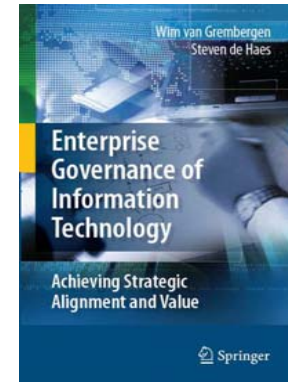


Enterprise Governance of IT

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What is IT Governance?

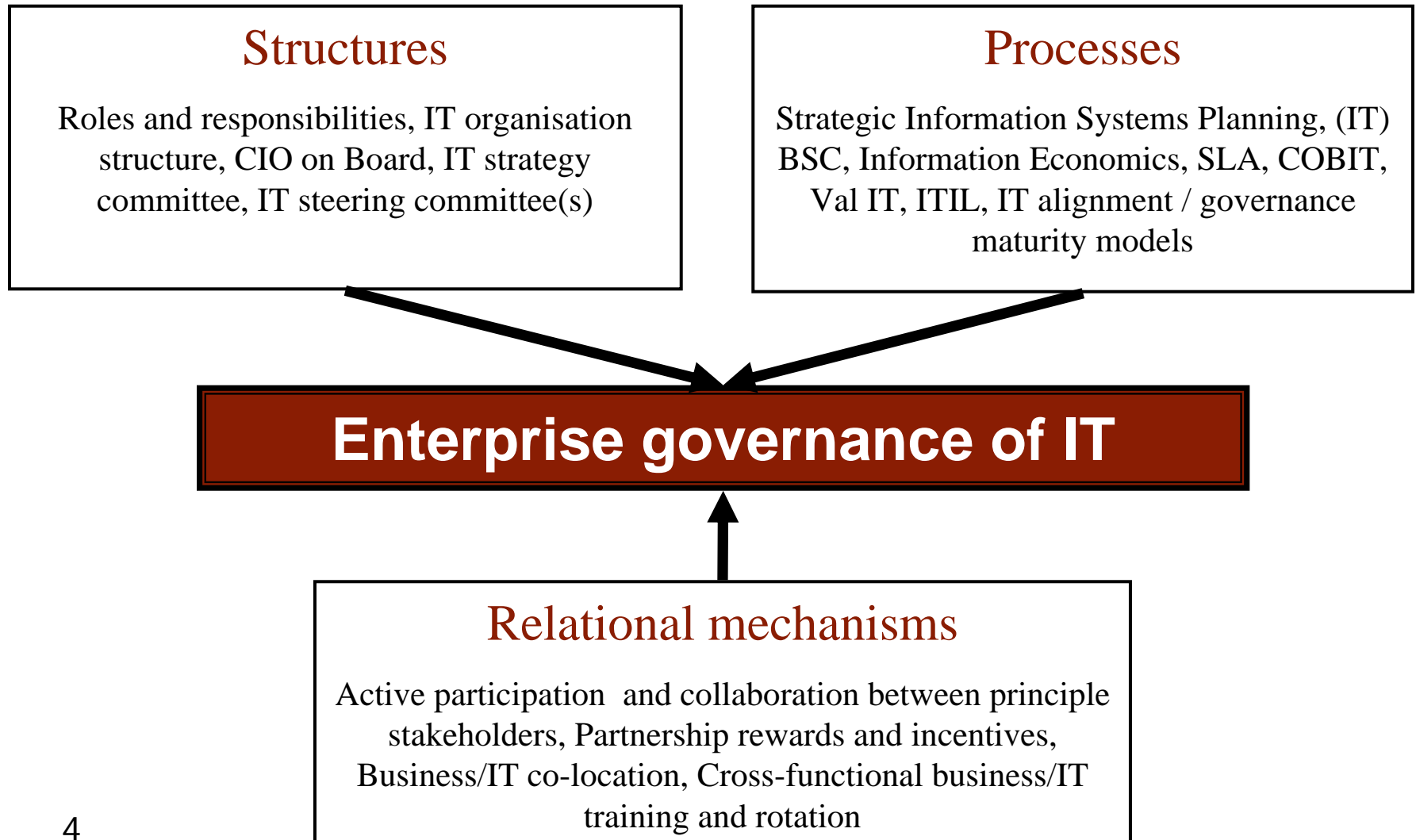
Definition of EGIT

Enterprise Governance of IT (EGIT) is an integral part of enterprise governance exercised by the Board overseeing the definition and implementation of processes, structures and relational mechanisms in the organisation enabling both business and IT people to execute their responsibilities in support of business/IT alignment and the creation of business value from IT- enabled business investments.

(Van Grembergen & De Haes, 2009)



Structures, processes and relational mechanisms



Delphi research resulted in 33 EGIT practices

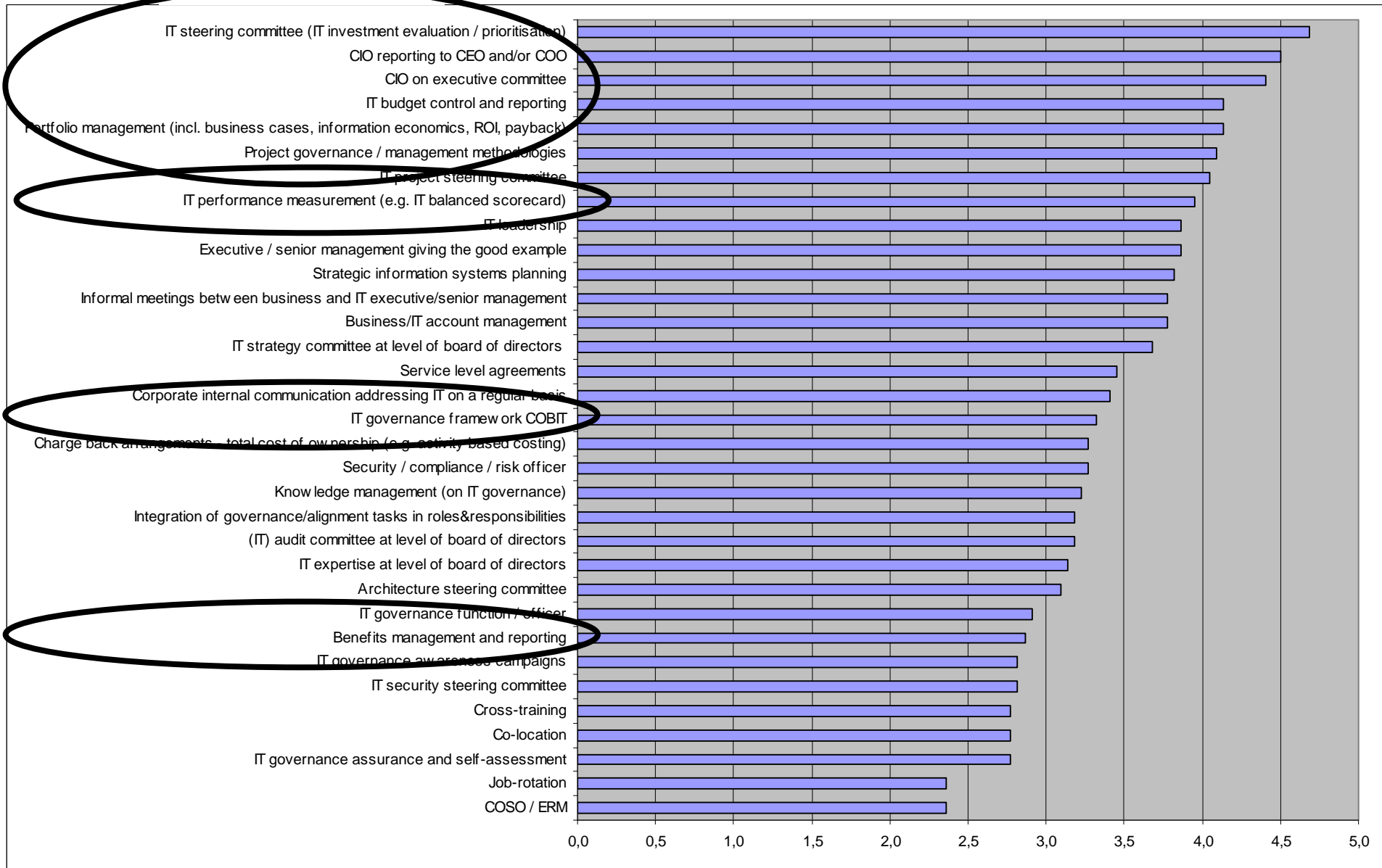
	Index	IT Governance Practice	Definition
IT governance structures	S1	IT strategy committee at level of board of directors	Committee at level of board of directors to ensure IT is regular agenda item and reporting issue for the board of directors
	S2	IT expertise at level of board of directors	Members of the board of directors have expertise and experience regarding the value and risk of IT
	S3	(IT) audit committee at level of board of directors	Indepent committee at level of board of directors overvewing (IT) assurance activities
	S4	CIO on executive committee	CIO is a full member of the executive committee
	S5	CIO (Chief Information Officer) reporting to CEO (Chief Executive Officer) and/or COO (Chief Operational Officer)	CIO has a direct reporting line to the CEO and/or COO
	S6	IT steering committee (IT investment evaluation / prioritisation at executive / senior management level)	Steering committee at executive or senior management level responsible for determining business priorities in IT investments.
	S7	IT governance function / officer	Function in the organisation responsible for promoting, driving and managing IT governance processes
	S8	Security / compliance / risk officer	Function responsible for security, compliance and/or risk, which possibly impacts IT
	S9	IT project steering committee	Steering committee composed of business and IT people focusing on prioritising and managing IT projects
	S10	IT security steering committee	Steering committee composed of business and IT people focusing on IT related risks and security issues
	S11	Architecture steering committee	Committee composed of business and IT people providing architecture guidelines and advise on their applications.
	S12	Integration of governance/alignment tasks in roles&responsibilities	Documented roles&responsibilities include governance/alignment tasks for business and IT people (cf. Weill)
IT governance processes	P1	Strategic information systems planning	Formal process to define and update the IT strategy
	P2	IT performance measurement (e.g. IT balanced scorecard)	IT performance measurement in domains of corporate contribution, user orientation, operational excellence and future orientation
	P3	Portfolio management (incl. business cases, information economics, ROI, payback)	Prioritisation process for IT investements and projects in which business and IT is involved (incl. business cases)
	P4	Charge back arrangements - total cost of ownership (e.g. activity based costing)	Methodology to charge back IT costs to business units, to enable an understanding of the total cost of ownership
	P5	Service level agreements	Formal agreements between business and IT about IT development projects or IT operations
	P6	IT governance framework COBIT	Framework for performance and control framework
	P7	IT governance assurance and self-assessment	Regular self-assessments or indepent assurance activities on the governance and control over IT
	P8	Project governance / management methodologies	Processes and methodologies to govern and manage IT projects
	P9	IT budget control and reporting	Processes to control and report upon budgets of IT investments and projects
	P10	Benefits management and reporting	Processes to monitor the planned business benefits during and after implementation of the IT investments / projects.
	P11	COSO / ERM	Framework for internal control
IT governance relational mechanisms	R1	Job-rotation	IT staff working in the business units and business people working in IT
	R2	Co-location	Physically locating business and IT people close to each other
	R3	Cross-training	Training business people about IT and/or training IT people about business
	R4	Knowledge management (on IT governance)	Systems (intranet, ...) to share and distribute knowledge about IT governance framework, responsibilities, tasks, etc.
	R5	Business/IT account management	Bridging the gap between business and IT by means of account managers who act as in-between
	R6	Executive / senior management group (IT governance)	Senior management and business partners
	R7	Informal meetings between business and IT executive/senior management	Informal meetings, with no agenda, where business and IT senior management talk about general activities, directions, etc. (eg. during informal lunches)
	R8	IT leadership	Ability of CIO or similar role to articulate a vision for IT's role in the company and ensure that this vision is clearly understood by managers throughout the organisation
	R9	Corporate internal communication addressing IT on a regular basis	Internal corporate communication regularly addresses general IT issues.
	R10	IT governance awareness campaigns	Campaigns to explain to business and IT people the need for IT governance

