an end-to-end view of IT. Enterprise architecture concepts help identify those resources (applications, information, infrastructure and people) essential for process success.

In summary, to provide the information that the enterprise needs to achieve its objectives, IT resources need to be managed by a set of naturally grouped processes.

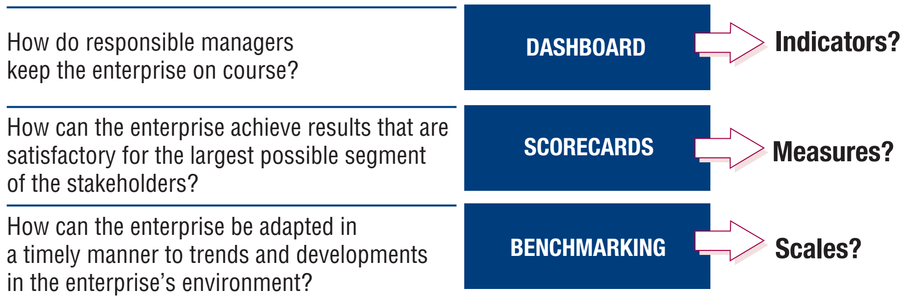
USING COBIT

But how does the enterprise get IT under control such that it delivers the information the enterprise needs? How does it manage the risks and secure the IT resources on which it is so dependent? How does the enterprise ensure that IT achieves its objectives and supports the business?

First, management needs control objectives that define the ultimate goal of implementing policies, processes, practices and organisational structures designed to provide reasonable assurance that:
- Business objectives are achieved
- Undesired events are prevented, or detected and corrected

Second, in today's complex environments, management is continuously searching for condensed and timely information to make difficult decisions on risk and control quickly and successfully. What should be measured, and how? Enterprises need an objective measure of where they are and where improvement is required, and they need to implement a management tool kit to monitor this improvement. **Figure 13** shows some traditional questions and the management information tools used to find the responses, but these dashboards need indicators, scorecards need measures and benchmarking needs a method for comparison.

Figure 13—Management Information


How do responsible managers keep the enterprise on course?
DASHBOARD
Indicators?
How can the enterprise achieve results that are satisfactory for the largest possible segment of the stakeholders?
SCORECARDS
Measures?
How can the enterprise be adapted in a timely manner to trends and developments in the enterprise's environment?
BENCHMARKING
Scales?

An answer to the requirements of determining and monitoring the appropriate IT control and performance level is COBIT's definition of:
- **Benchmarking** of IT process performance and capability, expressed as maturity models derived from the Software Engineering Institute's Capability Maturity Model®
- **Goals and metrics** of the IT processes to define and measure their outcome and performance, based on the principles of Robert Kaplan and David Norton's balanced business scorecard
- **Activity goals** for getting these processes under control, based on COBIT's control objectives

The assessment of process capability based on the COBIT maturity models is a key part of IT governance implementation. After identifying critical IT processes and controls, maturity modelling enables gaps between actual and desired capability to be identified and demonstrated to management. Action plans can then be developed to bring these processes up to the desired capability target level.

COBIT thus supports the IT governance focus areas by providing a framework to ensure that:
- IT is aligned with the business
- IT enables the business and maximises benefits
- IT resources are used responsibly
- IT risks are managed appropriately

Performance measurement is essential for IT governance. It is supported by COBIT and includes setting and monitoring measurable objectives of what the IT processes need to deliver (process outcome) and how they deliver it (process capability and performance). Many surveys have identified that the lack of transparency surrounding IT's cost, value and risks is one of the most important drivers for IT governance. Whilst the other focus areas contribute, transparency is achieved primarily through performance measurement.

The IT governance focus areas describe the topics that executive management needs to address to govern IT within its enterprise. Operational management uses processes to organise and manage ongoing IT activities. COBIT offers a generic process model that represents all the processes normally found in IT functions, providing a common reference model understandable to operational IT and business managers. The COBIT process model has been mapped to the IT governance focus areas (see the tool kit), providing a bridge between what operational managers need to execute and what executives wish to govern.

To achieve effective governance, executives expect controls to be implemented by operational managers within a defined control framework for all IT processes. COBIT's IT control objectives are organised by IT process; therefore, the framework provides a clear link amongst IT governance requirements, IT processes and IT controls.

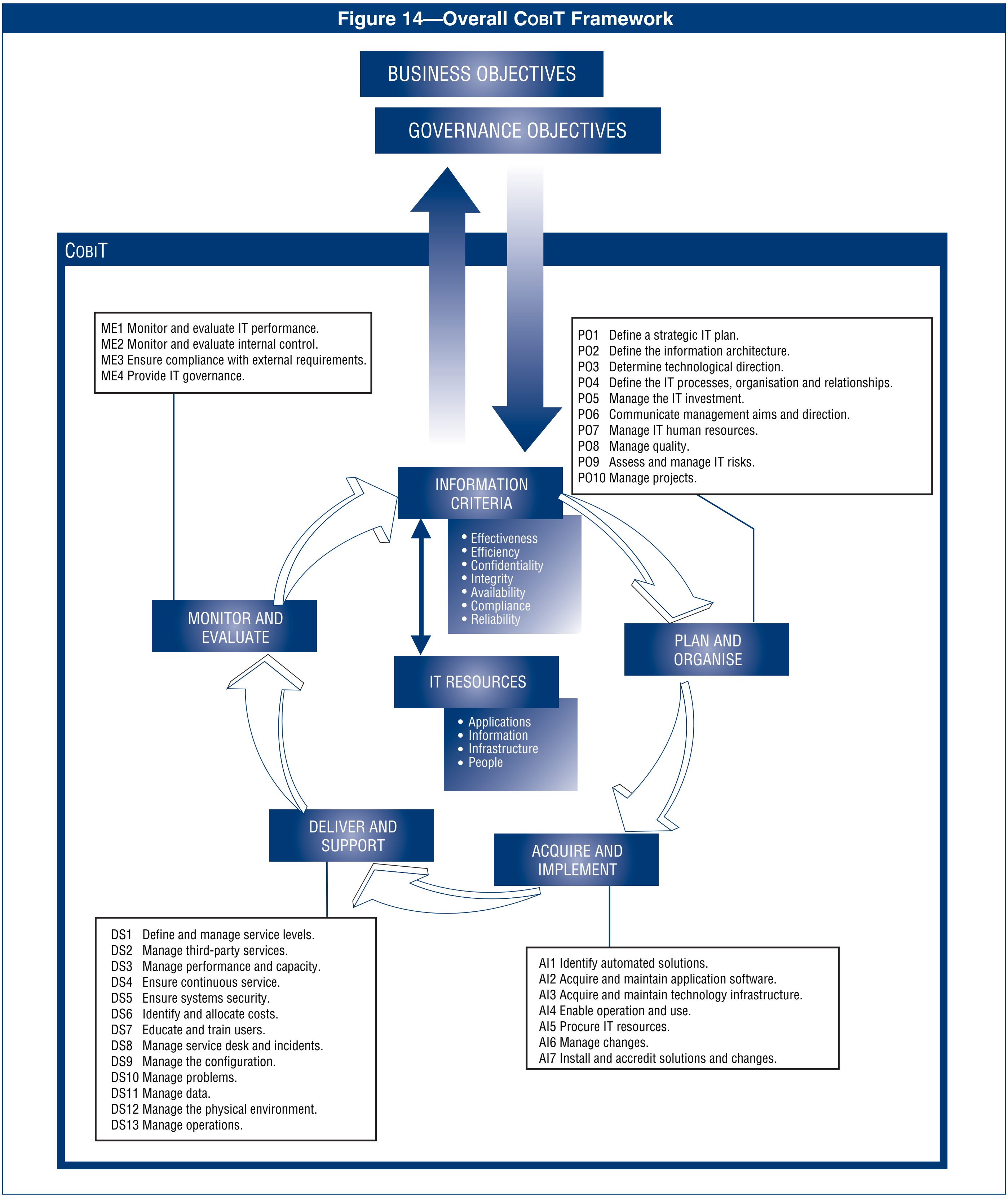
The benefits of implementing IT governance and using COBIT as an IT governance framework include:
- Better alignment, based on a business focus
- A view of what IT does that is understandable to management
- Clear ownership and responsibilities, based on process orientation
- General acceptability with third parties and regulators
- Shared understanding amongst all stakeholders, based on a common language
- Fulfillment of the COSO requirements for the IT control environment

COBIT provides clear policy and good practice for IT governance throughout enterprises worldwide, helping senior management understand and manage the risks associated with IT. COBIT accomplishes this by providing an IT governance framework (**figure 14**), control objectives and management guidance for five audiences: board and executive, business management, IT management, IT audit (or persons performing evaluations or assessments), and risk and compliance.

In addition to the five audiences described in **figure 15**, COBIT also provides useful support for the specific roles described in **figure 16**.

COBIT can be used together with other standards and best practices that focus in detail on specific technical areas, such as Information Technology Infrastructure Library (ITIL) for service management and ISO 17799, which focuses on information security management. COBIT provides the higher-level framework that links these detailed good practices to an IT process model driven by specific business requirements. In this way, a single, integrated IT governance control framework can be created. High-level and detailed mappings of COBIT to other international standards can be found at *www.isaca.org/downloads*.

Figure 14—Overall COBIT Framework



ME1 Monitor and evaluate IT performance.
ME2 Monitor and evaluate internal control.
ME3 Ensure compliance with external requirements.
ME4 Provide IT governance.

PO1 Define a strategic IT plan.
PO2 Define the information architecture.
PO3 Determine technological direction.
PO4 Define the IT processes, organisation and relationships.
PO5 Manage the IT investment.
PO6 Communicate management aims and direction.
PO7 Manage IT human resources.
PO8 Manage quality.
PO9 Assess and manage IT risks.
PO10 Manage projects.

DS1 Define and manage service levels.
DS2 Manage third-party services.
DS3 Manage performance and capacity.
DS4 Ensure continuous service.
DS5 Ensure systems security.
DS6 Identify and allocate costs.
DS7 Educate and train users.
DS8 Manage service desk and incidents.
DS9 Manage the configuration.
DS10 Manage problems.
DS11 Manage data.
DS12 Manage the physical environment.
DS13 Manage operations.

AI1 Identify automated solutions.
AI2 Acquire and maintain application software.
AI3 Acquire and maintain technology infrastructure.
AI4 Enable operation and use.
AI5 Procure IT resources.
AI6 Manage changes.
AI7 Install and accredit solutions and changes.

Figure 15—CobiT's Audiences

When you are…	➜ CobiT can serve the following objectives for you…	➜ Some specific approaches for the use of CobiT that may prove useful to you…
Board and executive	➜ Mandate and promote CobiT's IT governance model for all entities within the enterprise	➜ To complement existing internal control frameworks (e.g., COSO) for IT-specific matters ➜ To establish a common language and clear responsibilities amongst business, IT and audit ➜ To self-assess against the generally accepted CobiT standards and take actions as warranted to improve IT
Business management	➜ Establish a common enterprisewide control model to manage and monitor IT's contribution to the business	➜ As a code of good practices for dealing with IT in the business function ➜ As a code of good practices for addressing application controls in business processes ➜ To determine the different aspects that need to be covered by the service level agreement (SLA) agreed upon with the IT function (whether internally or outsourced)
IT management	➜ Structure the IT services function into manageable and controllable processes focusing on the business contribution ➜ Assess and improve IT processes to enhance delivery to the business	➜ As the baseline model to establish the appropriate level of generally accepted control objectives as well as for external certifications (e.g., ISO 17799, ISO 20000, SysTrust™ and SAS 70) ➜ As the basis for the process-related performance measures ➜ As the basis for IT-related policies and norms ➜ To help avoid or mitigate risk ➜ To establish SLAs and communicate with business functions
IT audit	➜ Serve as the basis for determining the IT audit universe and as the IT control reference	➜ As criteria for review and examination and for scoping IT-related audits ➜ As the starting point for developing an audit programme ➜ To help link business drivers to the audit process ➜ To provide assurance and control over IT ➜ To provide assurance and control over the IT performance management system
Risk and compliance	➜ Serve as the basis for advising on IT compliance and timely risk mitigation	➜ As criteria for the risk/compliance assessment and for framing IT-related assessments ➜ To ensure that IT complies with policy, laws and regulations ➜ To ensure that new risks are identified in a timely manner

Figure 16—IT Management Roles

When you are…	➜ CobiT can serve the following objectives for you…	➜ Some specific approaches for the use of CobiT that may prove useful to you…
Project manager	➜ Serve as the general framework for minimal project quality assurance standards	➜ To help ensure that project plans incorporate generally accepted phases in IT planning, acquisition and development, service delivery, and project management and assessment
Development manager	➜ Serve as high-level guidance for controls to be applied within development processes and for internal control to be integrated into information systems being built	➜ To ensure that all applicable IT control objectives in the development project have been addressed
Operations manager	➜ Serve as a general framework for minimal controls to be integrated into service delivery and support processes, placing clear focus on client objectives	➜ To ensure that operational policies and processes are sufficiently comprehensive
Information security officer	➜ Serve as a harmonising framework providing a way to integrate information security with other business-related IT objectives	➜ To structure the information security programme, policies and processes in alignment with business objectives

VAL IT PRINCIPLES

The Val IT principles are:
- IT-enabled investments will be managed as a **portfolio of investments**.
- IT-enabled investments will include the **full scope of activities** that are required to achieve business value.
- IT-enabled investments will be managed through their **full economic life cycle**.
- Value delivery practices will recognise that there are **different categories of investments** that will be evaluated and managed differently.
- Value delivery practices will define and monitor **key metrics** and will respond quickly to any changes or deviations.
- Value delivery practices will engage all stakeholders and assign **appropriate accountability** for the delivery of capabilities and the realisation of business benefits.
- Value delivery practices will be **continually monitored, evaluated and improved**.

