

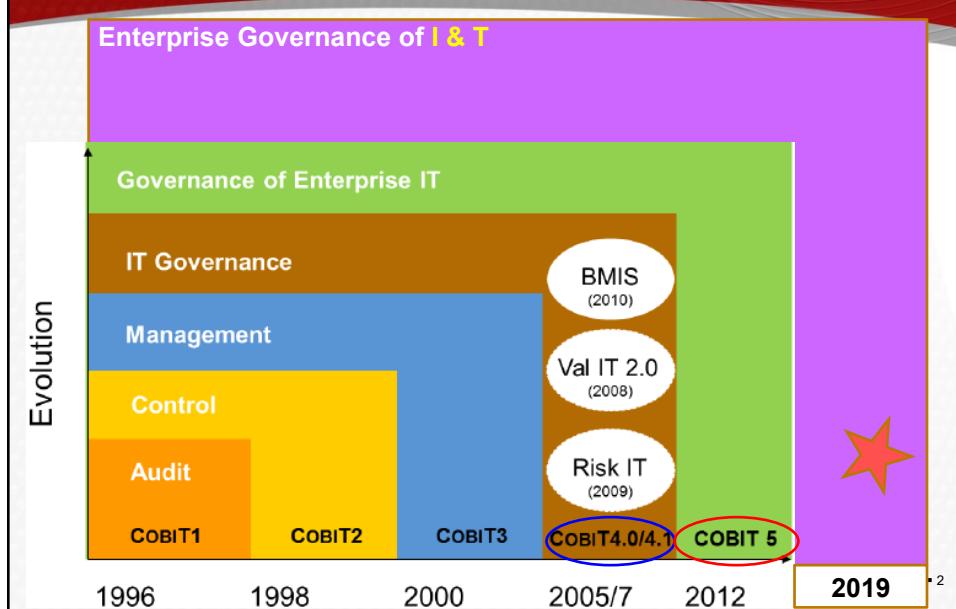
COBIT 2019

- Vsebina in slike v tem gradivu so povzete po knjigi COBIT 2019: *Framework Introduction*

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The evolution of COBIT



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I. Obvladovanje podjetja in IT [11]

In the light of digital transformation, information and technology (I&T) have become crucial in the support, sustainability and growth of enterprises. Previously, governing boards (boards of directors) and senior management could delegate, ignore or avoid I&T-related decisions. In most sectors and industries, such attitudes are now ill-advised. Stakeholder value creation (i.e., realizing benefits at an optimal resource cost while optimizing risk) is often driven by a high degree of digitization in new business models, efficient processes, successful innovation, etc. Digitized enterprises are increasingly dependent on I&T for survival and growth.

Given the centrality of I&T for enterprise risk management and value generation, a specific focus on enterprise governance of information and technology (EGIT) has arisen over the last three decades. EGIT is an integral part of corporate governance. It is exercised by the board that oversees the definition and implementation of processes, structures and relational mechanisms in the organization that enable both business and IT people to execute their responsibilities in support of business/IT alignment and the creation of business value from I&T-enabled business investments (figure 1.1).

Figure 1.1—The Context of Enterprise Governance of Information and Technology



Source: De Haes, Steven; W. Van Grembergen, *Enterprise Governance of Information Technology: Achieving Alignment and Value, Featuring COBIT 5*, 2nd ed., Springer International Publishing, Switzerland, 2015, <https://www.springer.com/us/book/9783319145464>

Enterprise governance of information and technology is complex and multifaceted. There is no silver bullet (or ideal way) to design, implement and maintain effective EGIT within an organization. As such, members of the governing boards and senior management typically need to tailor their EGIT measures and implementation to their own specific context and needs. They must also be willing to accept more accountability for I&T and drive a different mindset and culture for delivering value from I&T.

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Razmejitev med obvladovanjem (Governance) in vodenjem (Management) [13]

COBIT is a framework for the governance and management of enterprise information and technology,⁴ aimed at the whole enterprise. Enterprise I&T means all the technology and information processing the enterprise puts in place to achieve its goals, regardless of where this happens in the enterprise. In other words, enterprise I&T is not limited to the IT department of an organization, but certainly includes it.

The COBIT framework makes a clear distinction between governance and management. These two disciplines encompass different activities, require different organizational structures and serve different purposes.

• **Governance** ensures that:

- Stakeholder needs, conditions and options are evaluated to determine balanced, agreed-on enterprise objectives.
- Direction is set through prioritization and decision making.
- Performance and compliance are monitored against agreed-on direction and objectives.

In most enterprises, overall governance is the responsibility of the board of directors, under the leadership of the chairperson. Specific governance responsibilities may be delegated to special organizational structures at an appropriate level, particularly in larger, complex enterprises.

• **Management** plans, builds, runs and monitors activities, in alignment with the direction set by the governance body, to achieve the enterprise objectives.

In most enterprises, management is the responsibility of the executive management, under the leadership of the chief executive officer (CEO).

COBIT defines the components to build and sustain a governance system: processes, organizational structures, policies and procedures, information flows, culture and behaviors, skills, and infrastructure.⁵

COBIT defines the design factors that should be considered by the enterprise to build a best-fit governance system.

COBIT addresses governance issues by grouping relevant governance components into governance and management objectives that can be managed to the required capability levels.

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Kaj COBIT ni? [13]

Several misconceptions about COBIT should be dispelled:

- COBIT is not a full description of the whole IT environment of an enterprise.
- COBIT is not a framework to organize business processes.
- COBIT is not an (IT-)technical framework to manage all technology.
- COBIT does not make or prescribe any IT-related decisions. It will not decide what the best IT strategy is, what the best architecture is, or how much IT can or should cost. Rather, COBIT defines all the components that describe which decisions should be taken, and how and by whom they should be taken.

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Deležniki obvladovanja [15]

Figure 2.1—COBIT Stakeholders

Stakeholder	Benefit of COBIT
Internal Stakeholders	
Boards	Provides insights on how to get value from the use of I&T and explains relevant board responsibilities
Executive Management	Provides guidance on how to organize and monitor performance of I&T across the enterprise
Business Managers	Helps to understand how to obtain the I&T solutions enterprises require and how best to exploit new technology for new strategic opportunities
IT Managers	Provides guidance on how best to build and structure the IT department, manage performance of IT, run an efficient and effective IT operation, control IT costs, align IT strategy to business priorities, etc.
Assurance Providers	Helps to manage dependency on external service providers, get assurance over IT, and ensure the existence of an effective and efficient system of internal controls
Risk Management	Helps to ensure the identification and management of all IT-related risk
External Stakeholders	
Regulators	Helps to ensure the enterprise is compliant with applicable rules and regulations and has the right governance system in place to manage and sustain compliance
Business Partners	Helps to ensure that a business partner's operations are secure, reliable and compliant with applicable rules and regulations
IT Vendors	Helps to ensure that an IT vendor's operations are secure, reliable and compliant with applicable rules and regulations

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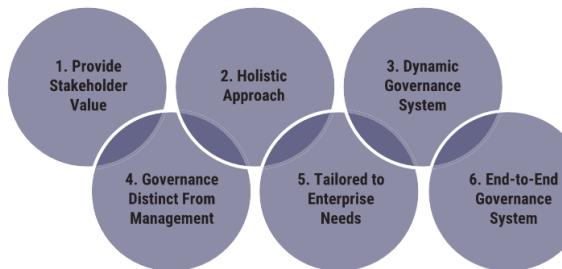
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6 principov sistema obvladovanja [17]

The six principles for a governance system are (figure 3.1):

