Comparing the eSCM-SP v2 and COBIT®

A comparison between the eSourcing Capability Model for Service Providers v2 and Control Objectives for Information and Related Technology, 3rd edition

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Abstract
The eSourcing Capability Model for Service Providers (eSCM-SP) gives providers of IT-enabled services a reference model and capability determination methods to use as they develop and improve their ability to consistently deliver high-quality services while minimizing costs and risks to their clients. Control Objectives for Information and related Technology (COBIT) represents a set of practices that organizations find useful in implementing IT governance that ensures that their IT processes are aligned with their business needs, and in control with respect to risks, costs, and quality. Organizations can use COBIT-based procedures and controls to effectively implement eSCM-SP Practices, particularly those that seek to reduce risks and costs over the life-cycle of sourcing contracts and relationships. On the other hand, the eSCM-SP provides a capability improvement context within which COBIT control objectives can be purposefully applied to achieve alignment and control over the IT processes that enable the sourcing and delivery of services.

Contributors
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Preface

This technical report is written for organizations that have already invested in an IT governance or IT security and control framework based on Control Objectives for Information and related Technology (COBIT), and are now considering adoption of the eSourcing Capability Model for Service Providers (eSCM-SP). The report will also be useful to organizations that have already adopted eSCM-SP and are looking for additional guidance on how to make their implementations more effective and controllable, particularly from the perspective of regulatory compliance and risk management.

When an organization adopts a new framework[1] for capability improvement, it must consider whether the framework requires abandoning or drastically changing practices or processes already in place. Specifically, organizations need to know the extent to which existing systems, procedures, policies, and guidelines count toward compliance with the new framework. While, in general, most frameworks have common ideas and principles, there are differences between them with respect to focus, scope, and perspective.

The purpose of this report is to help organizations map their implementations of the Control Objectives of COBIT to the requirements of the eSCM-SP. COBIT and the eSCM-SP are very different from each other in their focus, scope, and perspective. COBIT is a framework for IT governance that organizations implement to ensure that their IT processes are aligned with their business needs and in control with respect to risks, costs, and quality. The eSCM-SP is a framework for capability improvement for providers of IT-enabled services within a sourcing context. However, as this report highlights, there is a strong case for organizations to evaluate their plans and implementations for the two frameworks to take advantage of the complementary relationship between their respective provisions and requirements.

Section 1 of this report provides an overview of various frameworks for improving quality and process capabilities. Sections 2 and 3 provide brief overviews of the eSCM-SP and COBIT, respectively. Section 4 highlights how COBIT Control Objectives [ITGI 2000] support the requirements of the eSCM-SP v2 [Hyder 2004b]. This section includes a discussion of the challenges in the mapping process. Section 5 provides the conclusions of this report. Appendices A and B provide more details on the eSCM-SP and COBIT, respectively. Appendix C provides a mapping of the eSCM-SP into COBIT, organized by eSCM-SP Practices. Appendix D provides a mapping of COBIT into the eSCM-SP, organized by COBIT Control Objectives.

1 In this report, the terms "framework" and "frameworks" collectively refer to models, standards and frameworks for quality management and capability or process improvement. In certain instances, they are used to refer to either the eSCM-SP or COBIT, or both.

1. Introduction

Since the birth of the modern industrial economy at the beginning of the twentieth century, there have been ongoing efforts to systematically improve the productivity of organizations and the quality of the products and services they deliver. From Taylor's work on scientific management to Shewart's statistical process control and, more recently, to the work of quality experts such as Deming, Juran, and Crosby, there has been an evolution in the understanding of how people, process, and technology interact to affect quality, customer satisfaction, productivity, and efficiency in doing work [March 1996]. The appreciation and understanding of the importance of a best-practice approach to process and quality management has widened beyond the initial focus on manufacturing systems and assembly line environments to include service organizations, and systems design and development. The eSourcing Capability Model for Service Providers (eSCM-SP) [Hyder 2004a, Hyder 2004b] is one of the most recent in a long line of frameworks aimed at improving the capability of organizations in developing and delivering products and services.

Information and communication technologies (IT) have been crucial in transforming the value chains of modern industrial organizations by providing access to a larger set of customers, partners, and suppliers than was earlier possible. Several new business models, products, and services have been made viable, from conception to realization, by the facilities and functions provided by IT systems. Such benefits of IT led organizations to make large capital investments in the development and extension of their in-house IT capabilities.

However, not all organizations have enjoyed the same returns with respect to their IT assets and investments [Roach 1991], leading them to reconsider the need to develop and maintain their own extensive IT capabilities and resources. In several of these instances, organizations found it advantageous to outsource certain functions and processes, and focus and reallocate their assets on core competencies and business strategies.

This increased reliance on external service providers requires due diligence on the part of organizations that outsource their IT and business processes. Service providers, in turn, are required to sufficiently demonstrate that they can be capable and dependable business partners committed to a lasting and beneficial relationship with their customers. The eSCM-SP is specifically targeted at internal and external providers of IT-enabled services, to introduce best practice into the sourcing and delivery of those services.

There are two major strategies for improving performance: framework-based and measurement-based. The eSCM-SP has features of both. A framework-based strategy uses models and standards as frameworks to identify what processes and systems should be implemented in a successful organization. Improvement based on the eSCM-SP, or BS 15000, is an example of this strategy. Certification in some framework-based strategies, including ISO 9001 [ISO 2000a] and BS 15000 [BSI 2002a], is binary; an organization is either compliant with the standard or not. Models such as the eSCM-SP and CMMI [Chrissis 2003] measure organizations or processes using a form of ordinal scale (e.g., Maturity Levels or Capability Levels). Assessments using a framework identify what to do, but do not usually

describe how to do it. Frameworks typically do not specify performance levels for specific tasks (e.g., 5500 transactions per quarter).

The second strategy is measurement-based. The service provider's processes and systems are measured and compared to objectives set by management in order to identify which ones need to be improved. Measurement trends are used to confirm and quantify improvements. Framework-based strategies naturally evolve toward measurement-based strategies tailored to the business needs of the organization as the foundational capabilities described by the framework are successfully put in place. Other frameworks, models, and standards used by the organization may impact the improvement actions based on the eSCM-SP. By focusing on its business objectives, the organization can leverage its existing work on other improvement initiatives, allowing it to develop an integrated improvement strategy. Understanding the relationships between the eSCM-SP and other related models and standards can help the organization to complement or supplement its eSCM-SP implementation strategy.

A number of models and standards exist that are focused on quality or IT-related topics. These frameworks have a variety of issuing bodies, scopes, architectures, and rating methods:

- General Total Quality Management (TQM) philosophies, such as those of Deming [Deming 1986, Deming 1994], Juran [Juran 1992], and Crosby [Crosby 1979].
- Performance excellence strategies such as Six Sigma® [Harry 2000].
- The criteria for quality awards such as the following:
  - the Deming Prize in Japan [Deming]
  - the Malcolm Baldrige National Quality Award in the United States [Baldrige]
  - the European Quality Award [EQA]
  - the Rajiv Gandhi National Quality Award in India [RGNQA]
  - the Brazilian National Quality Award [PNQ]
- Standards such as the following:
  - ISO 9001 (Quality Management Systems—Requirements) [ISO 2000a]
  - Control Objectives for Information and related Technology (COBIT®) [ITGI 2000]
  - ISO/IEC 12207 (Software Life Cycle Processes) [ISO 2002a]
  - ISO/IEC 15288 (System Life Cycle Processes) [ISO 2002b]
  - ISO/IEC 15504 (Software Process Assessment) [ISO 1998]
  - BS 7799-2 (Information Security Management Systems—Specification with guidance for use) [BSI 2002b)
  - ISO 17799 (Information Security Management) [ISO 2000b]
  - BS 15000 (IT Service Management) [BSI 2002a]
  - COPC-2000 CSP standards [COPC 2004a, COPC 2004b]

- Process improvement models such as the following:
  - the Capability Maturity Model® (CMM®) for Software [Paulk 1995]
  - the Systems Engineering CMM® [Bate 1995]
  - the Software Acquisition CMM® [Cooper 2002]
  - the People CMM® [Curtis 2001]
  - CMM Integration℠ (CMMI®) [Chrissis 2003]

This report is part of a series that analyzes the common ground between the requirements of the eSCM-SP and those of some of these frameworks. The reports in this series are intended to help organizations make efficient use of their resources and existing investments in capability improvement. The differences or gaps between the requirements of the eSCM-SP and those of another framework are highlighted as opportunities for improvement or value-addition. This report focuses on the relationship between the eSCM-SP and the Control Objectives for Information and Related Technology (COBIT) [ITGI 2000].

Some of the frameworks identified (e.g., Six Sigma, the Baldrige Award, and EQA) are sufficiently abstract that their relationship to the eSCM-SP can be briefly described in the introductory report for this series [Paulk, forthcoming a]. For other frameworks, a fairly detailed mapping is both possible and appropriate. While an overview is contained in the introductory report, separate reports with detailed comparisons are available or under development for ISO 9001 [Guha 2005a], CMMI [Paulk, forthcoming b], the Software CMM [Paulk 2005], the People CMM [Hefley, forthcoming a], BS 15000 [Iqbal 2004], COBIT (this report), COPC [Guha, 2005b], BS 7799/ISO 17799 [Hefley, forthcoming b], and SS 507 [Guha forthcoming].

2. An Overview of the eSCM-SP

Competitive pressure, the need to access world-class capabilities, and a desire to share risks are among the primary drivers for organizations to delegate their IT-intensive business activities to external service providers [Hyder 2004a]. The tremendous growth in the sourcing of IT-enabled services, in particular, has been enabled by the rapid evolution and expansion of the global telecommunications infrastructure [ibid.]. The business processes being outsourced range from routine and non-critical tasks, which are resource intensive and operational, to strategic processes that directly impact revenue growth and profitability. The eSourcing Capability Model for Service Providers (eSCM-SP) v2 has been developed by a consortium led by Carnegie Mellon University's Information Technology Services Qualification Center (ITsqc) with the following purposes [ibid.]:

1. Give service providers guidance that will help them improve their capability across the sourcing life-cycle.
2. Provide clients with an objective means of evaluating the capability of service providers.
3. Offer service providers a standard to use when differentiating themselves from competitors.

Released in April 2004, the eSCM-SP v2 is composed of 84 Practices, which can be thought of as the "best practices" associated with successful sourcing relationships. Each Practice is distributed along three dimensions: Sourcing Life-cycle, Capability Area, and Capability Level.

The first dimension, Sourcing Life-cycle, is divided into Ongoing, Initiation, Delivery, and Completion. Ongoing Practices span the entire Sourcing Life-cycle, while Initiation, Delivery, and Completion occur in specific phases of that Life-cycle. During Initiation the organization negotiates with the client, agrees on requirements, designs the service that will be provided, and deploys (transitions) that service. Initiation may also include transfer of personnel, technology infrastructure, and intellectual property. During Delivery the organization delivers service according to the agreed-upon commitments. During Completion the organization transfers resources, and the responsibility for service delivery, back to the client, or to the client's designee.

The second dimension of the eSCM-SP, Capability Areas, provides logical groupings of Practices to help users better remember and intellectually manage the content of the Model. These groupings allow service providers to build or demonstrate capabilities in each critical sourcing function. The ten Capability Areas are Knowledge Management, People Management, Performance Management, Relationship Management, Technology Management, Threat Management, Service Transfer, Contracting, Service Design & Deployment, and Service Delivery.

The third dimension of the eSCM-SP is Capability Levels. The five Capability Levels of the eSCM-SP describe an improvement path that clients should expect service providers to travel. At Capability Level 1, a service provider is able to provide services but has not implemented all of the Level 2 Practices, and may be at a higher risk of failure.

At Capability Level 2, a service provider is able to consistently meet requirements, and has implemented, at a minimum, all 48 of the Level 2 Practices.

At Capability Level 3, a service provider is able to deliver services according to stated requirements, even if the required services differ significantly from the provider's experience, and has, at a minimum, implemented all 74 of the Level 2 and 3 Practices.

At Capability Level 4, a service provider is able to continuously innovate to add statistically and practically significant value to the services they provide. To achieve Level 4 the service provider has successfully implemented all 84 of the eSCM-SP Practices.

At Capability Level 5, a service provider has demonstrated measurable, sustained, and consistent performance excellence and improvement by effectively implementing all of the Level 2, 3, and 4 Practices for two or more consecutive Certification Evaluations covering a period of at least two years. There are no additional Practices to be implemented at Level 5.

Appendix A provides further detail on the rationale and structure of the eSCM-SP, as well as the Capability Determination Methods associated with it.

3. An Overview of COBIT

Control Objectives for Information and related Technology (COBIT) represents a set of widely adopted best practices and guidelines published by the IT Governance Institute of the Information Systems Audit and Control Association (ISACA). COBIT provides management and process owners with an IT governance model useful in assessing and managing the risks associated with IT, while ensuring the integrity of the information and information systems required to support business processes. COBIT provides guidance for business process owners and those responsible for managing IT services and infrastructure. It provides a framework that helps facilitate and assure effective control over the IT processes that provide the information required by the business, satisfying a well-defined set of criteria. [ITGI 2000]

The worldwide acceptance of COBIT as a good practice for control over information, IT, and related risks, continues to grow. The guidance provided by COBIT helps organizations implement effective governance over IT processes, systems, facilities, and infrastructures that are integral for the management and operation of most organizations. COBIT provides management guidelines on how to design and implement an effective measurement framework that will provide visibility and control over the performance and outcomes of IT processes that support business. COBIT also defines a set of critical success factors for each IT process that organizations should control for effective implementation of the process.

The comprehensive body of guidance that COBIT provides for managers, practitioners, and auditors is contained in the following set of components documents [ibid.]:

- Executive Summary
- Framework
- Control Objectives
- Audit Guidelines
- Implementation Tool Set
- Management Guidelines

The 34 IT Processes defined by COBIT are organized into four Domains [ibid.]:

- Planning and Organization (PO)
- Acquisition and Implementation (AI)
- Delivery and Support (DS)
- Monitoring (M)

A high-level Control Objective is associated with each Process, which is achieved through the implementation of Detailed Control Objectives. COBIT applies a set of criteria for information that each Process must meet to effectively support the business requirement associated with that Process. Each Process and its associated Control Objective is applicable to one or more of the following types of resources: People, Applications, Technology, Facilities, and Data.

COBIT supports IT governance by providing a comprehensive set of controls, along with guidelines for managers and auditors on how to implement such controls and assess their adequacy and effectiveness. One of the primary purposes of COBIT is for organizations to identify, assess, and manage risks associated with the IT processes, systems, and services that support their business processes.

