

ENTERPRISE VALUE: GOVERNANCE OF IT INVESTMENTS

The Business Case



BASED ON COBIT®



LEADING THE IT GOVERNANCE COMMUNITY

The IT Governance Institute®

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ISBN 1-933284-33-1

Enterprise Value: Governance of IT Investments, The Business Case
Printed in the United States of America

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ITGI WOULD LIKE TO ACKNOWLEDGE:

Fujitsu, whose generous sharing of its many years of experience with enterprise value management contributed significantly to the development of the Val IT management practices

ING and SeaQuation for sharing their experience and for their major contribution to the development of the Val IT management practices. ING, originally through its IT performance measurement and investment management workflow and since 2005 as SeaQuation, a wholly independent company, has done substantial investment research into IT and enterprise value.



The following organisations support Val IT as good practice for governance of IT-related business investments:



THE BUSINESS CASE

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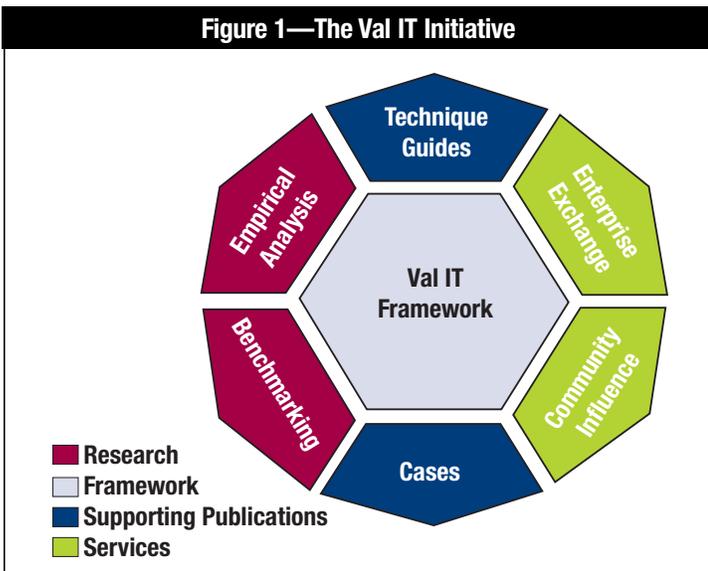
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1. THE VAL IT INITIATIVE

This document forms part of the Val IT™ initiative from the IT Governance Institute. The initiative is intended to respond to the need for organisations to optimise the realisation of value from IT investments.

The initiative has drawn on the collective experience of a team of practitioners and academics, existing and emerging practices and methodologies, and research to develop the Val IT framework. The work of the team has been reviewed and further enhanced by a broader group of global advisors, including the organisations that have chosen to endorse the work of the initiative.

As the initiative evolves, it will include a number of types of research activities, publications and supporting services grouped around the core Val IT framework described in this document, as illustrated in **figure 1**.



Control Objectives for Information and related Technology (COBIT®),¹ also from ITGI, provides a comprehensive framework for the management and delivery of high-quality information technology-based services. It sets best practices for the *means* of contributing to the process of value creation.

Val IT now adds best practices for the *end*, providing the means to unambiguously measure, monitor and optimise the realisation of business value from investment in IT. Val IT complements COBIT from a business and financial perspective and will help all those with an interest in value delivery from IT.

This technique guide, *Enterprise Value: Governance of IT Investments, The Business Case*, discusses the eight steps of developing an effective business case (covering building the fact sheet, cash flow overview from a life cycle perspective, consideration of alignment issues, risk appraisal, and optimisation of risk and return) and provides useful tools for each. It also provides a comprehensive outline of appropriate business case content.

The guide and examples shown are applicable to all enterprises, addressing all of the aspects that should be contained in any IT investment appraisal. The guidance is not, however, intended to be prescriptive and should be tailored to fit the enterprise's management approach. Small and medium-sized enterprises can adapt the templates to be simpler to create and maintain, but in all cases the model adopted should cover business alignment, cost and benefits (financial and non-financial), and risks, as these play a major role in every investment analysis of every enterprise.

Other documents in the series are available from the ISACA Bookstore, www.isaca.org/bookstore.

¹ COBIT, from the IT Governance Institute, is an internationally accepted standard for IT management processes. The latest edition, COBIT® 4.0, was released in December 2005.

2. VAL IT INTRODUCTION

Goal of Val IT

The goal of the Val IT initiative, which includes research, publications and supporting services, is 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 practices to assist the board and executive management in understanding and carrying out their roles related to such investments.

While applicable to all investment decisions, Val IT is primarily targeted at IT-enabled business investments: significant business investments in sustaining, growing or transforming the business with a critical IT component, where IT is a means to an end—the end being to contribute to the process of value creation in the enterprise. The end and the means are represented by the ‘Four Ares’² as illustrated in figure 2.

Specifically, Val IT focuses on the investment decision (are we doing the right things?) and the realisation of benefits (are we getting the benefits?). COBIT, the generally accepted international standard for control over IT, specifically focuses on the execution (are we doing them the right way and are we getting them done well?).

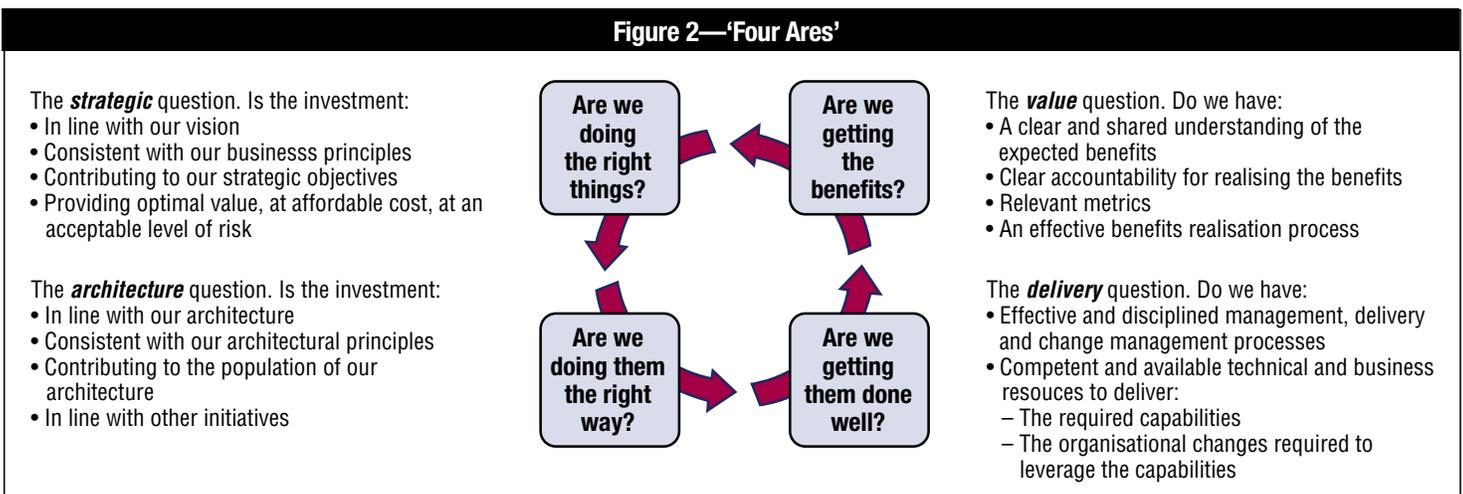
Effective application of the principles, processes and practices contained in Val IT will enable organisations to:

- Increase the understanding and transparency of cost, risks and benefits resulting in much 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
- 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 cost and delivery, and in so doing increase business value, reduce unnecessary costs and increase the overall level of confidence in IT

The Need for Val IT

The level of investment in IT is significant and continues to increase. Few organisations could operate for long today without their IT infrastructure. Yet, while there are many examples of organisations generating value from investing in IT, at the same time, many executives are questioning whether the business value realised is commensurate with the level of investment. It is no surprise, then, that there is an increasing

Figure 2—‘Four Ares’



² As described by John Thorp in his book *The Information Paradox*, written jointly with Fujitsu, first published in 1998 and revised in 2003.

demand from boards and executive management for generally accepted guidelines for investment decision making and benefit realisation.

IT-enabled business investments, when managed well within an effective governance framework, provide organisations with significant opportunities to create value. Many successful organisations have created value by selecting the right investments and successfully managing them from concept through implementation to realising the expected value. Without effective governance and good management, IT-enabled business investments provide an equally significant opportunity to destroy value.

The message is clear. IT-enabled business investments can bring huge benefits. Indeed, a study carried out within global financial services group ING³ indicates that IT-enabled business investments offer the opportunity to deliver greater returns than almost any other conventional investment. This research, carried out in mid-2004, indicated that, in comparison to more traditional investments such as commercial real estate, publicly traded equities and sovereign bonds, the return on a well-balanced portfolio of IT-enabled business investments can be expected to be significantly higher. However, the result of getting it wrong can be significant, including catastrophic financial losses and competitive disadvantage.

A New Perspective

A key lesson to be learned from the experiences mentioned earlier and many others is that IT investment is no longer about implementing IT solutions. It is about implementing IT-enabled change. Business value is generated by what organisations do with IT rather than by the technology itself. This implies greater complexity and greater risk than traditionally has been the case. The management practices that traditionally have been applied are no longer sufficient. There is a clear incentive for management to ensure that the

right governance and management processes are in place to optimise the creation of value. Ensuring that value is obtained from IT-enabled investments is an essential component of enterprise governance. It involves selecting investments wisely and managing them as an asset or service throughout their life cycle.

COBIT provides a comprehensive framework for the management and delivery of high-quality information technology-based services. It sets best practices for the *means* of contributing to the process of value creation. Val IT now adds best practices for the *end*, thereby providing the means to unambiguously measure, monitor and optimise the returns, both financial and non-financial, from investment in IT. In a preliminary analysis⁴ undertaken for ITGI, SeaQuation found that the intelligent application of processes as defined by COBIT and Val IT can help enterprises significantly improve the return on their investments. It is not enough, however, to simply have the processes in place. There is empirical evidence that it is increasing process maturity, as defined by the Capability Maturity Model (CMM),⁵ in combination with economies of scale and scope, that has the most significant impact on value creation in terms of total shareholders' return, capital efficiency or return on assets. These findings are further supported by a recent McKinsey study⁶ that found that IT investments have little impact unless they are accompanied by first-rate management practices, and those companies that combined good management practices with IT investments performed best of all.

Val IT complements COBIT from a business and financial perspective and will help all those with an interest in value delivery from IT. It has relevance to all management levels across the business and IT, from the CEO and the C-suite to those directly involved in the selection, procurement, development, implementation, deployment and benefits realisation processes. Val IT contains essential guidance for all.

³ ING Investor Relations, 'IT Investment and Shareholder Return', *ING Shareholder's Bulletin*, volume 12, number 2, May 2004, ING Group, The Netherlands, www.seaquation.com

⁴ SeaQuation Investment Research, *IT and Enterprise Value—Empirical Evidence for Val IT*, September 2005. The ITGI pilot study is based on a sample of the current SeaQuation knowledge bases. The follow-up study will leverage the complete risk and return data repository of more than 2,500 investment projects, representing about US \$15 billion, to identify the value drivers to optimise solutions delivery and risk-adjusted return of IT-enabled business investments.

⁵ A future Val IT technique guide will provide more information on CMM and guidance on increasing maturity levels.

⁶ McKinsey & Co., 'Does IT improve performance?', *The McKinsey Quarterly*, June 2005

3. THE VAL IT FRAMEWORK⁷

Value is not a simple concept. Value is complex, context-specific and dynamic. Value is indeed ‘in the eye of the beholder’. The nature of value differs for different types of organisations. For commercial or for-profit organisations, value tends to be viewed primarily in financial terms and can be simply the increase in profit to the organisation that arises from the investment. For not-for-profit organisations, including the public sector, value is more complex and is often non-financial in nature. It should be the improvement in the organisation’s performance against business metrics (which measure what those whom the organisation exists to serve receive) and/or the net increase in income that is available to provide those services, either or both of which arise from the investment.

Figure 3 defines 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.

Figure 3—Definition of Key Terms Used in Val IT

Value—The end business outcome(s) expected from an IT-enabled business investment where such outcomes may be financial, non-financial or a combination of the two

Portfolio—A grouping of programmes, projects, services or assets selected, managed and monitored to optimise business return (Note that the initial focus of Val IT is primarily interested in a portfolio of programmes. COBIT is interested in portfolios of projects, services or assets.)

Programme—A structured group of interdependent projects that are both necessary and sufficient to achieve the business outcome and deliver value. These projects could include, but are not limited to, changes to the nature of the business, business processes, the work performed by people, as well as the competencies required to carry out the work, enabling technology and organisational structure. The investment programme is the primary unit of investment within Val IT.

Project—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 schedule and budget

Implement—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

Val IT consists of a set of guiding principles, and a number of processes conforming to those principles, which are further defined as a suite of key management practices. The relationship between these, and the linkage to COBIT, is illustrated in **figure 4**.

Figure 4—Relationship Amongst Val IT Principles, Processes and Practices, and COBIT

Val IT supports the business goal of

Realising optimal value from IT-enabled business investments at an affordable cost with an acceptable level of risk

and is guided by

A set of principles applied in value management processes

that are enabled by

Key management practices cross-referenced to COBIT key controls

and are measured by

Key outcome and performance metrics

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**.

⁷ For more detail on the Val IT framework, see the companion document in the Val IT series, *Enterprise Value: Governance of IT Investments, The Val IT Framework*.