A number of terms that are used in the Val IT framework. While organisations may choose to use different terms, or give different meanings to the terms, it is important for the reader to understand how the terms are used in this publication.

- **Implement**—In business, includes the full economic life cycle of the investment programme through retirement, i.e., when the full expected value of the investment is realised, as much value as is deemed possible has been realised, or it is determined that the expected value cannot be realised and the programme is terminated
- **Portfolio**—In business, a grouping of programmes, projects, services, resources or assets selected, managed and monitored to optimise business return (Note that the initial focus of Val IT is primarily on a portfolio of programmes. COBIT is interested in portfolios of projects, services or assets.)
- **Programme**—In business, a structured grouping of interdependent projects that include the full scope of business, process, people, technology and organisational activities that are required (both necessary and sufficient) to achieve a clearly specified business outcome
- **Project**—In business, a structured set of activities concerned with delivering to the enterprise a defined capability (that is necessary but not sufficient to achieve a required business outcome) based on an agreed-upon schedule and budget
- **Value**—In business, relative worth or importance of an investment for an organisation or its key stakeholders taking into account the benefits accruing from the expenditures and risks. Its expression may take various forms, including monetary or material, substitution equivalence and subjective judgement.

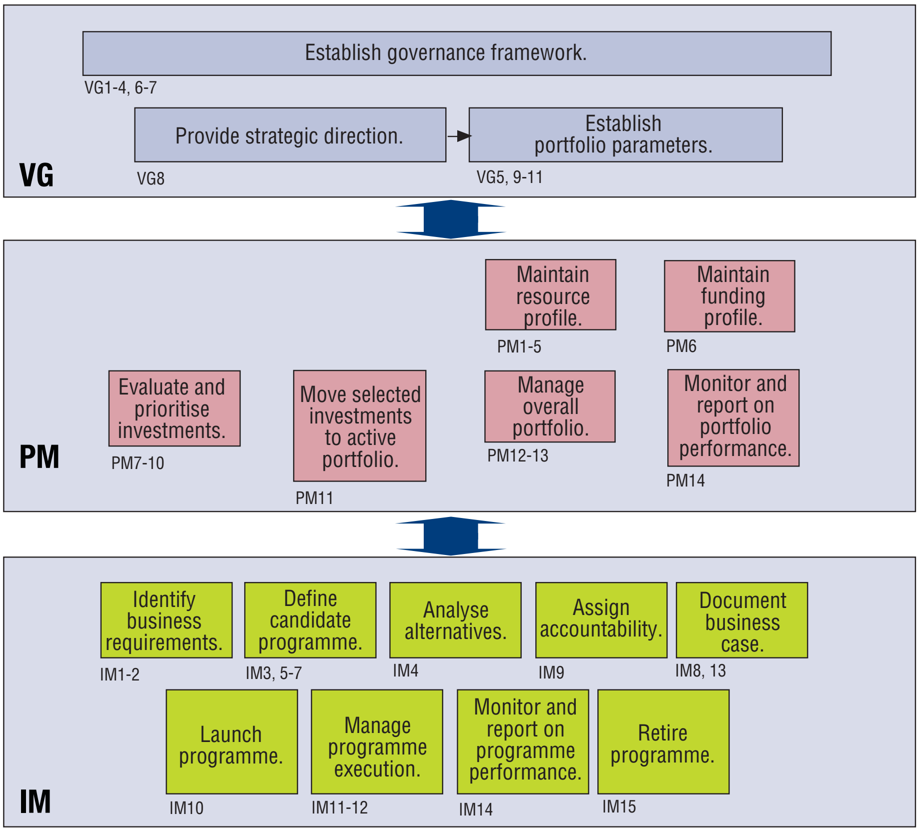
The primary focus of Val IT processes is on delivering business value by:
- Establishing a broad governance, monitoring and control framework that provides for clear and active linkage between the enterprise strategy and the portfolio of IT-enabled investment programmes that execute the strategy (Value Governance)
- Managing the overall portfolio to optimise value to the enterprise (Portfolio Management)
- Managing the results of individual investment programmes, including business, process, people, technology and organisational change enabled by the business and IT projects that make up the programmes (Investment Management)

Management practices are characteristics of successful processes. Each enterprise needs to consider its own policies, risk appetite and environment before selecting the management practices that best apply to the enterprise. Key management practices are provided for the following three processes:

1. Value Governance (VG)—11 key management practices covering:
    - The establishment of the governance, monitoring and control framework
    - The provision of strategic direction for the investments
    - The definition of investment portfolio characteristics
2. Portfolio Management (PM)—14 key management practices covering:
    - Identification and maintenance of resource profiles
    - The definition of investment thresholds
    - Evaluation, prioritisation and selection, deferral or rejection of investments
    - Management of the overall portfolio
    - Monitoring and reporting on portfolio performance
3. Investment Management (IM)—15 key management practices covering:
    - Identification of business requirements
    - Development of clear understanding of candidate investment programmes
    - The analysis of alternatives
    - Programme definition (scoping) and documentation of a detailed business case, including benefits details
    - Assignment of clear accountability and ownership
    - Management of the programme through its full economic life cycle
    - Monitoring and reporting on programme performance

A high-level view of the processes, the key management practices and the relationship amongst them is shown in **figure 17**.

Figure 17—Relationships Amongst Val IT Processes and Management Practices


Establish governance framework.
VG1-4, 6-7
Provide strategic direction.
Establish portfolio parameters.
VG
VG8
VG5, 9-11
Maintain resource profile.
Maintain funding profile.
PM1-5
PM6
Evaluate and prioritise investments.
Move selected investments to active portfolio.
Manage overall portfolio.
Monitor and report on portfolio performance.
PM
PM7-10
PM12-13
PM14
PM11
Identify business requirements.
Define candidate programme.
Analyse alternatives.
Assign accountability.
Document business case.
IM1-2
IM3, 5-7
IM4
IM9
IM8, 13
Launch programme.
Manage programme execution.
Monitor and report on programme performance.
Retire programme.
IM
IM10
IM11-12
IM14
IM15

A detailed description of the key management practices, with a cross-reference to COBIT control objectives and guidance on whether the executive, business or IT function should be responsible, accountable, consulted or informed for a particular management practice, is contained in *Enterprise Value: Governance of IT Investments, The Val IT Framework*, the foundation document in the Val IT series.

Val IT complements the good practices for IT governance provided by COBIT, helping senior management understand and manage the risks associated with IT-enabled business investments. The Val IT framework, including the principles, processes and key management practices, provides guidance for the five audiences identified in **figure 18**: board and executive, business management and users, IT management, auditors (or persons performing evaluations or assessments), and risk and compliance staff.

Figure 18—Val IT's Audiences

When you are…	➜ Val IT can serve the following objectives for you…	➜ Some specific approaches for the use of Val IT that may prove useful to you…
Board and executive	➜ Increase the understanding and transparency of cost, risks and benefits, resulting in much better informed management decisions ➜ Increase the probability of selecting IT-enabled business investments that have the potential to generate the highest return ➜ Increase the likelihood of success of executing selected IT-enabled business investments such that they achieve or exceed their potential return	➜ To assess the completeness and effectiveness of your current internal governance frameworks, specifically as they relate to value management ➜ As the basis to provide an increased value management focus to existing internal governance frameworks ➜ As the basis to establish a common language and clear responsibilities amongst all stakeholders related to value management
Business management	➜ Reduce costs by not doing things they should not be doing and taking early corrective action on or terminating IT-enabled business investments that are not delivering to their expected potential ➜ Reduce the risk of failure of IT-enabled business investments, especially high-impact failure	➜ As the basis to implement a consistent approach to developing, managing and maintaining complete and comprehensive business cases ➜ To ensure that there is clarity around the expected business outcomes of IT-enabled business investments, and that the full scope of organisational change required to achieve the outcomes is understood ➜ As the basis to establish consistent and comprehensive criteria for evaluating and selecting the business cases with the highest potential to deliver business value ➜ To ensure that appropriate accountabilities are assigned and accepted ➜ As the basis for managing IT-enabled business investments, to ensure early detection and response to deviations from investment plans
IT management	➜ Reduce the surprises relative to IT cost and delivery and, in doing so, increase business value, reduce unnecessary costs and increase the overall level of confidence in IT	➜ As the basis to develop an appropriate level of engagement with the board, executives and business management ➜ To ensure that IT resources are working on the activities that are aligned with (strategic) business objectives ➜ To demonstrate the contribution of IT to (strategic) business objectives
IT audit	➜ Ensure that the internal governance frameworks are in place and consistently followed to take adequate and balanced consideration of benefits, costs and risks of IT-enabled business investments, and that appropriate roles, responsibilities and accountabilities are assigned and accepted	➜ As the basis to establish criteria for reviewing and assessing the value management aspects of internal governance frameworks ➜ As the basis to establish criteria for value assessments of business cases for individual IT-enabled business investments ➜ As the basis to establish criteria for value assessments of IT-enabled business investments that are in the active portfolio of investments
Risk and compliance	➜ Reduce the risk of failure of IT-enabled business investments, especially high-impact failure	➜ As the criteria for risk/compliance assessment for IT-enabled business investments ➜ To ensure that risks are managed throughout the full economic life cycle of IT-enabled business investments

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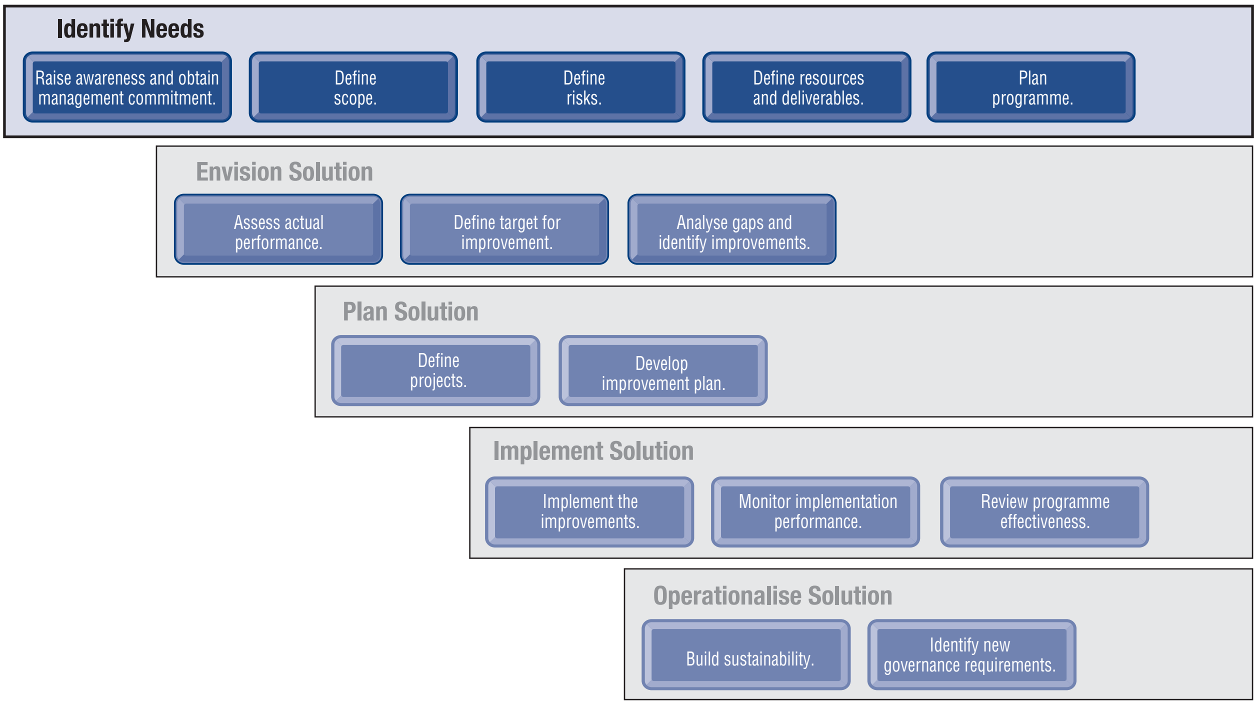
Implementation Road Map
Phase 1

Implementation Road Map

PHASE 1—IDENTIFY NEEDS


Identify Needs
Raise awareness and obtain management commitment.
Define scope.
Define risks.
Define resources and deliverables.
Plan programme.
Envision Solution
Assess actual performance.
Define target for improvement.
Analyse gaps and identify improvements.
Plan Solution
Define projects.
Develop improvement plan.
Implement Solution
Implement the improvements.
Monitor implementation performance.
Review programme effectiveness.
Operationalise Solution
Build sustainability.
Identify new governance requirements.

Identify Needs

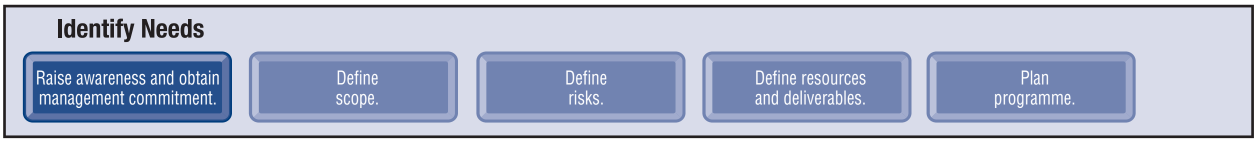
The start of an IT governance implementation project indicates that the need for IT governance has been *recognised*. It is important to reconfirm and communicate this need, and to further refine and define it to the point that an agreed-upon scope for the IT governance programme is reached.