1. Each enterprise needs a governance system to satisfy stakeholder needs and to generate value from the use of I&T. Value reflects a balance among benefits, risk and resources, and enterprises need an actionable strategy and governance system to realize this value.
2. A governance system for enterprise I&T is built from a number of components that can be of different types and that work together in a holistic way.
3. A governance system should be dynamic. This means that each time one or more of the design factors are changed (e.g., a change in strategy or technology), the impact of these changes on the EGIT system must be considered. A dynamic view of EGIT will lead toward a viable and future-proof EGIT system.
4. A governance system should clearly distinguish between governance and management activities and structures.
5. A governance system should be tailored to the enterprise's needs, using a set of design factors as parameters to customize and prioritize the governance system components.
6. A governance system should cover the enterprise end to end, focusing not only on the IT function but on all technology and information processing the enterprise puts in place to achieve its goals, regardless where the processing is located in the enterprise.⁶

Figure 3.1—Governance System Principles



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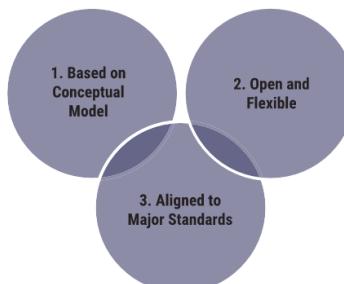
Trije principi ogrodja za obvladovanje [18]

3.3 Three Principles for a Governance Framework

The three principles for a governance framework are (figure 3.2):

1. A governance framework should be based on a conceptual model, identifying the key components and relationships among components, to maximize consistency and allow automation.
2. A governance framework should be open and flexible. It should allow the addition of new content and the ability to address new issues in the most flexible way, while maintaining integrity and consistency.
3. A governance framework should align to relevant major related standards, frameworks and regulations.

Figure 3.2—Governance Framework Principles



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Opredelitev obvladovanja in vodenja preko ciljev [20, 21]

4.2 Governance and Management Objectives

For information and technology to contribute to enterprise goals, a number of governance and management objectives should be achieved. Basic concepts relating to governance and management objectives are:

- A governance or management objective **always relates to one process** (with an identical or similar name) and a series of related components of other types to help achieve the objective.
- A governance objective relates to a governance process (depicted in the dark blue background in **figure 4.2**), while a management objective relates to a management process (depicted on the lighter blue background in **figure 4.2**). Boards and executive management are typically accountable for governance processes, while management processes are the domain of senior and middle management.

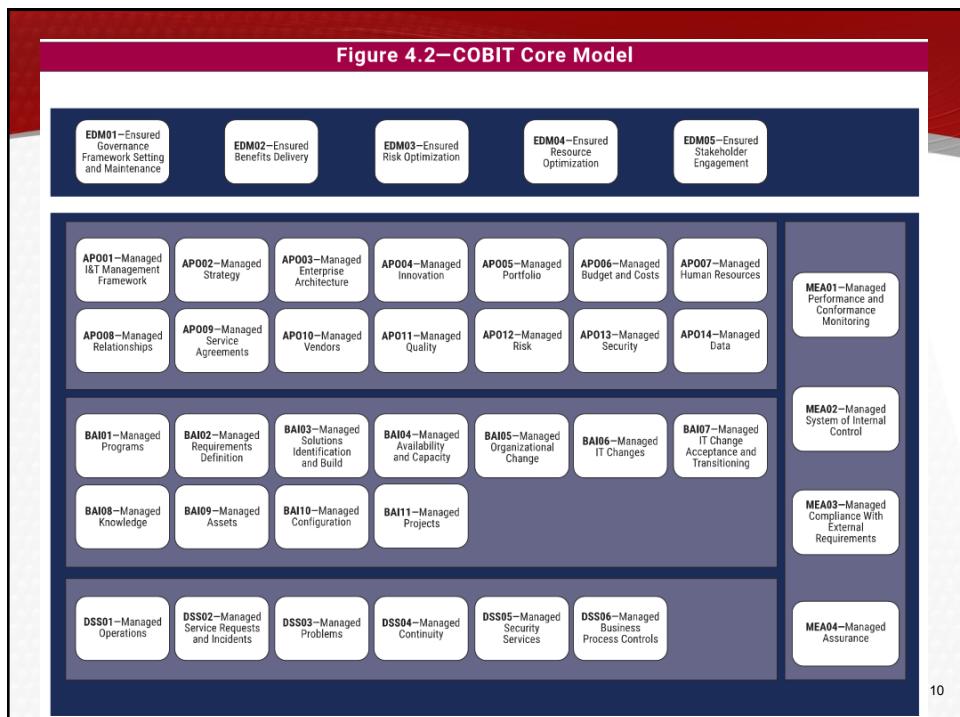
The governance and management objectives in COBIT are grouped into five domains. The domains have names with verbs that express the key purpose and areas of activity of the objective contained in them:

- Governance objectives are grouped in the **Evaluate, Direct and Monitor** (EDM) domain. In this domain, the governing body evaluates strategic options, directs senior management on the chosen strategic options and monitors the achievement of the strategy.
- Management objectives are grouped in four domains:
 - **Align, Plan and Organize** (APO) addresses the overall organization, strategy and supporting activities for I&T.
 - **Build, Acquire and Implement** (BAI) treats the definition, acquisition and implementation of I&T solutions and their integration in business processes.
 - **Deliver, Service and Support** (DSS) addresses the operational delivery and support of I&T services, including security.
 - **Monitor, Evaluate and Assess** (MEA) addresses performance monitoring and conformance of I&T with internal performance targets, internal control objectives and external requirements.

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Figure 4.2—COBIT Core Model



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Komponente sistema obvladovanja [21, 22]

4.3 Components of the Governance System

To satisfy governance and management objectives, each enterprise needs to establish, tailor and sustain a governance system built from a number of components.

- Components are factors that, individually and collectively, contribute to the good operations of the enterprise's governance system over I&T.
- Components interact with each other, resulting in a holistic governance system for I&T.
- Components can be of different types. The most familiar are processes. However, components of a governance system also include organizational structures; policies and procedures; information items; culture and behavior; skills and competencies; and services, infrastructure and applications (**figure 4.3**).
- **Processes** describe an organized set of practices and activities to achieve certain objectives and produce a set of outputs that support achievement of overall IT-related goals.
- **Organizational structures** are the key decision-making entities in an enterprise.
- **Principles, policies and frameworks** translate desired behavior into practical guidance for day-to-day management.
- **Information** is pervasive throughout any organization and includes all information produced and used by the enterprise. COBIT focuses on information required for the effective functioning of the governance system of the enterprise.

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- **Culture, ethics and behavior** of individuals and of the enterprise are often underestimated as factors in the success of governance and management activities.
- **People, skills and competencies** are required for good decisions, execution of corrective action and successful completion of all activities.
- **Services, infrastructure and applications** include the infrastructure, technology and applications that provide the enterprise with the governance system for I&T processing.

Figure 4.3—COBIT Components of a Governance System



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Faktorji vpliva na sistem obvladovanja [23-27]

Figure 4.4—COBIT Design Factors



1. **Enterprise strategy**—Enterprises can have different strategies, which can be expressed as one or more of the archetypes shown in figure 4.5. Organizations typically have a primary strategy and, at most, one secondary strategy.

Figure 4.5—Enterprise Strategy Design Factor

Strategy Archetype	Explanation
Growth/Acquisition	The enterprise has a focus on growing (revenues). ¹⁰
Innovation/Differentiation	The enterprise has a focus on offering different and/or innovative products and services to their clients. ¹¹
Cost Leadership	The enterprise has a focus on short-term cost minimization. ¹²
Client Service/Stability	The enterprise has a focus on providing stable and client-oriented service. ¹³

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2. **Enterprise goals** supporting the enterprise strategy—Enterprise strategy is realized by the achievement of (a set of) enterprise goals. These goals are defined in the COBIT framework, structured along the balanced scorecard (BSC) dimensions, and include the elements shown in figure 4.6.