12 structures

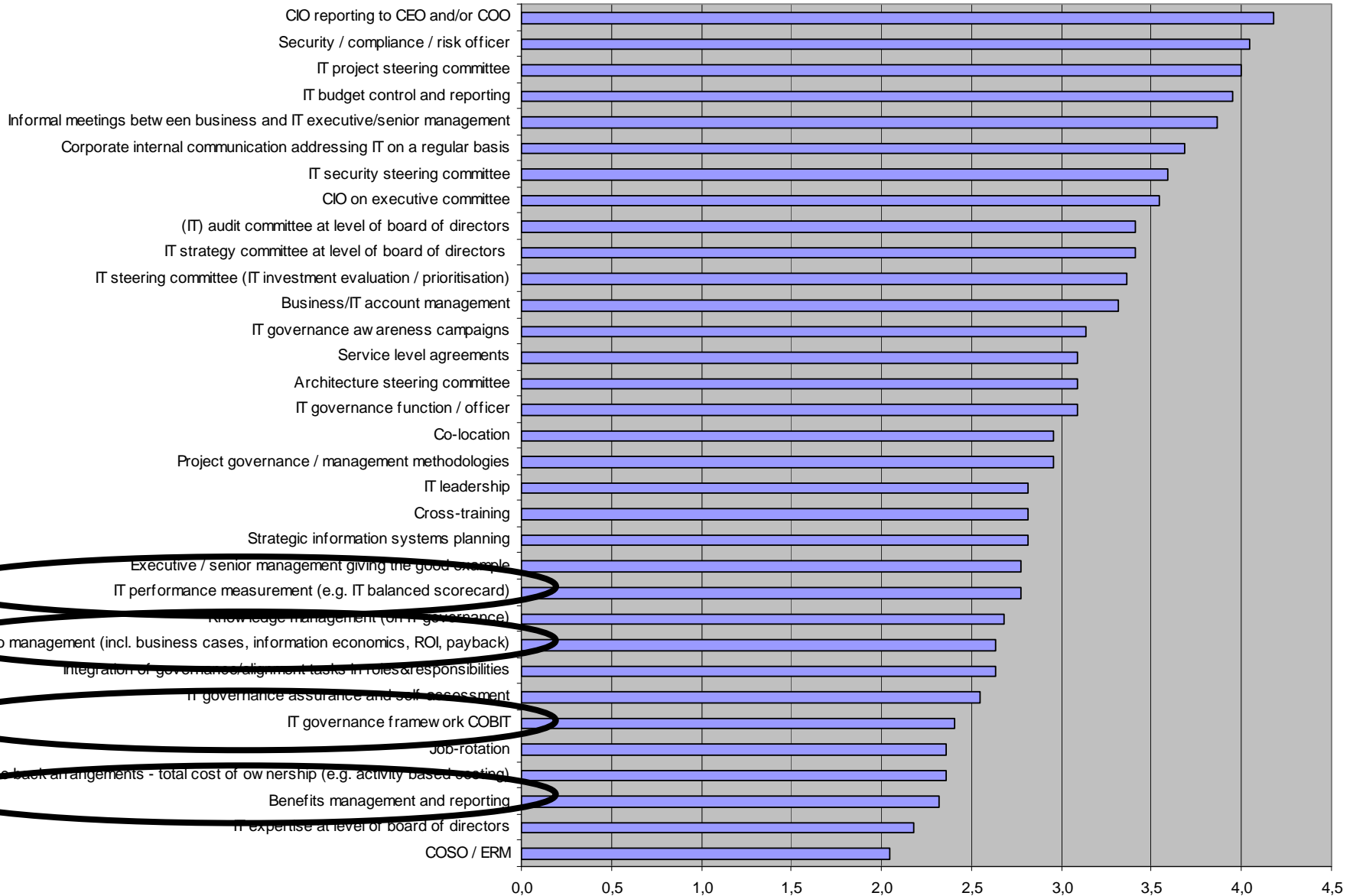
11 processes

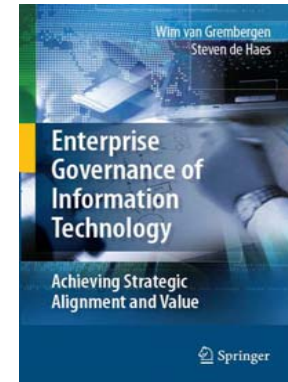
10 relational mechanisms

Perceived effectiveness of EGIT practices



Perceived ease of implementation of EGIT practices





Examples structures & processes

Example structure: IT Steering Committee

A group of senior executives appointed by the board to ensure that the board is involved in and kept informed of major IT-related matters and decisions. **The committee is accountable for managing the portfolio of IT-enabled investments**, IT services and IT assets, ensuring that value is delivered and risks are managed.