In recent years the popularity of COBIT has increased due to its value to organizations seeking to comply with the requirements of the Sarbanes-Oxley Act of 2002 (SOX). COBIT Control Objectives have been found by auditors to be useful in ensuring that organizations have the level of transparency, security, and control required by Sections 302 and 404 of SOX for all processes that enable or facilitate the recording of financial transactions and the generation of financial statements. The assurance of accuracy and integrity required by SOX is made more achievable and effective through the implementation of COBIT-based controls.

Appendix B provides a more detailed description of the structure and contents of COBIT.

4. Comparing the eSCM-SP and COBIT

One of the primary purposes of the eSCM-SP is to provide guidance to service providers and clients on how to reduce costs and risks of failure in sourcing contracts and relationships by implementing good practices in contracting, relationship management, change control, and security. Several eSCM-SP Practices require properly defined policies and procedures to ensure that service providers have the necessary oversight and control to fulfill contractual obligations. Regardless of whether the services are insourced or outsourced, poor quality of information for decision making and control can lead to problems and failures not only with respect to service quality but also from the perspective of compliance with statutes and regulations.

The eSCM-SP and its associated Capability Determination Methods are useful to service organizations seeking to evaluate, develop, and improve their capabilities in the design, deployment, and delivery of IT-enabled services. The eSCM-SP also helps such organizations manage risks associated with sourcing contracts during the initiation and completion phases. Due to its focus on sourcing contracts, phases, relationships, and operations, the eSCM-SP chooses to emphasize certain challenges and issues that, while faced by most organizations, are particularly critical for organizations that are engaged in the sourcing and provision of IT-enabled services.

COBIT provides a set of guidelines, definitions, and controls that are generally accepted as good practices for implementing security and control over IT processes. Its focus is on control over the performance and alignment of IT processes, regardless of the sourcing arrangement. In other words, COBIT does not emphasize or discuss the context of a commercial service provider serving clients that are not business units of its parent organization. COBIT applies to a much wider range of organizations than the eSCM-SP does since it can be used by any organization that implements controls over IT, regardless of whether it is a client or service provider, and regardless of the type of services being provided.

Within the context of COBIT, clients are senior management at the board level and owners of business processes, and service providers are IT organizations within the enterprise or firm. This is quite different from the eSCM-SP, where the dominant view is that of services sourced from a service provider, typically an external service provider.

4.1. High-level Comparison

The requirements of the eSCM-SP are specified in the form of a structured set of Practices associated with successful sourcing contracts and relationships that are adopted and implemented by service providers. The Model also has an associated set of methods, called the Capability Determination Methods, that are used for self-appraisals and formal evaluations that may lead to certification by Carnegie Mellon University .

The structure of the eSCM-SP gives service providers the option to selectively focus on the development and improvement of certain organizational capabilities related to the

management and provision of IT-enabled services. Organizations can choose to focus on specific Capability Areas or Capability Levels, based on their immediate or short-term business imperatives (i.e., those dictated by contracts and customers), or on long-term goals and strategies. The Model structure also provides them with a defined path for capability improvement at an organization level. Although COBIT provides for the use of a generic process maturity model to evaluate each of the 34 IT Processes, it does not provide a way for organizations to be evaluated or certified at any given level based on their implementation of the COBIT Control Objectives. Capability determination of service providers, as defined within the context of eSCM-SP, is not the primary focus of COBIT. Auditors use COBIT Control Objectives and audit guidelines to determine whether or not an IT organization has adequate internal control as required by management and other stakeholders. In this regard, COBIT Control Objectives represent guidance and reference, rather than requirements for compliance, as in the case of the Activities in eSCM-SP Practices. Table 1 provides a high-level comparison between the two frameworks.

Table 1
High-level comparison between the eSCM-SP and COBIT

	eSCM-SP	**COBIT**
Audience	Service providers of IT-enabled sourcing services.	IT organizations
Purpose	Building and improving service providers' capabilities to meet customer needs throughout the sourcing life-cycle.	Implementing IT security and control practices that ensure alignment, visibility, and control over IT processes that support business.
Size	84 Practices in 10 Capability Areas	34 IT Processes in 4 Domains
Coverage	5 Capability Levels 10 Capability Areas 4-part Sourcing Life-cycle • Ongoing • Initiation • Delivery • Completion	4 Domains • Planning and Organization • Acquisition and Implementation • Delivery and Support • Monitoring 34 High-level Control Objectives 318 Detailed Control Objectives 7 criteria for information
Recognition	Certification by Carnegie Mellon University at one of four Capability Levels (Levels 2, 3, 4, and 5). Certification is valid for a period of two years.	None
URL	itsqc.cmu.edu/escm	www.isaca.org

Since the emphasis and focus of the eSCM-SP is on IT-enabled services, and organizations that comply with its requirements have to demonstrate a certain degree of effectiveness in the implementation of its Practices, COBIT-based controls can provide strong support for the effective implementation of eSCM-SP Practices. The differences in purpose, scope, and emphasis explain why COBIT Control Objectives, while supporting eSCM-SP requirements, do not completely address all the related issues emphasized by the eSCM-SP.

Support for eSCM-SP Practices from COBIT Control Objectives varies by Capability Area. COBIT Control Objectives have wide applicability when it comes to governance and control over information, processes, and systems. Since the eSCM-SP has Practices and Activities that require such governance and control, it is not surprising that COBIT provides support for requirements in every eSCM-SP Capability Area, as shown in Table 2.

Table 2
Extent of support for eSCM-SP Capability Levels in COBIT

eSCM-SP Capability Level	Practices that have complete support in COBIT	Practices that have partial support in COBIT
Level 2	95 %	60 %
Level 3	23 %	54 %
Level 4	30 %	30 %

4.2. Coverage of eSCM-SP Requirements by COBIT

This section provides a brief overview of the extent to which the requirements of COBIT address the requirements of each eSCM-SP Capability Area. It must be noted that the discussion in this section is strictly from the perspective of meeting eSCM-SP requirements. In other words, the discussion focuses on how organizations that have successfully implemented the requirements specified in COBIT can leverage that investment toward adoption of the eSCM-SP, and vice versa. This is not a discussion of the relative merits of using the eSCM-SP over COBIT.

Figure 1 provides a graphical summary of the coverage of eSCM-SP Practices by COBIT based on the detailed mappings provided in Appendix C. For each Practice in eSCM-SP, COBIT Control Objectives were identified that support the implementation of that Practice. The tables in Appendix C show in detail how the requirements of a given Practice in the eSCM-SP may be supported, completely or partially, by one or more COBIT Control Objectives. Each such Practice-level mapping was assigned a value based on whether the identified Control Objectives "completely supported," "partially supported," or "did not support" the requirements of the Practice. For each level of support, a value was assigned (1.0, 0.67, or 0, respectively), and an average value was computed for an entire Capability Area (Figure 1) based on the values associated with each of its Practices. These average values are meant to indicate whether the requirements of a given Capability Area are "completely supported," "largely supported," "partially supported," or "not supported" by COBIT. "Completely supported" corresponds to an average value of at least 0.8. "Largely supported" means that the greater part of the Capability Area is supported from the appropriate perspective; the average value for the Capability Area was greater than 0.67. "Partially supported" means that a significant portion of the Capability Area is supported, but there is no explicit support for many requirements. This corresponds to an average coverage of less than 0.67.

Qualitative analysis is involved in deciding to what extent the requirements of the eSCM-SP may be supported by the implementation of COBIT Control Objectives. In addition, the "goodness" of a given implementation of either framework, beyond its requirements threshold, may vary across organizations. Figure 1 shows that organizations that have implemented COBIT Control Objectives may have a significant advantage or head start in initiating an eSCM-SP -based improvement program.

In addition to the mapping provided in Appendix C, which identifies the COBIT Control Objectives that support the implementation of eSCM-SP Practices, Appendix D provides a cross-reference that identifies the eSCM-SP Practices that can benefit from a given COBIT Control Objective.

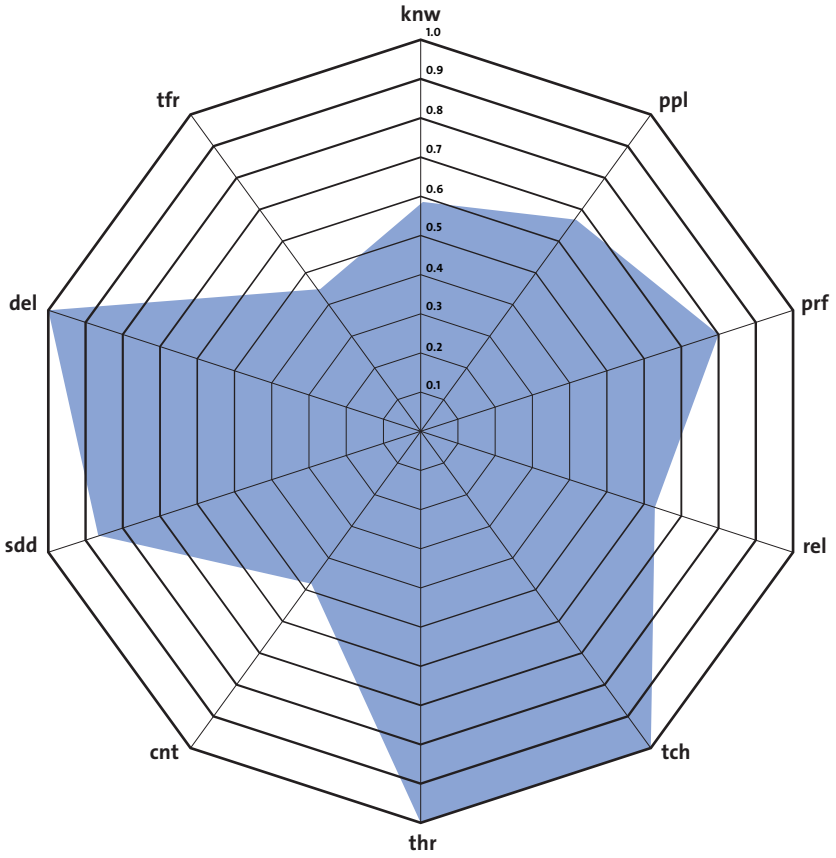

Figure 1
Support for eSCM-SP requirements in COBIT.

Capability Areas	
knw	Knowledge Management
ppl	People Management
prf	Performance Management
rel	Relationship Management
tch	Technology Management
thr	Threat Management
cnt	Contracting
sdd	Service Design & Deployment
del	Service Delivery
tfr	Service Transfer

Knowledge Management (knw)

There is a substantial level of support in COBIT for the eSCM-SP Knowledge Management Capability Area. COBIT does not define specific Processes or Control Objectives on how knowledge is to be provided and shared. However, the effect of implementing several Control Objectives in each of its four Domains would be that of providing knowledge required by service personnel to perform their work. Management policies specified by COBIT require the sharing of information between the IT Processes. When effectively integrated, the management processes, systems, and tools required to implement the

Control Objectives act like a knowledge system. COBIT requires that all of the systems and applications utilized to provide services be supported by documents, procedures, and manuals so that they are properly managed and supported by service personnel. Such procedures, guidelines, manuals, templates, checklists, and operational systems are considered to be process assets within the context of the eSCM-SP. COBIT Control Objectives for managing changes and configurations are very useful for effectively implementing eSCM-SP requirements for version and change control. These Control Objectives cover process assets, infrastructure components, and documents. The Control Objectives for the monitoring of performance, utilization, service levels, and costs, along with operations logs and management reporting, provide a knowledge base used for coordination and control at all levels of management. The eSCM-SP requirements for the collection and reuse of knowledge from specific engagements is outside the scope of COBIT. The requirement for the identification and analysis of work products for reuse is also outside the scope of COBIT.

People Management (ppl)

There is a substantial level of support in COBIT for the eSCM-SP People Management Capability Area. The Planning and Organization (PO) Domain addresses issues such as maintaining an adequately staffed workforce with the required competencies, based on identified long-term and short-term needs. The identification of risks faced by the organization includes risks from not having the required human resources. Control Objectives are specified for defining roles and responsibilities, and assigning them to competent groups and individuals. The eSCM-SP requirements for recruitment, training, and education are well supported in COBIT, but not completely. COBIT supports the requirements for measuring the effectiveness of training and related corrective action. Control Objectives are defined for an evaluation process for employees that provides regular feedback on their performance. However, there is not sufficient support for a related reward system, although management is clearly expected to institute the appropriate incentives. Similarly, career development procedures are not addressed to the extent required by the eSCM-SP. This may be because the focus of COBIT tends to be on IT governance and controls, which is relatively narrower than the scope of the eSCM-SP. While some Control Objectives ensure the involvement of personnel in planning and organization and ensure that personnel have sufficient authority to execute their responsibilities in decision-making, they do not adequately support the corresponding eSCM-SP requirements. Similarly, while some Control Objectives ensure the physical security of facilities, personnel health and safety, and a positive information control environment, they do not completely address the social and behavioral aspects of work environments emphasized by the eSCM-SP. Finally, there is no specific Process or Control Objective within COBIT that requires a formal policy to encourage, support, and reward employees' innovations in the delivery and support of services.

Performance Management (prf)

There is strong support in COBIT for the eSCM-SP Performance Management Capability Area. COBIT requires the development of strategic plans based on business requirements that align IT services with organizational objectives. Management is required to communicate its aims and directives to all levels of the organization involved in execution

and operation. Achievement of the organization's objectives is tracked through the quality assurance review processes. However, there is only partial support for the eSCM-SP requirements specific to engagement objectives. This limited support is due, in part, to the fact that COBIT governs the performance and alignment of IT processes, regardless of the sourcing arrangement. In other words, COBIT, for example, does not emphasize or discuss the content of a commercial service provider serving clients that are not business units of its parent organization. Therefore, while several Control Objectives may be applied to engagement-level analysis and control, they may not address all the issues within that perspective, such as those related to service commitments and business objectives specific to clients. On the other hand, COBIT provides strong guidance on measurement and control over process-level performance. The PO Control Objectives support communication, control, and compliance with policies and procedures. The Delivery and Support (DS) Control Objectives ensure that the services are delivered at the committed levels of quality in a cost-effective manner. For instance, the implementation of Performance Management Practices of the eSCM-SP can be more effective when COBIT controls for service level management, operations management, and capacity management are also implemented. The eSCM-SP requirements for ensuring that adequate resources are addressed in COBIT Processes for managing human resources, strategic plans, and for performance and capacity. There is strong support for eSCM-SP Practices related to managing problems reactively and proactively, thereby leading to improvements. However, the issue of making improvements to organizational performance, as defined in the eSCM-SP, is only partially supported through Control Objectives for monitoring, managing changes, and reviews of service-level agreements (SLAs). The deployment of innovations through proactive implementation of new services and technologies, as defined by the eSCM-SP, do not have significant support. Other areas that are covered in COBIT but do not have adequate support are related to capability baselines and benchmarking.