When you are…	➜	Your role in this phase is to…
Board and executive	➜	Set direction for the programme, approve the approach, nominate key programme roles and define responsibilities, and give visible support and commitment. Provide guidance regarding business priorities and attitude toward risks. Sponsor, communicate and promote the agreed-upon plan.
Business management	➜	Together with IT, ensure that business objectives have been stated with sufficient clarity to enable translation into business goals for IT, and provide input to understanding of risks and priorities. Establish scope with IT providers. Provide appropriate resources and commitment to support the programme.
IT management	➜	Gather requirements and objectives from all parties, gaining consensus on approach and scope. Provide expert advice and guidance regarding IT matters, and ensure that the business and executives understand and appreciate all key issues.
IT audit	➜	Agree on the role and reporting arrangements for audit participation. Provide advice and challenge proposed activities and actions, ensuring that objective and balanced decisions are made. Provide advice regarding controls and risk management practices and approaches. Ensure that an adequate level of audit participation is provided through the duration of the programme.
Risk and compliance	➜	Provide advice and guidance regarding risk and compliance matters. Ensure that the manager-proposed approach is likely to meet risk and compliance requirements. Ensure an adequate level of participation through the duration of the programme.

COBIT and Val IT provide support in phase 1 as follows:

- *Board Briefing on IT Governance, 2nd Edition*, which provides guidance for governance planning and organisation
- A matrix showing the relationship between generic business goals (aligned to the balanced scorecard) and IT goals
- A matrix showing the relationship between the IT goals and the IT processes
- The information criteria described in the COBIT framework and identified in these matrices, which help define the business value and business risk reduction requirements for information
- The IT resources described in the COBIT framework, which help define the resources required to manage delivery of information to meet business value and business risk requirements
- The IT processes defined in the COBIT framework, to recognise critical IT processes
- The control objectives and control practices, to provide guidance on critical control requirements
- The ISACA COBIT courses (*www.isaca.org/cobitcampus*), to help educate the IT governance team
- This *IT Governance Implementation Guide*, which provides guidance for planning and execution of the IT governance initiative
- The Val IT publications:
  - *Enterprise Value: Governance of IT Investments, The Val IT Framework*
  - *Enterprise Value: Governance of IT Investments, The Business Case*
  - *Enterprise Value: Governance of IT Investments, The ING Case Study*

Step 1—Raise Awareness and Obtain Management Commitment



Identify Needs

Raise awareness and obtain management commitment.

Define scope.

Define risks.

Define resources and deliverables.

Plan programme.

Step 1.1	
Process step	**Obtain commitment and set programme objectives.**
Process objective	Obtain an understanding of the IT governance programme background and objectives. Define the initial programme concept business case. Obtain the buy-in and commitment of all key stakeholders.
Process description	For the implementation of IT governance and use of COBIT and Val IT to be successful, it is important to ensure that the background and drivers behind the initiative are understood clearly and that there is good support from top management. When identifying the expectations of the programme, the existing corporate policies, strategies, governance and business plans, industry context, etc., should be taken into account, so the IT governance aspects can be integrated successfully. All of these requirements should then be combined in a business case/programme definition to obtain executive sponsorship and support. *Board Briefing on IT Governance, 2nd Edition,* can be a useful component in this first step.
Tasks	1. Raise executive awareness of IT's importance to the business and the value of IT governance. 2. Understand the business drivers for the IT governance programme, e.g., value delivery, cost optimisation and risk management. 3. Align with enterprise governance, corporate policies, strategies and any ongoing governance initiatives. 4. Define IT governance policy, objectives and targets. 5. Agree on programme scope, benefits, objectives and a high-level approach. 6. Develop a business case indicating the success factors to be used to enable performance monitoring and reporting of the success of the governance improvement. 7. Obtain executive sponsorship and necessary budgets and define accountabilities. 8. Define roles and responsibilities within the programme, starting with the executive sponsor to the programme manager and all stakeholders.
Input	• Enterprise policies, strategies, governance and business plans, and audit reports • Any useful and relevant industry overviews, case studies and success stories (*www.isaca.org/cobitcasestudies*) • Specific customer requirements, marketing and servicing strategy, market position, enterprise vision, and mission statement
Using COBIT and Val IT components	• *Board Briefing on IT Governance 2nd Edition* • *Enterprise Value: Governance of the IT Investment* (Val IT)—*The Business Case*
Output	Initial programme concept business case
Tool kit support	Management awareness diagnostic, COBIT FAQs, templates (project initiation), presentation folder with PowerPoint slides that can be tailored for in-house presentations, maturity measurement tool (to help raise awareness), Val IT tools (e.g., business case template)

Step 2—Define Scope

Identify Needs

Raise awareness and obtain management commitment.

Define scope.

Define risks.

Define resources and deliverables.

Plan programme.

Step 2.1	
Process step	**Understand the business goals and IT contribution.**
Process objective	Ensure that the programme team knows and understands the business goals and how IT needs to deliver value to the business in support of the business goals.
Process description	COBIT links IT processes to business and governance drivers, a fundamental requirement for IT governance. Therefore, it is important for the implementation team to be knowledgeable about the business environment and to have an insight into influencing factors such as competition, business goals, service providers, and legal and regulatory issues. The business plans, strategies and priorities should be understood, and the business goals relevant to this initiative should be derived from them. Val IT can be used to better engage business users and leaders and to obtain better clarity and understanding of business goals and objectives. This should lead to closer alignment of business and IT goals. This step identifies the IT goals, i.e., how IT needs to contribute to the business goals identified. The focus is on identifying and analysing how IT creates value for the business in enabling new business processes, in making the current business processes more efficient, in making the enterprise more effective, and in meeting governance-related requirements such as managing risks, ensuring security, and complying with legal and regulatory requirements. Val IT's framework provides a bridge between the business and IT with a set of processes and management practices that, when applied, result in clear and focused business objectives for IT. COBIT's framework provides a description of the cascade from business goals to IT goals, and the matrices showing the relationships between generic business goals and IT goals are a useful reference for identifying what is important. The objective is to build up a better understanding of how significant IT's contribution is to the business.
Tasks	1. Understand the business drivers. 2. Understand the governance drivers. 3. Obtain information about key business processes. 4. Understand business priorities and business strategy. 5 Define business goals for IT. 6. Understand the impact of the business goals for IT on IT, i.e., value contribution, efficiencies, process enablement and organisational change. 7. Establish the significance and nature of IT's contribution in relation to the business objectives.
Input	Business and IT plans and strategies
Using COBIT and Val IT components	• COBIT framework section covering business goals and IT goals • COBIT PO1.2 *Business-IT alignment*, PO5.1 *Financial management framework*, PO9.1 *IT and business risk management alignment* • COBIT business-goals-to-IT-goals matrices • *Enterprise Value: Governance of the IT Investment—The Val IT Framework*, especially VG8 *Establish strategic direction*
Output	Agreed-upon business goals for IT and impact on IT
Tool kit support	Article on linking business goals to IT goals

Identify Needs

Raise awareness and obtain management commitment.

Define scope.

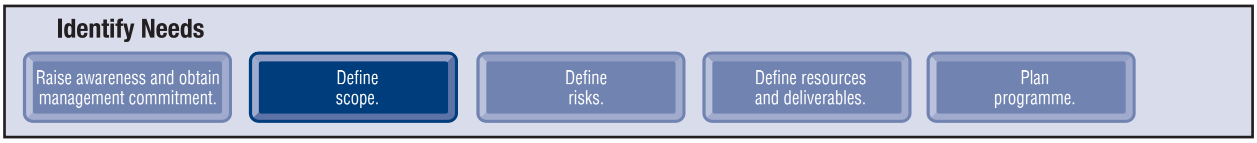
Define risks.

Define resources and deliverables.

Plan programme.

Step 2.2	
Process step	**Define IT goals.**
Process objective	Define IT goals based on the business goals for IT while considering current and required future services and the enterprise architecture for IT.
Process description	To satisfy business requirements, the information that the business needs to be successful has to conform to certain criteria, which COBIT refers to as business requirements for information. One of the underpinning concepts of the COBIT framework is that control over IT-processed information is the result of the combined application of IT-related resources that need to be managed by IT processes. The information criteria and enterprise architecture (IT resources and capabilities) can help the programme team understand how IT will support the business goals and IT goals. In this step, the information criteria that are relevant in the implementation programme should be analysed, i.e., the information requirements that need to be fulfilled to achieve the business and high-level IT goals of the programme. Also, the affected IT resources are identified. This analysis can be recorded using an IT heat map, combining business goals, IT goals, information criteria and IT resources needed to achieve these goals. The overall objective is to define the goals for IT in support of the business goals whilst considering environmental factors that could influence what is achievable.
Tasks	1. Understand the relationship between business goals and IT goals. 2. Identify the information criteria relevant to the business requirements to illustrate the controls required. 3. Identify the IT environment (internal and external), current services and required future services. 4. Identify the enterprise architecture for IT needed to support the IT goals and any constraints or limitations that may exist. 5. Define the IT goals needed to support business goals, including any internal infrastructure enhancements. 6. Record business goals, IT goals, information criteria and IT resources on the IT heat map.
Input	Understanding of business and IT contribution
Using COBIT and Val IT components	• COBIT framework • COBIT PO1 *Define a strategic IT plan*, PO5 *Manage the IT investment*, ME1 *Monitor and evaluate IT performance* • COBIT business-goals-to-IT-goals matrices • Val IT results chain[4]
Output	Definition of IT goals
Tool kit support	Templates (IT heat maps)

[4] Results Chain™ is a registered trademark of Fujitsu, and the term is used here with Fujitsu's permission. For an example of the model, see the book *The Information Paradox*, written jointly by John Thorp with Fujitsu, first published by McGraw Hill in 1998 and revised in 2003. The model is also discussed in 'Requirements that Handle IKIWISI, COTS and Rapid Change', by Barry Boehm, published by Institute of Electrical and Electronics Engineers in July 2000.



Identify Needs

Raise awareness and obtain management commitment.

Define scope.

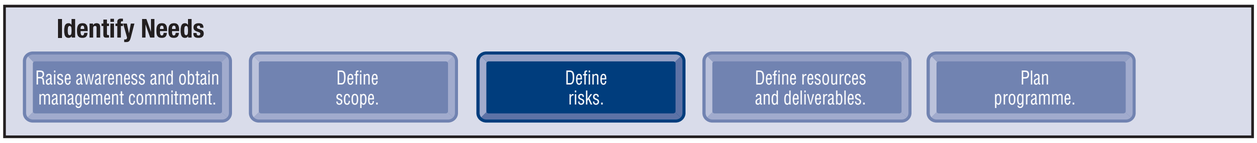
Define risks.

Define resources and deliverables.

Plan programme.

Step 2.3	
Process step	**Identify critical processes and controls.**
Process objective	Identify the critical processes that will be addressed in the improvement plan. Identify the appropriate control objectives for each selected process.
Process description	Based on the understanding now obtained of the IT goals and the related business and governance drivers, it may be necessary to refine the detailed scope and objectives of the initiative, as recorded in the programme initiation. One of the most important steps of the implementation road map is the identification of the most important processes. Using the results of the previous steps (i.e., programme initiation, IT heat maps), decisions should be made regarding which areas within IT need special attention and focus for this governance initiative. After selecting the processes to be improved, the next step is to consider related process and activity goals and select the appropriate control objective(s) for each of these processes.
Tasks	1. Select relevant processes critical to the success of the IT goals. 2. Identify process and activity goals needed to support the IT goals. 3. Select control objectives relevant to achieve the IT, process and activity goals (ensure value creation and response to governance requirements).
Input	IT heat maps, IT goals
Using CobiT and Val IT components	• CobiT process descriptions, management guidelines' IT goals, process goals and activity goals • CobiT PO1 *Define a strategic IT plan*, PO4 *Define the IT processes, organisation and relationships* • CobiT control objectives • Val IT key management practices
Output	• Selected processes and goals • Selected control objectives
Tool kit support	Management awareness diagnostics, themes-to-controls diagnostic, themes-to-risk-factors diagnostic, reporting techniques

Step 3—Define Risks


Identify Needs
Raise awareness and obtain management commitment.
Define scope.
Define risks.
Define resources and deliverables.
Plan programme.

Step 3.1	
Process step	**Quantify risk appetite and risk history.**
Process objective	Obtain an understanding of the enterprise's present and future attitude toward risk and how it will impact the programme.
Process description	The attitude that management takes with regard to risk varies in different organisations from extremely cautious (risk-averse) to very aggressive (risk-taking). It is important to know the enterprise's risk profile, acceptance position and risk awareness so that an appropriate risk management attitude is taken. In addition, the review of past incidents, audit reports and findings, and the existing risk management policy can help provide an appreciation of the way risks might arise in the future. This risk analysis can be documented in the risk acceptance and risk profile parts of the IT risks report.
Tasks	1. Understand with management the risk acceptance position, i.e., willingness to take risks. 2. Understand the risk profile with respect to the scope of the IT governance programme. 3. Understand the previous history of incidents, audit reports and findings.
Input	Audit reports, risk management policy
Using COBIT and Val IT components	COBIT PO1 *Define a strategic IT plan*, PO9 *Assess and manage IT risks*, PO10 *Manage projects*, DS4 *Ensure continuous service*
Output	Risk acceptance position and risk profile
Tool kit support	Templates (IT risks—acceptance position and risk profile part), management awareness diagnostic, themes-to-risk-factors diagnostic, risk analysis approach

Identify Needs
Raise awareness and obtain management commitment.
Define scope.
Define risks.
Define resources and deliverables.
Plan programme.