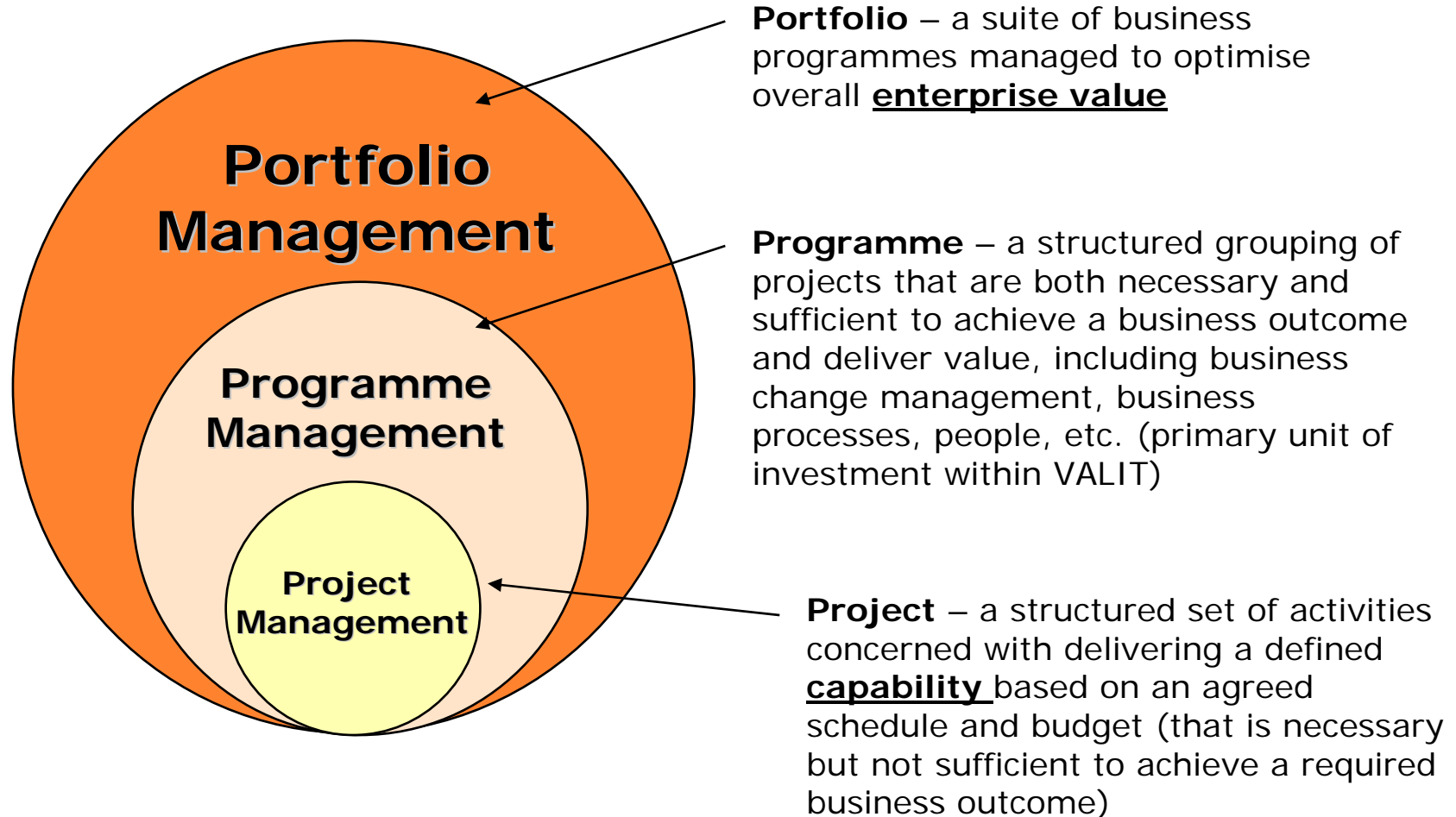


Example structure: IT Steering Committee

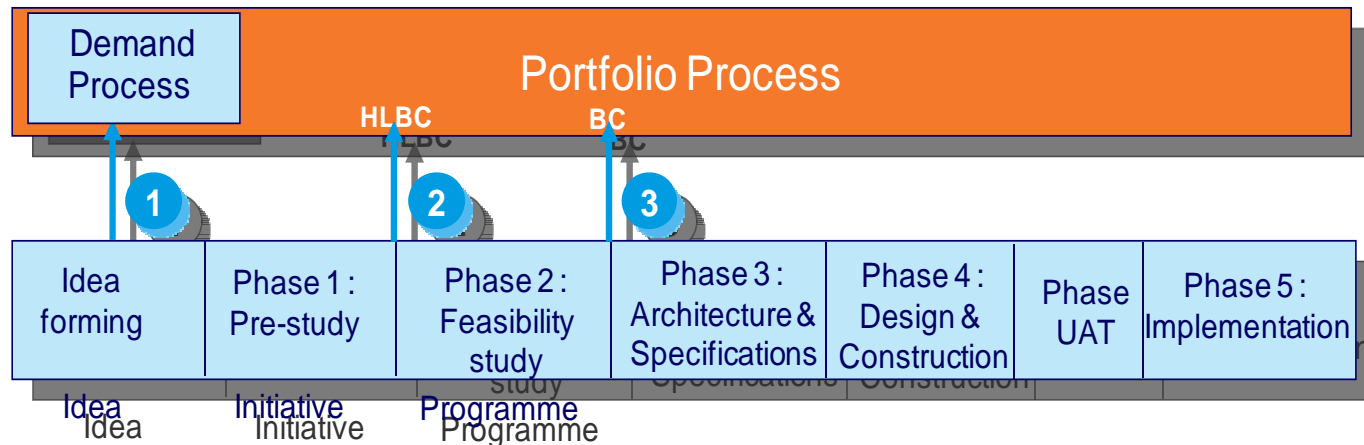
- **Mandate:** ensuring business value from IT-enabled investments
- **Span of Control:** servicing the entire business/IT entity for which the board is responsible
- **Delegation Rights:** delegating authority to executive management to carry out its decisions
- **Escalation Rights:** escalating all key issues and findings impacting the board
- **Authority Level/Decision Rights:** the Committee is responsible for the prioritisation and selecting the IT portfolio
- **Operating Principles:**
 - The Committee should meet at least quarterly. More frequent meetings may be scheduled depending on the need
 - Regular reporting to the board.
 - Minutes of meetings should be kept and approved in a timely manner

Example process: IT Portfolio Management

Value – the end business outcome expected from an IT-enabled business investment where such outcomes may be financial, non-financial or a combination of the two.



Portfolio Management



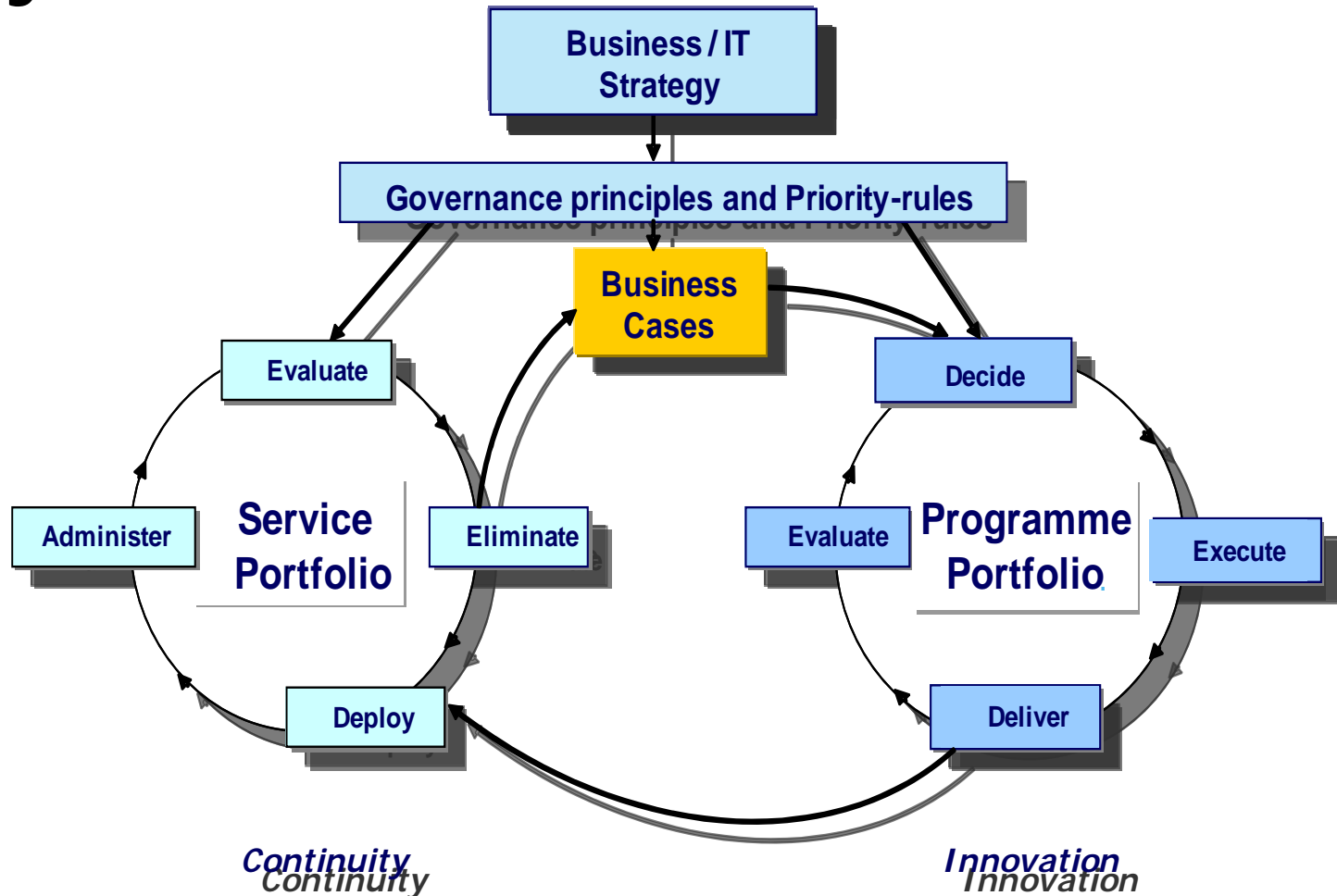
Three approval steps:

- 1 Approval 1: **Business ideas selection**
- 2 Approval 2: **Programme Go**
- 3 Approval 3: **Investment approval**