Relationship Management (rel)

There is a substantial level of support in COBIT for the eSCM-SP Relationship Management Capability Area. One of the primary objectives of implementing COBIT Processes and Control Objectives is to achieve better alignment between the IT organization and the business that it supports. The relationship with business stakeholders is managed through several Processes in the PO and DS Domains. However, within the context of COBIT, clients are senior management at the board level and owners of business processes, and service providers are IT organizations within the enterprise or firm. This is quite different from the eSCM-SP, where the primary focus is on services sourced from a service provider, typically an external service provider. This difference explains why COBIT Control Objectives, while supporting eSCM-SP requirements, do not completely address all the related issues emphasized by the eSCM-SP in this Capability Area and others. Therefore, for example, while COBIT addresses general requirements for managing relationships with clients (including users), it does not specify Control Objectives for roles and responsibilities defined within contracts. On the other hand, the eSCM-SP requirements related to the management of relationships with partners and suppliers, are well supported within COBIT since IT issues related to third-party services are relatively less sensitive to the nature of the relationship

with clients. The only issue addressed in the Relationship Management Capability Area that is not explicitly addressed with Control Objectives is that of achieving a cultural fit with suppliers and partners. Controls mostly focus on legal, financial, and regulatory risks arising from poor selection of third parties. Finally, while there is a strong emphasis on delivering high levels of service quality while controlling risks and costs, the focus in COBIT is more on meeting business requirements, complying with regulations, and controlling performance. The specific eSCM-SP requirement for service providers to actively pursue opportunities and execute programs aimed at creating new sources of value does not have support in COBIT.

Technology Management (tch)

There is complete support in COBIT for the eSCM-SP Technology Management Capability Area. One of the strengths of COBIT is the comprehensive and detailed guidance it provides for designing, implementing, and managing controls for information and related technologies. COBIT provides support for the effective implementation of every eSCM-SP Practice in this Capability Area. The COBIT Processes for managing the acquisition and implementation of systems and applications effectively support the corresponding eSCM-SP Practices. The Control Objectives for managing risks apply well to the issues highlighted by the eSCM-SP with respect to technology integration, optimization, and control. Other compliance issues such as privacy, intellectual property, and the flow of data across organizational and geographic boundaries are well supported. The Control Objectives related to the management of configurations address issues related to the identification, accounting, and tracking of technology assets and licenses.

Threat Management (thr)

There is complete support in COBIT for the eSCM-SP Threat Management Capability Area. One of the strengths of COBIT is the comprehensive and detailed guidance it provides for designing, implementing, and managing controls for reducing the risks associated with information and related technologies. Several COBIT Control Objectives form a solid basis for implementing a comprehensive risk management policy. Management is required to set up a positive control environment and define, communicate, and maintain appropriate policies to be followed by the organization. Security and internal-control frameworks are required to be implemented that minimize risk through preventive measures, timely identification of non-compliance, and restoration of the desired state of control. An entire COBIT Process is dedicated to the assessment, identification, measurement, and mitigation of business risks. The oversight extends to third-party services. The monitoring processes are part of the control framework, which seeks to identify and manage risk. Although COBIT does not define the concept of an engagement as defined in the eSCM-SP, the supporting Control Objectives can be applied within the context of engagements and across engagements at an enterprise level (such as the ones specified for managing and reviewing service level agreements). Business Risk Assessment (PO9.1) is expected to be applied at global and system-specific levels for new projects (engagements), as well as on a recurring basis with cross-disciplinary participation. COBIT provides a comprehensive set of controls for managing security of the infrastructure, information, and intellectual property, which are governed by a management policy for security and internal control. An entire

Process is dedicated to ensuring compliance with external requirements, which also serve as inputs to the development of the strategic IT plan. Additionally, controls are specified for obtaining independent assurance from auditors on service providers' compliance with laws and regulatory requirements (and that of third-party partners and suppliers). Finally, a set of controls are specified for developing and maintaining capabilities and resources that will ensure the required level of business continuity, primarily as part of the process for ensuring continuous service when disasters or disruptive events occur.

Contracting (cnt)

There is a substantial level of support in COBIT for the eSCM-SP Contracting Capability Area. However, the following difference between the focus of the eSCM-SP and that of COBIT must be reiterated. COBIT does not emphasize or discuss the context of a commercial service provider serving clients that are not business units of its parent organization. That is quite different from eSCM-SP, where the dominant view is that of services sourced from a service provider, typically an external service provider. This difference again explains why COBIT Control Objectives, while supporting eSCM-SP requirements in this Capability Area, do not completely address all the related issues as defined by the eSCM-SP. For example, guidelines for pricing and negotiations with current or prospective clients are clearly not in the scope of COBIT. However, controls are specified for analyzing, managing, allocating, and recovering costs as the basis for billing and chargeback procedures, which are instrumental to pricing models. Several COBIT Control Objectives address the need for diligence in analyzing existing conditions before making commitments to clients. These include issues such as analyzing existing systems for complexity, functionality, stability, etc., during strategic planning; cost-benefit justification; business risk assessment; project risks; and the feasibility of any technology to be developed or acquired. COBIT provides support for parts of the eSCM-SP related to management of requirements. To the extent that Activities in these Practices are project based and similar to systems development life-cycles, there is support from Control Objectives within the COBIT Processes for managing projects (PO10) and for managing quality (PO11), both of which require that requirements be clearly defined and reviewed at specific check points. Also applicable are the Control Objectives for defining and managing service levels, acquisition and installation of systems, and requirements for third-party services. Other areas not adequately covered by COBIT controls at the level of specificity required by the eSCM-SP are analysis of human resources capabilities, staffing and productivity baselines, transfer of assets between the service provider and clients, and review of legal commitments and obligations. For reasons given above, these contract-related requirements are mostly out of the scope of COBIT, as are those that pertain specifically to the use of market-based business intelligence on prospective customers based on the rationale provided in the eSCM-SP.

Service Design & Deployment (sdd)

There is a substantial level of support in COBIT for the eSCM-SP Service Design and Deployment Capability Area. To the extent that service design and deployment are project-based activities, guided by the quality specifications defined in service level agreements, the Control Objectives for managing projects, managing quality, and managing service

levels provide adequate support. The Control Objectives that support requirements management Activities in Relationship Management Practices also support Practices in this Capability Area. Adequate support is provided by Control Objectives for coordination and communication with clients and third parties, systems-development life-cycle, and reassessment of system design. However, the focus in COBIT is more on design, deployment, and operation of the IT infrastructure upon which IT services are hosted. The definition of services in the eSCM-SP extends to categories in which the scope of service design and deployment includes the design of work environments, workflow, organizational design, policies, and procedures. The distinction between the deployment and delivery phases made in the eSCM-SP is not made in COBIT, which demarcates between acquisition and installation (AI) of systems, applications, and procedures, and the delivery and support (DS) of the resultant services. Therefore, what is considered to be a deployment activity in the eSCM-SP is supported by Control Objectives in either the AI Domain, the DS Domain, or in both.

Service Delivery (del)

There is complete support in COBIT for the eSCM-SP Service Delivery Capability Area. The DS Domain in COBIT supports the essential service delivery and support processes of service management, which, in the eSCM-SP, are distributed across multiple Capability Areas. Unlike the Practice del03 (Deliver service) in this Capability Area, COBIT does not define a separate Process within its DS Domain that represents the actual performance of service delivery, represented by service requests, transactions, initialization, or other acts of production and consumption. But all of the DS Domain supports the scope of the Service Delivery Capability Area and the Practice del03. Planning and tracking service delivery is supported by Control Objectives from all four COBIT Domains, but particularly by the DS Processes. Control Objectives that directly support service delivery include those for short-term planning, risk assessment, service level management, systems and infrastructure deployment, maintaining continuity of services, availability management, capacity management, systems security, cost tracking and allocation, user training, help desk, operations management, and monitoring.

Control Objectives specified for managing service level agreements form the basis for verifying service commitments in the eSCM-SP. Monitoring and reporting service levels and customer satisfaction, and reviewing service level agreements are also covered. The Control Objectives for incident management and problem management through a help desk, change management, and configuration management adequately support most of the eSCM-SP requirements for ensuring that services are delivered and supported effectively, and modified or improved when necessary within the framework of contracts and agreements. Various aspects of financial management are supported by Control Objectives for cost-benefit monitoring, cost justification, costing and charging procedures, identification and allocation of costs, and asset management (through configuration control). Control Objectives for management reporting and for the adequacy of internal control provide support for requirements for oversight and approval by various stakeholders, as well as accuracy and completeness of financial information.

Service Transfer (tfr)

There is significant support in COBIT for the eSCM-SP Service Transfer Capability Area. Within the context of the eSCM-SP, transfer of control over the provision of services and the associated resources occurs following a sourcing decision made by the client. Depending on the type of decision, control may be transferred between the client and a service provider, or between two or more service providers. Such sourcing decisions, activities, and events are outside the scope of COBIT. However, there are COBIT Control Objectives that could support the implementation of eSCM-SP Practices in this Capability Area. Control Objectives for managing configurations support part of the requirements for identification, accounting, and tracking the resources transferred in and transferred out. The COBIT Process for managing human resources has Control Objectives that support that Process for transferring personnel into the organization. However, these controls are generic in nature and may not be adequate in the context of outsourcing contracts in which personnel may be transferred from clients and other service providers. The challenges and issues in such contexts are markedly different from normal acquisition and development of human resources. The transfer of personnel out of the organization is clearly out of the scope of COBIT.

Service continuity within the context of the Service Transfer Capability Area relates to reducing or preventing the impact on business operations during the period when control is transferred to or from the client or to another service provider. Such transfers occur during the initiation and completion phases of contracts. While this is clearly out of the scope of COBIT, there are Control Objectives related to business continuity from disasters that, to an extent, facilitate the smooth transfer of service. The transfer of knowledge specific to particular engagements, clients, or contracts from the organization during the termination phase of the sourcing cycle is outside the scope of COBIT.

4.3. Coverage of COBIT Requirements by the eSCM-SP

This section describes the extent to which the requirements of the eSCM-SP address the Control Objectives of COBIT. COBIT's Control Objectives provide for organizations a reference for achieving effective control over their IT processes that support business requirements. Although achieving control over IT processes is not the primary focus of the eSCM-SP, it is a desirable outcome from the perspective of several of its Practices. In other words, the implementation of eSCM-SP Practices can contribute to the achievement of most COBIT Control Objectives to varying extents.

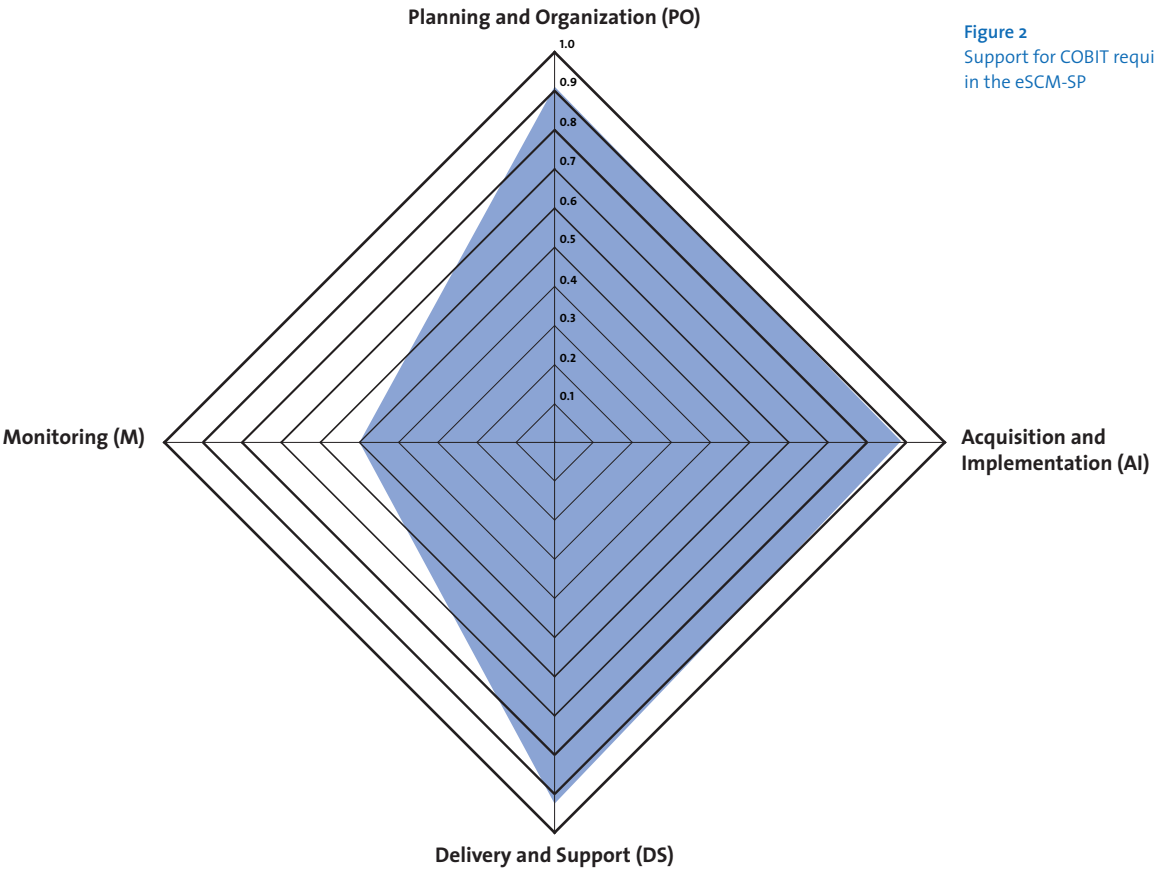

Figure 2
Support for COBIT requirements in the eSCM-SP

Figure 2 provides a graphical summary of the extent to which each of the four COBIT Domains may be supported by the implementation of eSCM-SP Practices. This summary is based on the detailed mappings provided in Appendix D. The tables in Appendix D show how the detailed Control Objectives associated with each COBIT Process may be supported, completely or partially, by one or more eSCM-SP Practices. A scale similar to the one described in Section 4.2 was used to generate Figure 2. It is clear from Figure 2 and Appendix D that eSCM-SP Practices can support the achievement of most of the Control Objectives in the PO, AI, and DS domains of COBIT, and a significant part of the M Domain.

4.4. Challenges to Mapping

Although COBIT-based controls can provide strong support for the effective and efficient implementation of eSCM-SP Practices, there are major differences between the eSCM-SP and COBIT. As is evident from the high-level comparison in Table 1, the two frameworks have major differences in scope, perspective, and structure. There are also major differences in how and for what purpose each framework is applied.