Step 3.2	
Process step	**Assess service delivery risks.**
Process objective	Determine the risks related to IT service delivery.
Process description	Based on the enterprise risk profile and its risk history and appetite, actual risks to the business and IT goals (identified in step 2) need to be defined, first at a high level. This step focuses on service delivery risks, the next one on solution delivery risks. It is likely that the IT governance initiative will focus on one area of risk as it may be too broad a scope to cover all aspects at once. IT service delivery risk takes into consideration process performance and the complexity and nature of the IT environment and organisation. This includes topics such as capability, quality of service, flexibility, nimbleness to change, responsiveness to current and changing business needs, robustness and reliability of current IT operational systems and services, and IT relationships and dependencies with external providers. The team should be aware that the human factor is often the most important element in the creation of risk. To assess these service delivery risks, the programme team—with the business and IT goals in mind—needs to define the impact of risks in terms of critical services and important resources (assets). The analysis should combine and document relevant threats, applicable vulnerabilities and significant impacts. This approach is essential to understand all the components of the threat-vulnerability-impact relationship. The overall objective is to focus on the most significant impacts whilst considering the history of incidents and the adequacy of current service delivery risk management methods and practices. Results can be recorded in the service delivery risks part of the IT risk report. Applying COBIT's generic activity goals and process goals as risk indicators (i.e., consider their absence) can help generate new insights into potential risk situations.
Tasks	Assess threats, vulnerabilities and impacts, including: • Complexity of the IT environment and nature of the IT organisation, identifying and focusing on significant risk impacts in terms of critical services and most important resources (assets) • General adequacy of current operational capability, quality of service, flexibility, nimbleness to change, and responsiveness to current and changing business needs • Robustness and reliability of current IT operational systems and services • IT relationships and dependencies, vendors, service providers, and contractors • General operational IT skills and capabilities, staff retention, turnover, etc. • Previous history of incidents
Input	Business continuity plans, impact analyses, regulatory requirements, IT architectures, risk management policies and reports, SLAs, operational level agreements (OLAs)
Using COBIT and Val IT components	COBIT management guidelines' activity goals and process goals for DS processes inversed and applied as risk indicators (i.e., consider their absence)
Output	Service delivery risk analysis
Tool kit support	Templates (IT risks—service delivery risks part), management awareness diagnostic, themes-to-risk-factors diagnostic, risk analysis approach

Identify Needs

Raise awareness and obtain management commitment.

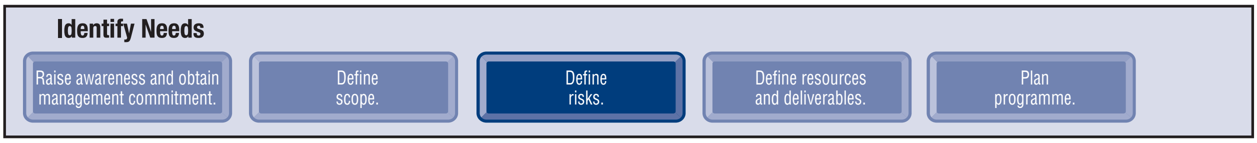
Define scope.

Define risks.

Define resources and deliverables.

Plan programme.

Step 3.3	
Process step	**Assess solution delivery risks.**
Process objective	Determine the risks of new developments and programme activities not achieving the intended business benefits.
Process description	Using the same inputs as in step 4.2, this step specifically focuses on solution delivery risks as they relate to the business and IT goals. Overall project management, solution delivery and business change enablement capabilities are analysed and the likelihood of programme and benefit realisation failure is assessed, for example, by a high-level review of the investment programme and project portfolios and a detailed assessment of some of the major projects. Risks are evaluated at least with regard to project timing, project budgets and realisation of planned benefits, including the business capability to effect the changes required to realise benefit. This step should also apply the same process criteria as the previous step, i.e., focusing on critical services and the most important resources, combining and documenting relevant threats, applicable vulnerabilities and significant impacts. New insights can also be obtained by leveraging COBIT and Val IT's KGIs and KPIs inversed as risk indicators.
Tasks	Assess threats, vulnerabilities and impacts, including: • Current overall programme management, service delivery and benefit realisation capability • Investment programme and project portfolios (consider likely success) • Adequacy of project risk management methods and practices
Input	Investment programme and project portfolios, programme and project plans, project management methodologies, project reports
Using COBIT and Val IT components	• COBIT management guidelines' activity goals and process goals for processes PO5 *Manage the IT investment*, PO8 *Manage quality* and PO10 *Manage projects* inversed and applied as indicators (i.e., consider their absence) • Val IT IM processes and business case technique guide
Output	Solution delivery risk analysis
Tool kit support	Templates (IT risks—solution delivery risks part), management awareness diagnostic, themes-to-risk-factors diagnostic, risk analysis approach


Identify Needs
Raise awareness and obtain management commitment.
Define scope.
Define risks.
Define resources and deliverables.
Plan programme.

Step 3.4	
Process step	**Adjust scope for risk.**
Process objective	Define objectives to mitigate the risks identified. Review the process importance and control selection in light of the risk assessment, and finalise the selection of the most important IT processes and controls that will be addressed by the programme.
Process description	The scope should be adjusted for risk and, thus, for the selected CobiT processes and controls that are most critical for IT success and for considering any necessary improvements. Any IT issues that already may have emerged about misalignment or IT value delivery should be communicated to executive management as preliminary findings. Where appropriate, urgent or quick-win corrective actions can be defined and initiated. Based on the understanding obtained of the IT goals and the related value and risk drivers, it may be necessary to refine the detailed scope and objectives of the programme, which can be updated in the programme business case.
Tasks	1. Consider the risks that could jeopardise the IT value objectives. 2. Consider information criteria to help illustrate threats. 3. Identify critical IT resources (assets). 4. Define additional IT goals based on risks that need to be addressed. 5. Record IT goals, information criteria and IT resources on the IT heat map. 6. Update or adjust the business case for the programme. 7. Adjust the scope. 8. Finalise selection of processes and controls.
Input	Programme initiation, IT risks report, IT heat maps
Using CobiT and Val IT components	• CobiT framework (information criteria and IT resource indicators) • CobiT PO9 *Assess and manage IT risks*
Output	• Definition of IT risk goals • Finalised programme initiation
Tool kit support	Management awareness diagnostic, themes-to-risk-factors diagnostic, risk analysis approach

Step 4—Define Resources and Deliverables

Identify Needs
Raise awareness and obtain management commitment.
Define scope.
Define risks.
Define resources and deliverables.
Plan programme.

Step 4.1	
Process step	**Define IT governance framework and management processes.**
Process objective	Define the IT governance framework and management processes.
Process descriptions	It is necessary to define a framework describing the IT governance model to be adopted by the enterprise, together with any other supporting IT governance processes. Most enterprises have some existing preferred IT models, standards and best practices that they are already using (ISO 17799, ITIL, etc.), so it is important to make sure that these are understood to consider how they can be used with the COBIT and Val IT components.
Tasks	1. Define a framework based on COBIT and Val IT. 2. Understand any current and/or preferred models, standards or best practices in use for IT management and governance. 3. Define the relationships between COBIT, Val IT, and any existing standards and best practices, e.g., ITIL and/or ISO 17799. 4. Define governance processes, methods and approaches.
Input	COBIT, Val IT, and relevant standards and best practices, such as ISO 17799 and ITIL
Using COBIT and Val IT Components	All components
Output	IT governance framework
Tool kit support	Templates (framework), COBIT FAQs, presentation folder, mapping folder

Identify Needs

Raise awareness and obtain management commitment.

Define scope.

Define risks.

Define resources and deliverables.

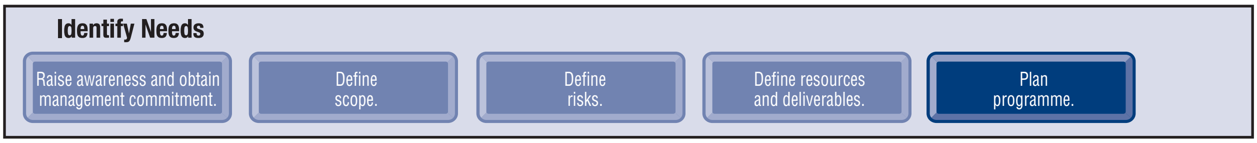
Plan programme.

Step 4.2	
Process step	**Define programme organisation.**
Process objective	• Design an organisational structure with clear roles and responsibilities and requisite resources to carry out the IT governance programme. • Define the IT governance programme team. • Ensure that the appropriate resources/skills for the programme team are assigned.
Process	It is important to build consensus by involving all interested stakeholders, such as executive management, business management, IT management, audit and external parties. It is equally important to create and establish a programme team that is multi-disciplinary, balanced and representative, with the right mix of people with: • Business insight and expertise/knowledge • IT background and knowledge of the as-is situation • Representation in management or ability to obtain strong management support • IT governance, CobiT and Val IT insight and expertise The role of an IT strategy committee at the board level or other IT governance mechanisms, structures and processes (which are described in *Board Briefing on IT Governance, 2nd Edition*) should be considered. This step should result in a clear organisation plan.
Tasks	1. Involve all interested stakeholders, e.g., executive management, business management, IT management, audit and external parties. 2. Consider internal organisational factors, e.g., corporate structure and management style, span of control, and devolved vs. centralised environment. 3. Allocate overall and programme responsibilities. 4. Define programme reporting requirements. 5. Establish management oversight of the programme, e.g., a programme steering committee. Consider the role of an IT strategy committee (or equivalent) and possibly other committees (steering committee, technology council, architecture board, etc.).
Input	• Initial programme business case • Organisation charts, job descriptions, policies, committees—their composition and mandates
Using CobiT and Val IT components	• *Board Briefing on IT Governance, 2nd Edition* • CobiT and Val IT frameworks
Output	Programme organisation
Tool kit support	Templates (organisation plan)

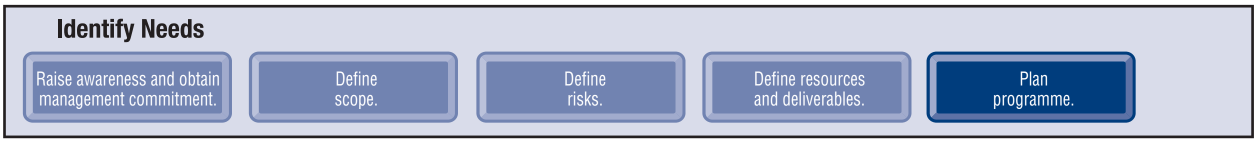
Identify Needs
Raise awareness and obtain management commitment.
Define scope.
Define risks.
Define resources and deliverables.
Plan programme.

Step 4.3	
Process step	**Define deliverables.**
Process objective	Refine and agree on the scope and the objectives of the IT governance programme.
Process description	Based on the understanding now obtained of the IT goals and the related value and risk drivers, it may be necessary to refine the detailed scope and objectives of the programme, which can be updated in the programme business case. Using the results of the previous steps, decisions should be made regarding which areas within IT need special attention and focus for this governance programme.
Tasks	1. Confirm stakeholder perceptions/expectations. 2. Update or adjust the business case for the programme. 3. Define the expectations and success criteria of the governance programme (KGIs). 4. Decide the areas of importance and focus. 5. Adjust the overall IT goals and agree on the scope.
Input	Programme initiation, IT heat maps, IT goals
Using COBIT and Val IT components	• COBIT processes • COBIT management guidelines' IT goals, process goals and activity goals • COBIT control objectives
Output	Finalised programme initiation
Tool kit support	Templates (programme initiation, IT heat map), management awareness diagnostics, themes-to-controls diagnostic, themes-to-risk-factors diagnostic, reporting techniques

Step 5—Plan Programme


Identify Needs
Raise awareness and obtain management commitment.
Define scope.
Define risks.
Define resources and deliverables.
Plan programme.

Step 5.1	
Process step	**Acquire resources and create the organisation structure.**
Process objective	Ensure that the appropriate resources/skills for the programme team are identified, funded and assigned. Create the necessary organisation structure.
Process descriptions	Based on the agreed-upon programme organisation and resource requirements, the resources need to be acquired and allocated to the programme. Funding may be required to support the cost of these resources, and it may be necessary to acquire external consultants or experts. A programme manager will need to be appointed as well as any other key roles, including important stakeholders. An organisation structure for the programme should be established to ensure effective execution of the programme's objectives.
Tasks	1. Finalise resource requirements. 2. Obtain any necessary funding. 3. Obtain programme resources. 4. Consider external specialist support. 5. Research available guidance and experiences. 6. Allocate team resources and roles. 7. Create organisation structures.
Input	Programme organisation plan
Using COBIT and Val IT components	• *Board Briefing on IT Governance, 2nd Edition* • COBIT and Val IT frameworks
Output	Programme resource plan
Tool kit support	Templates (resource plan)


Identify Needs
Raise awareness and obtain management commitment.
Define scope.
Define risks.
Define resources and deliverables.
Plan programme.