Figure 4.6—Enterprise Goals Design Factor

Reference	Balanced Scorecard (BSC) Dimension	Enterprise Goal
EG01	Financial	Portfolio of competitive products and services
EG02	Financial	Managed business risk
EG03	Financial	Compliance with external laws and regulations
EG04	Financial	Quality of financial information
EG05	Customer	Customer-oriented service culture
EG06	Customer	Business-service continuity and availability
EG07	Customer	Quality of management information
EG08	Internal	Optimization of internal business process functionality
EG09	Internal	Optimization of business process costs
EG10	Internal	Staff skills, motivation and productivity
EG11	Internal	Compliance with internal policies
EG12	Growth	Managed digital transformation programs
EG13	Growth	Product and business innovation

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3. **Risk profile** of the enterprise and current issues in relation to I&T—The risk profile identifies the sort of I&T-related risk to which the enterprise is currently exposed and indicates which areas of risk are exceeding the risk appetite. The risk categories¹⁴ listed in **figure 4.7** merit consideration.

Reference	Risk Category
1	IT investment decision making, portfolio definition and maintenance
2	Program and projects lifecycle management
3	IT cost and oversight
4	IT expertise, skills and behavior
5	Enterprise/IT architecture
6	IT operational infrastructure incidents
7	Unauthorized actions
8	Software adoption/usage problems
9	Hardware incidents
10	Software failures
11	Logical attacks (hacking, malware, etc.)
12	Third party/supplier incidents
13	Noncompliance
14	Geopolitical issues
15	Industrial action
16	Acts of nature
17	Technology-based innovation
18	Environmental

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4. **I&T-related issues**—A related method for an I&T risk assessment for the enterprise is to consider which I&T-related issues it currently faces, or, in other words, what I&T-related risk has materialized. The most common of such issues¹⁵ include those in **figure 4.8**.

Reference	Description
A	Frustration between different IT entities across the organization because of a perception of low contribution to business value
B	Frustration between business departments (i.e., the IT customer) and the IT department because of failed initiatives or a perception of low contribution to business value
C	Significant IT-related incidents, such as data loss, security breaches, project failure and application errors, linked to IT
D	Service delivery problems by the IT outsourcer(s)
E	Failures to meet IT-related regulatory or contractual requirements
F	Regular audit findings or other assessment reports about poor IT performance or reported IT quality or service problems
G	Substantial hidden and rogue IT spending, that is, IT spending by user departments outside the control of the normal IT investment decision mechanisms and approved budgets
H	Duplications or overlaps between various initiatives, or other forms of wasted resources
I	Insufficient IT resources, staff with inadequate skills or staff burnout/dissatisfaction
J	IT-enabled changes or projects frequently failing to meet business needs and delivered late or over budget
K	Reluctance by board members, executives or senior management to engage with IT, or a lack of committed business sponsorship for IT
L	Complex IT operating model and/or unclear decision mechanisms for IT-related decisions
M	Excessively high cost of IT
N	Obstructed or failed implementation of new initiatives or innovations caused by the current IT architecture and systems
O	Gap between business and technical knowledge, which leads to business users and information and/or technology specialists speaking different languages
P	Regular issues with data quality and integration of data across various sources
Q	High level of end-user computing, creating (among other problems) a lack of oversight and quality control over the applications that are being developed and put in operation
R	Business departments implementing their own information solutions with little or no involvement of the enterprise IT department ¹⁶
S	Ignorance of and/or noncompliance with privacy regulations
T	Inability to exploit new technologies or innovate using I&T

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5. **Threat landscape**—The threat landscape under which the enterprise operates can be classified as shown in figure 4.9.

Figure 4.9—Threat Landscape Design Factor	
Threat Landscape	Explanation
Normal	The enterprise is operating under what are considered normal threat levels.
High	Due to its geopolitical situation, industry sector or particular profile, the enterprise is operating in a high-threat environment.

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6. **Compliance requirements**—The compliance requirements to which the enterprise is subject can be classified according to the categories listed in figure 4.10.

Figure 4.10—Compliance Requirements Design Factor	
Regulatory Environment	Explanation
Low compliance requirements	The enterprise is subject to a minimal set of regular compliance requirements that are lower than average.
Normal compliance requirements	The enterprise is subject to a set of regular compliance requirements that are common across different industries.
High compliance requirements	The enterprise is subject to higher-than-average compliance requirements, most often related to industry sector or geopolitical conditions.

7. **Role of IT**—The role of IT for the enterprise can be classified as indicated in figure 4.11.

Figure 4.11—Role of IT Design Factor	
Role of IT ¹⁷	Explanation
Support	IT is not crucial for the running and continuity of the business process and services, nor for their innovation.
Factory	When IT fails, there is an immediate impact on the running and continuity of the business processes and services. However, IT is not seen as a driver for innovating business processes and services.
Turnaround	IT is seen as a driver for innovating business processes and services. At this moment, however, there is not a critical dependency on IT for the current running and continuity of the business processes and services.
Strategic	IT is critical for both running and innovating the organization's business processes and services.

8. **Sourcing model for IT**—The sourcing model the enterprise adopts can be classified as shown in figure 4.12.

Figure 4.12—Sourcing Model for IT Design Factor	
Sourcing Model	Explanation
Outsourcing	The enterprise calls upon the services of a third party to provide IT services.
Cloud	The enterprise maximizes the use of the cloud for providing IT services to its users.
Insourced	The enterprise provides for its own IT staff and services.
Hybrid	A mixed model is applied, combining the other three models in varying degrees.

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9. **IT implementation methods**—The methods the enterprise adopts can be classified as noted in [figure 4.13](#).

Figure 4.13—IT Implementation Methods Design Factor	
IT Implementation Method	Explanation
Agile	The enterprise uses Agile development working methods for its software development.
DevOps	The enterprise uses DevOps working methods for software building, deployment and operations.
Traditional	The enterprise uses a more classic approach to software development (waterfall) and separates software development from operations.
Hybrid	The enterprise uses a mix of traditional and modern IT implementation, often referred to as “bimodal IT.”

10. **Technology adoption strategy**—The technology adoption strategy can be classified as listed in [figure 4.14](#).

Figure 4.14—Technology Adoption Strategy Design Factor	
Technology Adoption Strategy	Explanation
First mover	The enterprise generally adopts new technologies as early as possible and tries to gain first-mover advantage.
Follower	The enterprise typically waits for new technologies to become mainstream and proven before adopting them.
Slow adopter	The enterprise is very late with adoption of new technologies.

11. **Enterprise size**—Two categories, as shown in [figure 4.15](#), are identified for the design of an enterprise’s governance system.¹⁸

Figure 4.15—Enterprise Size Design Factor	
Enterprise Size	Explanation
Large enterprise (Default)	Enterprise with more than 250 full-time employees (FTEs)
Small and medium enterprise	Enterprise with 50 to 250 FTEs

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Koncept kaskade ciljev [28]

4.6 Goals Cascade

Stakeholder needs have to be transformed into an enterprise’s actionable strategy. The goals cascade ([figure 4.16](#)) supports enterprise goals, which is one of the key design factors for a governance system. It supports prioritization of management objectives based on prioritization of enterprise goals.

Figure 4.16—COBIT Goals Cascade	
Stakeholder Drivers and Needs	→ Enterprise Goals
	→ Alignment Goals
	→ Governance and Management Objectives

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Poslovni cilji podjetja [29, 30]

4.6.1 Enterprise Goals

Stakeholder needs cascade to enterprise goals. Figure 4.17 shows the set of 13 enterprise goals along with a number of accompanying example metrics.