4.4.1. Differences in Scope and Perspective

COBIT focuses on the IT organization within an enterprise, its relationship with the business units or processes it supports, and the third-party services it utilizes. The enterprise could be a client or a service provider in the eSCM-SP context. COBIT is equally applicable to the IT processes of either type of enterprise, and therefore distinctions are not made between "COBIT for Clients" and "COBIT for Service Providers." The eSCM-SP focuses on the relationship between the client and the service provider, whether the services are sourced or not. One of the major elements in the eSCM-SP is the sourcing life-cycle, which includes phases for initiation, delivery, and completion of contracts, plus an overall phase. There is no such sourcing cycle defined in the COBIT context, where all services are provided within the construct of an ongoing relationship with the business and the IT organization that supports it. These differences present a challenge in mapping many COBIT Processes and Control Objectives to eSCM-SP Practices.

4.4.2. Difference in Structure

Practices in the eSCM-SP are organized into Capability Areas, Capability Levels, and Life-cycle phases. The idea of process Domains in COBIT is analogous to Capability Areas in the eSCM-SP, to the extent that each represents a closely-related, well-defined set of processes and activities that represent an organizational capability. However, the 34 IT Processes are organized in four COBIT Domains, which are parts of the management cycle, which is iterative over a period of time. The 84 Practices of the eSCM-SP are organized into ten Capability Areas, which are part of a sourcing life-cycle that contains certain elements that are iterative over a period of time. However, for a given contract between a client and service provider, there are clearly defined initiation and completion events, even though the business relationship may have an earlier start and a later end.

While COBIT recommends the use of a generic maturity model to assess the development of each process, an organization is not formally evaluated or certified at any particular level of capability or maturity. Since the eSCM-SP expects service providers to establish and implement its Practices at different Capability Levels, the performance of certain activities and processes matures or extends in scope across Capability Levels. The underlying premise is that organizations learn and improve, making greater investments in certain capabilities and resources over time or when business provides justification.

Practices in the eSCM-SP consist of Activities, which represent the requirements that must be met in order for the Practices to be implemented. Organizations adopting the eSCM-SP may choose which Practices they would like to implement, but they have little or no choice over which Activities. COBIT, on the other hand, does not have requirements

with which organizations need to comply or against which they are assessed. COBIT largely represents a set of controls and guidelines that are generally accepted as good practices for security and control over IT processes. Organizations may choose to implement specific Processes or Control Objectives based upon their own needs for alignment and control. The nearest thing to requirements in COBIT are the seven information criteria for information that IT processes must satisfy to meet the business needs they support. However, even those criteria serve as guidelines, and not as requirements.

5. Conclusions

COBIT and the eSCM-SP differ from each other in many aspects, including focus, scope, purpose, content, and structure. They are not alternative approaches to the same set of problems, challenges, or issues. They represent good practices from the perspective of largely different contexts. COBIT is grounded in the domains of information systems, security, audit, and control, while the eSCM-SP is a capability-improvement framework for providers of IT-enabled services. Although both COBIT and the eSCM-SP help organizations reduce risks and costs of services, they are very different in focus, scope, purpose, and context. COBIT does not have requirements with which organizations need to comply in order to be evaluated or certified at a given level. It does not make sense to say that an organization has achieved COBIT compliance to a specific degree. However, organizations use the COBIT Framework to align their IT processes with their business needs and to achieve a certain level of control over them. These outcomes are desirable within the context of the eSCM-SP as well, and therefore they form the basis upon which COBIT and eSCM-SP implementations can benefit from each other. Also, the eSCM-SP only specifies which activities and processes are to be implemented within the construct of Practices and Capability Areas. How the Activities are actually implemented is largely left to organizations to decide, based on their own situations. It is here where COBIT can add tremendous value within the context of eSCM-SP implementation. Organizations can make their specific implementation of eSCM-SP Practices significantly more effective and controllable by using the guidance provided in COBIT and the mappings provided in this report.

Recent legislation, such as Sarbanes-Oxley in the United States and other changes in the regulatory environment have prompted organizations to increase the visibility and control they have over all aspects of their business. The increasing pervasiveness of information and communications technologies means that IT controls have to be closely aligned and integrated with management controls to ensure that all risks to the business are identified, monitored, and controlled. This includes risks from sourcing contracts and relationships. A major risk to client organizations is from actions or omissions by service providers that violate statutes and regulations. Therefore, it is prudent for service providers to not only comply with all external regulations, but also to provide that assurance to their clients. There are Practices in the eSCM-SP that address this issue, however its focus is much wider than governance and compliance, the central tenets of COBIT. It would therefore be highly beneficial for service providers to use the guidance provided in COBIT to support their respective implementations of the eSCM-SP or any other framework. One of the strengths of COBIT is the guidance it provides on measurement, with key goal indicators, key performance indictors, and critical success factors defined for every Process. While a report on measurement and the eSCM-SP [Paulk 2004] describes how the Practices in the Model support implementing a balanced and comprehensive set of measures that address organizational objectives, the eSCM-SP does not provide guidance on measurement specific to each Practice. The implementation specific to each Practice, the implementation of COBIT-based controls to support eSCM-SP Practices means that service providers have a framework for measurement readily available that they can modify to suit their specific environments and situations.

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Appendix A: Description of the eSCM-SP v2

This section provides a detailed description of the eSourcing Capability Model for Service Providers (eSCM-SP) v2 [Hyder 2004a, Hyder 2004b].

A.1. Rationale Behind Development of the eSCM-SP

IT-enabled sourcing, or eSourcing, uses information technology as a key component of service delivery or as an enabler for delivering services. It is often provided remotely, using telecommunication or data networks. These services currently range from routine and non-critical tasks that are resource intensive and operational in nature to strategic processes that directly impact revenues.

IT-enabled services are being sourced at a rapid rate. The evolution of the Internet and the global telecommunications infrastructure has provided client organizations with a choice of service providers located anywhere in the world. Simultaneously, competitive pressures have driven organizations to find the most cost-effective way to get the IT-enabled services they need while maintaining or improving their quality of service.

Sourcing failures are largely related to a core set of critical issues affecting sourcing relationships. Based on literature review [Kumar 2001] and interviews with eSourcing service providers and clients, issues critical for successful eSourcing have been identified. These include developing and sustaining stakeholder relationships, building and keeping a competent workforce, defining and delivering quality service, assessing and managing threats (e.g., disasters, invasion of networks), remaining competitive through innovation and improvement, and managing transitions of resources and services.

The combination of high growth and significant failures in eSourcing highlights a growing need: clients and service providers both need to be able to address the critical issues in sourcing in order to increase their probability of success. Individually and as a whole, existing frameworks do not address all of the critical issues in eSourcing. Also, many of these frameworks do not readily provide methods to assess the capabilities of IT-enabled service providers to establish, manage, and improve relationships with clients.

A.2. Structure of the eSCM-SP v2

Released in April 2004, the eSCM-SP v2 is composed of 84 Practices, which can be thought of as "best practices" associated with successful sourcing relationships. Each Practice is assigned a value along three dimensions: Sourcing Life-cycle, Capability Area, and Capability Level.

Each of the 84 Practices in the eSCM-SP contains information about a sourcing best practice. This information includes a statement summarizing the best practice, a description of the best practice, a list of activities needing to be performed, and supplemental information that helps clarify the nature of those activities. For more information on the structure of the 84 Practices, see *The eSourcing Capability Model for Service Providers (eSCM-SP) v2, Part 2: Practice Details* [Hyder 2004b].

A.2.1. Sourcing Life-cycle

Although most quality models focus only on delivery capabilities, in eSourcing there are also critical issues associated with initiation and completion of engagements. The first dimension of the eSCM-SP Practices highlights where in the Sourcing Life-cycle each Practice is most relevant. Ongoing Practices span the entire Sourcing Life-cycle, while Initiation, Delivery, and Completion Practices occur in specific phases of that Life-cycle.

Ongoing Practices represent management functions that need to be performed during the entire Sourcing Life-cycle. In order to meet the intent of these Practices, it is important to perform them across the whole life-cycle; an organization that only performs an Ongoing Practice during Delivery is not meeting the intent of the Practice. Initiation Practices focus on the capabilities needed to effectively prepare for service delivery. These Practices are concerned with gathering requirements, negotiating, contracting, and designing and deploying the service, including transferring the necessary resources. Delivery Practices focus on service delivery capabilities, including the ongoing management of service delivery, verification that commitments are being met, and management of the finances associated with the service provision. Completion Practices focus on the capabilities needed to effectively close down an engagement at the end of the Sourcing Life-cycle. They mainly include the transition of resources to the client, or to a third party, from the service provider.

A.2.2. Capability Areas

Delivery of eSourcing occurs through a series of interdependent functions that enables service providers to effectively deliver service. The second dimension of the eSCM-SP, Capability Areas, provides logical groupings of Practices to help users better remember and intellectually manage the content of the Model. These groupings allow service providers to build or demonstrate capabilities in each critical sourcing function, addressing all of the critical sourcing issues discussed above.

All of the Ongoing Practices are contained within six of the ten Capability Areas: Knowledge Management, People Management, Performance Management, Relationship Management, Technology Management, and Threat Management. The other four Capability Areas are temporal and are typically associated with a single phase of the Sourcing Life-cycle: Initiation, Delivery, or Completion. The exception is Service Transfer, which includes both Initiation and Completion Practices. In addition to Service Transfer, these temporal Capability Areas are Contracting, Service Design & Deployment, and Service Delivery.

The Knowledge Management Practices focus on managing information and knowledge systems so that personnel have easy access to the knowledge they need to effectively perform their work. This Capability Area addresses the critical issues of capturing and using knowledge, and measuring and analyzing reasons for termination.

The People Management Practices focus on managing and motivating personnel to effectively deliver services. They address understanding the organization's needs for personnel and skills, filling those needs, and encouraging the appropriate behaviors to effectively deliver service. This Capability Area addresses the critical issues of establishing

and maintaining an effective work environment, building and maintaining competencies, and managing employee satisfaction, motivation, and retention.

The Performance Management Practices focus on managing the organization's performance to ensure that the client's requirements are being met, that the organization is continually learning from its experience, and that the organization is continually improving across engagements. These Practices address the effective capture, analysis, and use of data, including data on the organization's capabilities relative to its competitors. This Capability Area primarily addresses the critical issues of maintaining competitive advantage, innovating, building flexibility, and increasing responsiveness. It also addresses monitoring and controlling activities to consistently meet service delivery commitments.

The Relationship Management Practices focus on actively managing relationships with stakeholders, including the client, as well as suppliers and partners who are integral to the delivery of services to the client. Relationship Management primarily addresses the critical issues of managing stakeholder expectations, establishing and maintaining trust and ensuring the effectiveness of interactions with stakeholders, managing supplier and partner relationships, managing the cultural differences between stakeholders, and monitoring and managing the client's and end-users' satisfaction. This Capability Area also addresses innovating, building flexibility, increasing responsiveness, establishing well-defined contracts with stakeholders, and maintaining a competitive advantage.

The Technology Management Practices focus on managing the availability and adequacy of the technology infrastructure used to support the delivery of the services. Their focus covers controlling the existing technology, managing changes to that technology, and appropriately integrating the technology infrastructure with the client, suppliers, and partners to effectively deliver service. This Capability Area addresses the critical issue of managing rapid technological shifts and maintaining technology availability, reliability, accessibility, and security. It also addresses innovating, building flexibility, and increasing responsiveness.

The Threat Management Practices focus on identifying and actively managing threats to the organization's ability to meet its objectives and the requirements of the client. They focus on active risk management, paying particular attention to the risks associated with security, confidentiality, infrastructure, and disasters that may disrupt service or fail to meet the requirements of the client. This Capability Area addresses the critical issues of managing clients' security, and ensuring compliance with statutory and regulatory requirements. It also addresses maintaining the continuity of service delivery, managing rapid technological shifts, and maintaining the availability, reliability, accessibility, and security of the technology.

The Contracting Practices focus on effectively managing the process of gathering client requirements, analyzing them, and negotiating a formal agreement that describes how the service provider will meet those requirements. A critical component of contracting is understanding the client's expectations and needs, and agreeing with the client on how the organization will meet those requirements. All Contracting Practices are in Initiation. This

Capability Area addresses the critical issues of translating implicit and explicit needs into the defined requirements, and establishing well-defined contracts with stakeholders.

The Service Design & Deployment Practices focus on translating the client's requirements and the contract language of what will be provided into a detailed design for how it will be provided, and on effectively deploying that design. This Capability Area is closely related to the Contracting Capability Area. All Service Design & Deployment Practices are in the Initiation phase. This Capability Area addresses the critical issue of reviewing service design and deployment to ensure adequate coverage of the requirements. It also addresses developing procedures for monitoring and controlling activities to consistently meet service delivery commitments.

The Service Delivery Practices focus on the continued delivery of services according to commitments made to clients and based on service designs. They include planning and tracking of the service delivery activities. The Service Delivery Practices are the only ones in Delivery. This Capability Area addresses the critical issues of monitoring and controlling activities to consistently meet service delivery commitments, and maintaining continuity of service delivery. It also addresses establishing well-defined contracts with stakeholders, and maintaining a competitive advantage.

The Service Transfer Practices focus on transferring resources between service providers and clients or other service providers. In Initiation the resources are transferred to the organization as it takes responsibility for service delivery. This transfer may include people, processes, technology, and knowledge needed to effectively perform that service delivery. In Completion the organization transfers resources to the new service provider (either the client or an external service provider) in a manner that ensures continued service to the client during the transfer period. This Capability Area addresses the critical issues of smoothly transferring services and resources, and capturing and transferring the knowledge gained during the engagement to the client during contract completion. It also addresses maintaining continuity of service delivery.

A.2.3. Capability Levels

The third dimension in the eSCM-SP is Capability Levels. The five Capability Levels of the eSCM-SP describe an improvement path that clients should expect service providers to travel. This path starts from a desire to provide eSourcing services, and continues to the highest level, demonstrating an ability to sustain excellence.

The capabilities of Level 1 service providers vary widely. Some may have almost none of the eSCM-SP Practices implemented. These providers are very likely to be a high risk to work with because they often promise more than they deliver. Other service providers may have many of the eSCM-SP Practices implemented, including some Practices at Capability Levels 3 and 4. Because these service providers have not fully implemented all of the Capability Level 2 Practices, they may meet many of the client's needs successfully, but there will still be a risk of failure in areas where they have not implemented the necessary eSCM-SP Practices.