Step 5.2	
Process step	**Define timeline, approach and methodology.**
Process objective	Establish the time period for completion and define key milestones and checkpoints, linked to deliverables and objectives. Determine methods to be used and develop detailed plans with phases, activities and tasks for the initiative.
Process descriptions	Based on the agreed-upon programme scope and objectives, agree with the key role players on an overall time plan supported by a detailed project plan. Agree on the approach and methods to be used based on the guidance provided in the guide and any existing internal practices, especially for programme and project management.
Tasks	1. Agree on an overall time plan with key milestones. 2. Create a detailed project plan with phases, activities and tasks. 3. Define approaches and methods for all key tasks. 4. Refine/adjust the resource plan as required.
Input	Programme initiation, programme organisation plan, programme resource plan
Using CobiT and Val IT components	CobiT and Val IT frameworks
Output	Programme plan
Tool kit support	Templates (programme plan)

Identify Needs

Raise awareness and obtain management commitment.

Define scope.

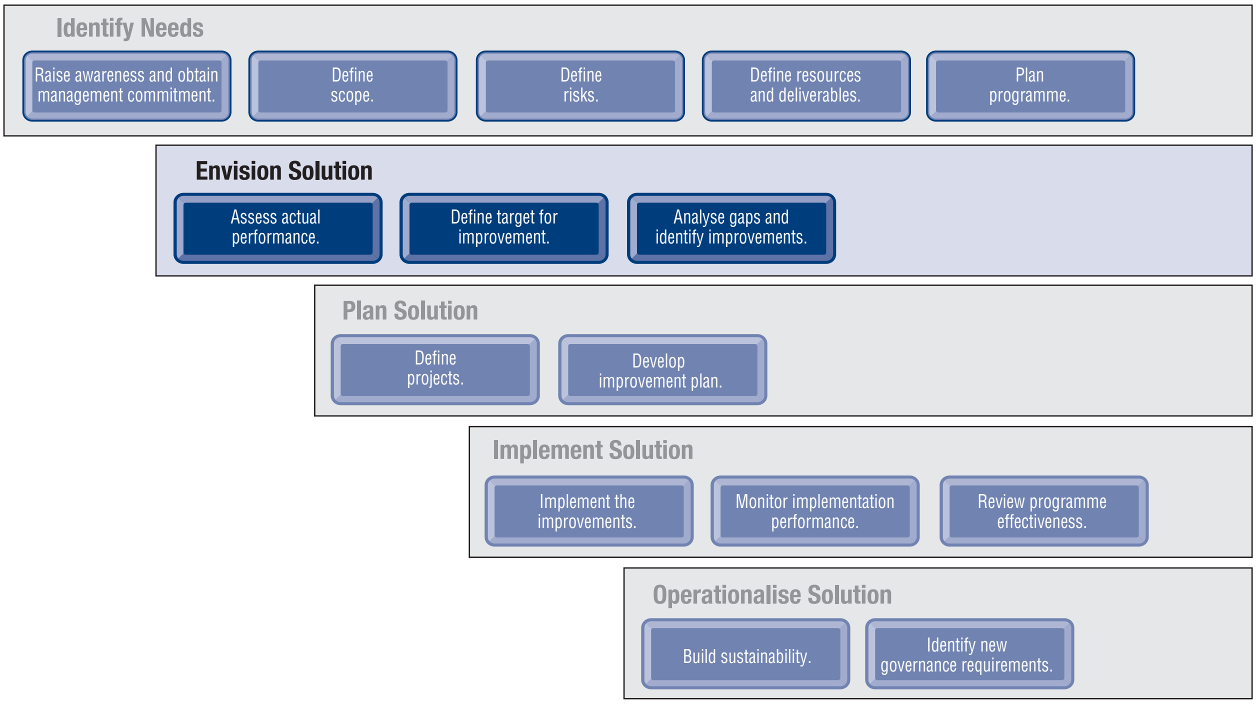
Define risks.

Define resources and deliverables.

Plan programme.

Step 5.3	
Process step	**Communicate aims and objectives.**
Process objective	Ensure that all affected parties are involved, committed and knowledgeable about the objectives and approach of the improvement programme.
Process description	Once the objectives and approach of the programme are set, the programme is organised, resources are assigned, and the IT governance framework and governance processes are agreed upon, it is crucial that they be communicated to all stakeholders and parties in the enterprise likely to be affected by the implementation project. This will help set expectations, raise awareness and ensure that all involved parties participate. If needed, skills should be improved by internal or external training. Finally, a feedback mechanism should be established to capture any reactions or suggestions when communicating directions, goals and responsibilities. The complete communication process should be supported by a programme communication plan.
Tasks	1. Define awareness messages. 2. Undertake awareness campaign. 3. Undertake any necessary internal training. 4. Consider external training. 5. Establish mechanisms for providing feedback.
Input	Initial programme business case, organisation plan, resource plan, IT governance framework
Using COBIT and Val IT components	• *IT Governance Implementation Guide, 2nd Edition* • COBIT PO6 *Communicate management aims and objectives*
Output	Communication plan
Tool kit support	Templates (communication plan), presentation folder

PHASE 2—ENVISION SOLUTION


Identify Needs
Raise awareness and obtain management commitment.
Define scope.
Define risks.
Define resources and deliverables.
Plan programme.
Envision Solution
Assess actual performance.
Define target for improvement.
Analyse gaps and identify improvements.
Plan Solution
Define projects.
Develop improvement plan.
Implement Solution
Implement the improvements.
Monitor implementation performance.
Review programme effectiveness.
Operationalise Solution
Build sustainability.
Identify new governance requirements.

Envision Solution

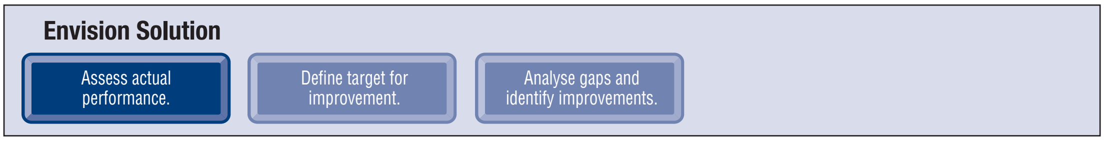
Phase 2 of the road map envisions the solution and is composed of three steps. First, the organisation should define where it is (as-is position), assessing current capability and maturity of the selected IT processes. Next, the appropriate and reasonable target capability and maturity levels (to-be position) should be set for each of those processes. Finally, the gaps between the as-is and to-be positions should be analysed and translated into improvement opportunities.

The first step of this phase—assessment of actual performance—is a useful tool to raise awareness and help understand scope. Therefore, it may be carried out as a stand-alone step before the commencement of the road map or as part of phase 1—identify needs.

When you are…	➜	Your role in this phase is to…
Board and executive	➜	Interpret the results/conclusions of assessments. Set priorities, time scales and expectations regarding the future capability required from IT.
Business management	➜	Assist IT with the setting of capability targets. Ensure that the envisaged solution is aligned to business goals.
IT management	➜	Apply professional judgement in formulating improvement priority plans and initiatives. Ensure open and fair assessment of IT activities. Guide assessment of current practice. Obtain consensus on a required capability target. Ensure that the envisaged solution is aligned to IT goals.
IT audit	➜	Provide advice and assist with current-state assessments, target-state positioning and gap priorities. If required, independently verify assessment results.
Risk and compliance	➜	Review assessment to ensure that risk and compliance issues have been addressed adequately.

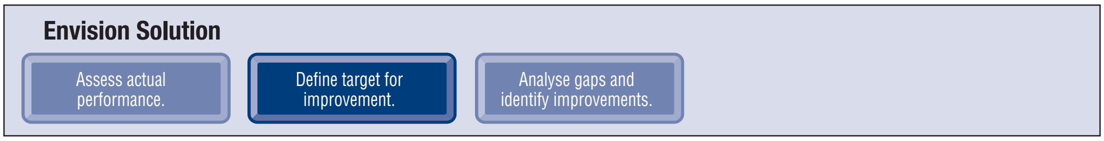
COBIT and Val IT provide support in phase 2 as follows:
- Management guidelines' key activity goals and process and generic maturity models for assessing maturity levels and setting maturity targets
- Control objectives and control practices for analysing capability maturity attributes, identifying gaps and determining improvement opportunities

Step 6—Assess Actual Performance


Envision Solution
Assess actual performance.
Define target for improvement.
Analyse gaps and identify improvements.

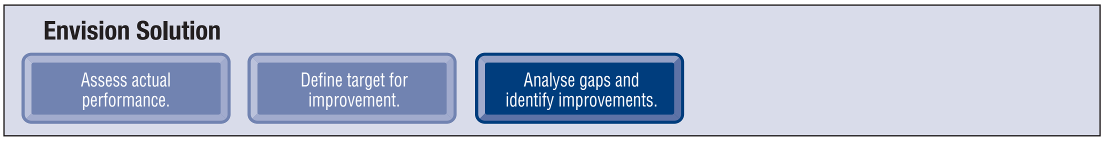
Step 6.1	
Process step	**Assess current capability maturity.**
Process objective	Determine the current capability maturity of the selected processes.
Process description	Previously, the understanding of business and governance drivers and a risk assessment were used to focus on the processes critical to ensuring that IT goals are met. Now, it is necessary to establish how well these processes are managed and executed, based on process descriptions, policies, standards, procedures, technical specifications, etc., to determine whether they are likely to support the business and IT requirements. This is achieved by using the capability maturity assessment technique for each IT process, considering COBIT's and Val IT's maturity models, control objectives, control practices and key activities.
Tasks	1. Define the method for executing the assessment (consensus meeting or via interviews, with or without facilitation by an external expert, etc.). 2. For each IT process, create a worksheet for analysing capability maturity, using the attributes described in the COBIT and Val IT frameworks. 3. Document understanding of how the current process actually addresses the control objectives and practices selected earlier. Record the actual capability for each attribute on the capability worksheet, at the current level of maturity. 4. Compare for reasonableness to the maturity model for the specific process in the management guidelines. 5. Define the process maturity rating based on the level attained for the different attributes in the capability maturity scorecard. 6. Note that the assessment can be supported by a tool provided in the implementation tool kit.
Input	Process descriptions, policies, standards, procedures, technical specifications
Using COBIT and Val IT components	• COBIT management guidelines' key activities, process maturity models and maturity attribute table • COBIT control objectives • COBIT control practices • COBIT ME1 *Monitor and evaluate IT performance*
Output	Current maturity rating for selected processes
Tool kit support	Templates (capability worksheet, capability maturity scorecard), maturity measurement folder, reporting techniques, maturity assessment tool

Step 7—Define Target for Improvement


Envision Solution
Assess actual performance.
Define target for improvement.
Analyse gaps and identify improvements.

Step 7.1	
Process step	**Determine target capability maturity.**
Process objective	Determine the targeted capability maturity for each of the selected processes.
Process description	Based on the assessed current-state process maturity levels, and using the results of the business-goals-to-IT-goals analysis and identification of process importance performed earlier, an appropriate maturity level should be determined for each process. The chosen level should take into account available external and internal benchmarks (e.g., COBIT Online benchmark data). It is important to ensure the appropriateness to the business of the level chosen.
Tasks	1. Consider IT goals, information criteria and IT resources recorded on the heat map to decide an initial ideal target maturity level for each process. 2. To the extent possible, benchmark internally to identify better practices that can be adopted. 3. To the extent possible, benchmark externally with competitors and peers to help decide appropriateness of the chosen target level. 4. Do a 'sanity check' of the reasonableness of the targeted level (individually and as a whole) looking at what is achievable and desirable within the chosen time frame. 5. Record the desired capability improvements on a capability worksheet. 6. Record the to-be targets on the capability maturity scorecard.
Input	Heat maps, capability worksheet, internal and external benchmarks
Using COBIT and Val IT components	• COBIT management guidelines' key activities and maturity models • COBIT control objectives • COBIT control practices
Output	Target maturity rating for selected processes
Tool kit support	Templates (capability worksheet, capability maturity scorecard), maturity measurement folder, reporting techniques

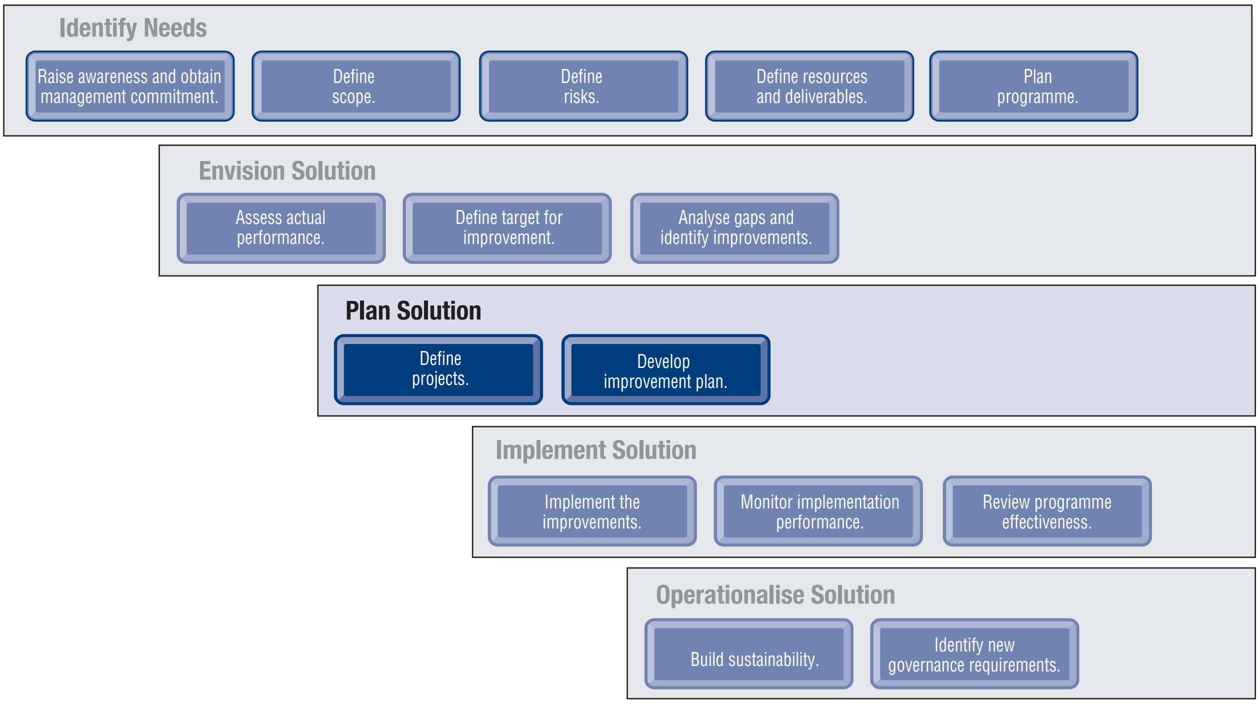
Step 8—Analyse Gaps and Identify Potential Improvements


Envision Solution
Assess actual performance.
Define target for improvement.
Analyse gaps and identify improvements.