Figure 4.17—Goals Cascade: Enterprise Goals and Metrics			
Reference	BSC Dimension	Enterprise Goal	Example Metrics
EG01	Financial	Portfolio of competitive products and services	<ul style="list-style-type: none"> Percent of products and services that meet or exceed targets in revenue and/or market share Percent of products and services that meet or exceed customer satisfaction targets Percent of products and services that provide competitive advantage Percent of market for new products and services
EG02	Financial	Managed business risk	<ul style="list-style-type: none"> Percent of critical business objectives and services covered by risk assessment Ratio of significant incidents that were not identified in risk assessments vs. total incidents Appropriate frequency of update of risk profile
EG03	Financial	Compliance with external laws and regulations	<ul style="list-style-type: none"> Cost of regulatory noncompliance, including settlements and fines Number of regulatory noncompliance issues causing public comment or negative publicity Number of noncompliance matters noted by regulators or supervisory authorities Number of regulatory noncompliance issues relating to contractual agreements with business partners
EG04	Financial	Quality of financial information	<ul style="list-style-type: none"> Satisfaction survey of key stakeholders regarding the transparency, understanding and accuracy of enterprise financial information Cost of regulatory noncompliance with finance-related regulations
EG05	Customer	Customer-oriented service culture	<ul style="list-style-type: none"> Number of customer service disruptions Percent of business customers satisfied that customer service delivery meets agreed levels Number of customer complaints Trend of customer satisfaction survey results
EG06	Customer	Business service continuity and availability	<ul style="list-style-type: none"> Number of customer service or business process interruptions causing significant incidents Business cost of interruptions Number of business processing hours lost due to unplanned service interruptions Percent of complaints as a function of committed service-availability
EG07	Customer	Quality of management information	<ul style="list-style-type: none"> Degree of board and executive management satisfaction with decision-making information Number of incidents caused by incorrect business decisions based on inaccurate information Time to provide supporting information to enable effective business decisions Timeliness of management information

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Cilji usklajevanja [30–32]

4.6.2 Alignment Goals

Enterprise goals cascade to alignment goals. Figure 4.18 contains the set of alignment goals and example metrics.

Figure 4.18—Goals Cascade: Alignment Goals and Metrics			
Reference	IT BSC Dimension	Alignment Goal	Metrics
AG01	Financial	I&T compliance and support for business compliance with external laws and regulations	<ul style="list-style-type: none"> Cost of IT noncompliance, including settlements and fines, and the impact of reputational loss Number of IT-related noncompliance issues reported to the board or causing public comment or embarrassment Number of noncompliance issues relating to contractual agreements with IT service providers
AG02	Financial	Managed I&T-related risk	<ul style="list-style-type: none"> Appropriate frequency of update of risk profile Percent of enterprise risk assessments including I&T-related risk Number of significant I&T-related incidents that were not identified in a risk assessment

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Figure 4.18—Goals Cascade: Alignment Goals and Metrics (cont.)			
Reference	IT BSC Dimension	Alignment Goal	Metrics
AG03	Financial	Realized benefits from I&T-enabled investments and services portfolio	<ul style="list-style-type: none"> Percent of I&T-enabled investments for which claimed benefits in the business case are met or exceeded Percent of I&T services for which expected benefits (as stated in the service level agreements) are realized
AG04	Financial	Quality of technology-related financial information	<ul style="list-style-type: none"> Scorecard of key stakeholders regarding the level of transparency, understanding and accuracy of IT financial information Percent of I&T services with defined and approved operational costs and expected benefits
AG05	Customer	Delivery of I&T services in line with business requirements	<ul style="list-style-type: none"> Percent of business stakeholders satisfied that IT service delivery meets agreed service levels Number of business disruptions due to IT service incidents Percent of users satisfied with the quality of IT service delivery
AG06	Customer	Ability to turn business requirements into operational solutions	<ul style="list-style-type: none"> Level of satisfaction of business executives with IT's responsiveness to new requirements Average time-to-market for new I&T-related services and applications Average time to turn strategic I&T objectives into an agreed and approved initiative Number of critical business processes supported by up-to-date infrastructure and applications
AG07	Internal	Security of information, processing infrastructure and applications, and privacy	<ul style="list-style-type: none"> Number of confidentiality incidents causing financial loss, business disruption or public embarrassment Number of availability incidents causing financial loss, business disruption or public embarrassment Number of integrity incidents causing financial loss, business disruption or public embarrassment
AG08	Internal	Enabling and supporting business processes by integrating applications and technology	<ul style="list-style-type: none"> Time to execute business services or processes Number of I&T-enabled business programs delayed or incurring additional cost due to technology integration issues Number of business process changes that need to be delayed or reworked because of technology integration issues Number of applications or critical infrastructures operating in silos and not integrated
AG09	Internal	Delivery of programs on time, on budget and meeting requirements and quality standards	<ul style="list-style-type: none"> Number of programs/projects on time and within budget Number of programs needing significant rework due to quality defects Percent of stakeholders satisfied with program/project quality
AG10	Internal	Quality of I&T management information	<ul style="list-style-type: none"> Level of user satisfaction with quality and timeliness and availability of I&T-related management information, taking into account available resources Ratio and extent of erroneous business decisions in which erroneous or unavailable I&T-related information was a key factor Percentage of information meeting quality criteria

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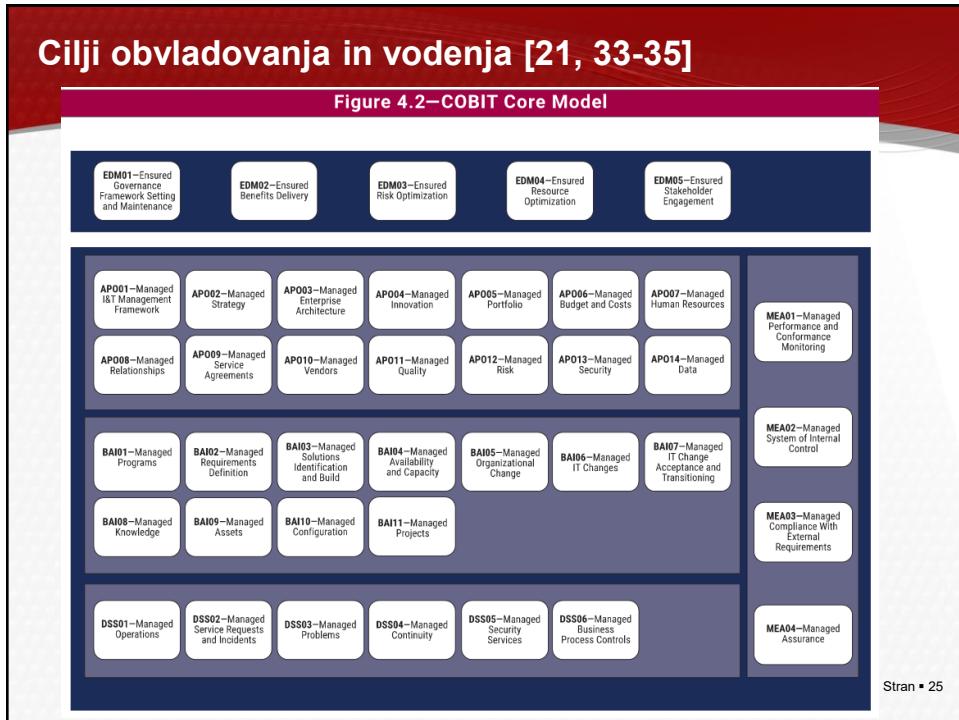
Figure 4.18—Goals Cascade: Alignment Goals and Metrics (cont.)			
Reference	IT BSC Dimension	Alignment Goal	Metrics
AG11	Internal	I&T compliance with internal policies	<ul style="list-style-type: none"> Number of incidents related to noncompliance with IT-related policies Number of exceptions to internal policies Frequency of policy review and update
AG12	Learning and Growth	Competent and motivated staff with mutual understanding of technology and business	<ul style="list-style-type: none"> Percent of I&T-savvy business people (i.e., those having the required knowledge and understanding of I&T to guide, direct, innovate and see opportunities of I&T for their domain of expertise) Percent of business-savvy IT people (i.e., those having the required knowledge and understanding of relevant business domains to guide, direct, innovate and see opportunities of I&T for the business domain) Number or percentage of business people with technology management experience
AG13	Learning and Growth	Knowledge, expertise and initiatives for business innovation	<ul style="list-style-type: none"> Level of business executive awareness and understanding of I&T innovation possibilities Number of approved initiatives resulting from innovative I&T ideas Number of innovation champions recognized/awarded