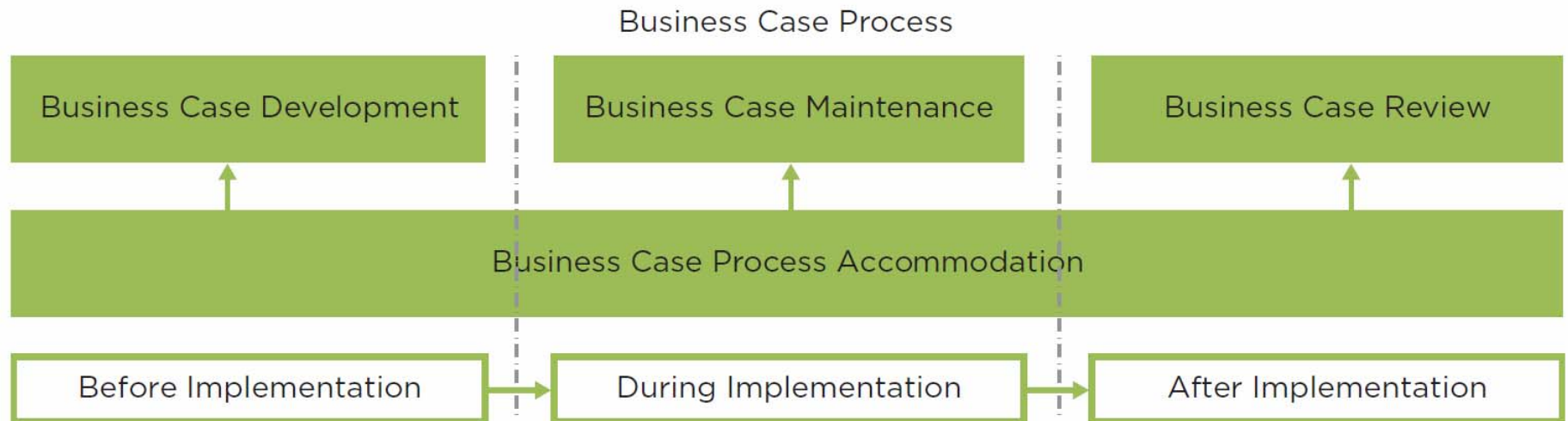
Three decision thresholds:

	Business	BIC	EC
> 5M€	1 2 3	2 3	3
> 500 k€	1 2 3	2 3	
> 150 k€	1 2 3		

Example: KLM - Innovation Continuity Bicycle



Example: Business Case Process



A BUSINESS CASE is a formal investment document with a structured overview of relevant information that provides a rationale and justification of an investment with the intent to enable well-founded investment decision-making.

A BUSINESS CASE PROCES is a set of logically related tasks that affect a business case and supports continuous business case usage with the intent to enable well-founded investment decision-making and to ultimately increase investment success.

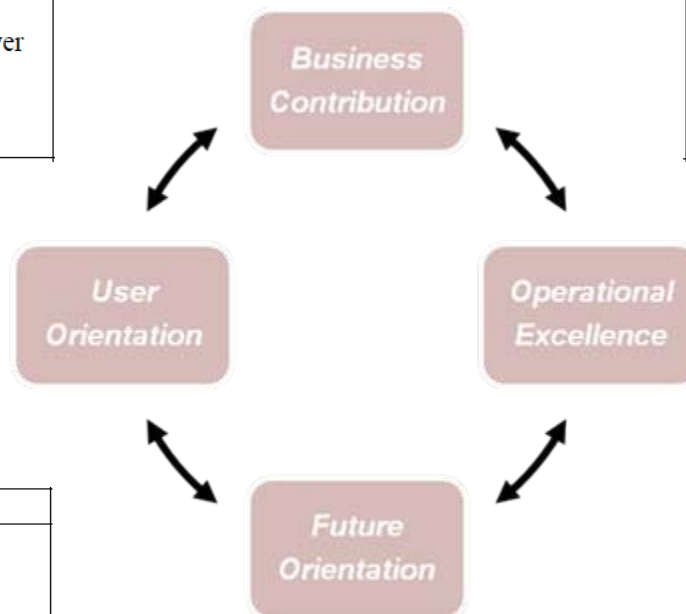
Example process: IT Balanced Scorecard (BSC)

USER ORIENTATION
How do users view the IT department?
Mission To be the preferred supplier of information systems.
Objectives
<ul style="list-style-type: none"> • Preferred supplier of applications • Preferred supplier of operations vs. proposer of best solution, from whatever source • Partnership with users • User satisfaction

The *User Orientation* perspective represents the user evaluation of IT.

FUTURE ORIENTATION
How well is IT positioned to meet future needs?
Mission To develop opportunities to answer future challenges.
Objectives
<ul style="list-style-type: none"> • Training and education of IT staff • Expertise of IT staff • Research into emerging technologies • Age of application portfolio

The *Business Contribution* perspective captures the business value created from the IT investments.



The *Future Orientation* perspective represents the human and technology resources needed by IT to deliver its services over time.

BUSINESS CONTRIBUTION
How does management view the IT department?
Mission To obtain a reasonable business contribution from IT investments.
Objectives
<ul style="list-style-type: none"> • Control of IT expenses • Business value of IT projects • Provision of new business capabilities

The *Operational Excellence* perspective represents the IT processes employed to develop and deliver the applications.

OPERATIONAL EXCELLENCE
How effective and efficient are the IT processes?
Mission To deliver effective and efficient IT applications and services.
Objectives
<ul style="list-style-type: none"> • Efficient and effective developments • Efficient and effective operations

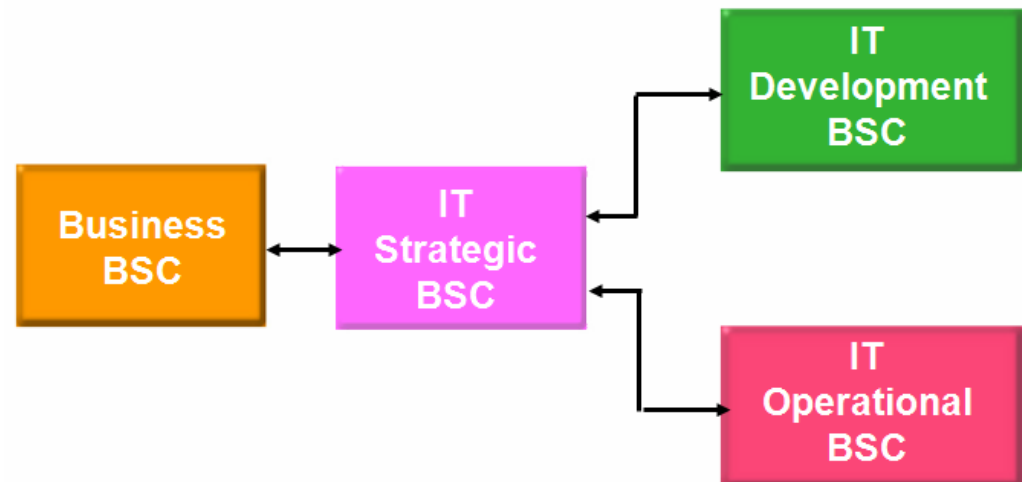
IT Balanced scorecard

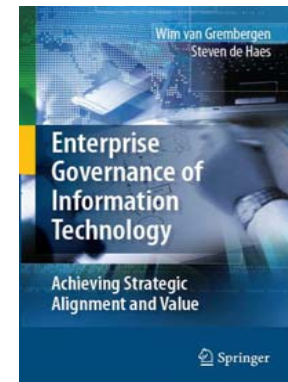
- **Key Goal Indicator (KGI)** - is defined as a measure of *what* has to be accomplished.
- **Key Performance Indicator (KPI)** - measures of *how well* the process is performing.



Balanced Scorecards Cascade:

The IT Development BSC and the IT Operational BSC both are enablers of the IT Strategic BSC that in turn is the enabler of the Business BSC.





Business/IT alignment

Business/IT alignment refers to applying IT in an appropriate and timely way in harmony with business strategies. It addresses how:

1. IT is aligned with the business
2. The business should or could be aligned with IT.

Jerry Luftman's assessment of business/IT alignment maturity.

Business/IT maturity assessment (Jerry Luftman)

IT is perceived by the business as:

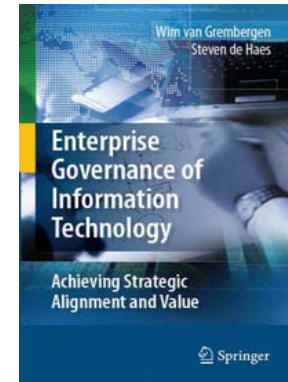
- 1 A cost of doing business
- 2 Emerging as an asset
- 3 A fundamental enabler of future business activity
- 4 A fundamental driver of future business activity
- 5 A partner for the business that co-adapts/improvises in bringing value to the firm
- 6 N/A or don't know

The following statements are about the IT and business relationship and trust.