Step 8.1	
Process step	**Analyse gaps and identify potential improvements.**
Process objective	Determine the gaps between the as-is and the to-be positions of the selected IT processes, and translate these gaps into improvement opportunities.
Process description	After the current capability of the processes has been determined and the target capability planned, the gaps between as-is and to-be should be evaluated and opportunities for improvement identified. After the gaps have been defined, the root causes, common issues, residual risks, existing strengths and best practices to close those gaps need to be determined. This step may identify some relatively easy-to-achieve improvements, such as improved training, the sharing of best practices and standardising procedures. However, the gap analysis is likely to require considerable experience in IT management techniques to develop practical solutions. Understanding of process techniques, advanced technical expertise and knowledge of IT management software will be needed. To ensure that this step is executed effectively, it is important for the team to work with the IT process owners, engaging internal expertise. If necessary, external advice should also be obtained. Risks that will not be mitigated after closing the gaps should be identified and formally accepted by management.
Tasks	1. Use understanding of current capability (by attribute) and compare it to the target capability level. 2. Leverage existing strengths to deal with certain gaps and seek guidance from COBIT's control practices, Val IT's management practices, and other specific best practices and standards such as ITIL, ISO 17799 and PMBOK to close other gaps. 3. Look for patterns that indicate root causes to be addressed. 4. Collate gaps into potential improvements. 5. Use the capability worksheet to record these recommended improvements. 6. Identify unmitigated residual risks and ensure or accept formally.
Input	Capability worksheet, maturity models, generic maturity model with attributes
Using COBIT and Val IT components	• COBIT control practices • COBIT mapping research papers • Val IT management practices
Output	• Description of improvement opportunities • Risk response document
Tool kit support	Templates (capability worksheet, capability maturity scorecard), maturity measurement folder, reporting techniques

Implementation Road Map
Phase 3

PHASE 3—PLAN SOLUTION


Identify Needs
Raise awareness and obtain management commitment.
Define scope.
Define risks.
Define resources and deliverables.
Plan programme.
Envision Solution
Assess actual performance.
Define target for improvement.
Analyse gaps and identify improvements.
Plan Solution
Define projects.
Develop improvement plan.
Implement Solution
Implement the improvements.
Monitor implementation performance.
Review programme effectiveness.
Operationalise Solution
Build sustainability.
Identify new governance requirements.

Plan Solution

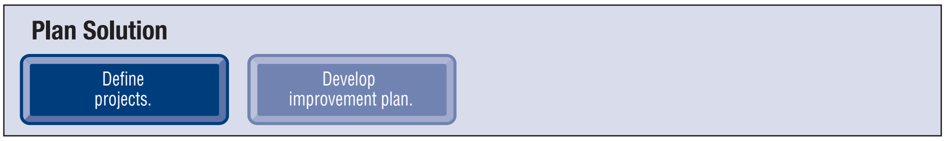
The third phase of the road map builds on the previously identified improvement initiatives and translates them into justifiable projects aligned with original business value and risk drivers. After approval of these individual projects, they should be integrated into one overall detailed and practical programme plan for rolling out the solution. The IT and business goals of this improvement programme should be translated into a set of metrics.

When you are…	➜ Your role in this phase is to…
Board and executive	➜ Consider and challenge proposals, support justified actions, provide budgets and set priorities as appropriate
Business management	➜ Together with IT, ensure that the proposed improvement actions are aligned with agreed-upon business and IT goals and that any activities requiring business input or action are supported
IT management	➜ Ensure viability and reasonableness of the programme plan. Ensure that the plan is achievable and there are resources available to execute the plan. Consider the plan together with priorities of the enterprise's portfolio of IT-enabled investments to decide a basis of investment funding.
IT audit	➜ Provide independent assurance that issues identified are valid, business cases are objectively and accurately presented, and plans appear achievable. Provide expert advice and guidance where appropriate.
Risk and compliance	➜ Ensure that any identified risks or compliance issues are being addressed, and proposals conform with any relevant policies or regulations

COBIT provides support in phase 3 as follows:
- Control objectives, control practices and management practices for prioritising improvement opportunities
- Management guidelines' IT process KGIs and IT key activity KPIs for defining process metrics

Val IT provides support in phase 3 as follows:
- IM and PM key management practices for guidance on investment management

Step 9—Define Projects



Step 9.1	
Process step	**Prioritise improvements into justifiable projects.**
Process objective	Translate improvement opportunities into justifiable projects. Prioritise and focus on the high-impact projects.
Process description	When all the potential initiatives for IT governance improvement have been identified, these initiatives should be prioritised into formal and justifiable projects. Each project should be mapped on an opportunity grid, considering the opportunity worksheet, best practices and standards, external proposals, technical evaluations, resource plans, IT budgets, etc. The projects with high benefit and that are relatively easy to implement should be selected first. Then, those with high benefit but a lesser ease of implementation should be decomposed into smaller parts. The selected high-priority initiatives should be translated into formal and justifiable projects, each with a project plan that includes the project's contribution to the programme objectives. This can be documented in the project definition reports. It is important to check whether the objectives still conform to the original value and risk drivers. The projects will be included in an updated business case for the programme. Details of any unapproved improvement project proposals should be recorded in a register for potential future considerations and opportunities presented for sponsors to reappraise and, when appropriate, resubmit their recommendations at a later date.
Tasks	1. For each improvement, consider potential benefit and ease of implementation (cost, effort, sustainability, etc.). 2. Plot improvements onto a grid to identify priority actions (based on benefit and ease of implementation). 3. Focus on alternatives showing high benefit/high ease of implementation. 4. Consider any other actions showing high benefit/low ease of implementation for possible scaled-down improvements (decompose into smaller improvements and look again at benefits and ease of implementation). 5. Analyse selected improvements to the detail required for high-level project definition, considering approach, deliverables, resources required, estimated costs, estimated time scales, dependencies and project risks. Use available best practices and standards to further refine detailed improvement requirements. Discuss with managers and teams responsible for the process area. 6. Consider feasibility, link back to the original value and risk drivers, and agree on projects to be included in the business case for approval. 7. Record unapproved projects and initiatives in register for potential future consideration.
Input	Opportunity worksheet, best practices and standards, external proposals, technical evaluations, resource plans, IT budget
Using CobiT and Val IT components	Val IT IM and PM key management practices, example business case
Output	• Improvement project definitions • Record of unapproved projects
Tool kit support	Templates (opportunity worksheet and grid, reworking good but hard-to-justify solutions)

Step 10—Develop Improvement Plan

Plan Solution
Define projects.
Develop improvement plan.

Step 10.1	
Process step	**Develop an improvement plan.**
Process objective	Integrate the improvement projects into the overall programme plan.
Process description	Based on the opportunity grid, the project definitions, the resource plan and the IT budget, the identified and prioritised improvements are now turned into a set of documented projects that support the overall improvement programme. The impact on the enterprise of executing the programme is determined and a change plan is prepared that describes the programme activities that will ensure, in practical terms, that the improvements delivered by the projects will be rolled out into the enterprise in a sustainable manner. An important element in this step is the definition of metrics (i.e., the programme's KPIs), that will measure whether the process improvements are likely to deliver the original business benefits. COBIT's and Val IT's process KGIs and activity KPIs can be used as starting points to achieve this. The complete improvement programme should be documented on a Gantt chart.
Tasks	1. Organise potential projects into an overall programme, in preferred sequence, considering resource requirements and dependencies. 2. Use portfolio management techniques to ensure that the programme conforms to strategic goals and IT has a 'balanced' set of initiatives. 3. Identify the impact of the improvement programme on the IT and business organisations and indicate how the improvement momentum is to be maintained. 4. Develop a change plan documenting any migration, conversion, testing, training, process or other activities that must be included within the programme as part of implementation. 5. Identify and agree on metrics for measuring the outcomes of the improvement programme in terms of the original business and IT goals.
Input	Opportunity grid, project definitions, portfolio management plan results, resource plan, IT budget
Using COBIT and Val IT components	• COBIT management guidelines' process KGIs and key activity KPIs • Val IT PM key management practices, example business case
Output	• Updated programme plan • Success metrics • Change plan
Tool kit support	Templates (programme Gantt chart, change plan)

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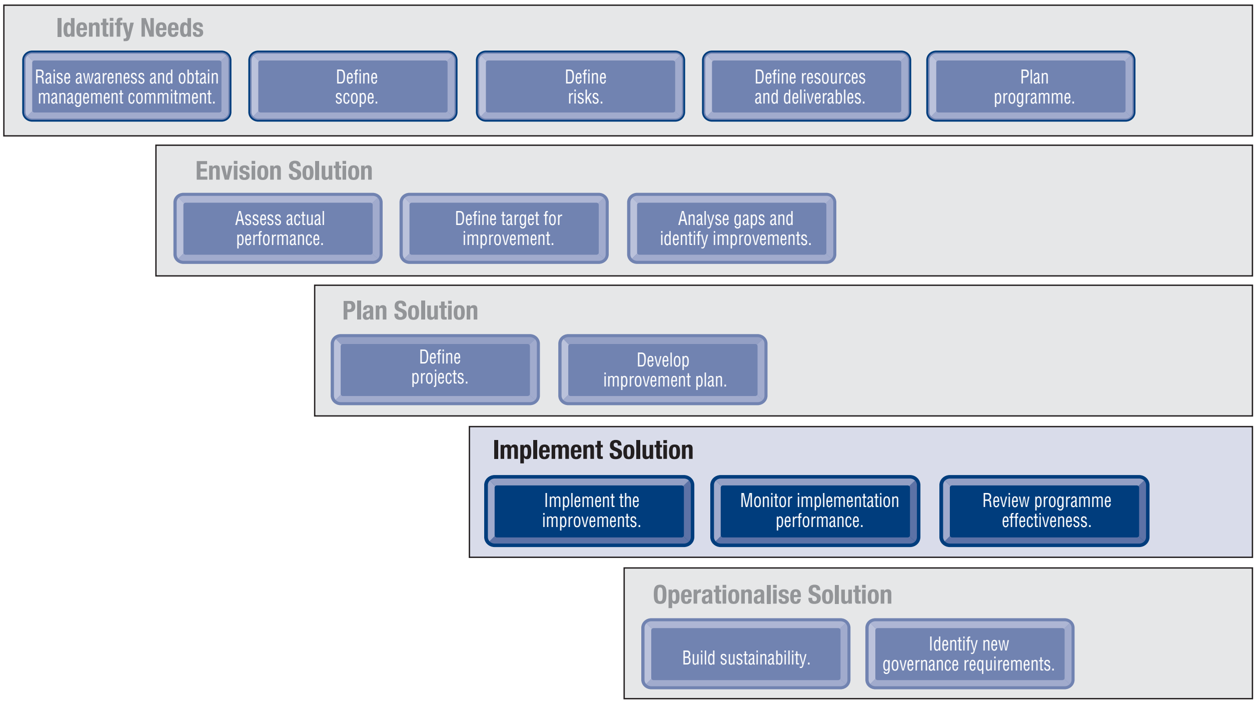
Implementation Road Map
Phase 4

PHASE 4—IMPLEMENT SOLUTION


Identify Needs
Raise awareness and obtain management commitment.
Define scope.
Define risks.
Define resources and deliverables.
Plan programme.
Envision Solution
Assess actual performance.
Define target for improvement.
Analyse gaps and identify improvements.
Plan Solution
Define projects.
Develop improvement plan.
Implement Solution
Implement the improvements.
Monitor implementation performance.
Review programme effectiveness.
Operationalise Solution
Build sustainability.
Identify new governance requirements.