Val IT Processes

To obtain return on investment, the Val IT principles should be applied by the stakeholders of the IT-enabled investments in the following processes:

- Value governance
- Portfolio management
- Investment management

Value Governance (VG)

The goal of value governance is to optimise the value of an organisation's IT-enabled investments by:

- Establishing the governance, monitoring and control framework
- Providing strategic direction for the investments
- Defining the investment portfolio characteristics

Portfolio Management (PM)⁸

The goal of portfolio management is to ensure that an organisation's overall portfolio of IT-enabled investments is aligned with and contributing optimal value to the organisation's strategic objectives by:

- Establishing and managing resource profiles
- Defining investment thresholds
- Evaluating, prioritising and selecting, deferring, or rejecting new investments
- Managing the overall portfolio
- Monitoring and reporting on portfolio performance

Investment Management (IM)

The goal of investment management is to ensure that an organisation's individual IT-enabled investment programmes deliver optimal value at an affordable cost with a known and acceptable level of risk by:

- Identifying business requirements
- Developing a clear understanding of candidate investment programmes
- Analysing the alternatives
- Defining the programme and documentng a detailed business case, including the benefits details
- Assigning clear accountability and ownership
- Managing the programme through its full economic life cycle
- Monitoring and reporting on programme performance

The focus of this publication is on one key element of the investment management process: the business case.

The seeds of success or failure are sown in the business case. However, organisations generally are not good at developing and documenting comprehensive and comparable business cases. The business case contains a set of beliefs and assumptions on how value can be created. To ensure that the expected outcomes will be achieved, these beliefs and assumptions need to be well tested. Qualitative and quantitative indicators enable validation of the business case and provide insight for future investment decisions. This is where it all starts. Val IT provides guidance to maximise the quality of business cases, with particular emphasis on the definition of key indicators, both financial (net present value, internal rate of return and payback period) and non-financial, and the comprehensive assessment and appraisal of the downside risk.

The business case is not a one-time, static document. It is an operational tool that must be continually updated to reflect the current reality and to support the portfolio management process. Section 4 contains detailed information on the structure, usage and contents of a business case for IT-enabled business initiatives.

⁸ For a case study of the effective application of portfolio management, see the companion document in the Val IT series, *Enterprise Value: Governance of IT Investments, The ING Case Study*.

4. VAL IT—THE BUSINESS CASE

Introduction: The Importance of the Business Case

The business case—all too often dismissed as a bureaucratic hurdle to be overcome with as little effort as possible—is one of the most valuable tools available to management in guiding the creation of business value. Experience has shown that the quality of the business case and the processes involved in its creation and use throughout the economic life cycle of an investment has an enormous impact on value creation.

Business cases include expectations of future events. Even with the best of processes, a business case is still no more than a snapshot at a point in time. It should not be created and reviewed only once to determine whether to proceed with an investment, and then ignored or, at best, revisited in the post-implementation review. It is an operational tool that should be continually updated throughout the economic life cycle of an investment and used to support the ongoing implementation and execution of a programme, including benefits realisation.

Business cases must include answers to the ‘Four Ares’ questions introduced earlier—answers based on relevant, business-focused information about the prospective programmes:

- **Are we doing the right things?** What is proposed, for what business outcome and how do the projects within the programme contribute?
- **Are we doing them the right way?** How will it be done, and what is being done to ensure that it will fit with other current or future capabilities?
- **Are we getting them done well?** What is the plan for doing the work, and what resources and funds are needed?
- **Are we getting the benefits?** How will the benefits be delivered? What is the value of the programme?

The process of developing the business case should be owned by the business sponsor and involve all key stakeholders in developing and documenting a complete and shared understanding of the expected business outcomes (both intermediate, or ‘lead’, and end, or ‘lag’, outcomes) of an

investment. It should describe how the business outcomes will be measured and the full scope of initiatives required to achieve the expected outcomes. These initiatives should include any required changes to the nature of the enterprise’s business, business processes, people skills and competencies, enabling technology, and organisational structure. The nature of each initiative’s contribution, how that contribution will be measured and all key assumptions are identified in the business case. The business case should also record metrics or similar indicators to monitor the validity of these assumptions. Key risks, to both the successful completion of individual initiatives and the achievement of the desired outcomes, also need to be identified and documented, together with mitigation actions.

The decision whether to proceed with an IT-enabled investment is first made at the individual programme level by the business sponsor, who determines if the business case is strong enough to be assessed at the portfolio level. At the portfolio level, the relative value of the programme is assessed against other active and candidate programmes. To facilitate this process, there should be an approach in place to arrive at a normalised value, or a set of normalised overall alignment, financial and non-financial benefits, and risk scores for individual business cases.

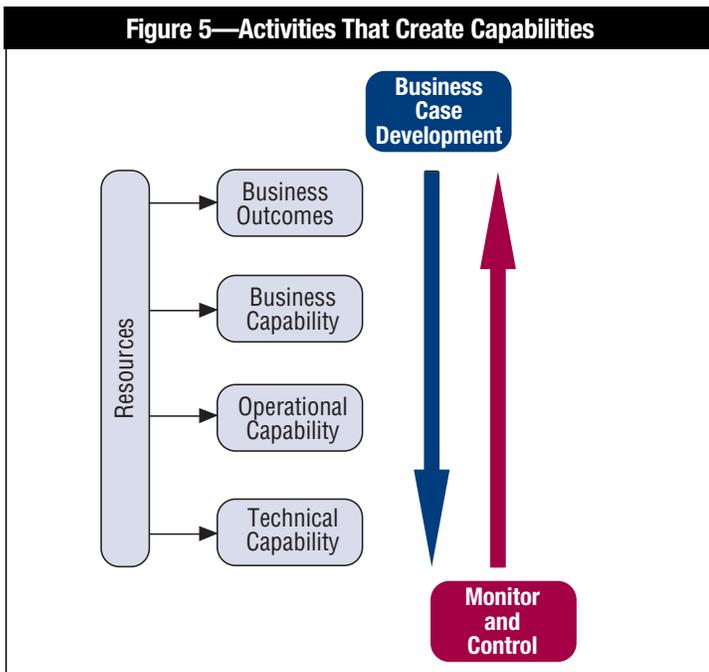
A frequent reaction when business cases are discussed in this context is that things are being made too complex. It is important to distinguish between the thought processes that should be followed when embarking upon a significant IT-enabled investment and the level of rigour and detail required to support and document that thinking. In the Val IT framework, the concept of categories of investment is introduced, with differing levels of complexity and degrees of freedom in allocating funds. The category of the investment, its size, the impact of it not succeeding and its position in the economic life cycle are all factors that determine which parts of the business case require greater attention and what level of detail is required.

Business Case Structure

The business case for an IT-enabled investment considers the following causal relationships:

- Resources are needed to develop:
 - A technology/IT service that will support:
 - An operational capability that will enable:
 - A business capability that will create:
 - Stakeholder value, which may be represented by a risk-adjusted financial return or total shareholders' return

These relationships imply that there are three interrelated streams of activities to create technical, operational and business capability (**figure 5**).



These three dynamic streams can be distinguished throughout the complete life cycle of a process or system. The life cycle can be summarised in four stages: build, implement, operate and retire.

The business case should be developed top-down, starting with a clear understanding of the desired business outcomes. Once an investment is approved, the delivery of the required

capabilities and the desired outcomes must be diligently monitored and controlled through the full economic life cycle of the investment.

