IM

# Information Management and Knowledge Management (IMKM)

## Lecture 7
## *IT Controlling & IT Governance*

TUM

Chair for Information Systems

# Lecture Schedule

## Information Systems Strategy

Business Value of IT

- Business IT Alignment
- Guest Lecture: Digital Leadership and the CIO Role
- IT-enabled Strategies
  - Digital Platforms

## Information Management

- **IT Controlling and IT Governance**
- IT Sourcing and IT Off-Shoring
- IT Security, Privacy and Risk Management
- Guest Lecture: Natural language processing for IM

## Knowledge Management

- Basics
- Tools
- Guest Lecture: Applications

# IMKM Lecture 7: IT Controlling & IT Governance

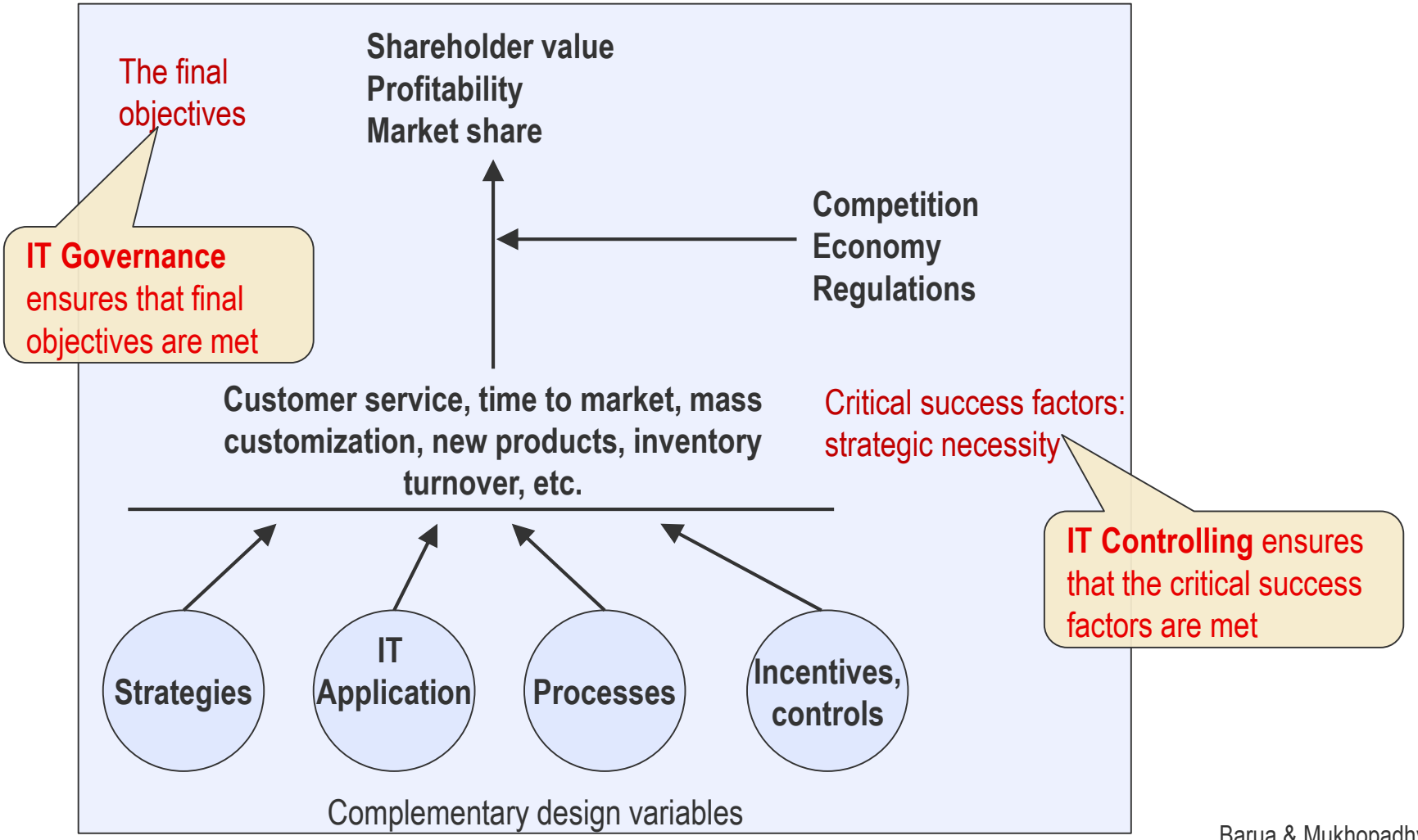
## Outline

1. **IT Controlling**
   1. Objectives and Functions
   2. Methods
2. IT Governance
   1. Definition and relation to Corporate Governance
   2. COBIT 2019

## Learning Objectives

- *You understand the objectives of IT controlling.*
- *You understand and can identify and differentiate the functions of IT controlling.*
- *You know and understand different methods of IT controlling.*
- *You know and understand IT governance and its relation to corporate governance.*
- *You know and understand what COBIT 2019 is and its six principles.*

# Relationship between IT Governance & IT Controlling




Barua & Mukhopadhyay (2004)

# Controlling and IT Controlling

**Controlling**

- a management concept for a future-oriented **corporate and profit controlling** and
- a strategy for safeguarding corporate existence and jobs.

- Provides **essential decision support** via recipient-oriented and future-oriented reporting.

**IT Controlling**

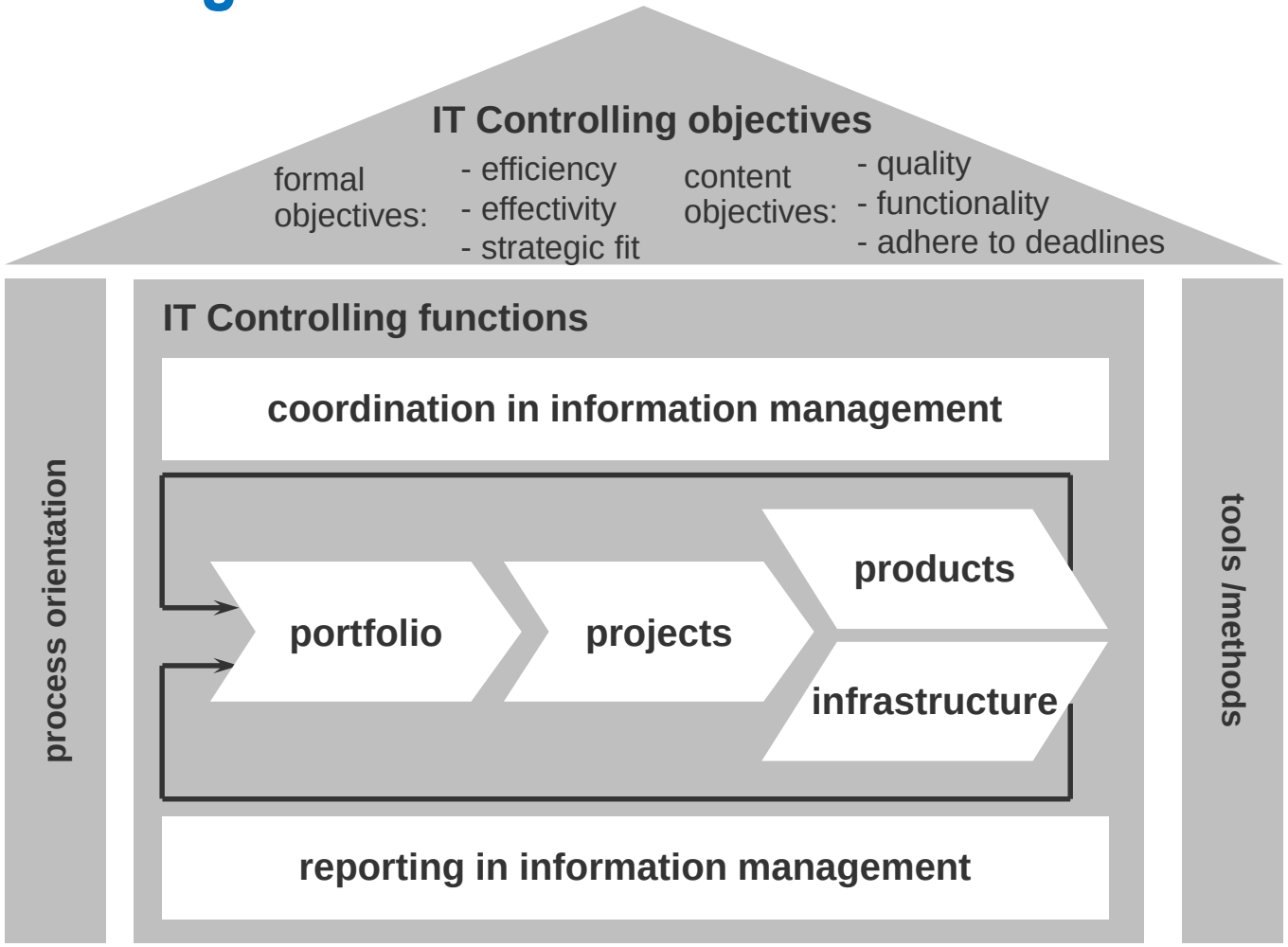
the controlling of IT in an organization

- guarantees **formal** objectives (efficiency & effectiveness) and
- **content** objectives (quality, functionality, adherence to schedule) of information processing.