Service providers at Capability Level 2 have formalized procedures for capturing requirements and delivering the services according to commitments made to clients and

other stakeholders. These providers are able to deliver specific services according to stated client expectations, given that the services do not significantly vary from the provider's experiences. At Capability Level 2 the service provider is able to systematically capture and understand requirements, design and deploy services to meet the requirements, and successfully deliver the services according to agreed-upon service levels.

The infrastructure (e.g., work environment, training, technology, and information) is in place to support consistent performance of work that meets the service provider's commitments. Level 2 service providers have implemented all of the Capability Level 2 Practices and can demonstrate their effective usage.

Service providers at Capability Level 3 are able to deliver services according to stated requirements, even if the required services differ significantly from the providers' experience. At Level 3 the service provider is able to manage its performance across the organization, understand targeted market services and their varying requirements (including specific cultural attributes), identify and manage risks across engagements, and design and deliver services based on established procedures. The service provider supports this capability through sharing and using knowledge gained from previous engagements, objectively measuring and rewarding personnel performance, and monitoring and controlling technology infrastructure. Having established systems for forming and managing client relationships, providers at Capability Level 3 continuously aim to improve the services delivered. Improvements are reactive and are typically generated from the defined measurement and verification activities. The Level 3 service provider demonstrates measurable improvement with respect to organizational objectives. Organizational learning improves performance across engagements. Level 3 providers have effectively implemented all of the Level 2 and 3 Practices.

Service providers at Capability Level 4 are able to continuously innovate to add statistically and practically significant value to the services they provide to their clients and other stakeholders. At Capability Level 4 the service provider is able to customize its approach and service for clients and prospective clients, understand client perceptions, and predict its performance based on previous experiences. The service provider supports this capability through systematically evaluating and incorporating technology advances and setting performance goals from a comparative analysis of its current performance as well as from internal and external benchmarks. Level 4 providers systematically plan, implement, and control their own improvement, typically generating these plans from their own performance benchmarks. They have effectively implemented all of the Capability Level 2, 3, and 4 Practices.

Service providers at Capability Level 5 have demonstrated measurable, sustained, and consistent performance excellence and improvement by effectively implementing all of the Capability Level 2, 3, and 4 practices for two or more consecutive Certification Evaluations covering a period of at least two years. There are no additional Practices required to reach Capability Level 5; effective, continued, implementation of all 84 of the eSCM-SP Practices in a rapidly changing environment shows an ability to sustain excellence throughout the organization over time.

A.3. Capability Determination Methods

The knowledge from an eSCM-SP Capability Determination may be used by clients. ITsqc provides four methods that can be used to assess the capabilities of service providers relative to the eSCM-SP Capability Levels. The four Capability Determination Methods systematically analyze evidence of the provider's implementation of the eSCM-SP v2 Practices to determine what Capability Level their organization has achieved [Hyder 2004a]. The Capability Determination may be of interest to, or required by, current or prospective clients of the service provider within a sourcing selection process. In this context, the Methods provide a consistent way for clients to evaluate their existing service providers or to compare two or more prospective providers. The knowledge from such an eSCM-SP Capability Determination may be used by clients to assess the risks and benefits of selecting a given service provider. Capability Determination may also be sponsored by service providers with the objective of evaluating their current capabilities and defining targets for self-improvement. In this context, the organization may or may not seek formal certification at an eSCM-SP Capability Level.

The four Capability Determination methods that are available from ITsqc are (1) Full Evaluation, (2) Full Self-appraisal, (3) Mini Evaluation, and (4) Mini Self-appraisal. The five major differences among these methods are (1) their purpose and outcome, (2) who conducts them, (3) who leads them, (4) who sponsors them, and (5) the number of eSCM-SP Practices that are analyzed (i.e., the model scope). Table 3 summarizes the four Methods.

Table 3
eSCM-SP Capability Determination Methods

		Evaluation	Self-appraisal
FULL	Purpose	For certification	To launch or validate an improvement effort. No certification.
	Team	External, trained & authorized by Carnegie Mellon University	Internal, external, or combination
	Lead evaluator	Required	Strongly Recommended
	Sponsor	Client or service provider	Service provider
	Model scope	All eSCM-SP Practices	All eSCM-SP Practices
MINI	Purpose	To prepare for a Full Evaluation or as part of a provider selection process. No certification.	To launch or validate an improvement effort. No certification.
	Team	External, trained & authorized by Carnegie Mellon University	Internal, external, or combination
	Lead evaluator	Required	Recommended
	Sponsor	Client or service provider	Service provider
	Model scope	Subset of eSCM-SP Practices	Subset of eSCM-SP Practices

Only the Full Evaluation leads to an ITsqc certification. It is a third-party external evaluation of a service provider's capability. It is based on evidence of the provider's implementation of all the Practices in the eSCM-SP, and is sponsored by the service provider or by its client(s). Members of the evaluation team must be trained by Carnegie Mellon

University and must be authorized to perform external evaluations of service providers. An authorized Lead Evaluator must head the evaluation effort. The evaluation data is rigorously reviewed by a certification board at Carnegie Mellon University and, when warranted, results in certification by Carnegie Mellon of the provider's capability. Organizations can be certified eSCM-SP -compliant at Capability Levels 2, 3, 4, or 5.

Appendix B: Description of COBIT

Control Objectives for Information and related Technology (COBIT) is a framework for implementing IT governance requirements. This is necessary in order for IT organizations to effectively meet their commitments to stakeholders that information required by their business processes will meet quality, fiduciary, and security requirements [ITGI 2000]. COBIT was developed and reviewed by a global committee of experts, and is organized by the IT Governance Institute (ITGI), who achieved consensus on a set of "good practices" that help organizations put in place control systems or frameworks to manage IT processes in order to effectively support their business processes [ibid.]. COBIT represents a widely used and de facto standard for the design, implementation, and improvement of systems of controls for IT governance. The COBIT family of products consists of several publications, shown in Figure 3, aimed at various levels of management within an enterprise and its IT organization.

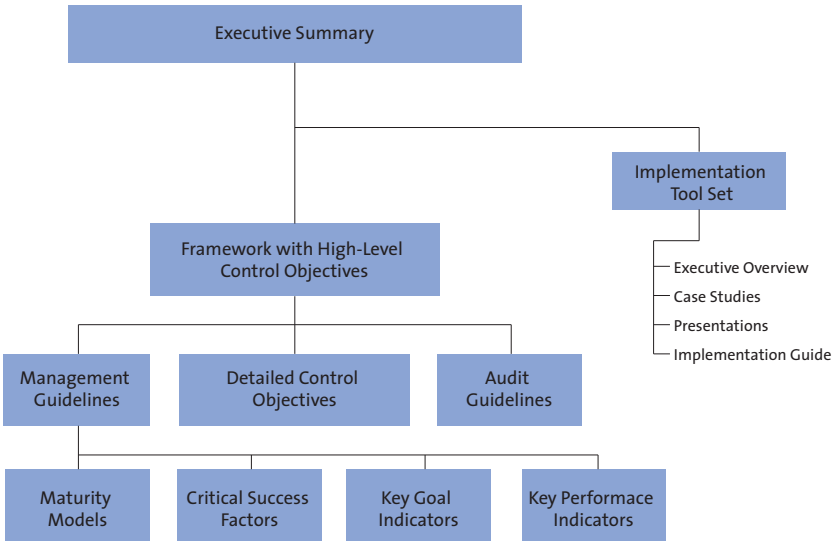

Figure 3
COBIT Family of Products
[ITGI 2000]

COBIT identifies 34 IT Processes across four Domains, a high-level approach to achieve control over each Process, 318 detailed Control Objectives, and audit guidelines to evaluate the performance of the Processes. Organizations can use the guidance that COBIT provides to define, implement, and monitor the appropriate level of control within their IT organizations. Each of the 34 IT Processes belongs to one of the following Domains:

- Planning and Organization (PO)
- Acquisition and Implementation (AI)
- Delivery and Support (DS)
- Monitoring (M)

Table 4 lists COBIT's high-level Control Objectives.

Table 4
High-level Control Objectives

Planning and Organization	**PO1**	Define a strategic IT plan
	PO2	Define the information architecture
	PO3	Determine the technological direction
	PO4	Define the IT organization and relationships
	PO5	Manage the IT investment
	PO6	Communicate management aims and directions
	PO7	Manage human resources
	PO8	Ensure compliance with external requirements
	PO9	Assess risks
	PO10	Manage projects
	PO11	Manage quality
Acquisition and Implementation	**AI1**	Identify automated solutions
	AI2	Acquire and maintain application software
	AI3	Acquire and maintain technology infrastructure
	AI4	Develop and maintain procedures
	AI5	Install and accredit systems
	AI6	Manage changes
Delivery and Support	**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	Assist and advise customers
	DS9	Manage the configuration
	DS10	Manage problems and incidents
	DS11	Manage data
	DS12	Manage facilities
	DS13	Manage operations
Monitoring	**M1**	Monitor the processes
	M2	Assess internal control adequacy
	M3	Obtain independent assurance
	M4	Provide for independent audit

For each IT Process and high-level Control Objective, COBIT specifies one or more of the following business requirements for information that must be satisfied to effectively support business needs:

- effectiveness
- efficiency
- confidentiality
- integrity
- availability
- compliance
- reliability

COBIT provides guidelines for management to answer the following questions about their organizations [ibid.]:

- What are good indicators of performance?
- What is important from a control perspective?
- What are the critical success factors for control?
- What are the risks of not achieving our objectives?
- What do others do? How do we measure and compare?

COBIT recommends the use of balanced scorecards to frame goals of the business that are to be achieved with the support of information technology enablers. The outcomes of business processes are represented on Balanced Business Scorecards as Key Goal Indicators (KGI) that inform management—after the fact—whether an IT process has achieved its business requirements. KGIs are usually expressed in terms of the following information criteria [ibid.]:

- Availability of information needed to support the business needs
- Absence of integrity and confidentiality risks
- Cost-efficiency of process and operations
- Confirmation of reliability, effectiveness, and compliance.

The performance of IT processes is measured and reported on the IT Balanced Scorecard in the form of Key Performance Indicators (KPI), which provide management a basis for judging whether or not the business goals will be reached. KPIs should be defined to provide a reliable indication of performance that is to be controlled for IT processes in order to effectively support the attainment of business process goals as measured by KGIs. For each of the 34 IT Processes, COBIT provides KPIs and KGIs for management to consider.

Since the primary concern of IT processes is to deliver the information required by business processes on a timely basis, management needs to identify and control the factors that are critical to achieving control over performances and outcomes [ibid.]. For each for the 34 IT Processes, COBIT provides a set of Critical Success Factors (CSF) that define the most important issues or actions for management to achieve control over and within its IT processes. These serve as guidelines for implementation and as a checklist for management to consider when managing their organizations.

With respect to achieving a certain level of control over IT processes, COBIT recommends benchmarking processes against their high-level Control Objectives to determine the following [ibid.]:

- current status of the organization—where it is today
- current status of (best-in-class in) the industry—the comparison
- current status of international standard guidelines—additional comparison
- organization's strategy for improvement—where it wants to be.

Appendix C: Coverage of the eSCM-SP by COBIT

This section provides a detailed mapping of eSCM-SP Practices to the COBIT Control Objectives that support their effective implementation. The objective of this comparison is to demonstrate the extent to which eSCM-SP requirements are supported by a COBIT-based control framework. As such, unlike comparisons made between the eSCM-SP and other frameworks such as BS 15000 [Iqbal 2004], Software CMM [Paulk 2005], and ISO 9001 [Guha 2005a], in the case of COBIT, what is being evaluated is the extent to which COBIT supports the implementation of the eSCM-SP. The analysis presented here is meant to be used as guidance and not as a definitive set of rules.

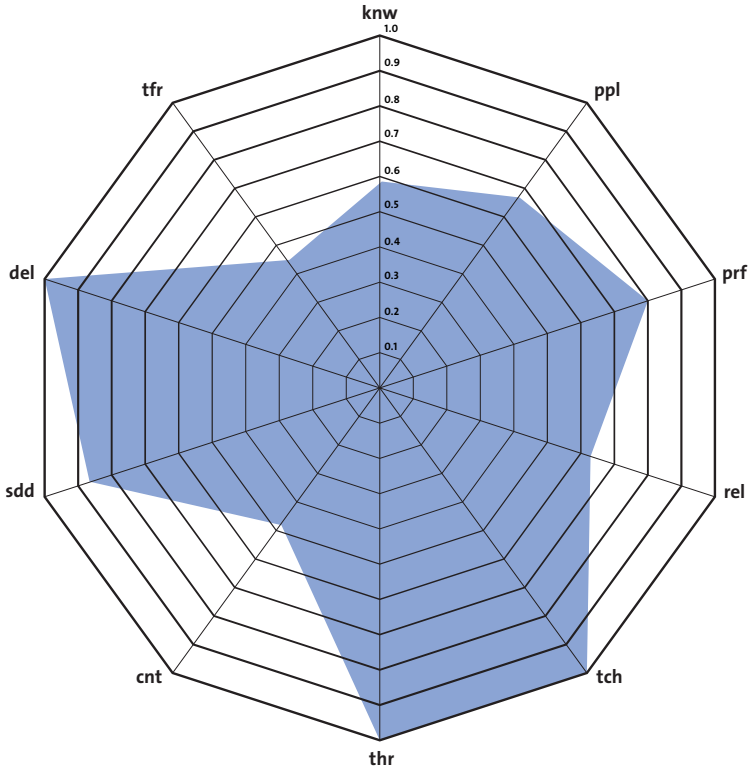

Figure 4
(For reference; identical to Figure 1)
Support for eSCM-SP v2 Requirements in COBIT

Capability Areas	
knw	Knowledge Management
ppl	People Management
prf	Performance Management
rel	Relationship Management
tch	Technology Management
thr	Threat Management
cnt	Contracting
sdd	Service Design & Deployment
del	Service Delivery
tfr	Service Transfer

Table 5 is organized according to the Capability Areas of the eSCM-SP. The following symbols are used to show support of eSCM-SP requirements by COBIT:

Symbol	Interpretation
●	The eSCM-SP Practice is supported in COBIT.
○	The eSCM-SP Practice is partially supported in COBIT.
⌀	The eSCM-SP Practice is not explicitly supported in COBIT (to any significant degree).

The mapping has been done at the level of detailed Control Objectives. In most cases, a Practice in the eSCM-SP is supported by Control Objectives from one or more COBIT Processes. In some cases, entire COBIT Processes support a specific eSCM-SP Practice.