Business Case Components

Each of the three activity streams has a number of components that are essential to evaluate the complete business case. These components together form the basis for an analytic model⁹ and are defined as follows:

- **Outcomes**—The clear and measurable results sought, including intermediate (leading) outcomes—those outcomes that are necessary but not sufficient to achieve the end benefit—and ultimate or end (lagging) outcomes—the end business benefits to be realised. These benefits can be financial or non-financial.
- **Initiatives**—Business, business process, people, technology and organisational (BPPTO) actions/projects (covering build, implement, operate and retire activities) that contribute to one or more outcomes
- **Contributions**—The measurable contribution expected from initiatives or intermediate outcomes to other initiatives or outcomes
- **Assumptions**—Hypotheses regarding conditions necessary to the realisation of outcomes or initiatives, but over which the programme organisation has little or no control. The assessment of risk, represented by assumptions and any other constraints regarding cost, benefits and alignment, is a major part of the business case process.

Other components that are identified in the business case are the resources required to perform all the activities of which the initiative consists, as well as the expenditures to acquire and, where necessary, maintain these resources. [Note that the term 'expenditure' is used instead of 'cost', to avoid misunderstanding whether 'cost' refers to cash out or to cost as posted in the profit and loss (P&L) statement.]

One of the benefits of using the analytic model technique is that the process of developing it—which is, in many ways, more important than the model itself—clearly demonstrates the need for, and value of, enabling infrastructure. It has historically been very difficult for CIOs to demonstrate the

⁹ For an example of such a model, see the Results Chain™ as described by John Thorp in *The Information Paradox*. 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 (*Computer*, volume 33, number 7).

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value of investments in infrastructure; this approach clearly demonstrates the direct contribution of infrastructure to desired business outcomes.

Business Case Development

The development of the business case consists of eight steps:

- Step 1—Building a fact sheet with all the relevant data followed by analysis of the data concerning:
- Step 2—Alignment analysis
- Step 3—Financial benefits analysis
- Step 4—Non-financial benefits analysis
- Step 5—Risk analysis

resulting in:

- Step 6—Appraisal and optimisation of the risk/return of the IT-enabled investment

represented by:

- Step 7—Structured recording of previous steps' results and documentation of the business case

and finally maintained by:

- Step 8—Review of the business case during the programme execution, including the entire life cycle of the programme results

This process is depicted in **figure 6**.

The steps are discussed in more detail below.

Step 1—Building the Fact Sheet

The business case fact sheet contains all the data needed for analysing strategic alignment, financial and non-financial benefits, and risks of the programme. It encompasses—per item, for the building, implementation, operations and retirement stages—best-case/worst-case scenario data, where appropriate, for the IT-enabled investment. The best- and worst-case scenario values are the most extreme, but still probable, of the possible values per item.

Building the fact sheet consists of data collection, data validation and data entry activities.

Data validation concerns performing plausibility checks on the data. This includes appraisal of the logic behind the claimed contribution of initiatives (and intermediate outcomes) to outcomes and associated benefits. The appraisal is best supported by empirical evidence (derived from evaluation of previous investments), especially concerning the logic of contribution and assumptions.

The fact sheet is illustrated in **figure 7**.

Figure 6—Steps of Business Case Development

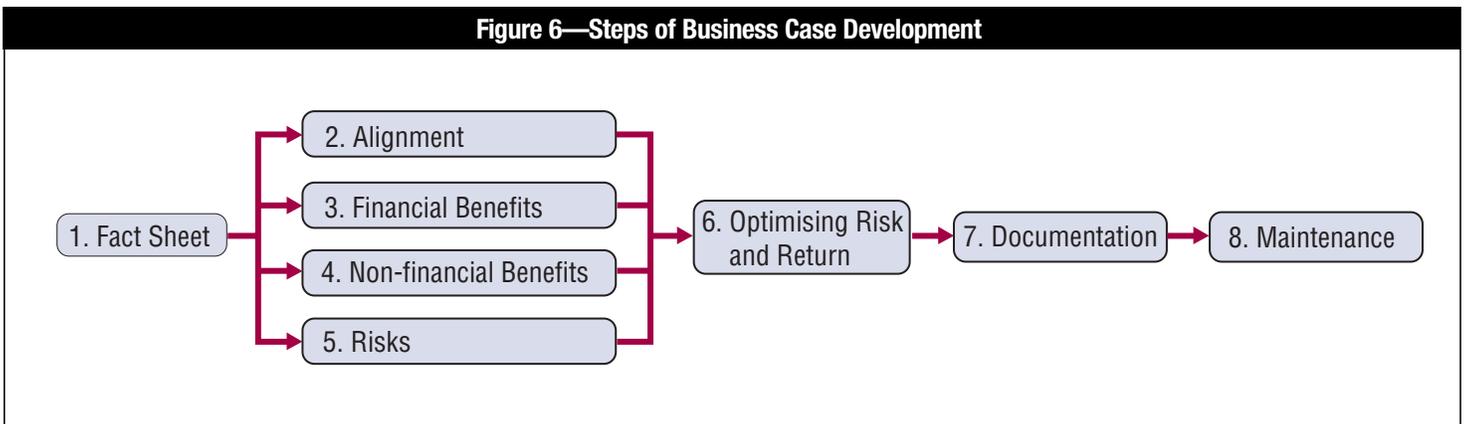


Figure 7—Business Case Fact Sheet Format

Fact Sheet Item	Building		Implementation		Operation		Retirement	
	Best Case	Worst Case	Best Case	Worst Case	Best Case	Worst Case	Best Case	Worst Case
<i>Technical capability</i>								
Outcomes (intermediate and end)								
Alignment								
Financial benefits								
Non-financial benefits								
Resources								
Expenditure								
Risk drivers								
Assumptions and constraints								
<i>Operational capability</i>								
Outcomes (intermediate and end)								
Alignment								
Financial benefits								
Non-financial benefits								
Resources								
Expenditure								
Risk drivers								
Assumptions and constraints								
<i>Business capability</i>								
Outcomes (intermediate and end)								
Alignment								
Financial benefits								
Non-financial benefits								
Resources								
Expenditure								
Risk drivers								
Assumptions and constraints								

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The main items (information elements) grouped per stream (functional, operational and business), as listed in *italics* and

bold in the left column of the business case fact sheet, are described in more detail in **figure 8**.