- Not merely a supervision/ **elementary controlling** function, but rather a **coordination** function for information management.

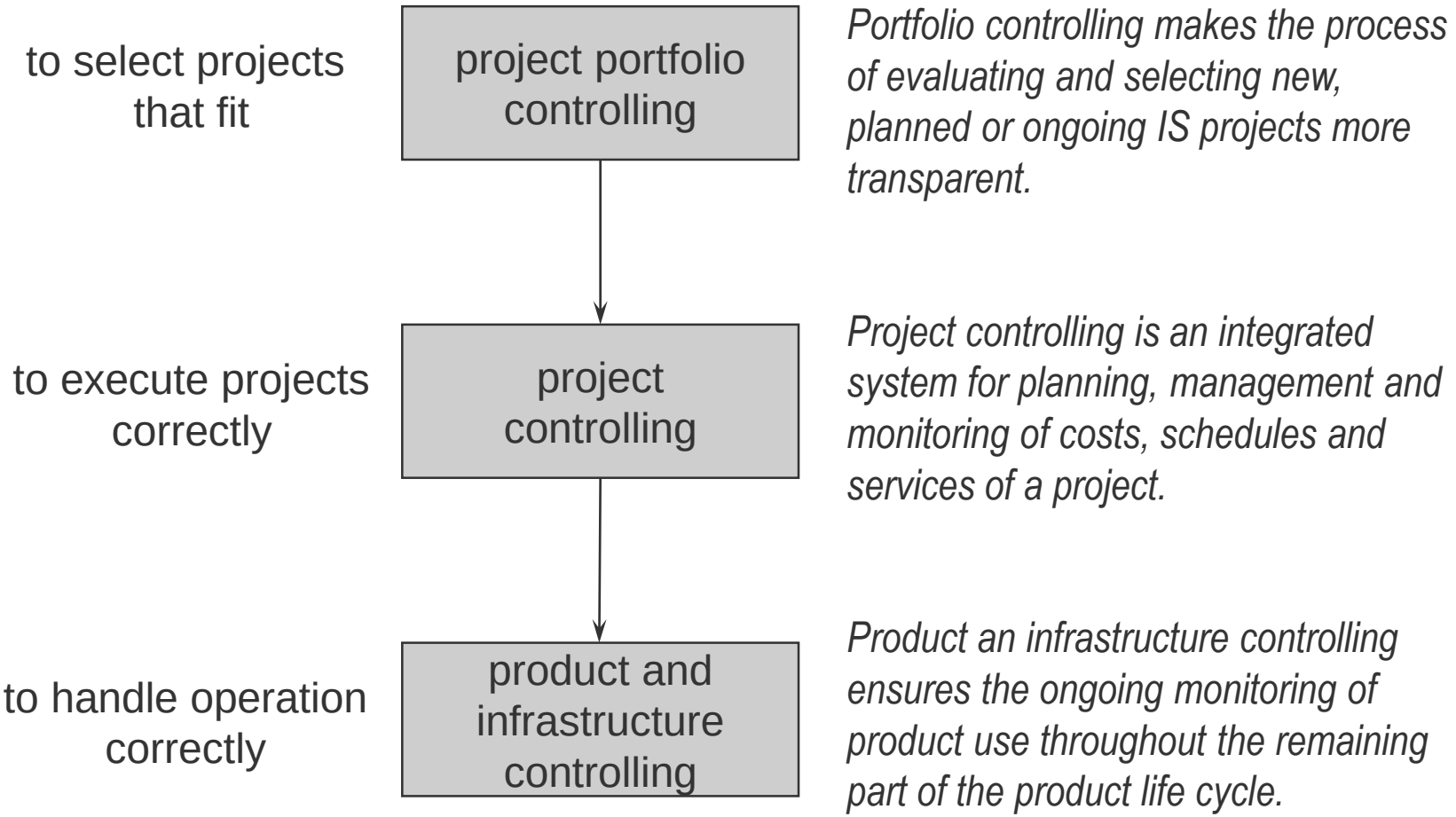
Gadatsch & Mayer (2014); Krcmar (2015), p. 497