Implement Solution

As the improvement plan rolls out, governed by established project and change management methodologies, the successful delivery of the desired business results is ensured by:

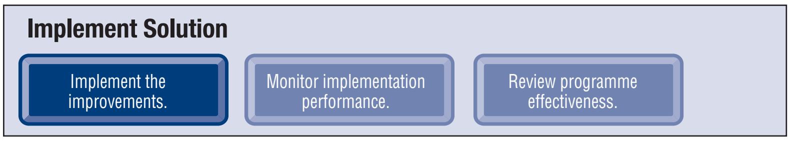
- The feedback and lessons learned, provided by the post-implementation review
- The monitoring of the improvements on the corporate performance and IT balanced scorecards

When you are…	➜ Your role in this phase is to…
Board and executive	➜ Assess performance in meeting the original objectives. Consider the need to redirect future activities.
Business management	➜ Provide feedback and consider the effectiveness of the business's contribution to the initiative. Use positive results to improve current business-related IT governance activities. Use lessons learned to adapt and improve the business's approach to future IT governance initiatives.
IT management	➜ Provide feedback and consider the effectiveness of IT's contribution to the initiative. Use positive results to improve current IT-related IT governance activities. Monitor projects based on project criticality as they are developing, using both programme management and project management techniques, and be prepared to change the plan and/or cancel one or more projects if early indications are that a project is off track and may not meet critical milestones. Use lessons learned to adapt and improve IT's approach to future IT governance initiatives.
IT audit	➜ Provide independent assessment of the overall efficiency and effectiveness of the initiative. Provide feedback and consider the effectiveness of audit's contribution to the initiative. Use positive results to improve current audit-related IT governance activities. Use lessons learned to adapt and improve audit's approach to future IT governance initiatives.
Risk and compliance	➜ Assess whether the initiative has improved the ability of the enterprise to identify and manage risks and legal, regulatory and contractual requirements. Provide feedback and make any necessary recommendations for improvements.

COBIT provides support in phase 4 as follows:
- Management guidelines' IT goals, process goals and key activity goals, and related metrics for establishing an IT balanced scorecard and to help conduct a post-implementation review
- PO10 and AI processes for guidance on project management and solution acquisition and implementation

Val IT provides support in phase 4 as follows:
- IM11 process for guidance on managing programme performance
- IM14 process for guidance on monitoring programme performance

Step 11—Implement the Improvements



Implement Solution

Implement the improvements.

Monitor implementation performance.

Review programme effectiveness.

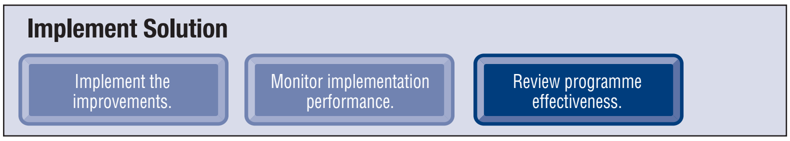
Step 11.1	
Process step	**Implement the improvements.**
Process objective	Implement the detailed improvement projects, leveraging enterprise programme and project management capabilities, standards and practices.
Process description	The approved improvement projects, including required change activities, are now ready for implementation, so the solutions as defined by the programme can now be acquired or developed and implemented into the enterprise. In this way, projects become part of the normal development life cycle and should be governed by established programme and project management methods. The rollout of the solution should be in line with the established project definitions and change plan such that the improvements are sustainable.
Tasks	1. Acquire or develop solutions. 2. Perform testing of solutions. 3. Perform rollout of solutions.
Input	Project definitions, project Gantt chart, change plan
Using COBIT and Val IT components	• COBIT PO10 *Manage projects* and AI processes • Val IT IM11 *Manage the programme*
Output	Implemented improvements
Tool kit support	

Step 12—Monitor Implementation Performance

Implement Solution
Implement the improvements.
Monitor implementation performance.
Review programme effectiveness.

Step 12.1	
Process step	**Monitor implementation performance.**
Process objective	Integrate the metrics for project performance and benefits realisation of the governance improvement project into the performance measurement system for regular and ongoing monitoring.
Process description	It is essential that the improvements described in the project can be monitored via IT goals and IT process goals using suitable techniques such as an IT balanced scorecard and benefits register. This will ensure that the initiatives remain on track according to original business and IT goals and continue to deliver the desired business benefits. For each metric, targets need to be set, compared regularly against reality and communicated using a performance report. To ensure success, it is crucial that positive as well as negative results from the performance measurements be reported to all stakeholders, which will build confidence and enable any corrective actions to be taken in time. Projects should be monitored as they are developing using both programme management and project management techniques, and preparation should be made to change the plan and/or cancel the project if early indications are that a project is off track and may not meet critical milestones.
Tasks	1. Set targets for each metric for an agreed-upon time period. The targets should enable IT performance and improvement actions to be monitored and success or potential failure determined. 2. Where possible, obtain current actual measures for these metrics. 3. Gather actual measures and compare them to targets on a regular (e.g., monthly) basis. 4. Compare to targets and investigate any significant variances. 5. Where variances indicate that corrective actions are required, develop and agree on proposed corrective measures. 6. Communicate both positive and negative results from performance monitoring to all interested stakeholders, with recommendations for any corrective measures.
Input	• IT goals and IT process goals identified as a result of requirements analysis • Existing measures and/or scorecards
Using COBIT and Val IT components	• COBIT management guidelines' IT goals and IT process goals
Output	• Updated scorecards and benefit register • Report explaining scorecard results
Tool kit support	Templates (IT balanced scorecard, performance report), example IT balanced scorecard

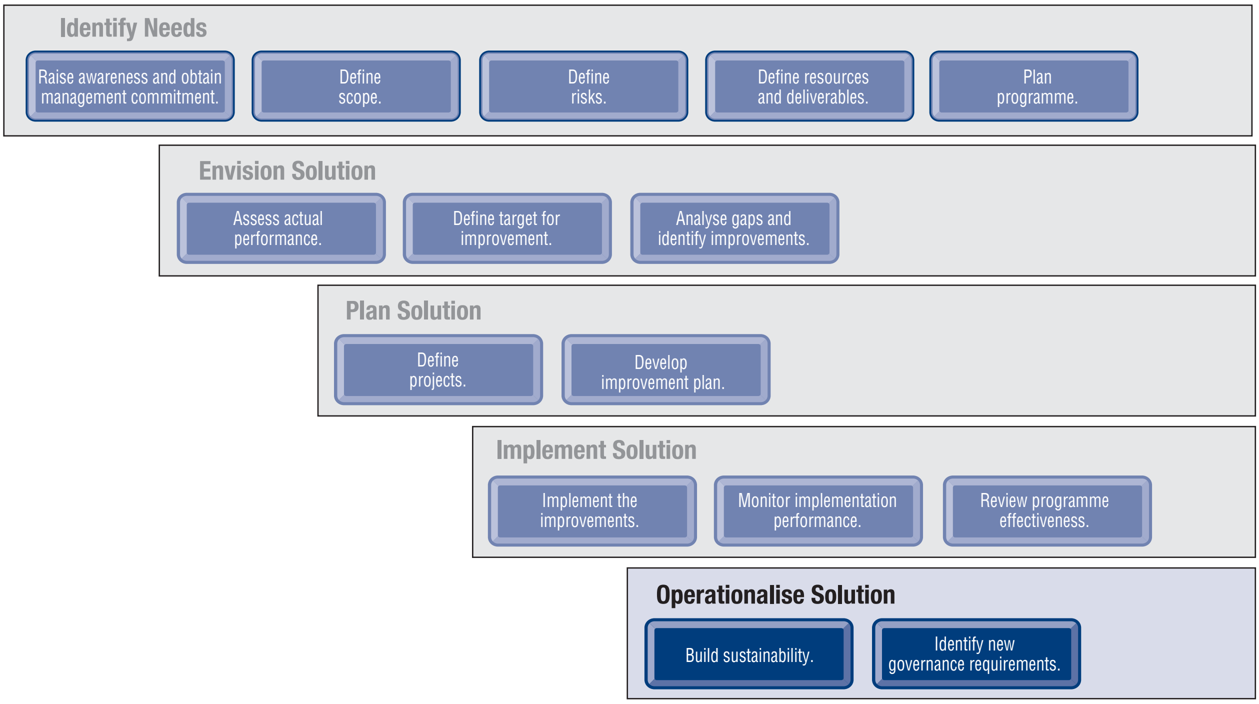
Step 13—Review Programme Effectiveness


Implement Solution
Implement the improvements.
Monitor implementation performance.
Review programme effectiveness.

Step 13.1	
Process step	**Review programme effectiveness.**
Process objective	Assess the results and experience gained from the programme. Record and share any lessons learned.
Process description	This step enables the team to determine whether the IT governance programme delivered against expectations. This can be done by comparing the results to the original success criteria and gathering feedback from the implementation team and stakeholders via interviews, workshops and satisfaction surveys. The lessons learned can contain valuable information for team members and project stakeholders for use in ongoing initiatives and improvement projects.
Tasks	1. Gather feedback and perform a stakeholder satisfaction survey. 2. Measure and report actual results against originally established project measures of success. 3. Perform a facilitated brainstorming session with project team members and project stakeholders to record and pass on lessons learned.
Input	Project documentation, original success criteria
Using CobiT and Val IT components	• CobiT ME4.3 *Value delivery* and ME4.6 *Performance measurement* • Val IT IM14 *Monitor and report on programme performance*
Output	Post-implementation review report (plus recommendations for new actions—last step)
Tool kit support	

Implementation Road Map
Phase 5

PHASE 5—OPERATIONALISE SOLUTION


Identify Needs
Raise awareness and obtain management commitment.
Define scope.
Define risks.
Define resources and deliverables.
Plan programme.
Envision Solution
Assess actual performance.
Define target for improvement.
Analyse gaps and identify improvements.
Plan Solution
Define projects.
Develop improvement plan.
Implement Solution
Implement the improvements.
Monitor implementation performance.
Review programme effectiveness.
Operationalise Solution
Build sustainability.
Identify new governance requirements.

Develop IT Governance Structure and Processes

As the improvement plan rolls out, governed by established project and change management methodologies, the sustainability of the delivery of the desired business results is supported by:
- The feedback and lessons learned, provided by the post-implementation review
- The monitoring of the improvements on the corporate performance and IT balanced scorecards

Operationalising the solution entails:
- Integrating IT governance with enterprise governance
- Ensuring accountability for IT throughout the enterprise
- Defining appropriate organisational structures
- Drafting and clearly communicating policies, standards and processes for IT governance and control
- Effecting cultural change (commitment at all levels in the enterprise, from the board to the 'shop floor')
- Driving a process and culture of continuous improvement
- Implementing optimum monitoring and reporting structures

When you are…	➔ Your role in this phase is to…
Board and executive	➔ Provide direction, set objectives, and allocate roles and responsibilities for the enterprise's ongoing approach to IT governance. Set the 'tone at the top', develop organisational structures, and encourage a culture of good governance and accountability for IT amongst business and IT executives.
Business management	➔ Provide support and commitment by working positively with IT to improve and make IT governance business as usual.
IT management	➔ Drive and provide strong leadership to sustain the momentum of the IT governance improvement programme. Engage in IT governance activities as part of normal business practice. Create policies, standards and processes to ensure that governance becomes business as usual.
IT audit	➔ Provide objective and constructive input, encourage self-assessments and provide assurance to management that governance is working effectively, thus building confidence in IT. Provide ongoing audits based on an integrated governance approach using criteria shared with IT and the business based around the COBIT framework.
Risk and compliance	➔ Work with IT and the business to anticipate legal and regulatory requirements, and identify and respond to IT-related risks as a normal activity in IT governance.

COBIT provides support in phase 5 as follows:
- COBIT's ME domain for guidance on processes, controls and goals relating to the effective monitoring of IT performance, internal controls, compliance and governance. ME4 provides process guidance and objectives that, if met, will lead to a sustainable IT governance approach.
- COBIT's PO4 for guidance on defining IT processes, organisation and relationships
- COBIT's PO6 for guidance on communicating management's aims and direction
- COBIT's RACI (Responsible, Accountable, Consulted and Informed) charts for help with defining roles and responsibilities
- *Board Briefing on IT Governance, 2nd Edition*, as a guide to IT governance and best practices for senior executives

Step 14—Build Sustainability

Operationalise Solution

Build sustainability.

Identify new governance requirements.

Step 14.1	
Process step	**Build sustainability.**
Process objective	Improve organisational structures, processes, roles and responsibilities to change the enterprise's behaviour so that IT governance becomes business as usual.
Process	In this step, the enterprise should build on the successes and lessons learned from the governance implementation project(s) to build and reinforce commitment amongst all IT stakeholders for continuously improved governance of IT. Policies, organisational structures, roles and responsibilities, and governance processes should be developed and optimised so that IT governance operates effectively as part of normal business practice, and there is a culture supporting this, demonstrated by top management.
Tasks	1. Document IT policies, standards and processes. 2. Define roles and responsibilities. 3. Create necessary organisational structures. 4. Enable clear communications setting out the board's expectations for IT governance. 5. Implement governance processes. 6. Use post-implementation review feedback to identify governance improvements.
Input	Post-implementation review report, environmental factors
Using COBIT and Val IT components	• COBIT PO4 *Define the IT processes, organisation and relationships* • COBIT PO6 *Communicate management aims and direction* • COBIT ME4 *Provide IT governance* • COBIT RACI charts • Val IT VG processes
Output	Implemented IT governance organisational structures and processes
Tool kit support	

Step 15—Identify New Governance Requirements

Build Sustainability
Build sustainability.
Identify new governance requirements.