Figure 8—Information Elements Grouped by Stream

	General Specification	Specification per Layer		
		Technology Capability	Operational Capability	Business Capability
<i>Outcomes (intermediate and end)</i>	The results of the deployment of resources in each of the layers. The outcomes may be intermediate at the functional and operational layers, as they are input for the consecutive layer.	See general specification.	See general specification.	See general specification.
<i>Alignment</i>	The degree to which a programme aligns with regulatory requirements, operational standards and policies as well as business strategy	Appraisal of alignment with technological standards and policies	Appraisal of alignment with operational goals, standards and policies	Appraisal of alignment with strategic business objectives
<i>Financial benefits (1)</i>		Description of infrastructure cost reductions achieved or capacity increase by replacement of current IT or deployment of new IT	Description of operational cost reductions achieved or capacity increase by replacement of current IT or deployment of new IT	Description of increase of revenues, volumes and margins, cost reductions, or risk mitigation resulting in lower failure cost
<i>Non-financial benefits</i>	Assets representing changes at the functional, operational and business levels of which the value cannot be expressed in accurate financial terms with a reasonable likelihood. Examples are brand, knowledge, relationships with customers and suppliers, and improved governance processes.	Description of the functionality of the new/enhanced IT system(s). Since this capability does not result in a direct financial return at the purely operational level, the value is categorised as non-financial.	Description of the operational capability of the new/enhanced processes. Since this capability does not result in a direct financial return at the purely operational level, the value is categorised as non-financial.	Description of the business capability and the associated non-financial benefits including, but not limited to, product quality, client satisfaction and brand recognition
<i>Resources and expenditures (1)</i>	Listing of resources and associated expenditures	Resources and expenditures required to build, implement and maintain the new/enhanced IT system(s)	Resources and expenditures required to build, implement and maintain the new/enhanced processes	Resources and expenditures required to develop and market the new/enhanced products and services

Figure 8—Information Elements Grouped by Stream (cont.)

	General Specification	Specification per Layer		
		Technology Capability	Operational Capability	Business Capability
Risk (drivers) (2)	A specification of the risk factors that may make the worst-case outcomes happen, as well as the success factors pushing the outcomes toward the best case. An analysis is required to show the impact of the identified risk drivers on events and probability, in the form of a breakdown of the best-/worst-case outcomes, per information element.	See general specification.	See general specification.	See general specification.
Assumptions and constraints	Clarification of how the deployment of the listed resources, with cost as specified, will contribute to deliver the described (intermediate) outcomes, benefits and alignment. Specific risk-determining assumptions are dealt with under the item 'risk'.	See general specification.	See general specification.	See general specification.

(1) See also step 3, which contains a cash flow overview that provides further definition and specification of the items that are collected in the fact sheet and summarised in the cash flow overview.
 (2) See also step 5, which provides examples of risk drivers.

Step 2—Alignment Analysis

There will almost always be more opportunities to invest than an organisation has the resources to take on. Alignment analysis is a means of assuring the effective and efficient use of scarce resources. This document addresses two types of alignment that are relevant in the context of IT-enabled business investments:

1. Assuring that the IT-related investments are optimised to support the strategic business objectives
2. Assuring that the IT-related investments are aligned with the target enterprise architecture. Note that this can be dealt with as part of risk analysis but, given the increasing importance of enterprise architecture, it can also be considered an alignment issue.

Alignment With Strategic Objectives

A key test of whether an opportunity should be pursued is the extent to which it is aligned with the organisation’s strategic

objectives. All IT-related investments should contribute to at least one of the strategic objectives. Those that contribute strongly to one objective, or contribute to more than one objective, should be evaluated higher than those that have a lesser contribution. Even though these other investments may be beneficial, the funding will likely be better used in investments that are more in line with the realisation of the objectives as defined in the strategy.

One view of such alignment is that there are three types of contribution a programme can make:¹⁰

1. *Contribution to the current objectives and priorities of the organisation.* This might be measured by reference to the impacts that the programme will have on measures derived from an organisation’s balanced scorecard or similar directional goals. Another measure might look at the impact of the programme on key issues that the organisation is currently facing.

¹⁰ As described by John Thorp in *The Information Paradox*

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2. *Contribution to the objectives of a parent company or larger context within which the organisation is operating.* This measure reflects the reality that organisations often need to adjust their plans to align with those of a parent, and the contribution of programmes that support these intents should be recognised.
3. *Contribution to the achievement of a desired future state or business vision.* This measure captures the contributions of those transformational programmes that are necessary to the long-term survival of the organisation, but which may not have an immediate positive impact. The contribution should be measured by assessing how, and to what extent, the programme helps create some crucial elements of the vision.

The process of determining alignment with strategic objectives can be extremely challenging. One reason is that strategic objectives are sometimes not explicitly stated, or are stated in terms that are so broad that it is easy for any investment to claim alignment. Further, at the portfolio level, it is often quite difficult to get organisations to rank their objectives. ‘They are all important’, while a true statement, is not helpful in making decisions between investments supporting one or more different strategic objectives.

Alignment With Enterprise Architecture

The enterprise architecture refers to the way relationships among components of an organisation, including processes, people and technology, work together to create services and/or products. The architecture is organised to be efficient and effective for a business unit or a complete business. A target architecture is a blueprint that reflects the ideal or desired world.

Alignment with the enterprise architecture should evaluate the extent to which investments in IT-enabled change are moving in the direction of the target architecture. Moving in a direction inconsistent with the blueprint may have a negative impact. Changes are supposed to result in added value regarding the target architecture, meaning constituting a step toward the ideal situation (outlined by the target architecture). This added value can be a criterion used to reject or accept a programme or to choose one programme over another. (Note

that there is an implicit assumption here that the target architecture is well conceived and robust. If this is not the case, evaluating the alignment at this stage adds no value.)

The alignment is appraised and converted into a score. This involves two steps:

1. Scoring the alignment per objective/requirement area (e.g., architectural standards)
2. Combining these scores into an overall alignment score

The alignment score is used as an input for step 6, optimising the programme value.

Step 3—Financial Analysis Based on Incremental Discounted Cash Flows

Expressing benefits in financial terms is a key objective of building a business case and should be pursued as far as reasonably possible. The exercise can be supported by advanced techniques such as real option value appraisal as well as by empirical research, providing valuation data obtained from other IT-enabled investments. Discounted cash flow techniques are generally preferred among investment bankers to facilitate the evaluation process of the business case. The objective is to find projects that are worth more to the business sponsor than they cost—projects that have a positive net present value (NPV).

A business sponsor’s appraisal of a proposed IT-enabled business investment is not unlike an individual’s investment decision. The steps are the same:

1. Estimate the expected future cash flows from the project. This is like estimating the coupon payments for a bond or the dividend stream for a stock, and a maturity value or terminal sale price.
2. Assess the risk and determine a required rate of return (cost of capital or risk premium) for discounting the expected future cash flows.
3. Compute the present value of the expected future cash flows.
4. Determine the cost of the projects and compare it to what the project is worth. If the project is worth more than it costs (positive NPV), it is worth undertaking.¹¹

¹¹ Finnerty, J.D.; *Project Financing: Asset-based Financial Engineering*, John Wiley & Sons, USA, 1996

Expenditures and financial benefits as specified in the business case fact sheet are summarised in a cash flow statement to calculate the financial value. (Note that, in the fact sheet, best and reasonable worst values are provided. From this, a most likely base-case value is derived by calculating the average, assuming a normal distribution.) The bottom line outcomes in the statements are summarised by ratios to perform an investment appraisal from a purely financial perspective.

Calculation of these ratios is relevant because the economic value of an organisation is calculated by the same ratios, as this value is, in the long run, the same as total shareholders' return, which is the sum of yields from share price appreciation and dividends received. Often, senior executives'

performance is measured by the outcomes of these financial key ratios.