# IT Controlling Framework



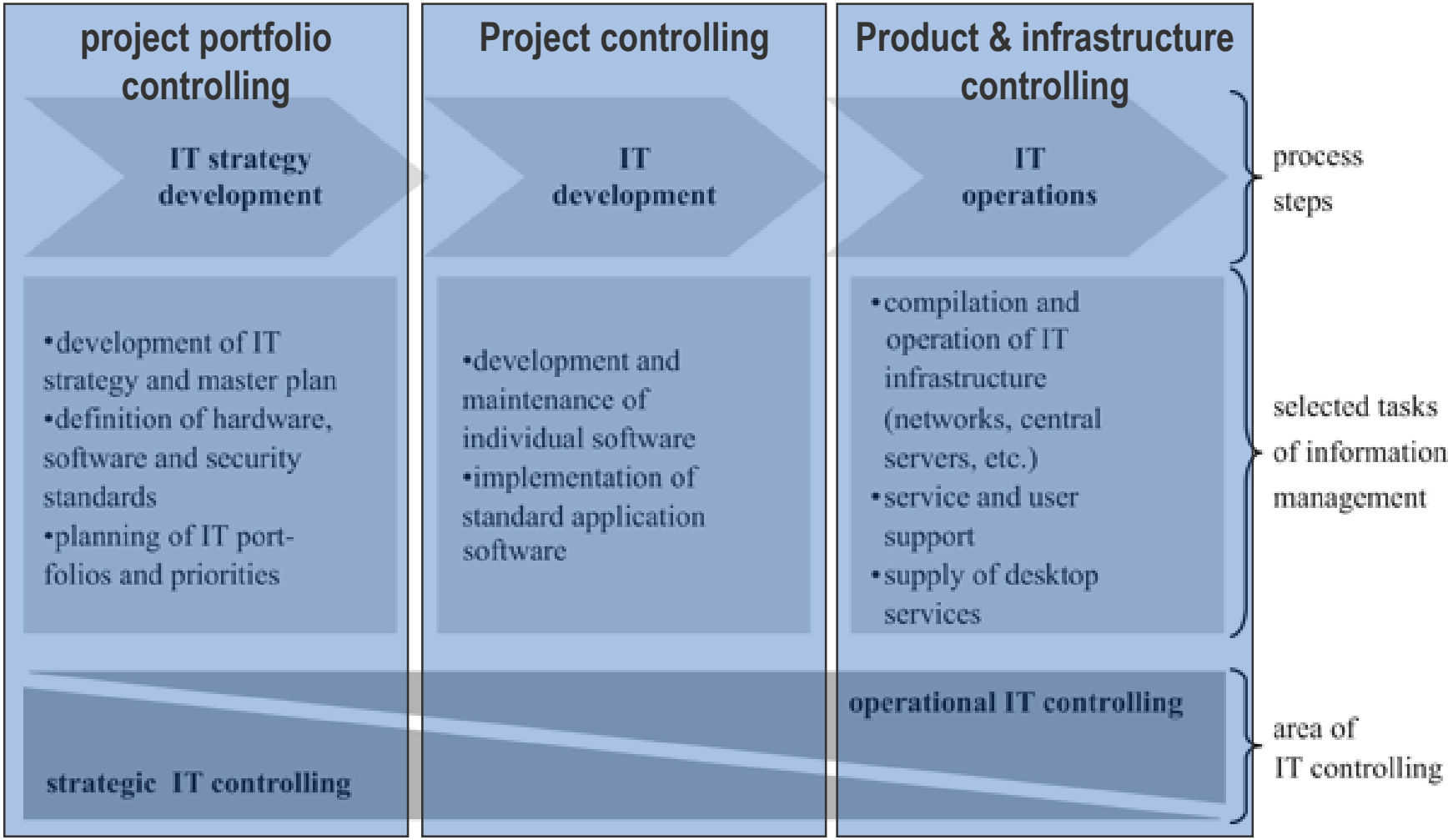

Krcmar (2015), p. 498

# IT Controlling Functions



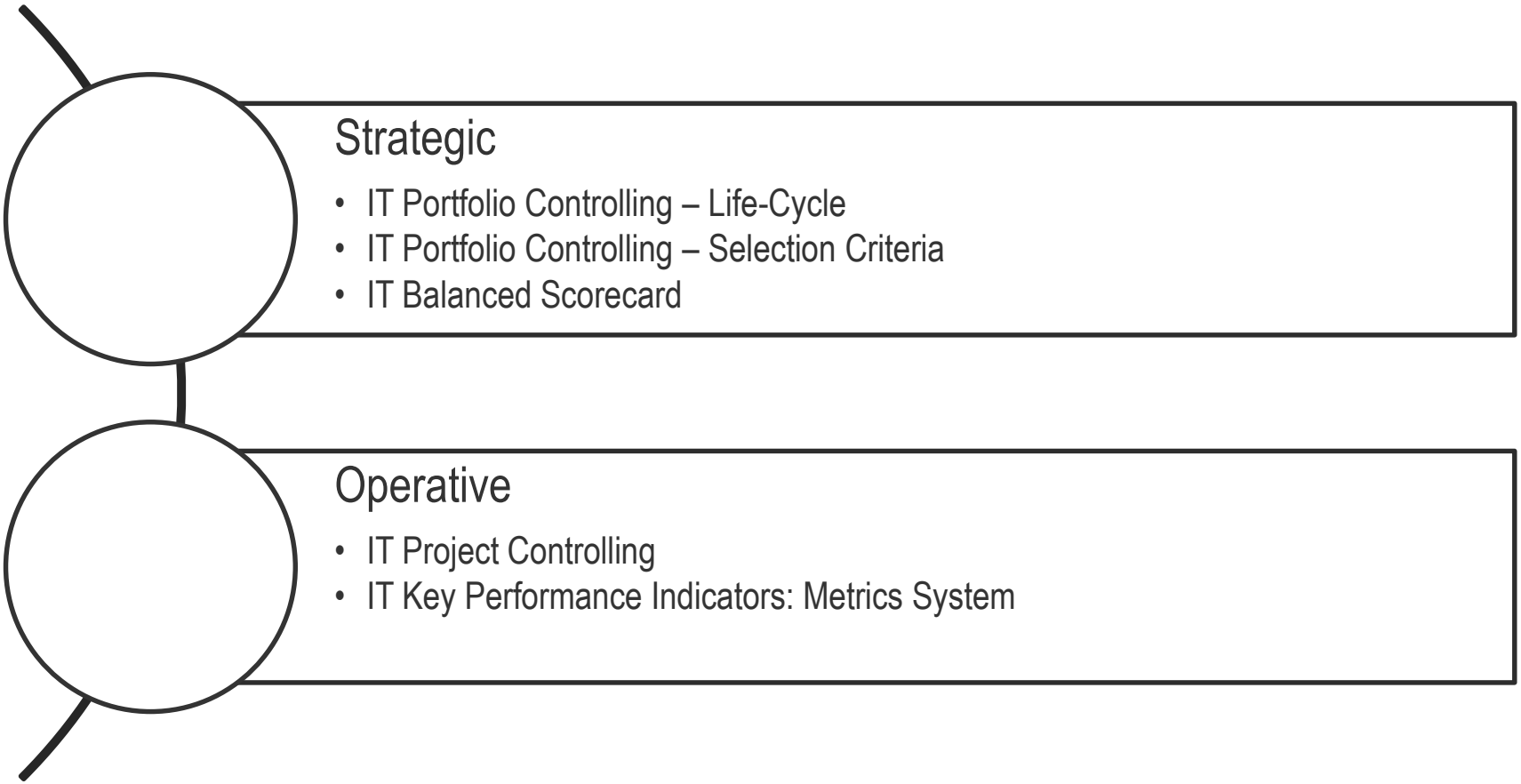

Krcmar (2015), p. 500ff

# IT Process Model & IT Controlling Functions



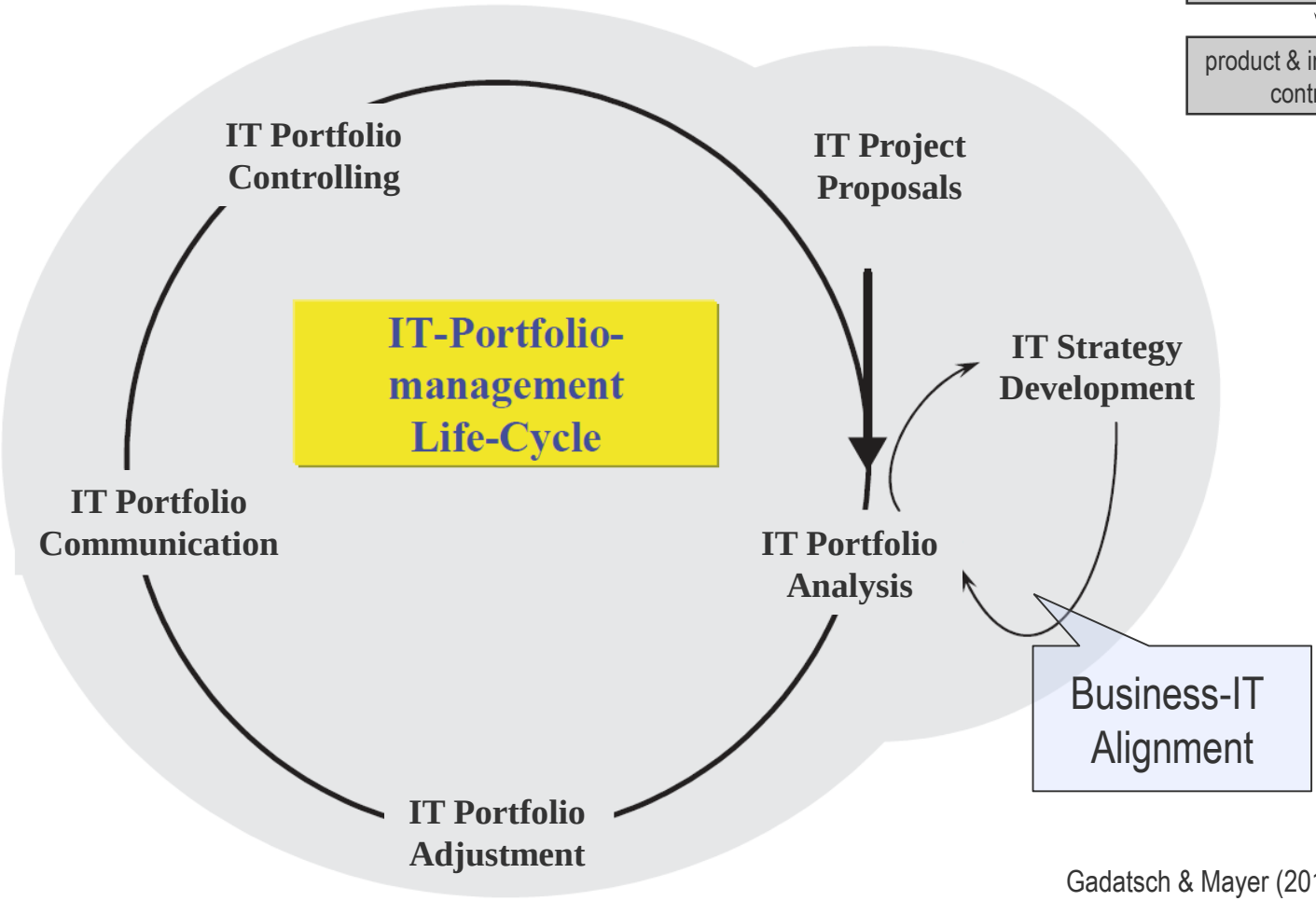

Gadatsch (2009)