Table 5
Coverage of the eSCM-SP by COBIT

Knowledge Management (knw)

eSCM-SP Practice	Relation	COBIT Process	Comments
knw01: Share knowledge	O	PO (1.4, 6.3) DS (1.4, 2.1, 8.5) M (1.4)	There is no formal requirement in COBIT for a policy that enforces the sharing of knowledge. These Control Objectives could be combined to partially fulfill the requirements of knw01.
knw02: Provide required information	O	PO (6.3) AI (4.x) DS (8.1, 8.5, 9.1, 9.2, 9.3, 10.1, 13.1) M (1.4)	These Control Objectives partially fulfill the requirements of knw02.
knw03: Knowledge system	O	AI (4.x) DS (3.3, 3.6, 8.1, 8.2, 8.5, 9.1, 9.2, 9.3, 10.1, 13.1, 13.2, 13.6)	These detailed Control Objectives partially fulfill the requirements of knw03. If integrated, the various service management processes, systems, and tools required to implement the Control Objectives act like a knowledge system.
knw04: Process assets	O	AI (4.x) DS (13.1, 13.2, 13.6)	These Control Objectives support the knw04 requirements for development and maintenance of procedures, guidelines, manuals, templates, checklists, and operational systems, which can be considered process assets.
knw05: Engagement knowledge	⌀		The requirement of collecting and maintaining knowledge from specific engagements (as defined in the eSCM-SP) for subsequent analysis and reuse (feedback) is not within the scope of COBIT.
knw06: Reuse	⌀		The requirement of identifying and analyzing work products for reuse is not within the scope of COBIT.
knw07: Version & change control	●	AI (6.x) DS (9.x)	The COBIT Processes for managing changes and managing configurations adequately support the requirements of knw07. Configuration management systems and procedures support the change management process, while the configurations themselves are under change control. The two Processes and their supporting Control Objectives cover process assets, infrastructure components, and documents.
knw08: Resource consumption	●	PO (5.2) DS (1.4, 3.3, 3.2, 3.4, 3.7, 3.8, 6.x, 13.6) M (1.1, 1.4)	The Control Objectives for monitoring, analyzing, and reporting costs and benefits (PO 5.2), service levels (DS 1.4), and availability and capacity utilization (DS3), combined with the Process for identifying and allocating costs for billing and chargeback, adequately support the requirements for knw08, with additional support from Control Objectives for operations logs (DS 13.6) and management reporting (M1).

People Management (ppl)

eSCM-SP Practice	Relation	COBIT Process	Comments
ppl01: Encourage innovation	⌀		There is no specific Process or Control Objective within COBIT that requires a formal policy to encourage employees (service provider personnel) to innovate in their approaches to the design, delivery or support of services. Note: Within the context of ppl01 and prf11, there is a distinction between innovations and continuous improvement achieved through a Plan-Do-Check-Act cycle.
ppl02: Participation in decisions	O	PO (4.1, 4.4, 4.10)	These Control Objectives ensure the involvement of personnel in planning and organization, and that personnel have sufficient authority to execute their responsibilities. To a limited extent, the segregation of duties forces cooperation and coordination between roles and functions. However, these do not adequately support the requirements of ppl02 that ensure feedback and, where necessary, pushback from personnel on decisions related to their work commitments.
ppl03: Work environment	O	PO (6.1, 8.2, 8.3) DS (12.1, 12.4)	These Control Objectives support the requirements for (1) physical security of facilities, (2) personnel health and safety, and (3) a positive information control environment. They do not completely support the social and behavioral aspects of an effective and compliant work environment as defined by ppl03.
ppl04: Assign responsibilities	●	PO (4.x, 7.1, 7.2, 7.3, 7.4, 10.3)	These Control Objectives adequately support the requirements of ppl04.
ppl05: Define roles	●	PO (1.1, 1.2, 1.3, 1.4, 1.5, 4.x, 7.1, 7.2, 7.3, 7.4, 10.3)	These Control Objectives adequately support the requirements of ppl05.
ppl06: Workforce competencies	●	PO (1.x, 4.x, 7.1, 7.2, 7.3, 7.4, 7.5, 9.3)	The Process for defining the strategic information technology plan applies to all of the five types of resources defined by COBIT, including People. The long- and short-term plans support the workforce competencies required to support the strategic plan of the IT organization. The risks faced by the IT organization include human resources risks. The Process for defining the IT organization and its relationships (PO4) and managing human resources (PO7) enable the development of the required competencies.
ppl07: Plan & deliver training	O	PO (7.4, 7.5, 10.12) AI (4.4, 5.1) DS (7.2)	These Control Objectives support most of the requirements of ppl07, but they do not adequately support the requirements for defining and measuring the effectiveness of training and taking corrective action necessary to close the effectiveness gaps.
ppl08: Personnel competencies	●	PO (4.11, 7.1, 7.2, 7.3, 7.4, 7.5, 10.12, 11.1)	The IT staffing plan (4.11), training plans for IT projects (10.11), and the general quality plan (11.1) supplement the Control Objectives for training and recruitment based on identified needs (7.1-7.5) to support ppl08.
ppl09: Performance feedback	●	PO (7.7)	This Control Objective requires management to implement a performance evaluation process for employees that will provide regular feedback on their performance against their specific job responsibilities and established standards. Under this Control Objective, employees also receive counseling on their performance and conduct. The performance evaluation Process is reinforced by a rewards system.
ppl10: Career development	⌀		The Control Objectives for personnel recruitment and promotion refers to promotion practices. However, there is no stipulation for implementing specific career-development procedures. While career development may be implied, or considered to be the cumulative effect of other Control Objectives, its certainty is limited without the motivation of a requirement for compliance.
ppl11: Rewards	O	PO (7.7)	This Control Objective suggests that management should use a reward system to reinforce a performance evaluation process for employees. Beyond that, the idea of rewards is not supported elsewhere in COBIT.

Performance Management (prf)

eSCM-SP Practice	Relation	COBIT Process	Comments
prf01: Engagement objectives	○	PO (6.x)	The Process for communicating management's aims and direction (PO6) only partially supports the requirements of prf01. Maintaining a positive information control environment (6.1) supports the successful implementation of prf01 requirements. The Control Objective for communicating organization policies (6.3) and the need to define, document and maintain a quality philosophy, policies, and objectives (6.7) could be applied to engagement objectives. However, prf01 relates more to performance objectives and service commitments (del04) than it does to organizational policies, code of conduct, and compliance with policies, procedures, and standards.
prf02: Verify processes	●	PO (6.x, 11.16) DS (13.4, 13.5) M (1.x, 2.x, 3.x, 4.x)	The PO Control Objectives support communication, control, and compliance with policies and procedures. The DS Control Objectives serve to verify that operations are managed as scheduled. The M Control Objectives ensure that data is collected and analyzed for monitoring and controlling all IT processes.
prf03: Adequate resources	●	PO (1.x, 7.1, 7.4) AI (1.1) DS (3.x)	The management of availability and capacity (DS3) primarily drives the demand and the provisioning of adequate resources. Long-term and short-term plans (PO1) take into account the adequacy of resources for meeting commitments and objectives. Training and recruitment (PO7) supports the adequacy of human resources with the required skills, knowledge, and experience. The definition of information requirements (AI 1.1) helps identify automated systems and solutions.
prf04: Organizational objectives	●	PO (1.x, 6.3, 6.7, 11.17)	The Process for long-term and short-term planning (PO1) and the review of the achievement of those objectives (PO 11.17) provide adequate support for prf04.
prf05: Review organizational performance	●	PO (1.4, 1.7, 5.2, 11.17) DS (1.4, 2.8, 3.3) M (1.x)	These Control Objectives provide adequate support for prf05. Monitoring and reporting the service levels delivered to customers (DS 1.4), including where third-parties are involved in delivery (DS 2.8), contribute to the determination of organizational performance.
prf06: Make improvements	○	PO (1.4) DS (1.7) M (1.x)	Service improvement programs (DS 1.7) have a smaller scope than improvements in organizational performance as specified in prf06. Changes to plans may contribute to improvements, but will not always do so (PO 1.4). Data gathered from regular monitoring and reporting (M1) can be useful in improvement initiatives.
prf07: Achieve organizational objectives	●	PO (1.x, 10.x, 11.1, 11.17) DS (1.7)	Short-term and long-term planning (PO1), combined with service-improvement programs (DS 1.7) and quality plans (PO11), adequately support the requirements of prf07. The project management process (PO10) supports the execution of these plans and their underlying objectives.
prf08: Capability baselines	○	DS (3.4, 3.5, 3.6, 3.7) M (1.2, 1.4)	These Control Objectives help model and predict the performance and capacity of systems and services. They support most of the requirements for developing capability baselines, but do not amount to a defined process that can be used to determine baselines for organizational capabilities tied to specific objectives.
prf09: Benchmark	○	DS (3.4, 3.5, 3.6, 3.7) M (1.2, 1.4)	These Control Objectives can support the collection of data required for benchmarking, as specified in prf09. There is no process defined for how to identify processes or capabilities for benchmarking, for developing the approach, or for analyzing the results and identifying actions to be taken.
prf10: Prevent potential problems	●	DS (3.3, 3.4, 3.5, 3.6, 10.x)	The Process for managing problems and incidents (DS10) includes proactive problem management supported by monitoring and reporting of performance or resources, tracking incidents, and identifying patterns and trends.
prf11: Deploy innovations	⊘		The Control Objectives for making improvements to services and acquiring new systems and technologies do not adequately support the very specific requirements of prf11.

Relationship Management (rel)

eSCM-SP Practice	Relation	COBIT Process	Comments
rel01: Client interactions	O	PO (11.8) AI (2.3, 6.1) DS (1.3, 1.4, 1.5, 8.1)	Interaction with clients is partially supported by Control Objectives for managing service levels (DS1), defining requirements for systems and software (AI), and subsequent changes and the quality assurance Process (PO).
rel02: Select suppliers & partners	●	AI (1.4, 1.12, 1.13, 1.14, 1.15, 1.16) DS (2.3, 2.4, 2.5)	The Control Objectives for managing the acquisition of systems and services include defining third-party (suppliers and partners) requirements. The COBIT Process for managing third-party services includes Control Objectives for qualifications, contracts, and outsourcing. Issues such as reliability, continuity of services, and security are also addressed.
rel03: Manage suppliers & partners	●	PO (4.14, 4.15) DS (2.x)	The COBIT Process for managing third-party services includes Control Objectives for the ownership of third-party relationships, qualifications, contracts, outsourcing, risk management, and monitoring of performance.
rel04: Cultural fit	⌀		The issue of cultural fit with suppliers and partners is not explicitly addressed in COBIT. Control Objectives mostly focus on legal, financial, and regulatory risks from poor selection of third parties.
rel05: Stakeholder information	O	PO (1.x)	One of the primary tenets of COBIT is the alignment of IT services with business needs. The development of the strategic IT plan is based primarily on the business requirements defined by stakeholders. The PO1 Control Objectives address a subset of the requirements of rel05.
rel06: Client relationships	O	PO (1.1, 1.2, 1.3, 4.15, 11.8) DS (1.3, 1.4, 1.5)	Control Objectives in the PO and DS Domains address eSCM-SP requirements such as long-term planning and strategies to develop and grow client relationships and manage service levels for higher performance and satisfaction. These two sets of Control Objectives are useful in managing client relationships as defined in the eSCM-SP. However, other requirements related to roles, responsibilities, and risks with respect to contact personnel (e.g., account managers), channels of interaction, and evaluating the status of relationships, are not supported.
rel07: Supplier & partner relationships	●	PO (4.14, 4.15, 11.10) AI (1.4, 1.12, 1.13, 1.14, 1.15, 1.16) DS (2.x)	COBIT specifies Control Objectives for managing relationships with third-party service providers. The Control Objectives support ownership of third-party relationships, qualifications, contracts, outsourcing, risk management, and monitoring of performance. They also include identifying business risks in selecting third parties from their exposure to legal uncertainties, financial health, compliance with regulations, etc.
rel08: Value creation	⌀		Although one of COBIT's principles is that alignment with business needs, reduction in costs, and mitigation of risks ultimately help create value for the business, the COBIT's emphasis is more on compliance to requirements and control over performance. This eSCM-SP Practice requires service providers to actively pursue opportunities and execute programs aimed at creating new sources of value.

Technology Management (tch)

eSCM-SP Practice	Relation	COBIT Process	Comments
tch01: Acquire technology	●	PO (3.1, 3.3, 3.5, 11.9, 11.10, 11.11, 11.12, 11.13, 11.14, 11.15, 11.16) AI (1.x, 2.x, 3.x, 4.x)	The Processes and Control Objectives in the AI Domain adequately support the requirements of this Practice. The Process for managing quality ensures that the acquisition of technology systems and applications is subjected to rigorous qualification and testing procedures.
tch02: Technology licenses	●	PO (8.4) DS (9.x)	PO 8.4 addresses privacy, intellectual property, and flow of data across organizational and geographic boundaries. The configuration management controls of DS9 ensure the identification, accounting, and tracking of technology assets and licenses.
tch03: Control technology	●	AI (2.12, 6.x) DS (9.x)	The configuration management controls of DS9 ensure the identification, accounting, and tracking of technology assets and licenses. AI 2.12 addresses the controllability of technology, requiring that all technology systems should include application controls that make systems more manageable. Change control policies and procedures are addressed in AI6.
tch04: Technology integration	●	PO (11.9, 11.10, 11.11, 11.12, 11.13, 11.14, 11.15, 11.16) AI (3.1, 5.x)	The Process for managing quality ensures that the integration of technology is subjected to rigorous qualification and testing procedures that facilitate effective and efficient integration of technology within the service infrastructure with minimal disruption to business processes. Controls also apply to the assessment, accreditation, and installation of technology systems.
tch05: Optimize technology	●	DS (3.x)	The Control Objectives for DS3 address optimization of the performance and capacity of the technology infrastructure.
tch06: Proactively introduce technology	●	PO (3.1, 3.2, 3.3, 3.4) AI (1.1, 1.2, 1.3)	The Process for determining technological direction is forward looking, with Control Objectives for monitoring future trends and conditions, infrastructure planning, and infrastructure contingency. These measures are necessary for proactively identifying and introducing technology to meet changing business needs and problems. The formulation of the technology acquisition strategy considers long-range IT plans.