Additionally, an allocation of the cash amounts to fiscal years is required (conversion from cash base to accrual accounting) to calculate the impact on the income statement (P&L impact), the balance sheet and the cash flow statement. The latter is important for return on investment (ROI) calculations as well as for managing working capital, liquidity and solvency.

An example of a cash flow statement summary, applicable financial ratios and some types of cash items is provided in **figure 9**.

Figure 9—Example Cash Flow Overview

Step 2 Financial Appraisal						
Cash Flow Overview						
Stages	Time Horizon	Year 1	Year 2	Year 3	Year 4	Year 5
Building	Cash flow out					
	Cash flow in					
Implementation	Cash flow out					
	Cash flow in					
Operations	Cash flow out					
	Cash flow in					
Retirement	Cash flow out					
	Cash flow in					
Net cash flow						
NPV						
Adjustments for accrual						
P&L impact						

Financial Appraisal	
Discount rate and time horizon	_____
Key ratios:	
NPV	_____
IRR	_____
Payback period	_____
P&L	_____
Solvency impact	_____
Liquidity impact	_____
Program accounting and reporting (tracking the benefits)	_____
Impact on shareholder value	_____

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Notes to figure 9:

- *Note 1—Incremental costing basis for cash flow projection.* Calculation of the project performance key ratios [NPV, internal rate of return (IRR) and payback period] should be done using incremental costs. In the instance of a new infrastructure, only the additional cash flows incurred by the new system should be included, i.e., the processing power needed to operate the additional system. Likewise, only the incremental benefits (cash inflows) accruing from this new system should be compared to the cash outflows. Cash flows are not similar to accounting cost; in particular, amortisation and depreciation costs should not be included in all cash flow projections.
- *Note 2—Hurdle rate as a reflection of the risk profile of the project.* Business sponsors want compensation for a particular degree of risk. The required return rate can be thought of as an opportunity cost. The business sponsor (or corporate investor) will require a rate of return at least as great as the percentage return he/she could earn in the most nearly comparable investment opportunity. The discount rate serves as the hurdle rate for a project and is a reflection of the risk exposure of the IT investment. The higher the risk profile, the higher the risk premium required and the higher the interest rate used to discount the future cash flows of the project.¹²

In step 5, risk analysis, the selection of an appropriate, risk-adjusted discount rate is discussed.

Figure 10¹³ provides some examples of cash inflows and outflows associated with IT-enabled investments (concerning benefits and capital and operating costs).

Step 4—Non-financial Benefit Analysis

While expressing benefits in financial terms is a key objective of building a business case and should be pursued as far as reasonably possible, non-financial benefits should not be ignored. Indeed, in the public sector and in not-for-profit organisations, many of the desired business outcomes are non-financial in nature.

In the private sector as well, organisations today are increasingly creating value from non-financial benefits, such as brand recognition, knowledge, and relationships with customers and suppliers. Such non-financial benefits often provide the competitive advantage that differentiates the best-in-class from the average or below-average performers. However, non-financials are often ignored in the business case or their contribution is dismissed because of the difficulty of translating them into hard financial benefits.

Figure 10—Cash Inflows and Outflows

Overview of Cash Inflows	Overview of Cash Outflows
<p><i>(examples of benefits)</i></p> <ul style="list-style-type: none"> • Increased productivity: increase in outputs per capita • Time savings: labour hours saved, increased on-time delivery reducing complaints • Improved quality: earnings growth, reduced downtime • Optimised risk: reduced failure cost, fraud incidence • Direct cost savings: reduced transaction cost • Channel optimisation: increased sales for current and new customers • Value creation: higher returns on IT-enabled business investments 	<p><i>(examples of IT project capital/operating costs)</i></p> <ul style="list-style-type: none"> • Technology-related expenditures: hardware, software, installation and configuration costs, start-up and training cost • Organisational change expenditures related to business process redesign, training and adoption • Disruption cost related to human factors: temporary decline in labour productivity, hours lost because of IT training, decline in service quality, revenues lost • Disruption cost related to organisational factors: technical disruptions, increased system support from vendors • Cost of risk mitigation and adjustments in the control framework • Direct operating and maintenance cost • Cost of non-alignment with strategy, policies, standards and/or regulations

¹² *Ibid.*

¹³ CMA Canada and AICPA, 2005 Management Accounting Guideline, 'Evaluating Performance in Information Technology', 2005

In dealing with non-financial benefits, organisations need to develop an explicit understanding of the nature of value for that organisation and how value is created, i.e., showing how these benefits contribute to value creation. The analytic model referenced earlier is a powerful tool for developing this understanding and supporting decision making.

The application of the model enables the contribution of non-financial benefits to the desired business outcomes to be better understood and, where applicable, the often implicitly expected contribution to financial results to be surfaced, validated and quantified. Inevitably, this quantification will result in a bandwidth or an outcome range rather than a point estimate.

By determining the outcome range of the cash inflows required to meet the financial standards, the worth of a discretionary programme can be estimated. To have a positive NPV at a given budget constraint and projected level of financial benefits (cash inflows), the gap between the required and the projected cash inflows (if any) indicates the minimum worth of the non-financial benefits to be accrued from the programme perspective.

When there is no clear contribution to financial results, decision making may be based on the degree of strategic alignment and the weighting given to that criterion.

When a programme with non-financial benefits is selected, the analytical model also facilitates the identification of measures or indicators that can be monitored to enable better control over benefits realisation.

Step 5—Risk Analysis

Programmes are not equal when it comes to the likelihood of their delivering the expected business value or the probability of meeting cost and schedule targets. Two programmes with the same level of strategic alignment and expected financial value may have quite different risk characteristics. There are many elements of risk with respect to delivering value.

The management of risks deals with uncertainties. This requires a structured approach that should be documented in a risk management plan, which should be integrated in the business case. The risk-related processes aim to minimise the

impact of potential negative events and take full advantage of opportunities for improvement.

Risk assessment is the process of analysing and evaluating identified risks to the programme's processes and objectives. A qualitative analysis should be made, followed by a quantitative analysis whenever possible. Levels of risk acceptable for the programme, and the means to determine when agreed-to levels of risk are exceeded, should be identified. Any identified risk with significant impact should be documented and a person should be assigned with the responsibility, authority and resources for managing that risk.

Solutions to eliminate, mitigate, transfer, share or accept risks, and plans to take advantage of opportunities, preferably should be based on known technologies or data from past experience. Consciously accepted risks should be identified and the reasons for accepting them recorded. When a solution to an identified risk is proposed, it should be verified that there will be no undesirable effects or new risks introduced by its implementation, and the resulting residual risk will be addressed. When contingencies to manage risks are made in the time schedule or in the budget, they should be identified and maintained separately.

There are two aspects to risks:

1. Delivery risk—The risk of not delivering the required BPPTO capabilities
2. Benefits risk—The risk of the expected benefits not being obtained

Delivery risk concerns two of the 'Four Ares' discussed previously:

- Are we doing things the right way? This identifies the risk of inconsistency with other current or potential programmes and with existing capabilities.
- Are we getting them done well? This identifies traditional project risk: budgets, schedules and meeting required specifications and quality standards.