# IT Controlling Methods Overview



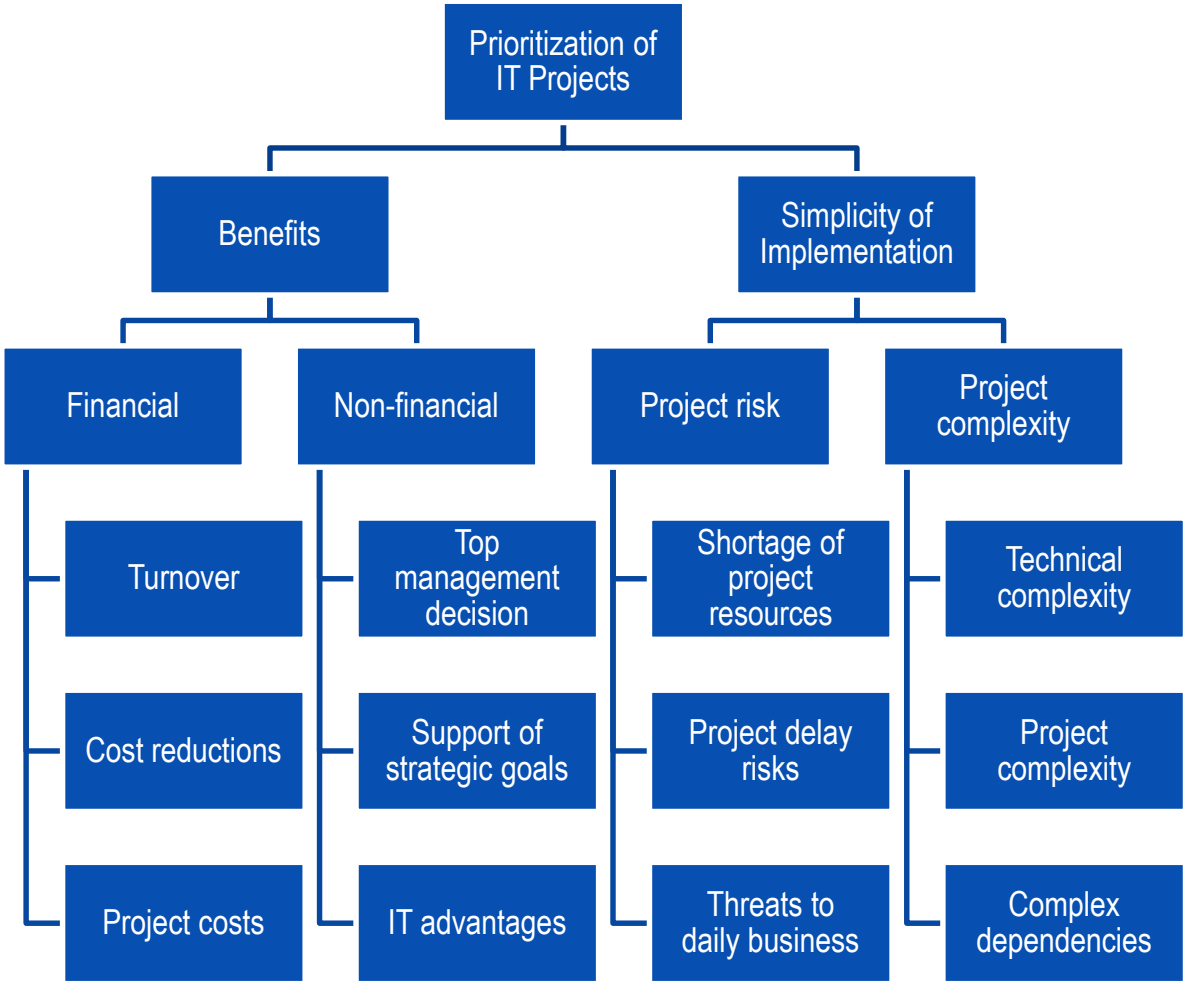
# IT Portfolio Controlling – Life-Cycle

project portfolio controlling
project controlling
product & infrastructure controlling




Gadatsch & Mayer (2014, p. 126)

# IT Portfolio Controlling – Selection Criteria




Gadatsch & Mayer (2014, p.123)

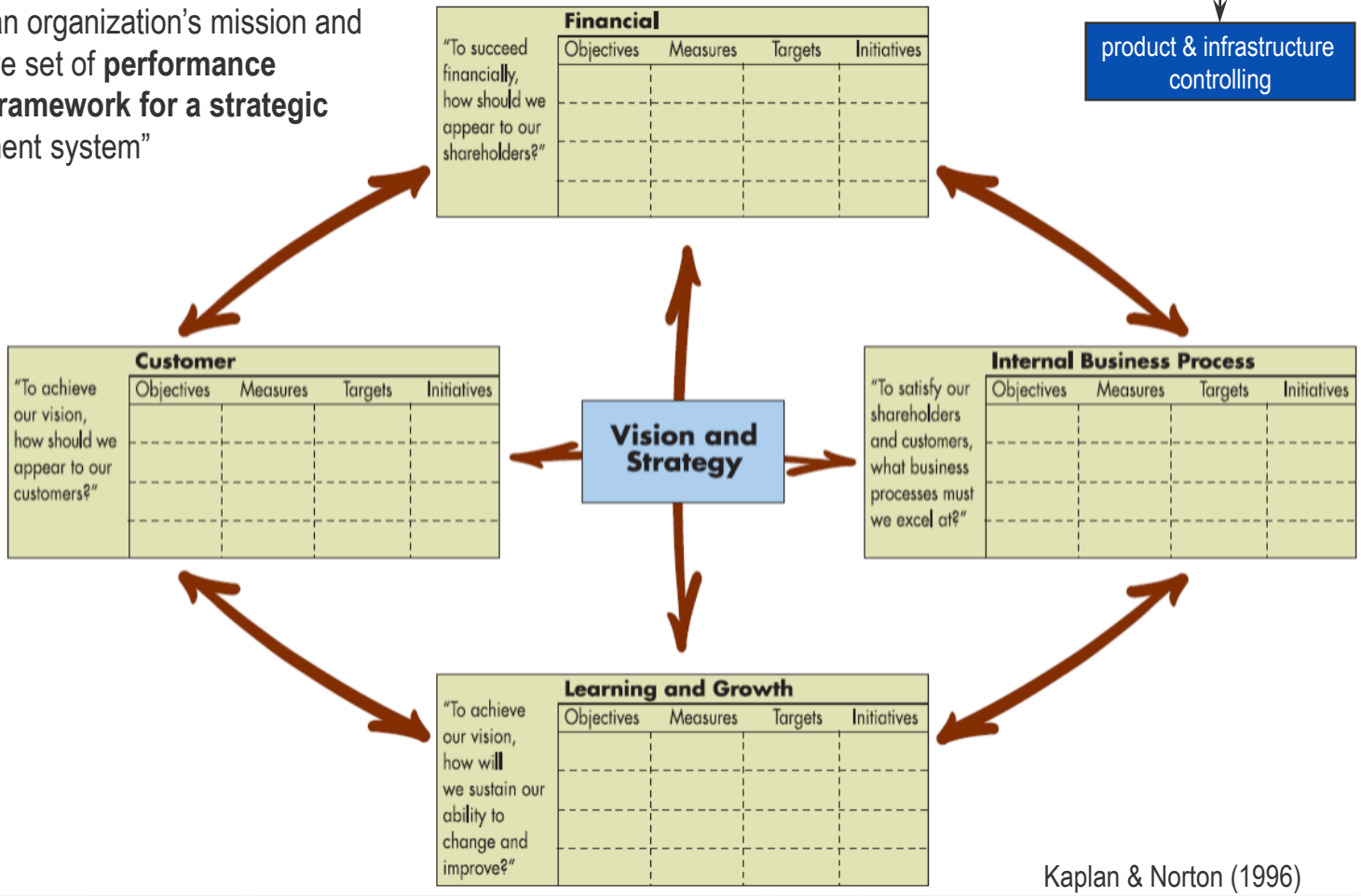
# Balanced Scorecard

project portfolio controlling

project controlling

product & infrastructure controlling

The Balanced Scorecard is a **performance measurement framework** that "**translates** an organization's mission and **strategy** into a comprehensive set of **performance measures** that provides the **framework for a strategic measurement** and management system" (Kaplan & Norton, 1996).