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Cilji obvladovanja in vodenja [21, 33-35]

Figure 4.2—COBIT Core Model



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Figure 5.1—COBIT Core Model: Governance and Management Objectives and Purpose

Reference	Name	Purpose
EDM01	Ensured governance framework setting and maintenance	Provide a consistent approach, integrated and aligned with the enterprise governance approach. I&T-related decisions must be made in line with the enterprise's strategies and objectives and desired value is realized. To that end, ensure that I&T-related processes are overseen effectively and transparently; compliance with legal, contractual and regulatory requirements is confirmed; and the governance requirements for board members are met.
EDM02	Ensured benefits delivery	Secure optimal value from I&T-enabled initiatives, services and assets; cost-effective delivery of solutions and services; and a reliable and accurate picture of costs and likely benefits so that business needs are supported effectively and efficiently.
EDM03	Ensured risk optimization	Ensure that I&T-related enterprise risk does not exceed the enterprise's risk appetite and risk tolerance, the impact of I&T risk to enterprise value is identified and managed, and the potential for compliance failures is minimized.
EDM04	Ensured resource optimization	Ensure that the resource needs of the enterprise are met in the optimal manner, I&T costs are optimized, and there is an increased likelihood of benefit realization and readiness for future change.
EDM05	Ensured stakeholder engagement	Ensure that stakeholders are supportive of the I&T strategy and road map, communication to stakeholders is effective and timely, and the basis for reporting is established to increase performance, identify areas for improvement, and confirm that I&T-related objectives and strategies are in line with the enterprise's strategy.
AP001	Managed I&T management framework	Implement a consistent management approach for enterprise governance requirements to be met, covering governance components such as management processes, organizational structures, roles and responsibilities, reliable and repeatable activities; information items, policies and procedures, skills and competencies; culture and behavior; and services, infrastructure and applications.
AP002	Managed strategy	Support the digital transformation strategy of the organization and deliver the desired value through a road map of incremental changes. Use a holistic I&T approach, ensuring that each initiative is clearly connected to an overarching strategy. Enable change in all different aspects of the organization, from channels and processes to data, culture, skills, operating model and incentives.
AP003	Managed enterprise architecture	Represent the different building blocks that make up the enterprise and its interrelationships, as well as the principles guiding their design and evolution over time, to enable a standard, responsive and efficient delivery of operational and strategic objectives.
AP004	Managed innovation	Achieve competitive advantage, business innovation, improved customer experience, and improved operational effectiveness and efficiency by exploiting I&T developments and emerging technologies.

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Figure 5.1—COBIT Core Model: Governance and Management Objectives and Purpose (cont.)		
Reference	Name	Purpose
AP005	Managed portfolio	Optimize the performance of the overall portfolio of programs in response to individual program, product and service performance and changing enterprise priorities and demand.
AP006	Managed budget and costs	Foster a partnership between IT and enterprise stakeholders to enable the effective and efficient use of IT-related resources and promote transparency and accountability of the cost and business value of solutions and services. Enable the enterprise to make informed decisions regarding the use of IT solutions and services.
AP007	Managed human resources	Optimize human-resources capabilities to meet enterprise objectives.
AP008	Managed relationships	Enable the right knowledge, skills and behaviors to create improved outcomes, increased confidence, mutual trust and effective use of resources that stimulate a productive relationship with business stakeholders.
AP009	Managed service agreements	Ensure that IT products, services and service levels meet current and future enterprise needs.
AP010	Managed vendors	Optimize vendor capabilities to support the IT strategy and road map, minimize the risk associated with nonperforming or noncompliant vendors, and ensure competitive pricing.
AP011	Managed quality	Ensure consistent delivery of technology solutions and services to meet the quality requirements of the enterprise and satisfy stakeholder needs.
AP012	Managed risk	Integrate the management of IT-related enterprise risk with overall enterprise risk management (ERM) and balance the costs and benefits of managing IT-related enterprise risk.
AP013	Managed security	Keep the impact and occurrence of information security incidents within the enterprise's risk appetite levels.
AP014	Managed data	Ensure effective utilization of the critical data assets to achieve enterprise goals and objectives.
BAI01	Managed programs	Realize defined business value and reduce the risk of unexpected delays, costs and value erosion. To do so, improve communications to and involvement of business and end users, ensure the value and quality of program deliverables and follow-up of projects within the programs, and maximize program contribution to the investment portfolio.
BAI02	Managed requirements definition	Create optimal solutions that meet enterprise needs while minimizing risk.
BAI03	Managed solutions identification and build	Ensure agile and scalable delivery of digital products and services. Establish reliable delivery solutions (technology, business processes and workflow) capable of supporting enterprise strategic and operational objectives.
BAI04	Managed availability and capacity	Maintain service availability, efficient management of resources and optimization of system performance through prediction of future performance and capacity requirements.
BAI05	Managed organizational change	Prepare and commit stakeholders for business change and reduce the risk of failure.
BAI06	Managed IT changes	Enable fast and reliable delivery of change to the business. Mitigate the risk of negatively impacting the stability or integrity of the changed environment.
BAI07	Managed IT change acceptance and transitioning	Implement solutions safely and in line with the agreed expectations and outcomes.

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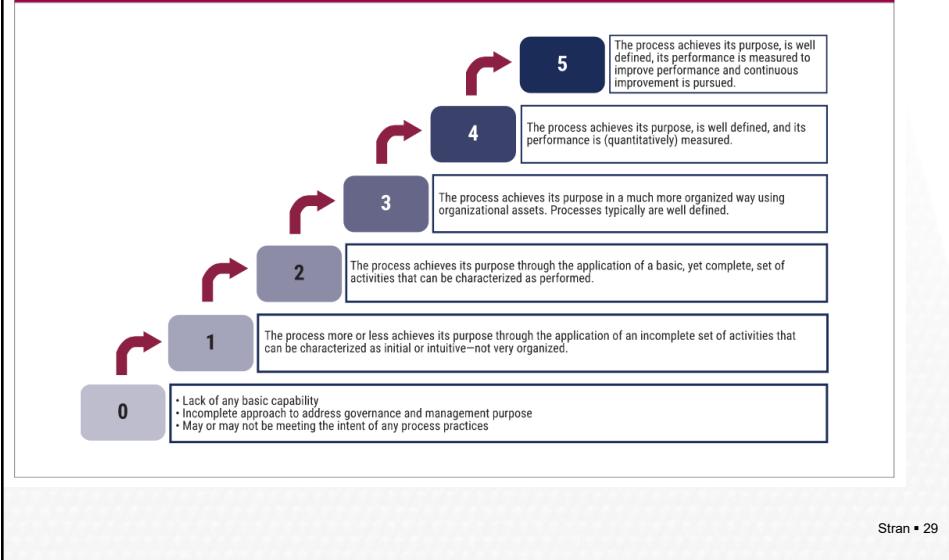
Figure 5.1—COBIT Core Model: Governance and Management Objectives and Purpose (cont.)		
Reference	Name	Purpose
BAI08	Managed knowledge	Provide the knowledge and management information required to support all staff in the governance and management of enterprise IT and allow for informed decision making.
BAI09	Managed assets	Account for all IT assets and optimize the value provided by their use.
BAI10	Managed configuration	Provide sufficient information about service assets to enable the service to be effectively managed. Assess the impact of changes and deal with service incidents.
BAI11	Managed projects	Realize defined project outcomes and reduce the risk of unexpected delays, costs and value erosion by improving communications to and involvement of business and end users. Ensure the value and quality of project deliverables and maximize their contribution to the defined programs and investment portfolio.
DSS01	Managed operations	Deliver IT operational product and service outcomes as planned.
DSS02	Managed service requests and incidents	Achieve increased productivity and minimize disruptions through quick resolution of user queries and incidents. Assess the impact of changes and deal with service incidents. Resolve user requests and restore service in response to incidents.
DSS03	Managed problems	Increase availability, improve service levels, reduce costs, improve customer convenience and satisfaction by reducing the number of operational problems, and identify root causes as part of problem resolution.
DSS04	Managed continuity	Adapt rapidly, continue business operations, and maintain availability of resources and information at a level acceptable to the enterprise in the event of a significant disruption (e.g., threats, opportunities, demands).
DSS05	Managed security services	Minimize the business impact of operational information security vulnerabilities and incidents.
DSS06	Managed business process controls	Maintain information integrity and the security of information assets handled within business processes in the enterprise or its outsourced operation.
MEA01	Managed performance and conformance monitoring	Provide transparency of performance and conformance and drive achievement of goals.
MEA02	Managed system of internal control	Obtain transparency for key stakeholders on the adequacy of the system of internal controls and thus provide trust in operations, confidence in the achievement of enterprise objectives and an adequate understanding of residual risk.
MEA03	Managed compliance with external requirements	Ensure that the enterprise is compliant with all applicable external requirements.
MEA04	Managed assurance	Enable the organization to design and develop efficient and effective assurance initiatives, providing guidance on planning, scoping, executing and following up on assurance reviews, using a road map based on well-accepted assurance approaches.