Benefits risk concerns the other two 'ares':

- Are we doing the right things? This identifies the risk of error or lack of clarity in the desired business outcomes in a changing environment.

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- Are we getting the benefits? This identifies the risks around the business being realistically able to realise the expected benefits of the programme.

An important risk driver is the level of ability or willingness to make reliable (and/or sufficiently accurate) forecasts regarding cost, outcomes and benefits. This concerns delivery risk as well as benefits risk.

To avoid the possibility of unjustified project acceptance ('false positive') or unjustified project rejection ('false negative'), it is worth considering having the risk assessment performed by a body independent of the programme organisation itself.

Other examples of delivery risk drivers include:

- Quality of the programme and project plans (completeness and reasonability)
- Clarity of scope and deliverables
- Unproven technology
- Compliance with technology architecture and standards
- Project duration
- Size of the project in relation to earlier successful projects
- Level of interface required to existing systems and processes
- Senior business department staff involvement
- Key staff availability during project deployment
- Experience/quality of project managers
- Experience/quality of project teams
- Reliance on vendors
- Dependency on factors outside control of project teams
- Quality of risk control mechanisms
- Ability to provide ongoing operational support

Other examples of benefits risk drivers include:

- Non-alignment with commercial policies or strategy
- Non-alignment with technical standards, architecture, etc.
- Compliance with security guidelines/policy
- Clarity and credibility of desired business outcomes
- Measurability of outcomes (lead and lag indicators)
- Benefits monitoring processes
- Sensitivity of outcomes to timing or external dependencies, including changes in the economy, market conditions or a specific industry sector
- Extent of organisational change required (depth and breadth)
- Clarity of the scope of organisational change required
- Quality of the change management plan

- Preparedness and capability of business to handle the change
- Level of business organisational understanding of and commitment to the programme
- Quality and availability of business sponsorship
- Senior business department staff engagement
- The extent to which the programme is broken down into 'do-able chunks' rather than taking a 'big bang' approach

As explained previously, risk is represented in the business case fact sheet by the width of the range of possible values per item (mainly intermediate outcomes, cost and benefits). The larger the bandwidth, the higher the standard deviation of expected return and the lower the likelihood of achieving the financial targets. The drivers behind the range width are also specified in the fact sheet.

All the value ranges are aggregated to obtain one value range covering the whole spectrum of possible bottom-line outcomes. This range represents the overall investment risk. This risk representation is converted into an adjustment of the hurdle rate that is used in programme appraisal (e.g., decision making based on NPV or IRR). The size of this adjustment is often quite large (a multiple of the risk-free rate).

Alternative approaches are:

- The risk drivers are assessed to obtain a risk score.
- The aggregated outcome range and the risk it represents are assessed to obtain a risk score.

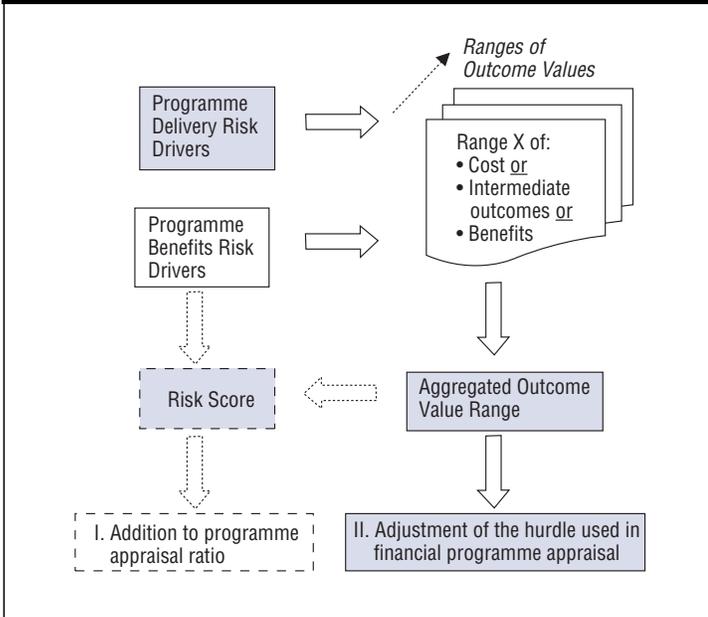
The risk score is used for an appraisal performed by combining the risk score with cost and benefits (that preferably are represented by a financial ratio). For the score, a tiered categorisation (e.g., low, medium, high, extreme) is usually applied.

The process of risk appraisal with the different approaches is illustrated in **figure 11**.

Step 6—Optimising Risk and Return

As stated earlier, the decision whether to proceed with an IT-enabled investment is first made at the individual programme level by the business sponsor, who determines if the business case is strong enough to be assessed at the portfolio level. At the portfolio level, the relative value of the programme is assessed against other active and candidate programmes. To facilitate this process, there should be a process in place to

Figure 11—Risk Appraisal Process



arrive at a normalised value or a set of normalised overall alignment, financial and non-financial benefits, and risk scores for individual business cases.

The appraisal of an individual programme is detailed as follows.

Strategic alignment (step 2), financial ratios derived from the fact sheet (step 3), non-financial benefits (step 4) and risks (step 5) are combined to assess the risk and return profile of the programme. This appraisal should be conducted for a number of programme alternatives to determine the optimal programme content.

The table in **figure 12** provides a suggested decision matrix for appraisal of the results of the analysis of the fact sheet data. The matrix is not meant to be exhaustive.

Figure 12—Decision Matrix

Result of Analysis of Fact Sheet Data				Decision at Individual Programme Level
Calculated risk acceptable? (step 5)	Financial targets met? (step 3)	Non-financial benefits explicit? (step 4)	Strategic alignment? (step 2)	
N	—	—	—	Reject.
Y (factored into the required discount rate or in a risk premium)	Y	—	Y	Submit to portfolio prioritisation.
Y (by using a score—part of multiple criteria analysis)	Y	—	Y	Submit to portfolio prioritisation if hurdle excess as compared to risk score is acceptable.
Y	Y	—	N	Reject unless benefits are realised within a short term with no negative impact on strategically aligned investments.
Y	N	Y	Y	Submit to portfolio prioritisation if the value of the non-financial benefits is considered worth (at a minimum) the amount required to meet the financial targets. Quantification of the non-financial benefits should be pursued as far as reasonably possible.
Y	N	Y	N	Reject.
Y	N	N	Y	Reject.

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Step 7—Document Business Case

As mentioned in the introduction to this section, the category of the investment, its size, the impact of it not succeeding, and its position in the economic life cycle are all factors that determine which components of the business case require greater attention and what level of detail is required. Future releases of Val IT series publications will provide more guidance on the relevance/importance of business case components for different categories of investment and for different stage-gates within the economic life cycle.