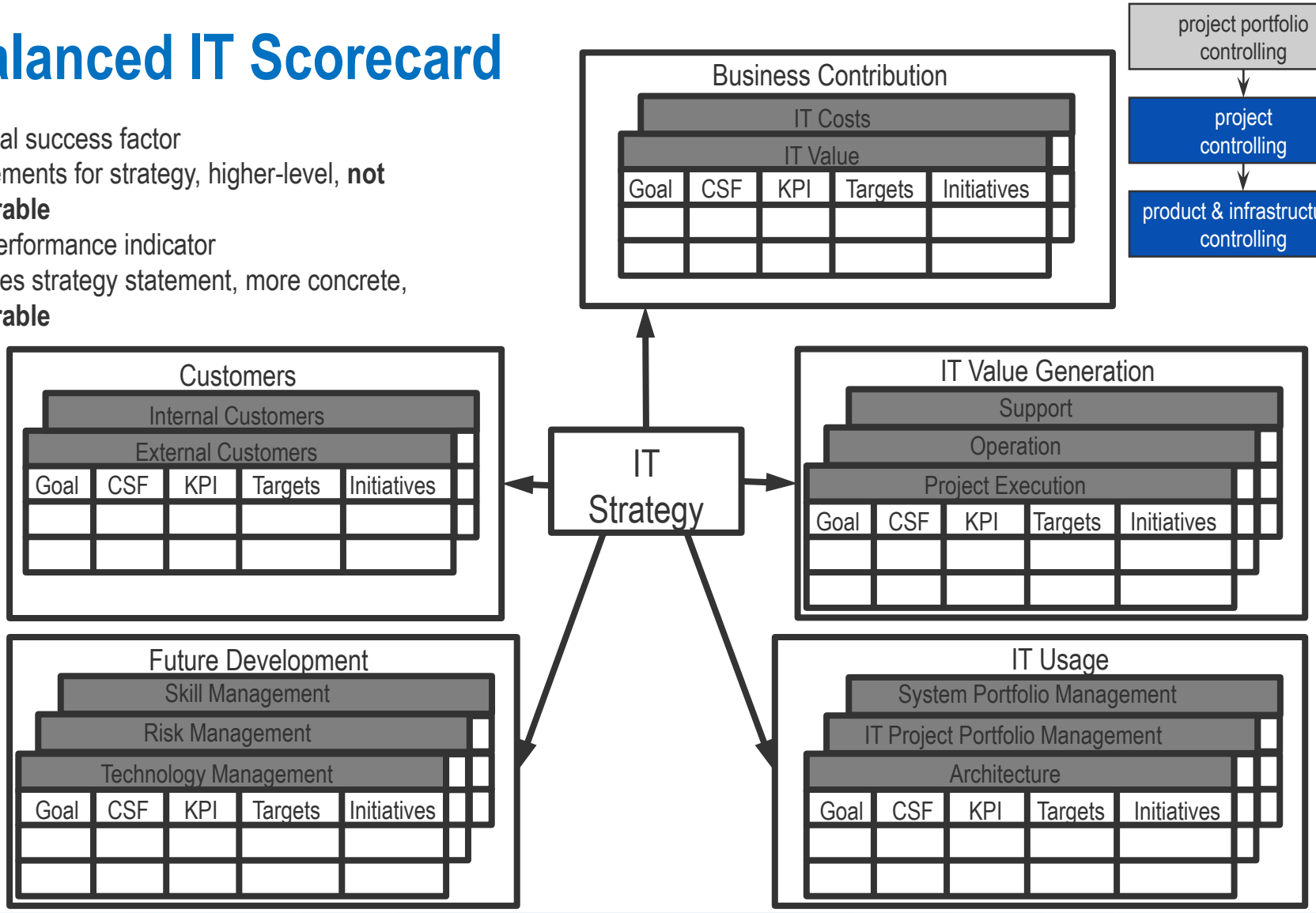



Kaplan & Norton (1996)

# Balanced IT Scorecard

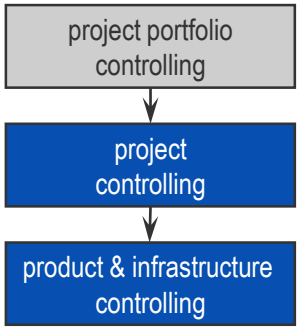
**CSF** = Critical success factor
- Vital elements for strategy, higher-level, **not measurable**

**KPI** = key performance indicator
- Quantifies strategy statement, more concrete, **measurable**




(Krcmar 2015, p. 513; Schmid-Kleemann 2004, p. 147)

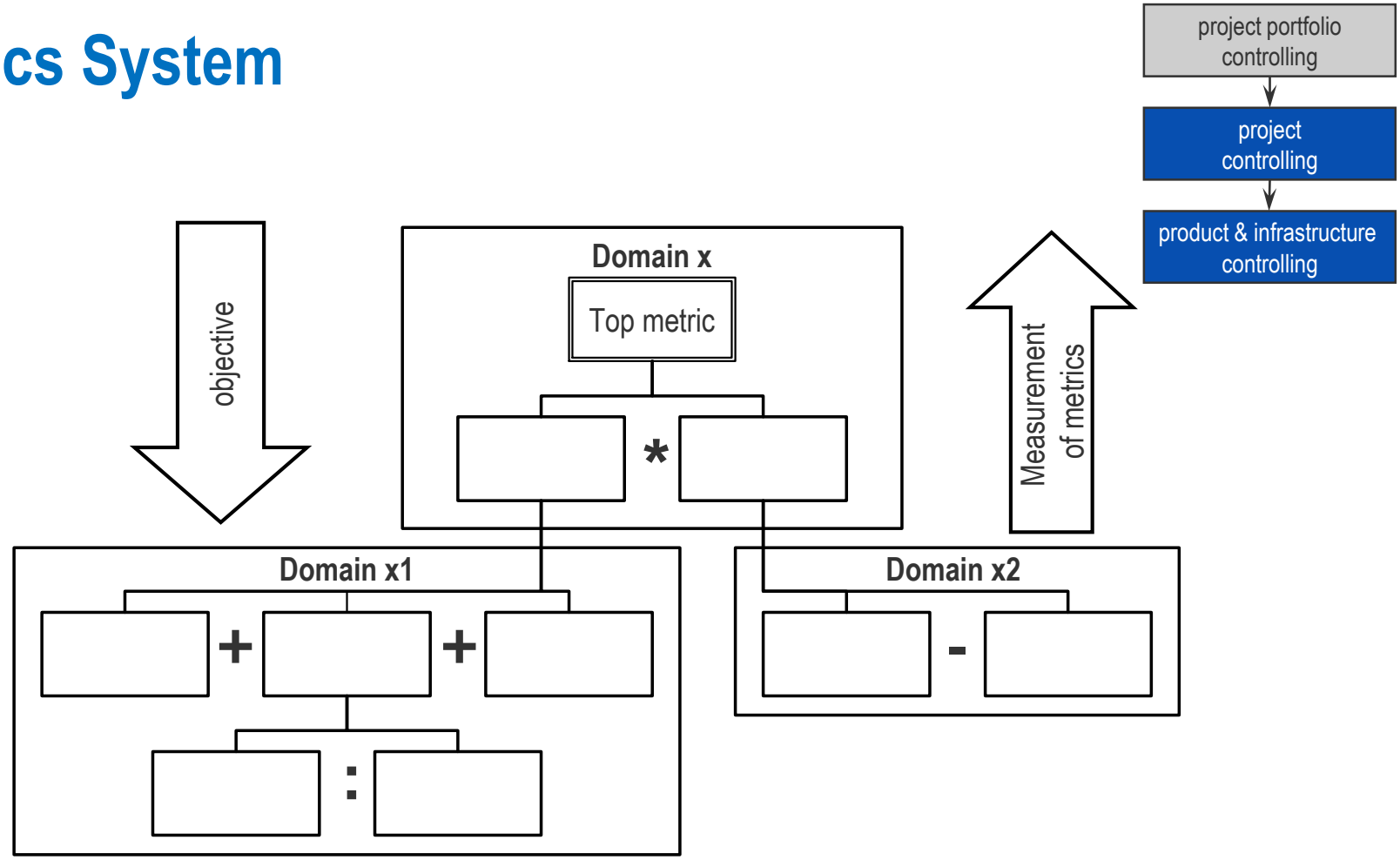
# Metrics System




- Metric: A **quantitative judgement** on a planned or actual **value** of a criteria of a steering object, at a certain point in time.