- 1 There is a sense of conflict and mistrust between IT and the business.
- 2 The association is primarily an "arm's length" transactional style of relationship.
- 3 IT is emerging as a valued service provider.
- 4 The association is primarily a long-term partnership style of relationship.
- 5 The association is a long-term partnership and valued service provider.
- 6 N/A or don't know

The following statements are about the cultural locus of power in making IT-based decisions. Our important IT decisions are made by:

- 1 Top business management or IT management at the corporate level only
- 2 Top business or IT management at corporate level with emerging functional unit level influence
- 3 Top business management at corporate and functional unit levels, with emerging shared influence from IT management
- 4 Top management (business and IT) across the organization and emerging influence from our business partners/alliances.
- 5 Top management across the organization with equal influence from our business partners/alliances.
- 6 N/A or don't know



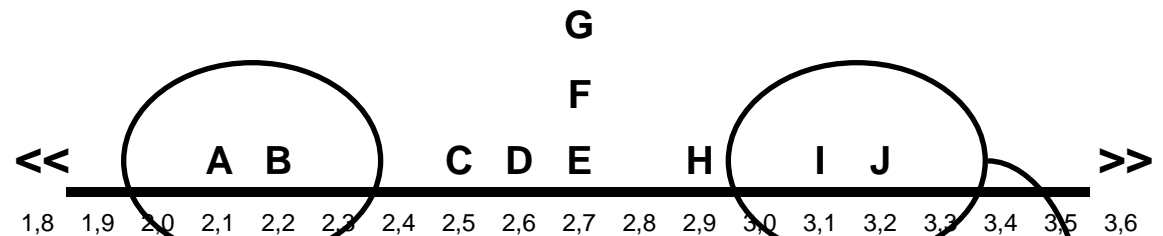
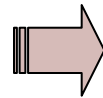
Relationship EGIT – Business/IT alignment

IT Governance assessment

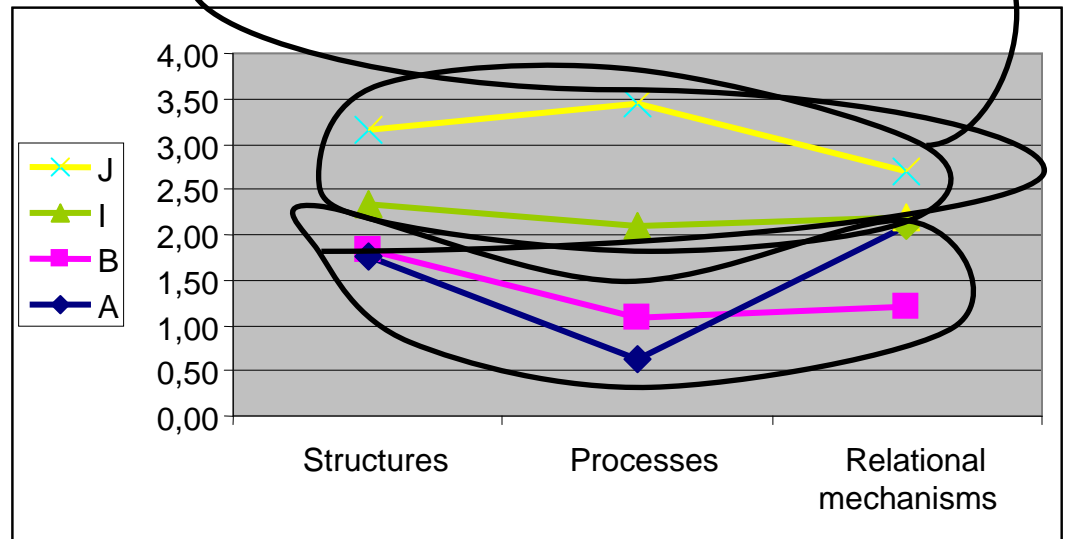
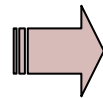
	Organisation					
	Maturity					Rationale
IT strategy committee at level of board of directors	0	1	2	3	4	5
IT expertise at level of board of directors	0	1	2	3	4	5
(IT) audit committee at level of board of directors	0	1	2	3	4	5
CIO on executive committee	0	1	2	3	4	5
CIO reporting to CEO and/or COO	0	1	2	3	4	5
IT steering committee (IT investment evaluation / prioritisation at executive / senior management level)	0	1	2	3	4	5
IT governance function / officer	0	1	2	3	4	5
Security / compliance / risk officer	0	1	2	3	4	5
IT project steering committee	0	1	2	3	4	5
IT security steering committee	0	1	2	3	4	5
Architecture steering committee	0	1	2	3	4	5
Integration of governance/alignment tasks in roles&responsibilities	0	1	2	3	4	5
Strategic information systems planning	0	1	2	3	4	5
IT performance measurement (e.g. IT balanced scorecard)	0	1	2	3	4	5
Portfolio management (incl. business cases, information economics, ROI, payback)	0	1	2	3	4	5
Charge back arrangements - total cost of ownership (e.g. activity based costing)	0	1	2	3	4	5
Service level agreements	0	1	2	3	4	5
IT governance framework COBIT	0	1	2	3	4	5
IT governance assurance and self-assessment	0	1	2	3	4	5
Project governance / management methodologies	0	1	2	3	4	5
IT budget control and reporting	0	1	2	3	4	5
Benefits management and reporting	0	1	2	3	4	5
COSO / ERM	0	1	2	3	4	5
Job-rotation	0	1	2	3	4	5
Co-location	0	1	2	3	4	5
Cross-training	0	1	2	3	4	5
Knowledge management (on IT governance)	0	1	2	3	4	5
Business/IT account management	0	1	2	3	4	5
Executive / senior management giving the good example	0	1	2	3	4	5
Informal meetings between business and IT executive/senior management	0	1	2	3	4	5
IT leadership	0	1	2	3	4	5
Corporate internal communication addressing IT on a regular basis	0	1	2	3	4	5
IT governance awareness campaigns	0	1	2	3	4	5
Other practices						
General remarks						

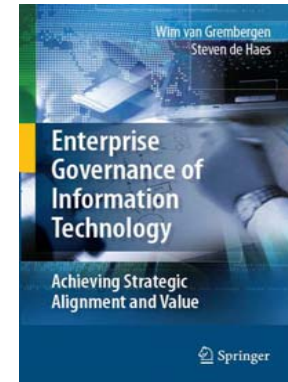
The relationship between EGIT and business/IT alignment