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Prehod iz zrelostnega modela v model zmožnostni model [39]

Figure 6.2—Capability Levels for Processes



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6.4.2 Rating Process Activities

A capability level can be achieved to varying degrees, which can be expressed by a set of ratings. The range of available ratings depends on the context in which the performance assessment is made:

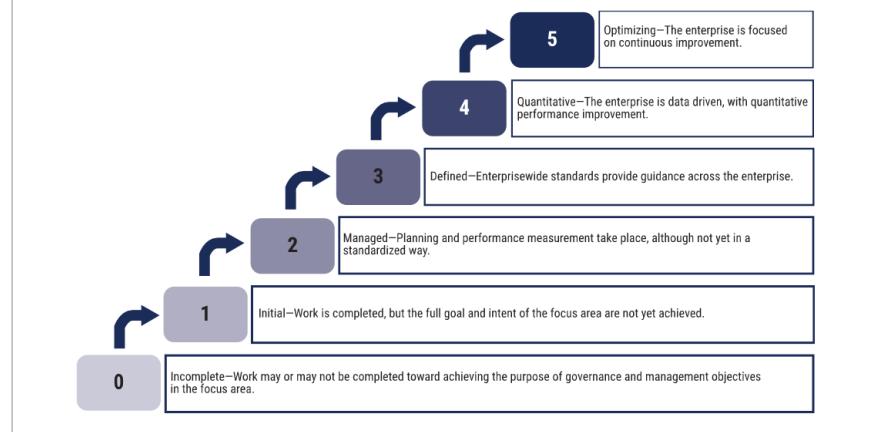
- Some formal methods leading to independent certification use a binary pass/fail set of ratings.
- Less formal methods (often used in performance-improvement contexts) work better with a larger range of ratings, such as the following set:
 - *Fully*—The capability level is achieved for more than 85 percent. (This remains a judgment call, but it can be substantiated by the examination or assessment of the components of the enabler, such as process activities, process goals or organizational structure good practices.)
 - *Largely*—The capability level is achieved between 50 percent and 85 percent.
 - *Partially*—The capability level is achieved between 15 percent and 50 percent.
 - *Not*—The capability level is achieved less than 15 percent.

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Zrelostni model [40]

Figure 6.3—Maturity Levels for Focus Areas

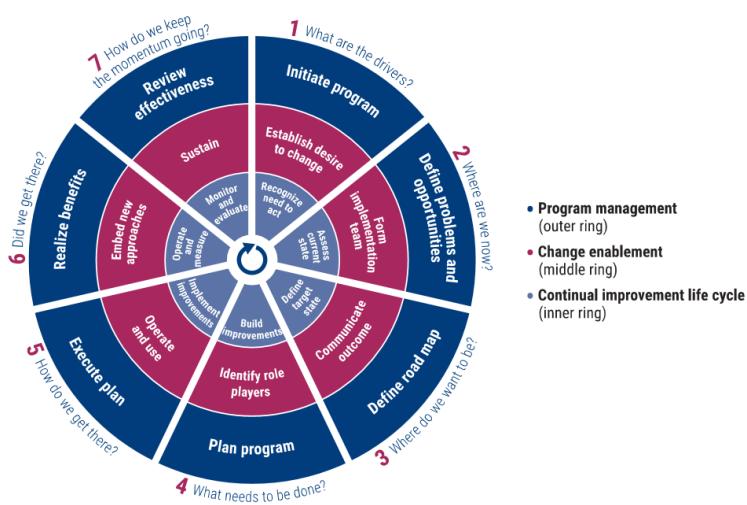


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Uvajanje COBIT [50]

Figure 8.1—COBIT Implementation Road Map



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Način opisa ciljev (procesov) COBIT 2019