Step 15.1	
Process objective	**Identify new governance objectives based on experiences gained and current business objectives for IT.**
Process description	Using the feedback and lessons learned, monitoring of the improvements on the corporate performance and IT scorecards, and current understanding of business and IT goals, the enterprise should consider new governance requirements. In this process, it is important to get the business sponsors and chief information officer (CIO) to support moving forward with the next iteration of the road map and IT governance programme. The direction of priorities and objectives should be set.
Tasks	1. Review feedback from the review of programme effectiveness. 2. Review results from performance scorecards. 3. Consider the current business objectives for IT. 4. Obtain support from the programme sponsors for further IT governance activity. 5. Agree on the need and set priorities and objectives.
Input	• Post-implementation review report • Performance reports • Business and IT strategy
Using COBIT and Val IT components	• COBIT maturity models • COBIT PO1 *Define a strategic IT plan* • COBIT DS1 *Define and manage service levels* • COBIT ME3 *Ensure compliance with external requirements* • COBIT ME4 *Provide IT governance*
Output	Recommendations for further IT governance activities
Tool kit support	

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Appendix I

Generic Approach to IT Initiative Scoping

Scoping an IT governance programme involves defining the objectives, deliverables, environment to be addressed, organisational units involved or affected, and how to measure programme success. It also includes identifying any IT frameworks, standards and best practices used to guide the initiative. Having defined the programme, planning then covers developing estimates of financial and other resources required, agreeing on the programme time frames, and determining how the programme will be executed. Then the proposed scope can be communicated to all stakeholders for agreement.

The scoping approach in this appendix provides 14 generic activities divided into a two-step process: *Defining the initiative* and *Planning the initiative*. The activities are a guide to help support the detailed planning of large and complex IT governance programmes, and they need to be customised. The same approach has been used to design the first phase of the implementation road map.

This generic scoping process is designed to identify everything that needs to be considered to enable effective planning, such as why governance is needed, where to focus attention, risks that could affect the scope, who needs to be involved
(e.g., key stakeholders, sponsors, team members), what kind of resources will be required, how best to organise the programme, and the methodologies and approaches that would be useful.

Appendix II

CobiT and Related Products

Appendix I—Generic Approach to IT Initiative Scoping

1. Define the Initiative

Define the purpose of the initiative, the business objective and the expected value to be returned. Document the enterprise areas addressed and impacted. List the success factors, compliance requirements, potential risks and project closure criteria. Establish how changes to these project drivers and outcomes will be addressed.

Steps	Activities	Deliverables
Step 1.1 Define objectives. Identify the primary objectives and goals of the initiative. Develop the value proposition and indicate how the objectives support and enhance the goals of the enterprise.	• Identify reasons and objectives for undertaking the project and review with management. • Research and document key issues and concerns. • Learn from similar projects that have been undertaken. • Identify and obtain relevant documents. • Identify expected outcomes and deliverables of the initiative (high level). • Identify competitive landscape.	• Documented business values • Documented objectives of the IT initiative • Documented expected outcomes
Step 1.2 Define boundaries. Define the IT project and its boundaries, what is included and what is excluded. Identify the organisational units, business activities and processes that are included and those that are excluded from the project scope.	• Identify key activities, business units, organisational entities, operations, etc., to be included within the scope of the project. • Identify and document items that are normally within the scope of such projects but are to be excluded. • Identify any scope issues, such as partially owned entities, foreign jurisdictions and exclusions. • Ensure that the scope is sufficient to make certain that the results obtained will meet the objectives and expected deliverables. • Establish a liaison with affected entities to ensure co-ordination.	• Documented scope of IT initiative • Documented scope of boundary issues and their treatment • Communication of the boundaries with key stakeholders
Step 1.3 Define standards. Identify standards, reference frameworks, policies and/or contracts in undertaking the project with which the initiative needs to comply. Standards may include industry requirements, regulatory standards and entity policies. Identify indicators for measuring, and establish key success factors for achieving, compliance.	• Identify contractual, legislative, regulatory, industry or other standards to which the entity and the project must comply. • Identify any standards or frameworks that the project/initiative should consider. • Document success factors to enable, and key metrics to evidence, compliance with standards.	• Documented standards that will be used • Documented key success factors and metrics for use in assessing project results
Step 1.4 Define risks. Identify and assess risks associated with the project, including business risks as well as project risks. The degree of risk assessment and mitigation depends on the project's size, value delivered and impact.	• Identify potential reasons for failure or delay of the initiative in meeting objectives. • Identify important scenarios that may endanger the initiatives' objectives, as well as the negative impacts this initiative may have on other enterprise objectives. • Identify the significance of risks and likelihood of occurrence. • Create plans to manage and mitigate the risks.	• Documented risk assessment of IT initiative • Risk mitigation plan (as needed) and estimated costs
Step 1.5 Define change process. Identify internal and external factors that could cause changes to the project and define how changes will be made to the project's objectives, scope, risks and success factors.	• Identify and analyse internal and external factors that could cause changes to the project. • Define and document the process and procedures for authorising, accepting and communicating changes to the drivers and outcomes. • Identify appropriate tools and techniques to manage the change process.	• Change process description • Change management guidance, including the use of tools and techniques

APPENDIX I—GENERIC APPROACH TO IT INITIATIVE SCOPING (*cont.*)

Steps	Activities	Deliverables
Step 1.6 Define success. Identify the conditions that must exist for the project to be considered complete, including the specific activities, tasks and deliverables required to complete the project. Define the exit criteria of the initiative, i.e., the conditions that determine whether the objectives have been achieved.	• Identify post-project acceptance activities. • Identify evidence required to indicate that the project deliverables have been provided and accepted by the project owner and by those taking responsibility for the ongoing activities the project may create.	• Evidence (e.g., metrics, quality criteria) required to indicate the project has been successfully completed • Evidence that post-completion activities have been identified and provided to appropriate organisational units
Step 1.7 Define resources. Identify the resources required to successfully complete the initiative, including people, technology, funding and skills.	• Define the number and level (skills) of resources needed to achieve the objectives of the initiative. • Assess the need for technology and equipment to support the initiative.	• Resource model • Resource cost plan
Step 1.8 Define deliverables. Define the specific deliverables that are to be produced during the initiative.	• Identify the external deliverables that will result from the initiative. • Create an illustrative sample deliverable.	• List of project deliverables • Sample of selected deliverables

2. Plan the Initiative

Define the deliverables in detail. Based on that, identify the resources, support and accountabilities required to produce the deliverables. Obtain approval, set priorities within the initiative, activate resources and develop a communication plan so the initiative can be stage-gated.

Steps	Activities	Deliverables
Step 2.1 Obtain executive support. Identify and appoint the appropriate project sponsor for the initiative.	• Determine the suitability of potential sponsors. • Assess the availability of potential sponsors to fulfil the requirements. • Develop executive presentation material based on project objectives and benefits.	• Initiative sponsor/owner identification • Completed project documentation and charter
Step 2.2 Finalise resource requirements. Acquire the necessary funding and resources as defined in the resource model.	• Review the expected resource model and cost plan. • Prepare a detailed acquisition timeline. • Prepare a detailed, calendar-based project budget, including resource consumption/use and funding requirements.	• Updated resource model • Detailed resource acquisition timeline • Detailed project budget
Step 2.3 Define organisation for the initiative. Define and implement the organisational structure required to make the initiative successful. This should include leadership, staffing, key sponsor, etc., and may include a project management office.	• Document roles and responsibilities. • Define leadership expectations. • Create and establish the organisation structure. • Initially populate the organisation with key personnel. • Create position descriptions, roles and responsibilities.	• Organisation model • Reporting authority • Roles and responsibilities

Appendix I—Generic Approach to IT Initiative Scoping (*cont.*)

	Activities	Deliverables
Step 2.4 Define timeline. Define the specific timeline for the initiative to be completed in order to meet stated goals and objectives given the expected resources and deliverables defined for the initiative. Include key milestones and identify the critical path.	• Review goals, objectives and the expected resource model. • Based on the review, define key milestones for deliverables and major initiative checkpoints with project sponsors. • Prepare a high-level timing diagram and identify potential critical path and dependent activities. • Prepare Gantt charts for each major phase of the subproject, including critical and slack path analysis, skill requirements and resource plans. • Ensure that the timing will meet critical external reporting, financing and other deadlines within the business cycle. • Define ongoing status reporting within the project and to key external stakeholders and affected staff.	• Documented timelines integrated with the resource planning information • Project timeline document indicating: – Activities and tasks – Activity dependence – Major milestone dates – Major project checkpoints – Key deliverable dates – Status and reporting dates – Business activities and other key dates • Defined communications documents
Step 2.5 Define approach and methodology. Determine the methodologies to be used and develop detailed plans, complete with phases, subphases, activities and tasks to enable the project to successfully meet its objectives.	• Develop project phases and subphases, each with objectives, activities and deliverables. • Determine the approach and methodologies to be used and the information to be obtained. • Develop detailed work plans for each phase, subphase and activity.	• Detailed project plan
Step 2.6 Create communication plan. Design a plan to communicate information about the initiative, manage expectations and support the objectives of the initiative throughout its life cycle. Consider the key milestones and different audiences.	• Communicate project status, resource plan and costs, as appropriate. • Communicate the status of the risk management plan. • Communicate changes in project goals and objectives. • Communicate project progress.	• Documented communication plan, including timeline and key milestones

Appendix II—CobiT and Related Products

The CobiT framework, in versions 4.0 and higher, includes all of the following:
- Framework—Explains how CobiT organises IT governance management and control objectives and good practices by IT domains and processes, and links them to business requirements
- Process descriptions—Include 34 IT processes covering the IT responsibility areas from beginning to end
- Control objectives—Provide generic best practice management objectives for IT processes
- Management guidelines—Offer tools to help assign responsibility, measure performance, and benchmark and address gaps in capability
- Maturity models—Provide profiles of IT processes describing possible current and future states

In the years since its inception, CobiT's core content has continued to evolve, and the number of CobiT-based derivative works has increased. Following are the publications currently derived from CobiT:
- *Board Briefing on IT Governance, 2nd Edition*—Designed to help executives understand why IT governance is important, what its issues are and what their responsibility is for managing it
- CobiT Online—Allows users to customise a version of CobiT for their own enterprise, then store and manipulate that version as desired. It offers online, real-time surveys, frequently asked questions, benchmarking and a discussion facility for sharing experiences and questions.
- *CobiT Control Practices: Guidance to Achieve Control Objectives for Successful IT Governance, 2nd Edition*—Provides guidance on the risks to be avoided and value to be gained from implementing a control objective, and instruction on how to implement the objective. Control practices are strongly recommended for use with the *IT Governance Implementation Guide: Using CobiT and Val IT, 2nd Edition*.
- *IT Assurance Guide: Using CobiT*—Provides guidance on how CobiT can be used to support a variety of assurance activities and offers suggested testing steps for all the CobiT IT processes and control objectives. At the time of this writing, the *IT Assurance Guide* is in development. It will replace the information in the *Audit Guidelines* for auditing and self-assessment against the control objectives in CobiT 4.1.
- *IT Control Objectives for Sarbanes-Oxley: The Role of IT in the Design and Implementation of Internal Control Over Financial Reporting, 2nd Edition*—Provides guidance on how to assure compliance for the IT environment based on the CobiT control objectives
- *IT Governance Implementation Guide: Using CobiT and Val IT, 2nd Edition*—Provides a generic road map for implementing IT governance using CobiT and Val IT resources and a supporting tool kit
- CobiT *Quickstart*—Provides a baseline of control for the smaller organisation and a possible first step for the larger enterprise
- CobiT *Security Baseline*—Focuses on essential steps for implementing information security within the enterprise
- CobiT Mappings—Currently posted at *www.isaca.org/downloads*:
  - *Aligning CobiT, ITIL and ISO 17799 for Business Benefit*
  - *CobiT Mapping: Overview of International IT Guidance, 2nd Edition*
  - *CobiT Mapping: Mapping of ISO/IEC 17799:2000 With CobiT, 2nd Edition*
  - *CobiT Mapping: Mapping of PMBOK With CobiT 4.0*
  - *CobiT Mapping: Mapping of SEI's CMM for Software With CobiT 4.0*
  - *CobiT Mapping: Mapping of ITIL With CobiT 4.0*
  - *CobiT Mapping: Mapping of PRINCE2 With CobiT 4.0*
  - *CobiT Mapping: Mapping of ISO/IEC 17799:2005 With CobiT 4.0*
- *Information Security Governance: Guidance for Boards of Directors and Executive Management, 2nd Edition*—Presents information security in business terms and contains tools and techniques to help uncover security-related problems

Val IT is the umbrella term used to describe the publications and future additional products and activities addressing the Val IT framework.

Current Val IT-related publications are:
- *Enterprise Value: Governance of IT Investments—The Val IT Framework*, which explains how an enterprise can extract optimal value from IT-enabled investments and is based on the CobiT framework. It is organised into:
  - Three processes—Value Governance, Portfolio Management and Investment Management
  - IT key management practices—Essential management practices that positively influence the achievement of the desired result or purpose of a particular activity. They support the Val IT processes and play roughly the same role as do CobiT's control objectives.
- *Enterprise Value: Governance of IT Investments—The Business Case*, which focuses on one key element of the investment management process
- *Enterprise Value: Governance of IT Investments—The ING Case Study*, which describes how a global financial services company manages a portfolio of IT investments in the context of the Val IT framework

For the most complete and up-to-date information on CobiT, Val IT and related products, case studies, training opportunities, newsletters and other framework-specific information, visit *www.isaca.org/cobit* and *www.isaca.org/valit*.

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