*Business/IT
alignment maturity*



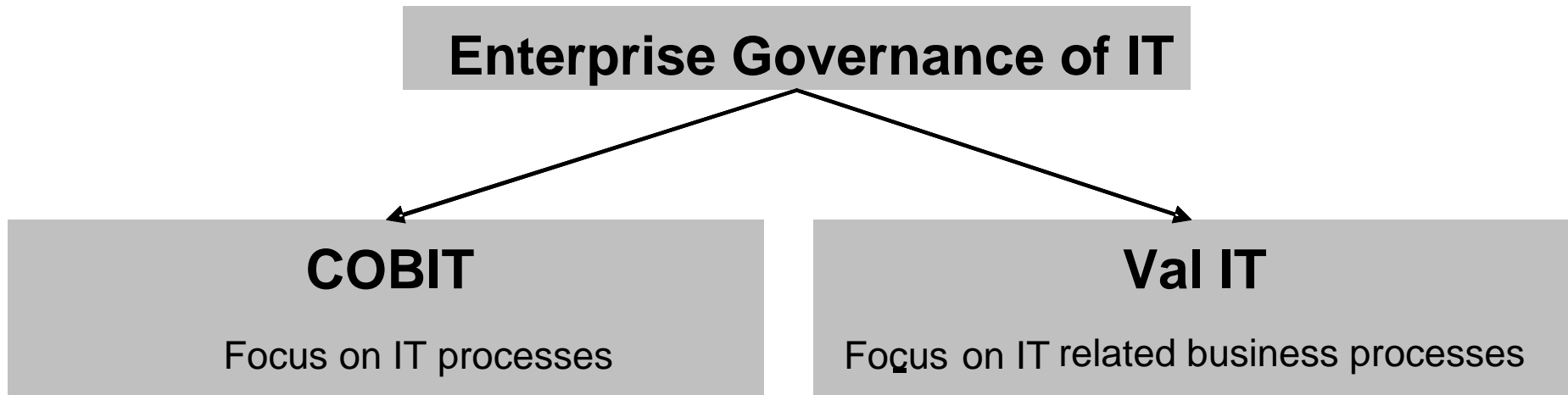
*Maturity of IT
governance
practices*



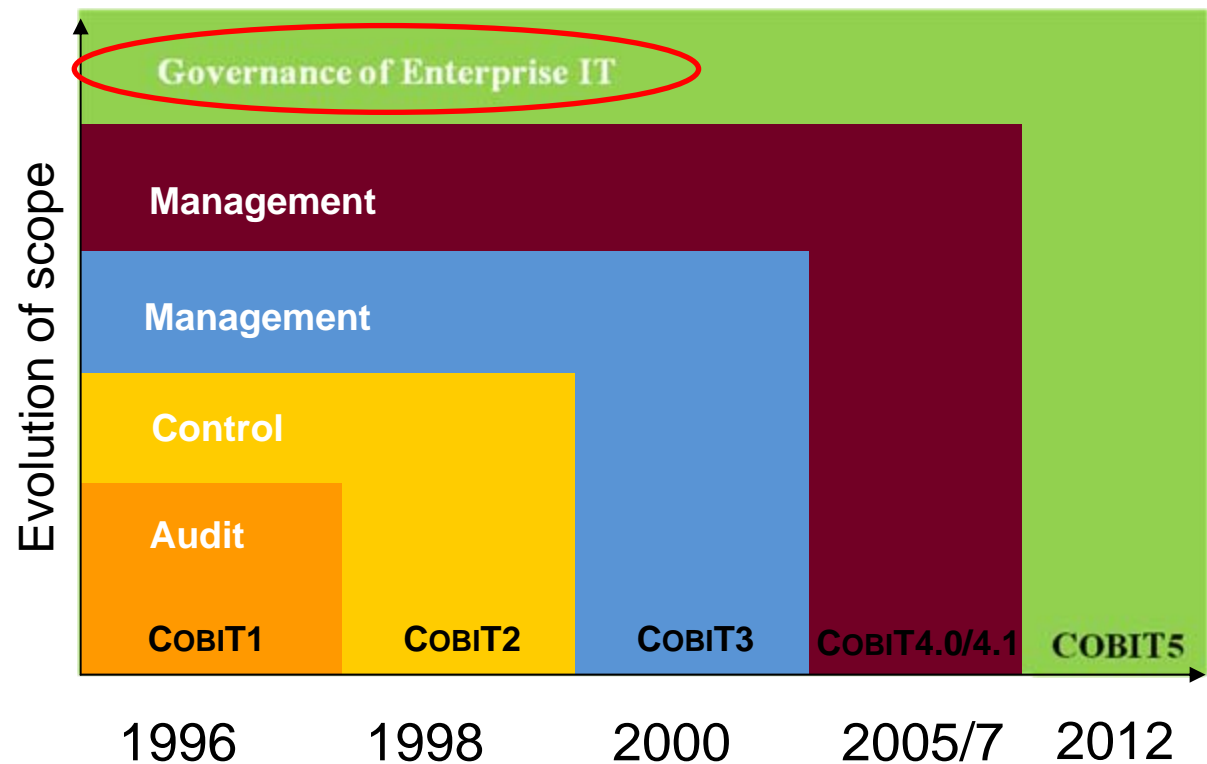


COBIT 5 framework for EGIT

COBIT and VAL IT as frameworks for Enterprise Governance of IT

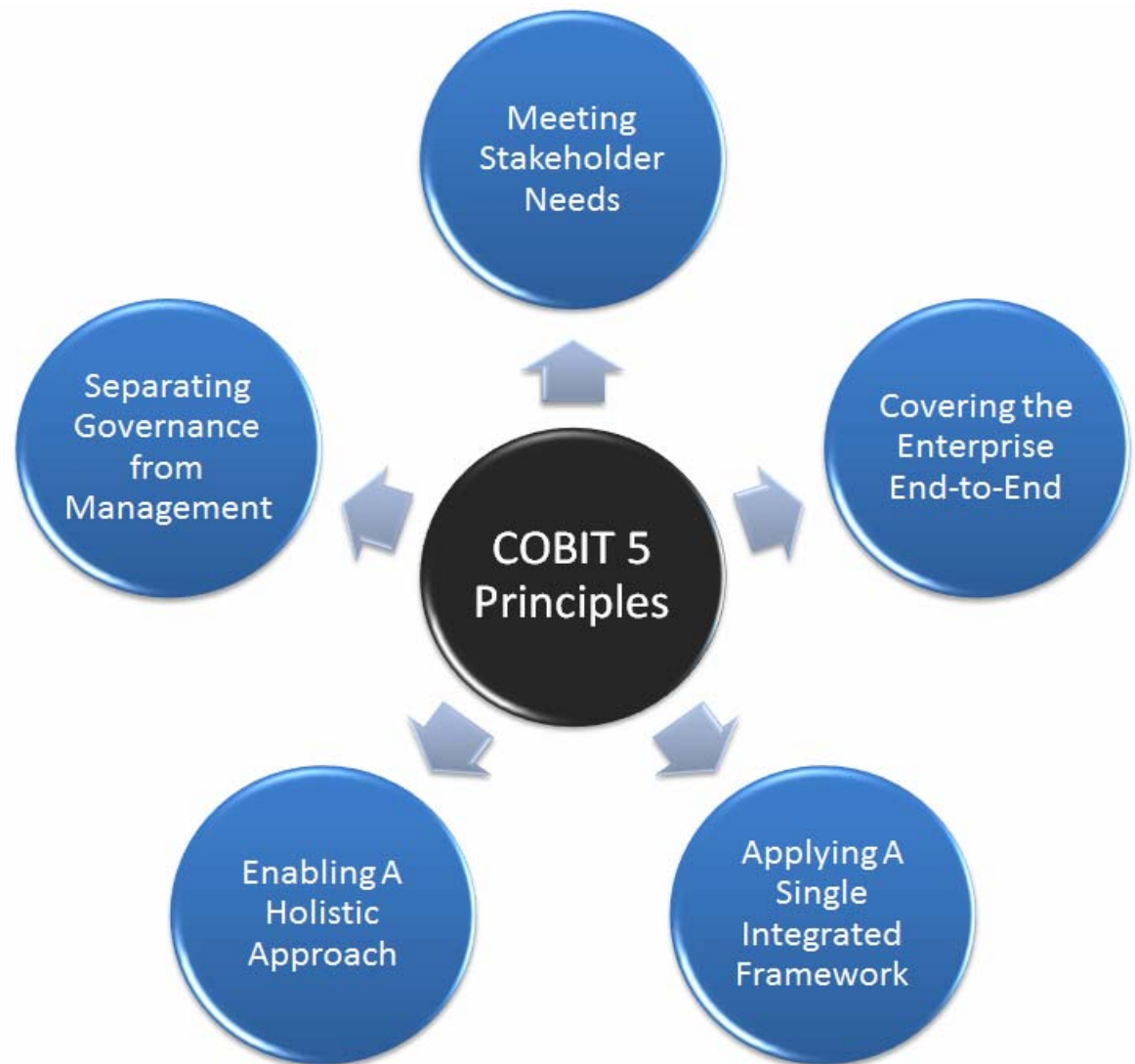


Introduction to COBIT 5



Synopsis:

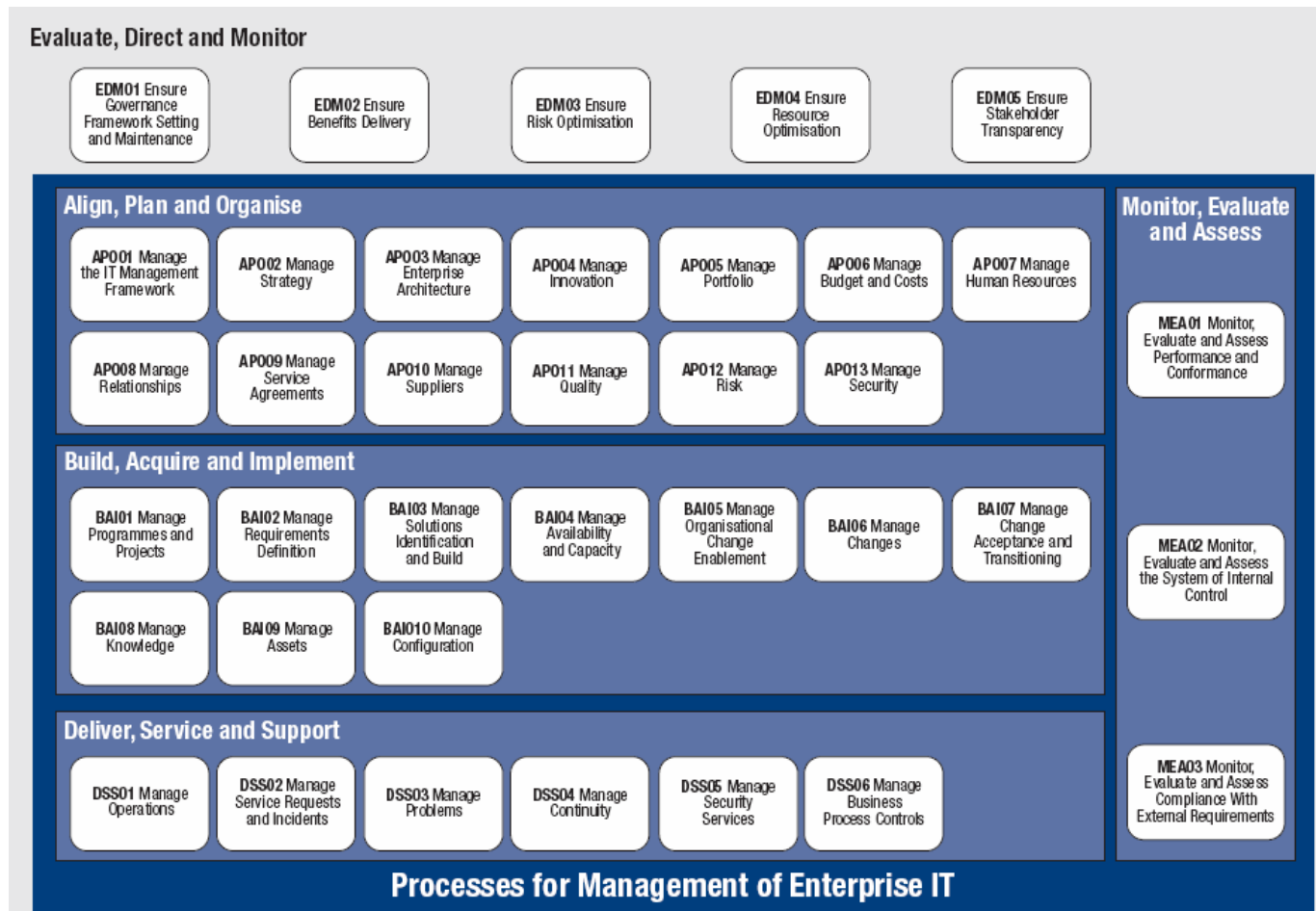
COBIT 5 brings together **five principles** that allow the enterprise to build an effective **governance and management** framework based on a holistic set of **seven enablers** that optimises information and technology investment and use for the benefit of stakeholders.