- Types of metrics
  - Steering metrics
  - Information metrics
  - Benchmarks
  - Quantitative vs. Qualitative metrics
  - Retrospective vs. Predicting metrics

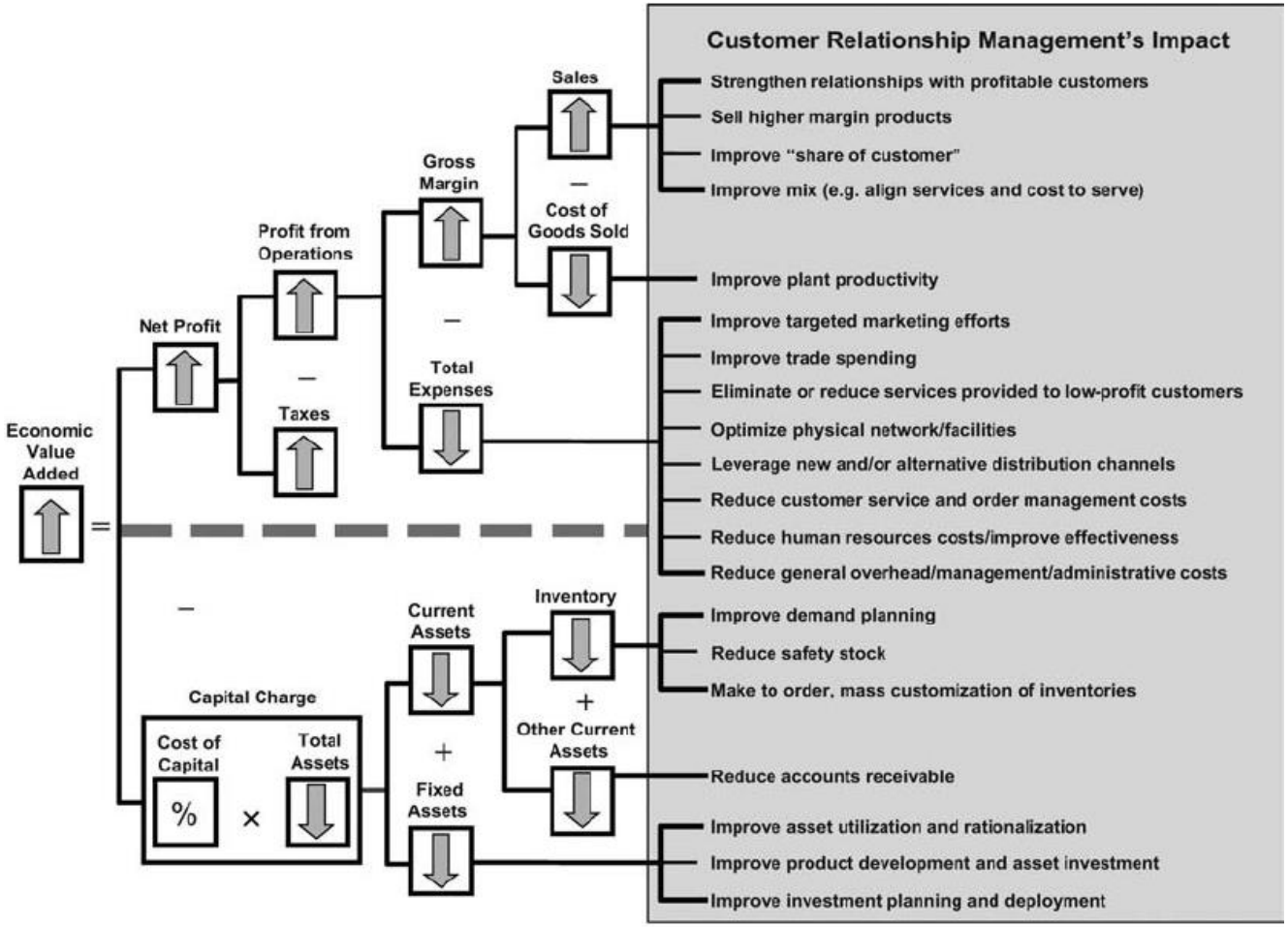
# Metrics System




Krcmar (2010), p. 553

# Metrics System

## Example: Economic Value Added



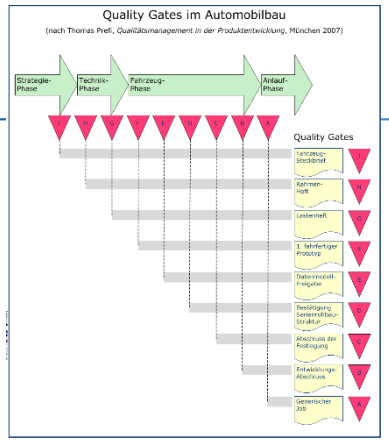

project portfolio controlling

project controlling

product & infrastructure controlling

Lambert (2008)

# IT Project Controlling




project portfolio controlling

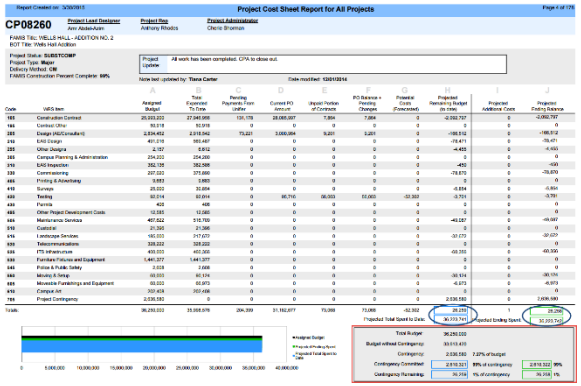
↓

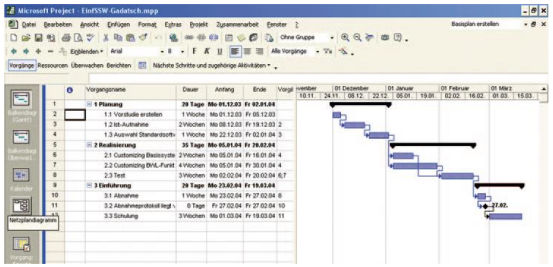
project controlling

↓

product & infrastructure controlling

| TYPE | COMPLEXITY OF COMPONENT | | | |
|---|---|---|---|---|
| | Low | Average | High | Total |
| External Inputs | __ *3= __ | __ *4 =__ | __ *6 =__ | |
| External Output | __ *4=__ | __ *5=__ | __ *7 =__ | |
| External Inquiries | __ *3=__ | __ *4=__ | __ *6 =__ | |
| Internal Logical files | __ *7=__ | __ *10=__ | __ *15 =__ | |
| External Interface File | __ *5=__ | __ *7=__ | __ *10 =__ | |
| TOTAL UAF | | | | |




**Quality**

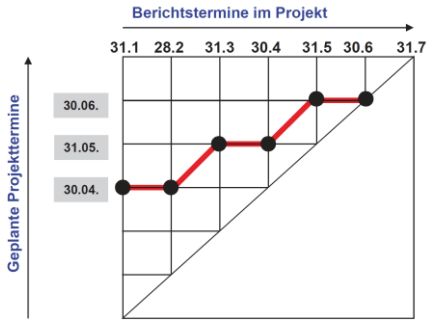
- Quality gates
- Customer reviews

**Cost**

- Estimation (Function Point analysis, COCOMO (Constructive Cost Model))
- Reporting