Domain: Align, Plan and Organize Management Objective: AP002 – Managed Strategy		Focus Area: COBIT Core Model							
Description									
<p>Provide a holistic view of the current business and I&T environment, the future direction, and the initiatives required to migrate to the desired future environment. Ensure that the desired level of digitization is integral to the future direction and the I&T strategy. Assess the organization's current digital maturity and develop a road map to close the gaps. With the business, rethink internal operations as well as customer-facing activities. Ensure focus on the transformation journey across the organization. Leverage enterprise architecture building blocks, governance components and the organization's ecosystem, including externally provided services and related capabilities, to enable reliable but agile and efficient response to strategic objectives.</p>									
<p>Purpose Support the digital transformation strategy of the organization and deliver the desired value through a road map of incremental changes. Use a holistic I&T approach, ensuring that each initiative is clearly connected to an overarching strategy. Enable change in all different aspects of the organization, from channels and processes to data, culture, skills, operating model and incentives.</p>									
<p>The management objective supports the achievement of a set of primary enterprise and alignment goals:</p>									
<p>Enterprise Goals</p> <ul style="list-style-type: none"> • EG01 Portfolio of competitive products and services • EG05 Customer-oriented service culture • EG08 Optimization of internal business process functionality • EG12 Managed digital transformation programs 		<p>Alignment Goals</p> <p>AG08 Enabling and supporting business processes by integrating applications and technology</p>							
<p>Example Metrics for Enterprise Goals</p> <table border="0"> <tr> <td style="vertical-align: top;"> EG01 a. Percent of products and services that meet or exceed targets in revenues and/or market share b. Percent of products and services that meet or exceed customer satisfaction targets c. Percent of products and services that provide competitive advantage d. Time to market for new products and services </td> <td style="vertical-align: top;"> AG08 a. Time to execute business services or processes b. Number of I&T-enabled business programs delayed or incurring additional cost due to technology-integration issues c. Number of business process changes that need to be delayed or reworked because of technology-integration issues d. Number of applications or critical infrastructures operating in silos and not integrated </td> </tr> <tr> <td style="vertical-align: top;"> EG05 a. Number of customer service disruptions b. Percent of business stakeholders satisfied that customer service delivery meets agreed levels c. Number of customer complaints d. Trend of customer satisfaction survey results </td> <td></td> </tr> <tr> <td style="vertical-align: top;"> EG08 a. Satisfaction levels of board and executive management with business process capabilities b. Satisfaction levels of customers with service delivery capabilities c. Satisfaction levels of suppliers with supply chain capabilities </td> <td></td> </tr> <tr> <td style="vertical-align: top;"> EG12 a. Number of programs on time and within budget b. Percent of stakeholders satisfied with program delivery c. Percent of business transformation programs stopped d. Percent of business transformation programs with regular reported status updates </td> <td></td> </tr> </table>	EG01 a. Percent of products and services that meet or exceed targets in revenues and/or market share b. Percent of products and services that meet or exceed customer satisfaction targets c. Percent of products and services that provide competitive advantage d. Time to market for new products and services	AG08 a. Time to execute business services or processes b. Number of I&T-enabled business programs delayed or incurring additional cost due to technology-integration issues c. Number of business process changes that need to be delayed or reworked because of technology-integration issues d. Number of applications or critical infrastructures operating in silos and not integrated	EG05 a. Number of customer service disruptions b. Percent of business stakeholders satisfied that customer service delivery meets agreed levels c. Number of customer complaints d. Trend of customer satisfaction survey results		EG08 a. Satisfaction levels of board and executive management with business process capabilities b. Satisfaction levels of customers with service delivery capabilities c. Satisfaction levels of suppliers with supply chain capabilities		EG12 a. Number of programs on time and within budget b. Percent of stakeholders satisfied with program delivery c. Percent of business transformation programs stopped d. Percent of business transformation programs with regular reported status updates		
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EG12 a. Number of programs on time and within budget b. Percent of stakeholders satisfied with program delivery c. Percent of business transformation programs stopped d. Percent of business transformation programs with regular reported status updates									
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A. Component: Process		
Management Practice	Example Metrics	Capability Level
AP002.01 Understand enterprise context and direction. Understand the enterprise context (industry drivers, relevant regulations, basis for competition), its current way of working and its ambition level in terms of digitization.	a. Level of understanding within I&T management of current enterprise organization and context b. Level of knowledge within I&T management of enterprise goals and direction c. Level of understanding of key stakeholders for I&T and their detailed requirements	
Activities		
1. Develop and maintain an understanding of the external environment of the enterprise.		2
2. Develop and maintain an understanding of the current way of working, including the operational environment, enterprise architecture (business, information, data, applications and technology domains), enterprise culture and current challenges.		
3. Develop and maintain an understanding of future enterprise direction, including enterprise strategy, goals and objectives. Understand the ambition level of the enterprise in terms of digitization, which may include a range of increasingly aspirational goals, from cutting costs, increasing customer centricity, or getting to market faster by digitizing internal operations, to creating entirely new revenue streams from new business models (e.g., platform business).		
4. Identify key stakeholders and obtain insight on their requirements.		
Related Guidance (Standards, Frameworks, Compliance Requirements)	Detailed Reference	
COSO Enterprise Risk Management, June 2017	7. Strategy and Objective-Setting–Principle 6	
Management Practice	Example Metrics	
AP002.02 Assess current capabilities, performance and digital maturity of the enterprise. Assess the performance of current I&T services and develop an understanding of current business and I&T capabilities (both internal and external). Assess current digital maturity of the enterprise and its appetite for change.	a. Percent of staff satisfied with current capabilities b. Percent of business owner satisfaction with investment in and utilization of the internal and external asset base to meet critical success factors	

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Activities		Capability Level	
1. Develop a baseline of current business and I&T capabilities and services. Include assessment of externally provisioned services, governance of I&T, and enterprise-wide I&T-related skills and competencies.		2	
2. Assess digital maturity across different dimensions (e.g., ability of leadership to leverage technology, level of accepted technology risk, approach to innovation, culture and knowledge level of users). Assess appetite for change.		3	
Related Guidance (Standards, Frameworks, Compliance Requirements)		Detailed Reference	
COSO Enterprise Risk Management, June 2017		7. Strategy and Objective-Setting—Principle 6; 9. Review and Revision—Principle 15	
Management Practice		Example Metrics	
APO02.03 Define target digital capabilities. Based on the understanding of enterprise context and direction, define the target I&T products and services and required capabilities. Consider reference standards, best practices and validated emerging technologies.		a. Percent of enterprise objectives addressed by the I&T goals/objectives b. Percent of I&T objectives that support the enterprise strategy	
Activities		Capability Level	
1. Summarize enterprise context and direction and identify specific I&T aspects of enterprise strategy (e.g., digitizing processes, implementing new technology, supporting legacy architecture, applying new digital business models, developing digital product portfolio, etc.).		2	
2. Define high-level I&T objectives and goals and specify their contribution to enterprise objectives.			
3. Detail required I&T services and products to realize enterprise objectives. Consider validated emerging technology or innovation ideas, reference standards, competitor business and I&T capabilities, comparative benchmarks of good practice, and emerging I&T service provision.			
4. Determine I&T capabilities, methodologies and organizational approaches required to realize the defined I&T product and service portfolio. Consider different development methodologies (Agile, scrum, waterfall, bimodal IT), depending on business requirements. Consider how each could help realize I&T objectives.		3	
Related Guidance (Standards, Frameworks, Compliance Requirements)		Detailed Reference	
No related guidance for this management practice			

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A. Component: Process (cont.)	
Management Practice	Example Metrics
APO02.04 Conduct a gap analysis. Identify gaps between current and target environments and describe the high-level changes in the enterprise architecture.	a. Number of high-impact changes required in the different enterprise architecture domains b. Number of significant gaps between current environment and good practices
Activities	Capability Level
1. Identify all gaps and changes required to realize the target environment.	3
2. Describe high-level changes in enterprise architecture (business, information, data, applications and technology domains).	
3. Consider the high-level implications of all gaps. Assess the impact of potential changes on business and I&T operating models, I&T research and development capabilities, and I&T investment programs.	
4. Consider the value of potential changes to business and IT capabilities, I&T services and enterprise architecture, and the implications if no changes are realized.	
5. Refine the target environment definition and prepare a value statement outlining benefits of the target environment.	
Related Guidance (Standards, Frameworks, Compliance Requirements)	Detailed Reference
No related guidance for this management practice	
Management Practice	Example Metrics
APO02.05 Define the strategic plan and road map. Develop a holistic digital strategy in cooperation with relevant stakeholders, and detail a road map that defines the incremental steps required to achieve the goals and objectives. Ensure focus on the transformation journey through the appointment of a person who helps spearhead the digital transformation and drives alignment between business and I&T.	a. Level of stakeholder support for the digital transformation plan b. Percent of initiatives in the I&T strategy that are self-funding (with financial benefits exceeding costs) c. Degree of correspondence between enterprise strategy and I&T strategy and objectives
Activities	Capability Level
1. Define initiatives required to close gaps between current and target environments. Integrate initiatives into a coherent I&T strategy that aligns I&T with all aspects of the business.	3
2. Detail a road map that defines the incremental steps required to achieve the goals and objectives of the I&T strategy. Ensure actions are included to train people with new skills, support adoption of new technology, sustain change throughout the organization, etc.	
3. Consider the external ecosystem (enterprise partners, suppliers, start-ups, etc.) to help support execution of the road map.	
4. Group actions into programs and/or projects with a clear goal or deliverable. For each project, identify high-level resource requirements, schedule, investment/operational budget, risk, change impact, etc.	
5. Determine dependencies, overlaps, synergies and impacts among projects, and prioritize.	
6. Finalize road map, indicating relative scheduling and interdependencies of projects.	
7. Ensure focus on the transformation journey. Appoint a champion of digital transformation and alignment between business and I&T (chief digital officer [CDO] or other traditional C-suite role).	
8. Obtain support and formal approval of plan from stakeholders.	
9. Translate objectives into measurable outcomes represented by metrics (what) and targets (how much). Ensure that outcomes and measures correlate to enterprise benefits.	
Related Guidance (Standards, Frameworks, Compliance Requirements)	Detailed Reference
ISF, The Standard of Good Practice for Information Security 2016	SG2.1 Information Security Strategy
ITIL V3, 2011	Service Strategy, 4.1 Strategy management for IT services