Synopsis:

37 Processes:

- EDM – Governance Processes
- APO, BAI & DSS – Management Processes



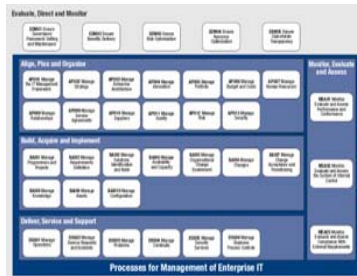
Source: COBIT® 5, figure 16. © 2012 ISACA®

1. Meet Stakeholder Needs

Synopsis:

- Stakeholder needs have to be transformed into an enterprise's actionable strategy.
- The COBIT 5 goals cascade translates stakeholder needs into specific, actionable and customised goals within the context of the enterprise, IT-related goals and enabler goals.





Portfolio of competitive products and services

IT Related Goals			Financial				Customer					Internal				Learning & Growth		
Corporate	1	Alignment of IT and business strategy	S	S	S	P		P	S	P	P	S	P	S	P		S	S
	2	IT compliance with external laws and regulations	P	S												P		
	3	Commitment of executive management for taking IT decisions		S	S	P				S	S		S		P		S	S
	4	Managed IT related business risks	S	P					P	S					S		S	S
	5	Realised benefits from IT enabled investments and services portfolio			P	P	S			S		S	S	P		S		S
	6	Transparency of IT costs, benefits and risk		S		S	P				S	P		P				
Customer	7	IT services in line with business requirements			P	P		P	S	S			P	S	S		S	S
	8	Adequate use of applications, information and technology solutions		S	S	S		S	S			S	S	S		S		S
Internal	9	IT agility		S	P	S		S		P			P		S	S		P
	10	Security of information and processing infrastructure	P	P					P								P	
	11	Optimisation of IT infrastructure, resources and capabilities			S	P				S		P	S	P		S		S
	12	Integration of applications and technology into business processes			P	S		S		S			P	S	S	S		S
				S	S	P		S				S		S	S	S		S
			S		S	S				P			S					S
Learning & Growth			S	S												P		
	16	Competent and motivated IT people		P	S	S		S		S					P		P	S
	17	Knowledge, expertise and initiatives for business innovation			P	S		S		P	S		S		S	S		P

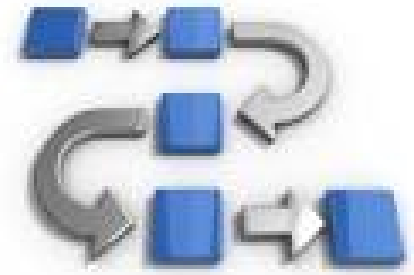
Integration of applications into business processes

Integration of applications into business processes

COBIT Processes			IT Related Goals																
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
			Corporate						Customer			Internal						Learning & Growth	
Build, Acquire & Implement	BAI1	Manage programmes and projects	S		S	P	P	S	S	S			S		P				S
	BAI2	Define Requirements	P	S	S	S	S	S	P	S	S	S	S	P	S	S			S
	BAI3	Identify & Build Solutions	S			S	S		P	S			S	S	S	S			S
	BAI4	Manage Availability and Capacity				S	S		S	S	S		P			S			S
	BAI5	Enable Organisational Change	S		S		S		S	S	S		S	S	S			S	S
	BAI6	Manage changes				P	S		S	S	S	S	S	S	S	S	S		S
	BAI7	Accept & Transition of Change				S	S		S	S	S			P	S		S		S
	BAI8	Knowledge Management	S				S		S	S	S		S			S		S	P

2. Covering the Enterprise End-to-end

- COBIT 5 addresses the governance and management of information and related technology from an enterprise-wide, end-to-end perspective.
- This means that COBIT 5:
 - Integrates governance of enterprise IT into enterprise governance, i.e., the governance system for enterprise IT proposed by COBIT 5 integrates seamlessly in any governance system because COBIT 5 aligns with the latest views on governance.
 - Covers all functions and processes within the enterprise; **COBIT 5 does not focus only on the 'IT function'**, but treats information and related technologies as assets that need to be dealt with just like any other asset by everyone in the enterprise



2. Covering the Enterprise End-to-end RACI

EDM02 RACI Chart																										
Key Governance Practice	Board	Chief Executive Officer	Chief Financial Officer	Chief Operating Officer	Business Executives	Business Process Owners	Strategy Executive Committee	Steering (Programmes/Projects) Committee	Project Management Office	Value Management Office	Chief Risk Officer	Chief Information Security Officer	Architecture Board	Enterprise Risk Committee	Head Human Resources	Compliance	Audit	Chief Information Officer	Head Architect	Head Development	Head IT Operations	Head IT Administration	Service Manager	Information Security Manager	Business Continuity Manager	Privacy Officer
	A	R	R	C	R		R			C	C		C	C	C	C	C	R	C	C	C					
	A	R	R	C	R	I	R	I	I	I	I	I	I	I	I	I	I	R	C	I	I	I	I	I	I	
	A	R	R	C	R		R			R	C	C	C	C	C	C	C	R	C	C	C					

Roles and Organisational Structures

BUSINESS EXECUTIVE	A senior management individual accountable for the operation of a specific business unit or subsidiary
BUSINESS PROCESS OWNER	An individual accountable for the performance of a process in realising its objectives, driving process improvement and approving process changes.
STRATEGY (IT EXECUTIVE) COMMITTEE	A group of senior executives appointed by the board to ensure that the board is involved in and kept informed of major IT-related matters and decisions. The committee is accountable for managing the portfolios of IT-enabled investments, IT services and IT assets, ensuring that value is delivered and risks are managed. The committee is normally chaired by a board member, not the CIO.
(PROJECT AND PROGRAMME) STEERING COMMITTEES	A group of stakeholders and experts who are accountable for guidance of programmes and projects, including management and monitoring of plans, allocation of resources, delivery of benefits and value, and management of programme and project risks
ARCHITECTURE BOARD	A group of stakeholders and experts who are accountable for guidance on enterprise architecture-related matters and decisions, and for setting architectural policies and standards
ENTERPRISE RISK COMMITTEE	The group of executives of the enterprise who are accountable for the enterprise-level collaboration and consensus required to support enterprise risk management activities and decisions. An IT risk council may be established to consider IT risk in more detail and advise the Enterprise Risk Committee.
HEAD OF HUMAN RESOURCES	The most senior official of an enterprise who is accountable for planning and policies with respect to all human resources in that enterprise
COMPLIANCE	The function in the enterprise responsible for guidance on legal, regulatory and contractual compliance
AUDIT	The function in the enterprise responsible for provision of internal audits

Roles and Organisational Structures

HEAD OF ARCHITECT	A senior individual accountable for the enterprise architecture process
HEAD OF DEVELOPMENT	A senior individual accountable for IT-related solution development processes
HEAD OF IT OPERATIONS	A senior individual accountable for the IT operational environments and infrastructure
HEAD OF IT ADMINISTRATION	A senior individual accountable for IT-related records and responsible for supporting IT-related administrative matters
PROGRAMME AND PROJECT MANAGEMENT OFFICE (PMO)	The function responsible for supporting programme and project managers, and gathering, assessing and reporting information about the conduct of their programmes and constituent projects
VALUE MANAGEMENT OFFICE (VMO)	The function that acts as the secretariat for managing investment and service portfolios, including assessing and advising on investment opportunities and business cases, recommending value governance/management methods and controls, and reporting on progress on sustaining and creating value from investments and services
SERVICE MANAGER	An individual who manages the development, implementation, evaluation and on-going management of new and existing products and services for a specific customer (user) or group of customers (users)
INFORMATION SECURITY MANAGER	An individual who manages, designs, oversees and/or assesses an enterprise's information security
BUSINESS CONTINUITY MANAGER	An individual who manages, designs, oversees and/or assesses an enterprise's business continuity capability, to ensure that the enterprise's critical functions continue to operate following disruptive events
PRIVACY OFFICER	An individual who is responsible for monitoring the risks and business impacts of privacy laws and for guiding and co-ordinating the implementation of policies and activities that will ensure that the privacy directives are met. Also called 'Data Protection Officer'

3. Applying a Single Integrated Framework

COBIT 5 aligns with the latest relevant other standards and frameworks used by enterprises:

- Enterprise: COSO, COSO ERM, ISO/IEC 9000, ISO/IEC 31000
- IT-related: ISO/IEC 38500, ITIL, ISO/IEC 27000 series, TOGAF, PMBOK/PRINCE2, CMMI, etc.