Threat Management (thr)

eSCM-SP Practice	Relation	COBIT Process	Comments
thr01: Risk management	●	PO (6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.8, 8.1, 9.x) DS (2.4, 2.5, 2.6, 2.7, 2.8) M (1.4, 2.x)	Several COBIT Control Objectives form a sound basis for implementing a comprehensive risk management policy. Management is required to set up a positive control environment and define, communicate, and maintain appropriate policies to be followed by the organization. COBIT Control Objectives minimize risk through preventive measures, timely identification of non-compliance, and restoration of the desired state of control. An entire Process (PO9) is dedicated to the assessment, identification, measurement, and mitigation of business risks. This oversight extends to third-party services. Monitoring processes are part of the control framework that seeks to identify and manage risk.
thr02: Engagement risk	●	PO (9.x, 10.10) AI (1.8) DS (2.4, 2.5, 2.6)	An entire Process (PO9) is dedicated to the assessment, identification, measurement, and mitigation of business risks. Other Control Objectives focus on the risks specific to projects and contracts. Risks of not meeting service levels are addressed by requiring service level managers to monitor and report the achievement of performance criteria and to initiate corrective action where required.
thr03: Risk across engagements	●	PO (9.x, 10.10) AI (1.8) DS (2.4, 2.5, 2.6) M (2.x)	The Control Objectives for risk management apply not only to specific customers, but to the entire set of capabilities and resources deployed to serve all customers. Business risk assessment is applied at global and system-specific levels, for new projects (engagements) as well as on a recurring basis with cross-disciplinary participation.
thr04: Security	●	PO (2.4, 6.8) AI (2.12, 5.10) DS (2.7, 5.x, 7.3, 11.x, 12.1, 12.2, 12.3)	COBIT specifies a comprehensive framework of controls that apply to multiple levels and dimensions, from information architecture, technology acquisition, and accreditation, to agreements with third parties, training, and facilities. DS 5 and DS 11 have Control Objectives that apply to various layers of the service infrastructure, including systems, procedures, applications, and data. They support the basic tenets of security: confidentiality, integrity, and availability. These Processes are governed by a management policy for security and internal control (PO 6.8).
thr05: Intellectual property	●	PO (6.9, 8.4) AI (1.15) DS (5.4, 5.5, 5.6, 5.8, 5.9, 5.21) M (3.5, 3.6)	Numerous Control Objectives specified within the COBIT Processes for security provide adequate support for the requirements in thr05 to protect intellectual property of stakeholders.
thr06: Statutory & regulatory compliance	●	PO (8.x) DS (12.4) M (3.5, 3.6)	Compliance with statutes and regulations is one of the primary benefits from implementing COBIT-based controls. An entire Process (PO8) is dedicated to ensuring compliance with external requirements. This Process provides an input to the Process for developing the strategic IT plan (PO1). Controls are also specified for obtaining independent assurance from auditors on compliance with laws and regulatory requirements by the service provider and its third-party partners and suppliers.
thr07: Disaster recovery	●	PO (3.3, 9.x) DS (4.x, 11.23, 11.24, 11.25, 11.26)	These Control Objectives are specified for developing and maintaining capabilities and resources that will ensure the required level of business continuity, primarily as part of the Process for ensuring continuous service (DS4). The controls for the assessment, identification, measurement, and mitigation (actions) of business risk (PO9), include in their scope risks from disasters or disruptive events. The technological infrastructure plan (PO3.3) includes contingency aspects such as redundancy, resilience, adequacy, and evolutionary capability of the infrastructure.

Contracting (cnt)

eSCM-SP Practice	Relation	COBIT Process	Comments
cnt01: Negotiations	⌀		Guidelines, procedures, policies, or plans for negotiations with current or prospective clients are outside the scope of COBIT.
cnt02: Pricing	O	PO (5.2) DS (1.6, 6.x)	Specifying controls for pricing is outside the scope of COBIT. However, controls are specified for analyzing, managing, allocating, and recovering costs to ensure that services are provided on a cost-justifiable basis that is aligned with business needs. These controls form the basis for billing and chargeback procedures, which are instrumental in pricing models.
cnt03: Confirm existing conditions	O	PO (1.8, 5.3, 9.1, 9.2, 10.5, 10.10) AI (1.5, 1.6, 1.7, 1.8) DS (1.1, 1.5, 2.4, 3.1, 3.4)	Several COBIT Control Objectives address the need for diligence in analyzing existing conditions before making commitments to clients. These Control Objectives include issues such as analyzing existing systems for complexity, functionality, stability, etc., during strategic planning; cost-benefit justification; business risk assessment; project risks; and the feasibility of technology to be developed or acquired. Areas not adequately supported by COBIT controls—at the level of specificity required by eSCM-SP —are analysis of human resources capabilities, staffing and productivity baselines, transfer of assets between the service provider and clients, and review of legal commitments and obligations. These areas dealing with contract management are mostly outside the scope of COBIT.
cnt04: Market information	⌀		The requirements of this Practice are outside the scope of COBIT since it pertains specifically to the use of business intelligence on prospective customers. Although the inputs to the Process for developing a strategic IT plan (PO1) are business requirements, their nature is quite distinct from the type of information service providers are expected to obtain, analyze, and use within the scope of this Practice.
cnt05: Plan negotiations	⌀		Guidelines, procedures, policies, or plans for negotiations with current or prospective clients are outside the scope of COBIT.
cnt06: Gather requirements	O	PO (10.1, 10.2, 10.4, 11.11, 11.5, 11.8), DS (1.1)	The Control Objectives that address the Processes for managing projects (PO10) and managing quality (PO11) provide adequate support for some of the requirements of this Practice, along with controls for defining and managing service levels.
cnt07: Review requirements	O	PO (1.8, 10.1, 10.2, 10.3, 10.4, 10.5, 10.6, 10.10, 11.5, 11.8) DS (1.1, 1.5, 2.4, 3.1, 3.4)	The Control Objectives that address the Processes for managing projects (PO10) and managing quality (PO11) provide support for some of the requirements of this Practice, along with controls for acquisition and installation of systems and requirements for third-party services.
cnt08: Respond to the requirements	O	PO (9.1) DS (1.1)	Control Objectives for business risk assessment and service level management support part of the process of formulating responses to opportunities with prospective clients.
cnt09: Contract roles	O	PO (4.4, 4.15, 11.8) DS (1.1, 2.2, 2.5)	Definitions of contract-related roles and responsibilities of service providers and clients support some of the requirements of this Practice.
cnt10: Create contracts	O	DS (1.1, 1.2, 2.3, 2.5)	Control Objectives for a service level management framework and for managing third-party services support some of the requirements for creating contracts. COBIT does not discuss or elaborate on the nature and types of relationships between the IT organization and the business. While DS1 and DS2 could be applied to the contracts with external service providers, outsourced or managed services are not the focus of these Control Objectives.
cnt11: Amend contracts	O	DS (1.1, 1.2, 1.5)	Control Objectives for a service level management framework and for managing third-party services support some of the requirements for creating contracts. COBIT does not discuss or elaborate on the nature and types of relationships between the IT organization and the business. While DS1 and DS2 could be applied to the contracts with external service providers, outsourced or managed services are not the focus of these Control Objectives.

Service Design & Deployment (sdd)

eSCM-SP Practice	Relation	COBIT Process	Comments
sdd01: Communicate requirements	●	PO (10.1, 10.2, 10.3, 10.4, 10.5, 10.6, 11.5, 11.8, 11.11) AI (1.1, 2.1, 6.10)	The Control Objectives that address managing projects and managing quality provide support for the requirements for communicating requirements to service design and development teams. The project management frameworks require clearly written statements that define the nature and scope for every implementation. The review and approval mechanisms ensure that formal procedures are followed in communicating requirements.
sdd02: Design & deploy services	○	PO (7.1, 9.1, 10.x, 11.x) AI (1.2, 4.x, 5.x) DS (1.2, 2.1, 2.2, 2.3, 3.1, 3.2, 4.3)	To the extent that service design and deployment are project based, guided by quality specifications that are defined in service level agreements, the Control Objectives for managing projects (PO10), managing quality (PO11), and managing service levels provide adequate support. However, the focus in COBIT is more on design, deployment, and operation of IT infrastructure upon which IT services are hosted. The definition of services in the eSCM-SP extends to categories in which the scope of service design and deployment includes design of work environments, workflow, organizational design, policies, and procedures.
sdd03: Plan design & deployment	○	PO (7.1, 10.4, 10.5, 10.6, 10.7, 11.8) AI (4.x, 5.x) DS (1.2, 2.1, 2.2, 2.3, 3.1, 3.2, 4.3)	To the extent that service design and deployment are project based, guided by quality specifications that are defined in service level agreements, the Control Objectives for managing projects (PO10), managing quality (PO11), and managing service levels provide adequate support. However, the focus in COBIT is more on design, deployment, and operation of IT infrastructure upon which IT services are hosted. The definition of services in the eSCM-SP extends to categories in which the scope of service design and deployment includes design of work environments, workflow, organizational design, policies, and procedures.
sdd04: Service specification	●	AI (1.1, 1.4, 2.1, 2.5, 4.1) DS (1.1, 2.1, 3.1, 3.6)	The Control Objectives for defining and managing service levels (DS1) provide adequate support for the activity of creating a service specification. Additionally, controls related to defining requirements and specifications for systems and services, as part of acquisition and implementation, may also be applied to this Practice.
sdd05: Service design	○	AI (1.7, 1.9, 1.11, 2.x, 4.x, 5.1) DS (1.2, 3.2, 4.3)	To the extent that service design and deployment are project based, guided by quality specifications that are defined in service level agreements, the Control Objectives for managing projects (PO10), managing quality (PO11), and managing service levels provide adequate support. However, the focus in COBIT is more on design, deployment, and operation of IT infrastructure upon which IT services are hosted. The definition of services in the eSCM-SP extends to categories in which the scope of service design and deployment includes design of work environments, workflow, organizational design, policies, and procedures.
sdd06: Design feedback	●	PO (11.8) AI (2.3, 2.17) DS (1.5)	Adequate support is provided by Control Objectives for coordination and communication with clients and third parties, systems-development life-cycle, and reassessment of system design.
sdd07: Verify design	○	PO (11.8) AI (2.3, 2.17) DS (1.5)	The Control Objectives that support design feedback also support verification of design. However, this eSCM-SP Practice has additional requirements, such as reviews and audits by management or designated personnel, establishment of formal procedures for verification, and involvement of external stakeholders.
sdd08: Deploy service	●	PO (10.12, 10.13, 11.8, 11.9, 11.10, 11.11, 11.12, 11.13, 11.14, 11.15, 11.16, 11.17) AI (5.x, 6.x) DS (7.x, 9.1, 9.2, 9.3, 13.2, 13.3)	To the extent that service deployment is project based, guided by quality specifications defined in service level agreements, the Control Objectives for managing projects (PO10), managing quality (PO11), and managing service levels provide adequate support. Other Control Objectives for training users, defining service configurations, and managing operations provide support for this Practice.

Service Delivery (del)

eSCM-SP Practice	Relation	COBIT Process	Comments
del01: Plan service delivery	●	PO (1.5, 9.1) AI (5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 5.14, 6.3, 6.4, 6.5) DS (1.2, 1.3, 1.4, 1.5, 1.6, 2.6, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 4.3, 5.1, 6.x, 7.1, 8.1, 13.2, 13.3, 13.8) M (1.4)	Planning and tracking service delivery is supported by Control Objectives from all four COBIT Domains, but particularly by the Delivery and Support Processes. Control Objectives that directly support service delivery include those for short-term planning, risk assessment, service level management, deployment of systems and infrastructure, maintaining continuity of services, availability management, capacity management, systems security, cost tracking and allocation, user training, help desk, operations management, and monitoring.
del02: Train clients	●	AI (4.4, 5.1) DS (7.x)	The DS7 Process has Control Objectives for training and educating users. This supports the requirement for training clients.
del03: Deliver service	●	DS (1.x, 2.8, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 6.x, 8.x, 13.3, 13.5)	Numerous Control Objectives within the DS Domain support the requirements of this Practice.
del04: Verify service commitments	●	DS (1.1, 1.4, 1.5, 2.8) M (1.x)	Control Objectives are specified for service level agreements, which form the basis for verifying service commitments. Monitoring and reporting of service levels and reviewing service level agreements are also covered. The monitoring Process (M1) is concerned with data collection, analysis, and reporting on all processes. It also includes customer satisfaction.
del05: Correct problems	●	AI (6.1, 6.2, 6.3) DS (8.x, 9.1, 9.4, 9.7, 10.x)	The Control Objectives for managing incidents and problems through a help desk adequately support the requirements for correcting problems. Changes are controlled and supported by the change management and configuration management processes. These Control Objectives provide comprehensive support for eSCM-SP Practices related to problem management, asset management, and change management.
del06: Prevent known problems	●	PO (9.1, 9.3) AI (6.1, 6.2, 6.3, 6.4, 6.5, 6.6) DS (1.4, 3.5, 5.1, 8.5, 9.3, 9.4, 9.5, 10.x, 13.6) M (1.1, 1.3, 2.1)	The Control Objectives for managing incidents and problems through a help desk adequately support the requirements for preventing problems. Changes are controlled and supported by the change management and configuration management processes. These Control Objectives provide comprehensive support for the eSCM-SP Practices related to problem management, asset management, and change management. Proactive measures for preventing known problems are specified under processes for service level management, performance and capacity, and operations. Control Objectives for monitoring enable the preventive measures.
del07: Service modifications	●	AI (6.1, 6.2, 6.3) DS (1.5, 1.7, 9.4) M (1.3)	Modifications to services are supported by the Control Objectives that cover change management, service level agreements, service improvement, and configuration control. Contractual issues are addressed within the service level agreement framework. Customer satisfaction is covered by a Control Objective within the monitoring Process (M1).
del08: Financial management	●	PO (5.x, 9.1) AI (1.6) DS (1.6, 6.x, 9.1) M (1.4, 2.1)	Various aspects of financial management are supported by the Control Objectives that cover cost-benefit monitoring and justification, costing and charging procedures, identification and allocation of costs, and asset management (through configuration control). Control Objectives that cover management reporting and adequacy of internal control provide support for requirements for oversight and approval by various stakeholders, as well as accuracy and completeness of financial information.

Service Transfer (tfr)

eSCM-SP Practice	Relation	COBIT Process	Comments
tfr01: Resources transferred in	O	DS (9.x, 11.21, 11.22)	Control Objectives for managing configurations support some of the requirements for identification, accounting, and tracking of resources transferred in and transferred out.
tfr02: Personnel transferred in	O	PO (4.11, 4.12, 4.13, 7.x)	The COBIT Process for managing human resources has Control Objectives that support the Process for transferring personnel into the organization. However, these controls are generic in nature and may not be adequate for outsourcing contracts in which personnel may be transferred from clients and other service providers. The challenges and issues in such contexts are markedly different from normal acquisition and development of human resources.
tfr03: Service continuity	O	PO (9.x) DS (4.x, 13.5)	Service continuity within the context of the Service Transfer Capability Area relates to reducing or preventing impacts on business operations during the period when control is transferred to or from the client or to another service provider. Such transfers occur during the completion phases of contracts. While this is clearly outside the scope of COBIT, there are Control Objectives related to business continuity from disasters that, to an extent, facilitate the smooth transfer of service.
tfr04: Resources transferred out	O	DS (9.x, 11.21, 11.22)	Control Objectives for managing configurations support some of the requirements for identification, accounting, and tracking of resources transferred in and out of the organization.
tfr05: Personnel transferred out	⌀		The transfer of personnel out of the organization is outside the scope of COBIT.
tfr06: Knowledge transferred out	⌀		The transfer of knowledge specific to particular engagements, clients, or contracts, out of the organization during the termination phase of the sourcing cycle is outside the scope of COBIT.