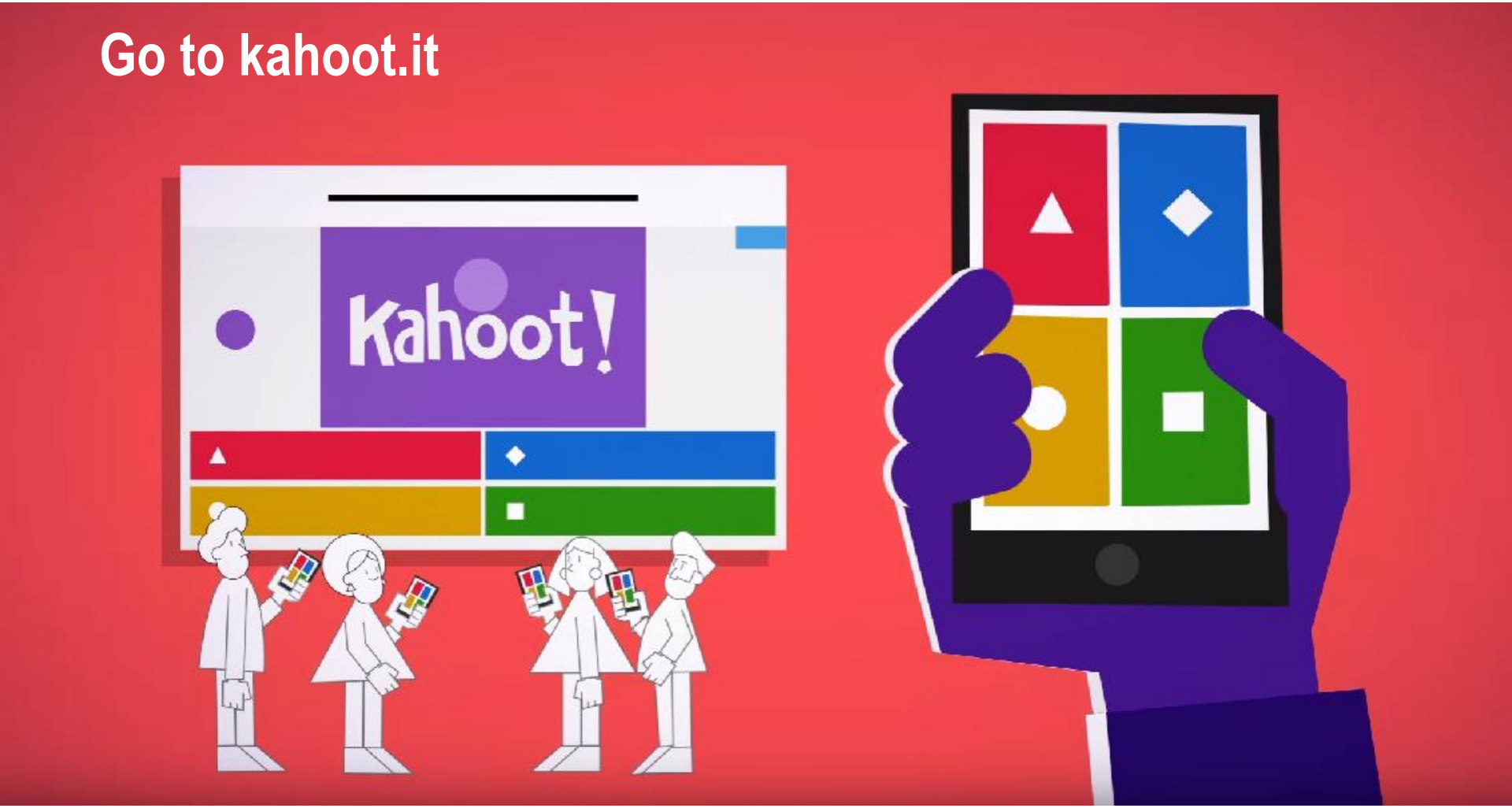
**Time**

- Milestones
- Gantt Chart



# Quiz Time!

## Go to kahoot.it



# IMKM Lecture 7: IT Controlling & IT Governance

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# The wirecard Scandal

”On 25 June 2020, Wirecard filed for insolvency after revelations that €1.9 billion was "missing", the termination and arrest of its CEO Markus Braun. Questions are raised with regards to the regulatory failure on the part of Federal Financial Supervisory Authority (BaFin), Germany's top financial watchdog, and possible malpractice of its long time auditor Ernst & Young.”

**Was this scandal related to governance?**

(Use yes/agree, no/disagree in Zoom)


https://www.ft.com/content/39087386-2114-403f-8f9b-ca24fdcc668c
https://en.wikipedia.org/wiki/Wirecard_scandal

# Why do we need Corporate Governance?

Corporations have two important virtues:

- They allow shareholders (investors) to reduce risk by **limiting their liability** to the value of their investment.
- They allow shareholders to **buy and sell their ownership interests** easily.

But there is a big problem that creates a **potential misalignment** of interests between shareholders and managers:

**The Separation of Ownership and Control!**

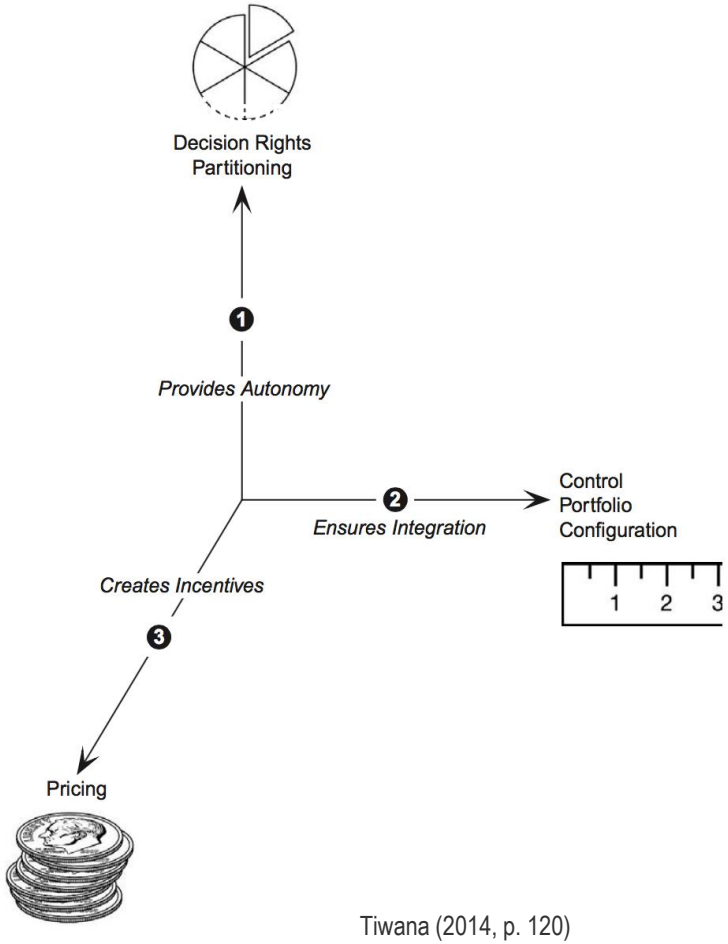
# What is Corporate Governance?

Corporate governance is the system by which business corporations are **directed and controlled**. The corporate governance structure specifies the distribution of **rights and responsibilities** among different participants in the corporation, such as the board, managers, shareholders and other stakeholders, and spells out the **rules and procedures** for making decisions on corporate affairs.

By doing this, it also provides the **structure** through which the company **objectives are set**, and the **means** of attaining those objectives and **monitoring** performance.