- This allows the enterprise to use COBIT 5 as the overarching governance and management framework integrator.
- ISACA plans a capability to facilitate COBIT user mapping of practices and activities to third-party references.

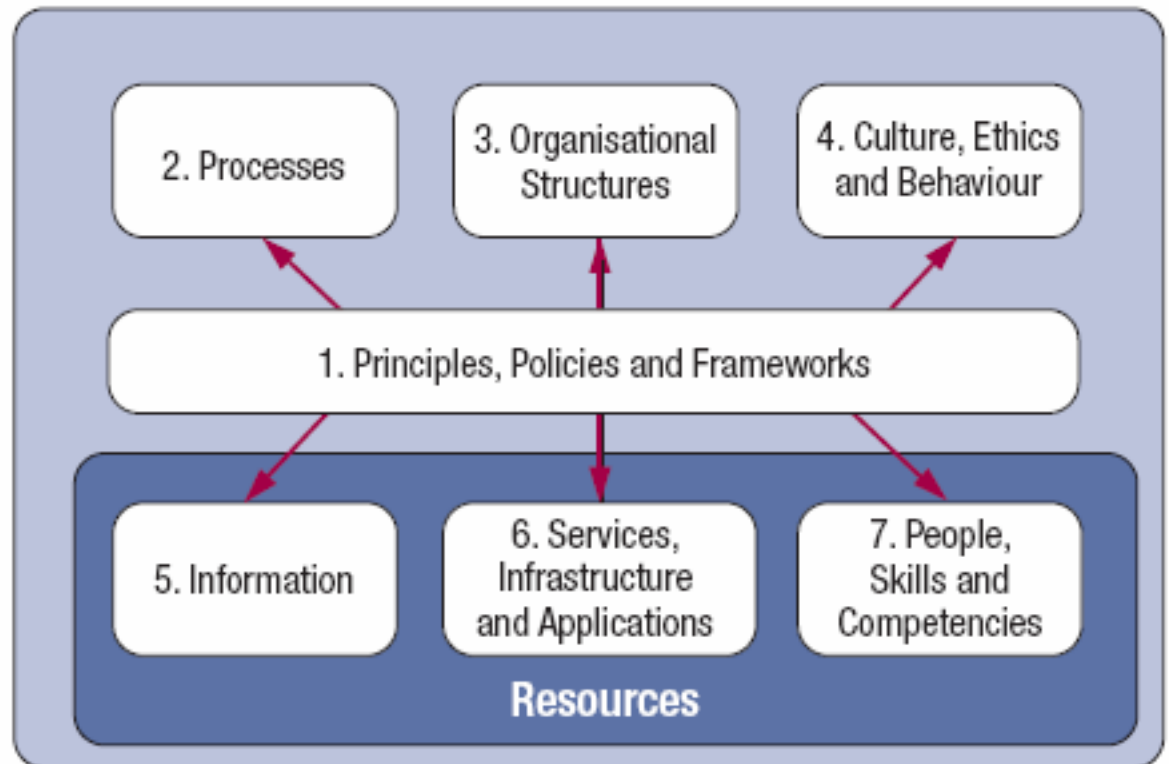


4. Enabling a Holistic Approach (Enablers)

Synopsis:

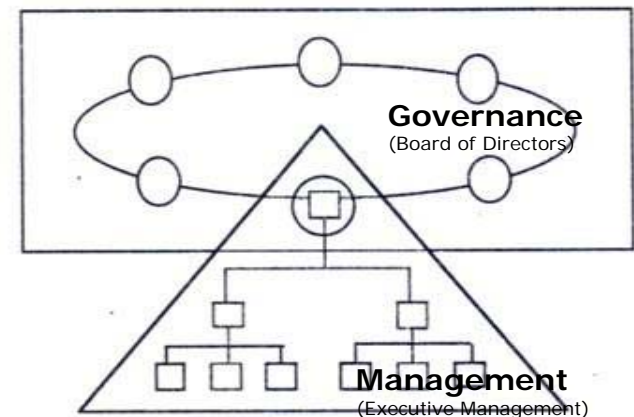
COBIT 5 has 7 enablers:

- Factors that, individually and collectively, influence whether something will work - in the case of COBIT, governance and management over enterprise IT
- Driven by the goals cascade, i.e., higher-level IT-related goals define what the different enablers should achieve



5. Separating Governance From Management

- The COBIT 5 framework makes a clear distinction between Governance and Management.
- These two disciplines:
 - Encompass different types of activities.
 - Require different organisational structures.



- **Governance:** In most enterprises, governance is the responsibility of the board of directors under the leadership of the chairperson.
- **Management:** In most enterprises, management is the responsibility of the executive management under the leadership of the CEO.

One COBIT 5 Process as an Example:

APO 09 - Manage Service Agreements

AP009 Manage Service Agreements	Area: Management Domain: Align, Plan and Organise
Process Description Align IT-enabled services and service levels with enterprise needs and expectations, including identification, specification, design, publishing, agreement, and monitoring of IT services, service levels and performance indicators.	
Process Purpose Statement Ensure that IT services and service levels meet current and future enterprise needs.	

Process Goals and Metrics	
Process Goal	Related Metrics
1. The enterprise can effectively utilise IT services as defined in a catalogue.	<ul style="list-style-type: none"> • Number of business processes with undefined service agreements
2. Service agreements reflect enterprise needs and the capabilities of IT.	<ul style="list-style-type: none"> • Percent of live IT services covered by service agreements • Percent of customers satisfied that service delivery meets agreed-on levels
3. IT services perform as stipulated in service agreements.	<ul style="list-style-type: none"> • Number and severity of service breaches • Percent of services being monitored to service levels • Percent of service targets being met

One COBIT 5 Process as an Example: APO 09 - Manage Service Agreements

AP009 RACI Chart																										
	Board	Chief Executive Officer	Chief Financial Officer	Chief Operating Officer	Business Executives	Business Process Owners	Strategy Executive Committee	Steering (Programmes/Projects) Committee	Project Management Office	Value Management Office	Chief Risk Officer	Chief Information Security Officer	Architecture Board	Enterprise Risk Committee	Head Human Resources	Compliance	Audit	Chief Information Officer	Head Architect	Head Development	Head IT Operations	Head IT Administration	Service Manager	Information Security Manager	Business Continuity Manager	Privacy Officer
Key Management Practice																										
AP009.01 Identify IT services.		C		R	R	R	C		I							I	I	R	I	C	C	C	A	I	I	
AP009.02 Catalogue IT-enabled services.					I	I			I							I	I	R	I	C	C	C	A	I	I	
AP009.03 Define and prepare service agreements.					R	C			C		C					C	C	R		C	R	R	A	C	C	
AP009.04 Monitor and report service levels.		I		I	I	R					C							I		I	I	I	A			
AP009.05 Review service agreements and contracts.					A	C			C		C					C	C	R		C	R	R	R	C	C	I

One COBIT 5 Process as an Example: APO 09 - Manage Service Agreements

Management Practice	Inputs		Outputs	
AP009.02 Catalogue IT-enabled services. Define and maintain one or more service catalogues for relevant target groups. Publish and maintain live IT-enabled services in the service catalogues.	From	Description	Description	To
	EDM04.01	Approved resources plan	Service catalogues	AP008.05
	EDM04.02	Communication of resourcing strategies		
	AP005.05	Updated portfolios of programmes, services and assets		
Activities				
1. Publish in catalogues relevant live IT-enabled services, service packages and service level options from the portfolio.				
2. Continually ensure that the service components in the portfolio and the related service catalogues are complete and up to date.				
3. Inform business relationship management of any updates to the service catalogues.				

The knowing-doing gap

- While organisations do recognise EGIT's importance, they are still struggling with getting such governance practices implemented and embedded into their organisations ('knowing-doing gap')
- Need for an organizational system, i.e. "the way a firm gets its people to work together to carry out the business". (De Wit and Meyer, 2005).

More information

- IT Alignment and Governance Research Institute
 - www.antwerpmanagementschool.be/ITAG
- Email
 - wim.vangrembergen@ua.ac.be
- Books & Publications
 - Van Grembergen W., De Haes S., Implementing Information Technology Governance: models, practices and cases, 255p., IGI Publishing, 2008
 - Van Grembergen W., De Haes S., Enterprise Governance of IT: achieving strategic alignment and value, 360p., Springer, 2009
 - International Journal on IT/Business Alignment and Governance (IJITBAG)
www.igi-global.com/IJITBAG
- Executive education
 - Executive Master in IT Governance & Assurance
 - Executive Master in Enterprise IT Architecture