Appendix D: Coverage of COBIT by the eSCM-SP

This section provides a detailed mapping of the COBIT Processes to those eSCM-SP Practices that support their achievement. The purpose of this mapping is to provide organizations that have implemented the eSCM-SP with a reference for identifying the support for COBIT Control Objectives within the eSCM-SP. This will help them estimate the extent to which their implementation of the eSCM-SP supports the implementation of COBIT. This COBIT-based view complements the eSCM-SP -based view provided in Appendix C.

The analysis presented here is to be used as guidance and not as a definitive set of rules. Figure 5 indicates the footprint of each of the ten eSCM-SP Capability Areas within each of the four COBIT Domains The larger the footprint, the greater the number of links from that COBIT Domain to eSCM-SP Practices within a Capability Area.

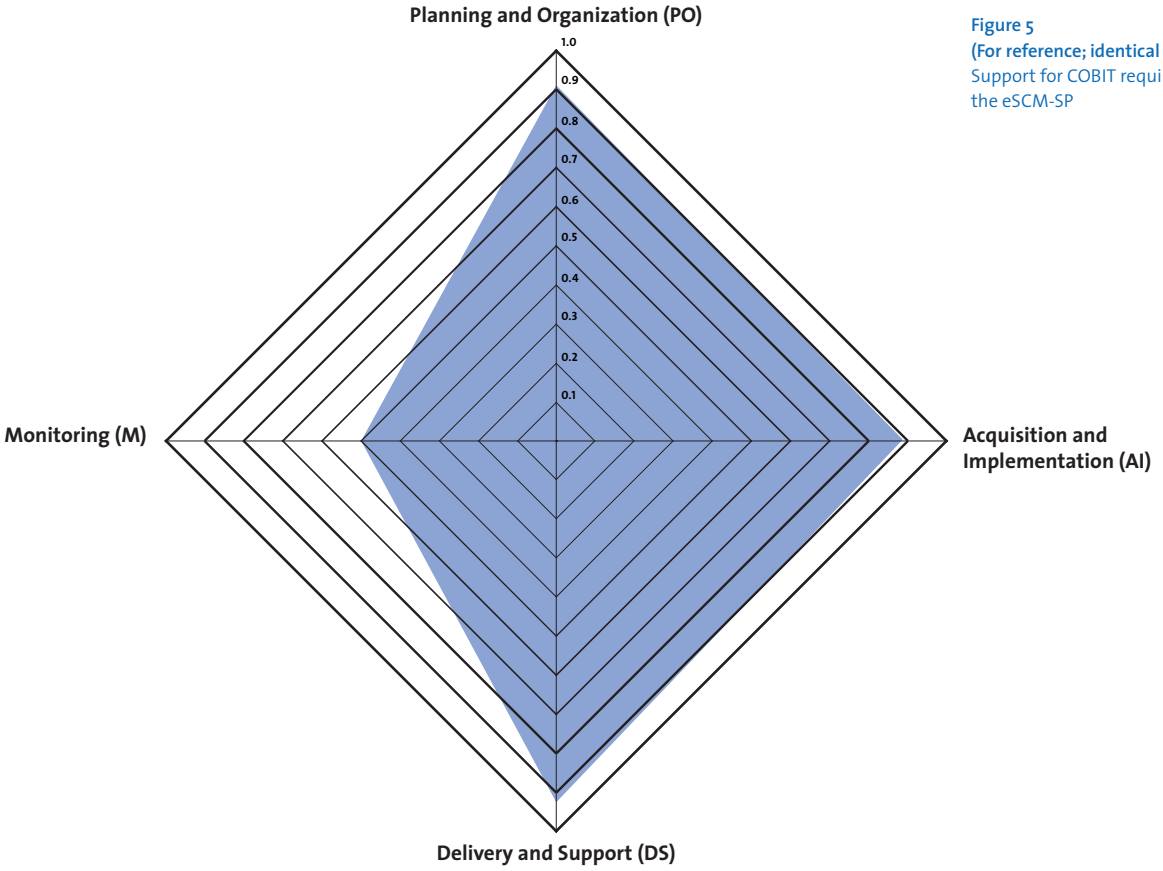

Figure 5
(For reference; identical to Figure 2)
Support for COBIT requirements in the eSCM-SP

Table 5 is organized according to the COBIT Domains and Processes. The following symbols are used to show support of COBIT requirements by eSCM-SP:

Symbol	Interpretation
●	The COBIT Process is supported in the eSCM-SP.
O	The COBIT Process is partially supported in the eSCM-SP.
⌀	The COBIT Process is not explicitly supported in the eSCM-SP (to any significant degree).

Table 6
Coverage of COBIT by the eSCM-SP

Planning and Organization

COBIT Processes	Relation	eSCM-SP Practices	Comments
PO1: Define a strategic IT plan	●	prf01, prf03, prf04, prf05, rel06, cnt03, del01	The requirements of these eSCM-SP Practices effectively address the requirements of PO1.
PO2: Define the information architecture	O	thr04	The requirement of security levels for data is partially addressed by thr04 Activities.
PO3: Determine the technological direction	●	tch01, tch05, tch06	The requirements of these eSCM-SP Practices effectively address the requirements of PO3.
PO4: Define the IT organization and relationships	O	knw01, ppl02, ppl04, ppl05, ppl08, prf02, prf05, rel02, rel03, rel06, rel07, thr04, cnt09, tfr02	The requirement for segregation of duties (PO 4.10) is not adequately addressed, even with Activity b5 in thr04.
PO5: Manage the IT investment	●	knw08, prf03, prf05, del08	The requirements of these eSCM-SP Practices effectively address the requirements of PO5.
PO6: Communicate management aims and directions	O	knw02, knw03, knw04, knw07, ppl03, ppl05, prf01, prf02, prf04, thr01, thr04, thr05, thr06	The eSCM-SP focuses much more on the definition, communication, implementation, and review of organizational objectives and their achievement. PO6 focuses on policies, procedures, standards, and the risk associated with non-conformance or poor understanding and implementation. These eSCM-SP Practices address almost all of the requirements of PO6 but may not achieve the same effect due to the difference in focus.
PO7: Manage human resources	●	ppl04, ppl05, ppl06, ppl07, ppl09, ppl11, prf03, rel04, tfr02	The requirements of these Practices adequately meet the business requirement of PO7. The detailed Control Objective of Personnel Clearance Procedures (PO7.6) is addressed by the eSCM-SP requirements in ppl04 and ppl05 to hire personnel and assign roles and responsibilities in conformance with client requirements, statutes, and regulations. These include security requirements which are further elaborated in thr04.
PO8: Ensure compliance with external requirements	●	ppl03, tch02, thr01, thr04, thr05, thr06	The requirements of these eSCM-SP Practices effectively address the requirements of PO8.
PO9: Assess risks	●	thr01, thr03, thr07, tfr03	The requirements of these eSCM-SP Practices effectively address the requirements of PO9.
PO10: Manage projects	●	know04, ppl04, ppl05, ppl08, prf01, prf03, prf07, thr02, cnt03, cnt06, cnt07, sdd01, sdd02, sdd03, sdd08	The eSCM-SP does not have a Practice dedicated to project management that corresponds to PO10. However, several eSCM-SP Practices, including Support Practices address project management requirements such as those included in PO10. The *a* and *c* Major Activities in every eSCM-SP Practice address project management issues such as planning, estimation, resource allocation, scheduling, staffing, implementation, tracking, verification, and corrective action related to the design, deployment, and delivery of services, and also to ongoing improvement and innovation.
PO11: Manage quality	●	knw04, knw07, ppl08, prf01, prf02, prf04, prf05, prf08, prf09, prf10, rel01, rel06, rel07, tch01, tch04, cnt06, cnt07, cnt09, sdd01, sdd02, sdd04, sdd06, sdd07, del03, del04, del05	The eSCM-SP does not have a Practice dedicated to quality management that corresponds to PO11. However, several eSCM-SP Practices, including Support Practices address quality management requirements such as those included in PO11.

Acquisition and Implementation

COBIT Processes	Relation	eSCM-SP Practices	Comments
AI1: Identify automated solutions	○	knw02, prf03, rel02, rel07, tch01, tch03, tch06, thr03, thr04, thr05, cnt03, sdd01, sdd02, sdd04, sdd05	Most of the requirements of AI1 are addressed by several eSCM-SP Practices. However, COBIT has some detailed technical requirements related to information architecture, audit trails design, software acquisition, and software maintenance, that do not have corresponding requirements in the eSCM-SP.
AI2: Acquire and maintain application software	○	knw02, rel01, tch01, tch03, thr04, sdd01, sdd04, sdd05, sdd06, sdd07	Most of the requirements of AI2 are addressed by several eSCM-SP Practices. However, COBIT has some detailed technical requirements related to application software that are either out of the scope of the eSCM-SP or are not addressed at the level defined in COBIT.
AI3: Acquire and maintain technology infrastructure	●	tch01, tch03, tch04	The requirements of the identified eSCM-SP Practices effectively address the requirements of AI3.
AI4: Develop and maintain procedures	●	knw02, knw03, knw04, ppl08, prf03, tch01, sdd04	The Knowledge Management Practices of the eSCM-SP address most of the requirements of AI4. Other requirements are addressed by ppl08, prf03, tch01, and sdd04.
AI5: Install and accredit systems	●	ppl08, tch01, tch04, tch05, thr04, sdd02, sdd03, sdd08, del01	The requirements of these Practices adequately meet the business requirement of AI5. The requirements for system conversion (PO5.4) and data conversion (PO5.5) are addressed within sdd02, sdd03, and tch04 as part of design, deployment, and integration of the technology infrastructure.
AI6: Manage changes	●	knw07, rel01, tch03, sdd08, del05, del06, del07	The requirements of these eSCM-SP Practices effectively address the requirements of AI6.

Delivery and Support

COBIT Processes	Relation	eSCM-SP Practices	Comments
DS1: Define and manage service levels	●	prf01, cnt02, cnt09, cnt10, cnt11, sdd04, del04	The requirements of these eSCM-SP Practices effectively address the requirements of DS1.
DS2: Manage third-party services	●	rel02, rel03, rel04, rel05, cnt09, sdd04, del04	The requirements of these eSCM-SP Practices effectively address the requirements of DS2.
DS3: Manage performance and capacity	●	knw08, prf01, prf03, prf08, prf10, tch05, cnt03, cnt07, sdd03, sdd04, sdd05, del01, del03, del04, del06	The requirements of these eSCM-SP Practices effectively address the requirements of DS3.
DS4: Ensure continuous service	●	knw04, thr01, thr03, thr07, sdd03, tfr03	The requirements of these eSCM-SP Practices effectively address the requirements of DS4.
DS5: Ensure systems security	○	knw07, thr04, thr05, del06	These eSCM-SP Practices address most, but not all, of the requirements of DS5. Implementation of the eSCM-SP's Required Activities may not fulfill all the requirements of DS5. COBIT has some specific requirements for security such as those on cryptographic key management, transaction authorization, firewall architecture, and re-accreditation.
DS6: Identify and allocate costs	●	knw08, cnt02, del03, del08	The requirements of these eSCM-SP Practices effectively address the requirements of DS6.
DS7: Educate and train users	●	ppl08, thr04, sdd08, del01, del02	These Practices adequately meet the requirements of DS7. The Security Principles and Awareness Training requirement (PO 7.3) is addressed under Activity b5 of thr04.
DS8: Assist and advise customers	○	knw02, rel01, del03, del05	These eSCM-SP Practices address most, but not all, of the requirements of DS8. The eSCM-SP requirements to manage client interactions (rel01) and to manage requests for service (del03 b2) partially address the COBIT requirements for maintaining and operating a help desk function and associated processes. The eSCM-SP does not have similar requirements explicitly defined and separated from other requirements.
DS9: Manage the configuration	●	knw03, knw07, tch02, tch03, del08, tfr01, tfr04	The knowledge system (knw03) and process assets (knw04) requirements of eSCM-SP, along with requirements for version and change control (knw07) effectively form the basis for a configuration management system that can meet the requirements of DS9. They are supplemented by requirements for controlling technology (tch03), controlling licenses (tch02), and asset management (del08 b5).
DS10: Manage problems and incidents	●	knw02, knw03, prf10, del05, del06	The requirements of these eSCM-SP Practices effectively address the requirements of DS10.
DS11: Manage data	○	knw03, thr04, thr05, thr06, thr07, tfr01, tfr04	These eSCM-SP Practices address most, but not all, of the requirements of DS11. Implementation of the eSCM-SP's Required Activities may not fulfill all the requirements of DS11. COBIT has some specific requirements for managing data that may not be addressed by either the knowledge management, risk, or security requirements of the eSCM-SP. The discussion in the eSCM-SP is mostly at the level of processes, infrastructure, service levels, and knowledge assets. COBIT specifies controls at the data-processing and data-handling level that are subsumed within knowledge management and information processing in the eSCM-SP, but do not have requirements specified.
DS12: Manage facilities	●	ppl03, thr04	The requirements of these eSCM-SP Practices effectively address the requirements of DS12.
DS13: Manage operations	●	knw02, knw03, knw04, prf02, prf03, thr04, sdd08, de01, del03	The requirements of these eSCM-SP Practices effectively address the requirements of DS13. Operations procedures and manuals are covered under knowledge system (knw03) and process assets (knw04).

Monitoring

COBIT Processes	Relation	eSCM-SP Practices	Comments
M1: Monitor the processes	●	knw02, knw04, knw08, prf02, prf05, prf08, prf09, prf10, del04	The requirements of these eSCM-SP Practices effectively address the requirements of M1.
M2: Assess internal control adequacy	●	prf02, thr01, thr03, del08	The eSCM-SP Practice prf02 requires procedures that verify compliance with policies, procedures, and guidelines. The requirements of this Practice, along with those concerning risk management (thr01 and thr03) and financial controls (del08), effectively address the COBIT requirements to monitor the adequacy of internal control.
M3: Obtain independent assurance	⌀		The Required Activity b6 under thr06 does not adequately address the requirements of M3.
M4: Provide for independent audit	⌀		The prf02 requirements for verifying conformance with processes and the del08 requirements for auditing engagement finances do not adequately address the COBIT requirements for obtaining independent assurance. It is not sufficient that the requirements of thr06 include compliance with statutes and regulations, which may include the requirement for obtaining independent assurance.