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A. Component: Process (cont.)	
Management Practice	Example Metrics
APO02.06 Communicate the I&T strategy and direction. Create awareness and understanding of the business and I&T objectives and direction, as captured in the I&T strategy, through communication to appropriate stakeholders and users throughout the enterprise.	a. Frequency of updates to the I&T strategy communication plan b. Percent of stakeholders aware of I&T strategy and direction
Activities	Capability Level
1. Develop a communication plan covering the required messages, target audiences, communication mechanisms/channels and schedules.	3
2. Prepare a communication package that delivers the plan effectively, using available media and technologies.	
3. Develop and maintain a network for endorsing, supporting and driving the I&T strategy.	
4. Obtain feedback and update the communication plan and delivery as required.	4
Related Guidance (Standards, Frameworks, Compliance Requirements)	Detailed Reference
No related guidance for this management practice	

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B. Component: Organizational Structures																	
Key Management Practice	Chief Executive Officer	Chief Information Officer	Chief Technology Officer	Chief Digital Officer	IT Governance Board	Business Process Owners	Project Management Office	Data Management Function	Relationship Manager	Head Architect	Head Development	Head IT Operations	Head IT Administration	Service Manager	Information Security Manager	Business Continuity Manager	Privacy Officer
APO02.01 Understand enterprise context and direction.	A	R	R							R	R	R	R	R	R	R	R
APO02.02 Assess current capabilities, performance and digital maturity of the enterprise.	A	R	R							R	R	R	R	R	R	R	R
APO02.03 Define target digital capabilities.	R	R	A	R						R	R	R	R	R	R	R	R
APO02.04 Conduct a gap analysis.	R	R	A	R	R					R	R	R	R	R	R	R	R
APO02.05 Define the strategic plan and road map.	R	R	R	A	R	R	R			R	R	R	R	R	R	R	R
APO02.06 Communicate the I&T strategy and direction.	R	R	R	R	A												
Related Guidance (Standards, Frameworks, Compliance Requirements)	Detailed Reference																
ISO/IEC 38502:2017(E)	5.4 Responsibilities of managers																
C. Component: Information Flows and Items (see also Section 3.6)		Inputs		Outputs													
Management Practice	From	Description	To	Description	To												
APO02.01 Understand enterprise context and direction.	APO04.02	Innovation opportunities linked to business drivers	Sources and priorities for change	Internal													
	EDM04.01	Guiding principles for allocating resources and capabilities															
	Outside COBIT	Enterprise strategy and strengths, weaknesses, opportunities, threats (SWOT) analysis															

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C. Component: Information Flows and Items (see also Section 3.6) (cont.)				
Management Practice	Inputs		Outputs	
	From	Description	Description	To
APO02.02 Assess current capabilities, performance and digital maturity of the enterprise.	AP006.05 AP008.05 AP009.01 AP009.04 AP012.01 AP012.02 AP012.03 AP012.05 BAI04.03 BAI04.05 BAI09.01 BAI09.04 EDM04.03	Cost optimization opportunities Definition of potential improvement projects Identified gaps in IT services to the business Improvement action plans and remediations Emerging risk issues and factors Risk analysis results Aggregated risk profile, including status of risk management actions Project proposals for reducing risk. + Prioritized improvements + Performance and capacity plans Corrective actions Results of fit-for-purpose reviews + Results of cost optimization reviews + Opportunities to reduce asset costs or increase value Feedback on allocation and effectiveness of resources and capabilities	Gaps and risk related to current capabilities Capability SWOT analysis Baseline of current capabilities	AP012.01 Internal Internal
APO02.03 Define target digital capabilities.	AP004.05	+ Results and recommendations from proof-of-concept initiatives + Analysis of rejected initiatives	Proposed enterprise architecture changes Required business and IT capabilities High-level I&T-related goals	AP003.03 Internal Internal
APO02.04 Conduct a gap analysis.	AP004.06 AP005.01 BAI01.05 BAI01.06 BAI11.09 EDM02.02	Assessments of using innovative approaches Investment return expectations Results of program goal achievement monitoring Stage-gate review results Post-implementation review results Evaluation of strategic alignment	Gaps and changes required to realize target capability Value benefit statement for target environment	AP001.03; AP013.02; BAI03.11; EDM04.01 BAI03.11

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C. Component: Information Flows and Items (see also Section 3.6) (cont.)				
Management Practice	Inputs		Outputs	
	From	Description	Description	To
APO02.05 Define the strategic plan and road map.	AP003.01 AP003.02 AP003.03 AP005.01 AP006.02 AP006.03 BAI09.05 DSS04.02 EDM02.01 EDM04.01 EDM04.03	+ Defined scope of architecture + Architecture concept + Business case and value proposition Information architecture model Transition architectures Funding options Budget allocations I&T budget Action plan to adjust license numbers and allocations Approved strategic options Feedback on strategy and goals Approved resources plan Remedial actions to address resource management deviations	I&T strategy and objectives Strategic road map Definition of strategic initiatives Risk assessment initiatives	All APO; All BAI; All DSS; All MEA AP001.01; AP003.01; AP008.01; EDM02.01; EDM02.02 AP001.01; AP003.01; AP008.01; EDM02.01; EDM02.02 EDM02.01, APO12.01 All APO; All BAI; All DSS; All MEA
APO02.06 Communicate the I&T strategy and direction.	EDM04.02	Communication of resourcing strategies	Communication package Communication plan	Internal
Related Guidance (Standards, Frameworks, Compliance Requirements)		Detailed Reference		
ITIL V3, 2011		Service strategy, 3.9 Service strategy inputs and outputs		
D. Component: People, Skills and Competencies				
Skill	Related Guidance (Standards, Frameworks, Compliance Requirements)		Detailed Reference	
Business plan development	e-Competence Framework (e-CF)—A common European Framework for ICT Professionals in all industry sectors—Part 1: Framework, 2016		A. Plan—A.3. Business Plan Development	
Emerging technology monitoring	Skills Framework for the Information Age V6, 2015		EMRG	
I&T strategy and planning	Skills Framework for the Information Age V6, 2015		ITSP	
Strategy alignment	e-Competence Framework (e-CF)—A common European Framework for ICT Professionals in all industry sectors—Part 1: Framework, 2016		A. Plan—A.1. IS and Business Strategy Alignment	

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E. Component: Policies and Procedures			
Relevant Policy	Policy Description	Related Guidance	Detailed Reference
I&T service strategy principles	For details, refer to related guidance.	ITIL V3, 2011	Service Strategy, 3. Service strategy principles
I&T strategy policy and principles	Provides holistic view of current business and I&T environment, strategic direction and initiatives required to reach the desired future environment. Ensures that business and I&T strategy reflect target level of digitization.		

F. Component: Culture, Ethics and Behavior		
Key Culture Elements	Related Guidance	Detailed Reference
Establish a culture and underlying values that fit the overall business strategy (i.e., customer oriented, innovation driven, product based). Find ways to inject speed into processes and introduce the supporting culture and behavior that allow moving at a faster pace. This could start with changing basic habits such as having more frequent strategy leadership meetings or automating certain activities.	The Scaled Agile Framework for Lean Enterprises	Configurable framework that helps organizations deliver new products and solutions in the shortest sustainable lead time (all chapters)
In the current context of digital business models, ecosystems and disruption, it is vital for many organizations to prioritize digital transformation in their strategy. Build a culture that challenges the status quo and explores new ways of working (e.g., invest in automation to respond rapidly to customers, develop sophisticated reporting and analytics to interpret customer needs, build innovative interfaces to gather customer data, create mechanisms to deliver content and offers across all relevant channels).		

G. Component: Services, Infrastructure and Applications
<ul style="list-style-type: none"> • Customer analytics • Industry benchmarks • Performance measurement system (e.g., balanced scorecard, skills management tools) • Technology watch services and tools

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