The following illustrates an overall structure and content of a business case:

1. Cover sheet
 - Programme name
 - Business sponsor
 - Programme manager
 - Revision notes
 - Validation signatures
 - Approval signature
2. Executive summary
 - Programme context
 - Name
 - Business sponsor
 - Track record of management team
 - Category of investment
 - Programme description/profile
 - Synopsis of business case assessment
 - Programme contribution (value)
 - Programme timing (schedule)
 - Risk, financial return and alignment scores
 - Dependencies
 - Key risks
 - Comparative value summary
3. Are we doing the right things? (Why?)
 - Financial benefits (full economic life cycle, best case, worst case, most likely case)
 - Description and quantification, including cash flow (cash in and cash out)
 - Measurement
 - Assumptions and sensitivity
 - Accountability
 - Financial costs (full economic life cycle, full IT and business costs, best case, worst case, most likely case)
 - Total commitment and funding request for this stage-gate
 - Assumptions
 - Accountability
 - Non-financial benefits (alignment)
 - Description and quantification
 - Measurement
 - Assumptions and sensitivity
 - Accountability
 - Non-financial (alignment, efficiency) costs
 - Description
 - Impact and mitigation strategy
 - Risk analysis (key risks and mitigation strategies)
 - Organisational change impact
 - Affected stakeholders
 - Change management approach
 - Change management costs
 - Impact of not doing the programme
 - Opportunity cost
4. Are we doing things the right way? (What and How?)
 - Alternative approaches
 - Selected approach
 - High-level analytic mode
 - Programme milestones
 - Critical success factors
 - Programme dependencies
 - Enterprise architecture compliance
 - Security policy compliance
 - Key risks
5. Are we doing things well? (How?)
 - Programme execution plan
 - Description/definition of projects
 - Planning assumptions
 - Technology impact
 - Staffing and organisation (resource profile over time)
 - Schedule and costs
 - High-level benefits realisation plan
 - Risk management
 - Change management
 - Objectives
 - Framework
 - Communication approach
 - Governance structure (controls)
 - Key risks

6. Are we getting the benefits?

- Description of benefits (projected life, full economic life cycle, best case, worst case, most likely, or base, case)
- High-level benefits register
- Financial benefits
- Key risks

7. Appendices

- Detailed analytic model
- Detailed project plan
- Detailed risk management plan
- Detailed benefits realisation plan
- Full benefits register

Step 8—Maintain Business Case

As discussed in the introduction to this section, a business case is no more than a snapshot at a point in time. It should not be created and reviewed only once to determine whether to proceed with an investment, and then ignored or, at best, revisited in the post-implementation review. It is an operational tool that should be continually updated throughout the economic life cycle of an investment and used to support the ongoing implementation and execution of a programme, including benefits realisation. This should be done whenever

the projected costs or benefits of the programme change, when risks change, and in preparation for stage-gate reviews.

With specific regard to risks, they should be monitored and controlled throughout the life cycle of the programme by an iterative process of risk identification, risk assessment and risk treatment.

The programme should be managed by taking into account that there are always risks. Personnel should be encouraged to anticipate and identify risks and report them to the programme organisation. Risk management plans should be maintained ready for use. Reports on project risk monitoring should be part of progress evaluations and, hence, updates of the business cases.

As an integrated part of the enterprise portfolio, the programme should be actively managed, resulting in a higher rate of cancellations (if the programme is not delivering or has become obsolete). Postmortem analysis of all major programmes is encouraged to learn from success and failure and continuously improve the portfolio quality.

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6. APPENDIX—GLOSSARY

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

Architecture: Description of the fundamental underlying design of the components of the business system, or of one element of the business system (e.g., technology), the relationships among them, and the manner in which they support the organisation's objectives

Balanced scorecard: The balanced scorecard, developed by Robert S. Kaplan and David P. Norton, is a coherent set of performance measures organised into four categories. It includes traditional financial measures, but adds customer, internal business process, and learning and growth perspectives.

Benchmarking: A systematic approach to comparing an organisation's performance against peers and competitors in an effort to learn the best ways of conducting business (e.g., benchmarking of quality, logistical efficiency and various other metrics)

Benefit: An outcome whose nature and value (expressed in various ways) are considered advantageous by an organisation

Business case: Documentation of the rationale for making a business investment, used to support a business decision on whether to proceed or not with the investment

Business process: A set of cross-functional activities or events that result in the delivery of a specific product or service to a customer

Business sponsor: The individual accountable for delivering the benefits of an IT-enabled business investment programme to the organisation

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

Change management: A holistic and proactive approach to managing the transition from a current to a desired organisational state, focusing specifically on the critical human or 'soft' elements of change. It includes activities such as culture change (values, beliefs and attitudes), development of reward systems (measures and appropriate incentives), organisational design, stakeholder management, human resource policies and procedures, executive coaching, change leadership training, team building and communications planning and execution.

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

COBIT: *Control Objectives for Information and related Technology*, from the IT Governance Institute (ITGI), is an internationally accepted IT control framework.

Economic Value Added (EVA): Technique developed by G. Bennett Stewart III, and registered by the consulting firm of Stern, Stewart, where the performance of the corporate capital base, including depreciated investments such as training and research and development, as well as more traditional capital investments, such as plant and equipment, is measured against what shareholders could earn elsewhere

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

Internal rate of return (IRR): The discount rate that equates an investment cost with its projected earnings. When discounted at the IRR, the present value of the cash outflow will equal the present value of the cash inflow. The IRR and NPV are measures of the expected profitability of an investment project.

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Life cycle: A series of stages that characterise the course of existence of an organisational investment (e.g., product, project, programme)

Modelling: Developing a simplified representation of a system or phenomenon. Such representations may be static or dynamic, in which case behaviour of the system or phenomenon under different conditions can be simulated.

Net present value (NPV): Is calculated by using an after-tax discount rate of an investment and a series of expected incremental cash outflows (the initial investment and operational costs) and cash inflows (cost savings or revenues) that occur at regular periods during the life cycle of the investment. To arrive at a fair NPV calculation, cash inflows accrued by the business up to about five years after project deployment should be taken into account.

Payback period: The length of time needed to recoup the cost of capital investment. Financial amounts in the payback formula are not discounted. Note that the payback period does not take into account cash flows after the payback period and is therefore not a measure of the profitability of an investment project. The scope of the IRR, NPV and payback period is the useful economic life of the project up to a maximum of five years.

Portfolio: A grouping of programmes, projects, services or assets, selected, managed and monitored to optimise business return

Project and programme: In this document, a differentiation is made between the traditional use of the term 'project' and a new term 'programme', a term that is increasingly gaining wider acceptance. While it is recognised that organisations may choose to use different terms, or have different definitions of those terms, in the interests of clarity the following definitions are used in this book:

- **Project:** A structured set of activities concerned with delivering a defined capability (that is necessary but NOT sufficient to achieve a required business outcome) to the organisation based on an agreed schedule and budget
- **Programme:** 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

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

Stage-gates: A point in time when a decision is made to commit funds to the next set of activities on a programme or project, stop the work altogether, or put a hold on execution of further work

Val IT: The standard framework for organisations to select and manage IT-related business investments and IT assets by means of investment programmes such that they deliver the optimal value to the organisation. Based on COBIT.

Value: Value is complex, context-specific and dynamic. It is the relative worth or importance of an investment for an organisation, as perceived by its key stakeholders, expressed in financial and non-financial terms.