OECD (1999)

# Reminder: Platform Governance in an App Store



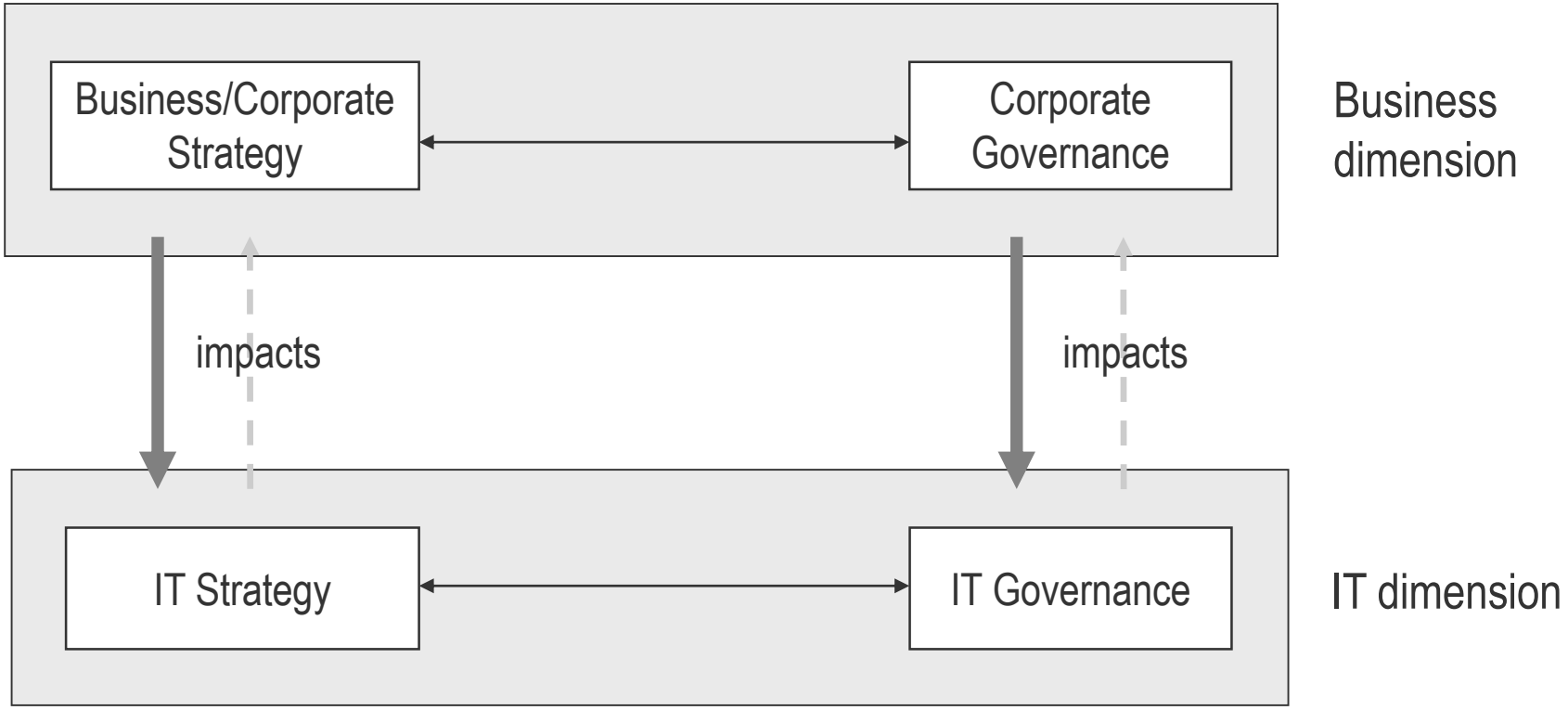

Tiwana (2014, p. 120)

How to influence the platform's ecosystem

**3 dimensions of platform governance:**

- *Decision rights partitioning – provide autonomy*
  The platform owner can transfer decision rights to the app developer to trigger innovation
- *Control portfolio design – ensure integration*
  The platform owner needs to control and guide the development process of third-party.
- *Pricing – create incentives*
  The platform owner needs to create incentives e.g. by sharing revenues with developers

# From Corporate Governance to IT Governance



# IT Governance

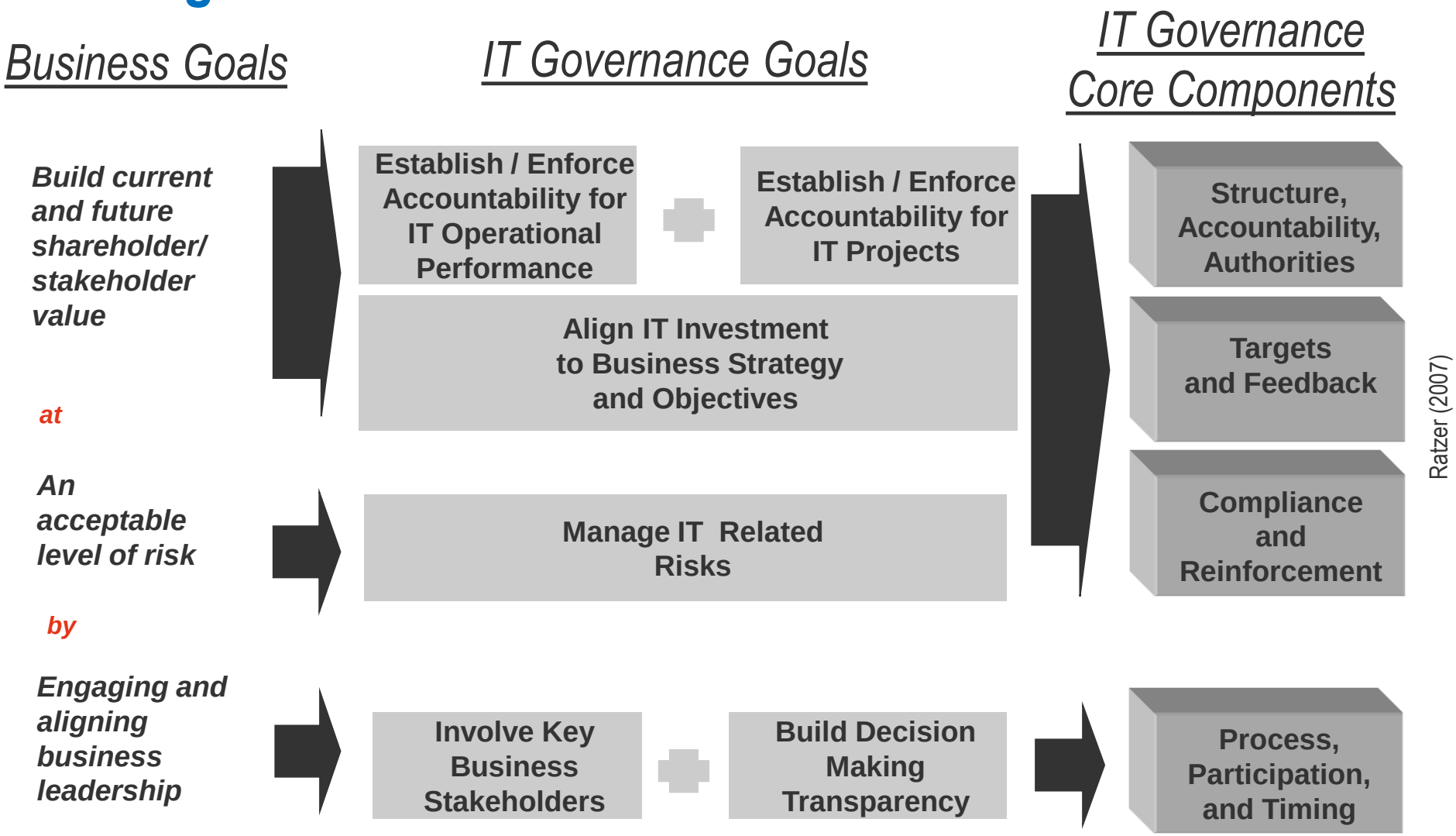
"IT governance represents the **framework for decision rights** and **accountabilities** to encourage desirable behavior in the use of IT"

Weill & Woodham (2002), cited in Krcmar (2015), p. 444

"IT governance is not about what specific decisions are made. That is management. Rather, governance is about systematically determining who makes each type of decision (**a decision right**), who has input to a decision (**an input right**) and how these people (or groups) are held **accountable** for their role. Good IT governance draws on corporate governance principles to manage and use IT to achieve **corporate performance goals**."

Weill & Ross (2004)

# Design of IT Governance



# Control OBjectives for Information and related Technology (COBIT)

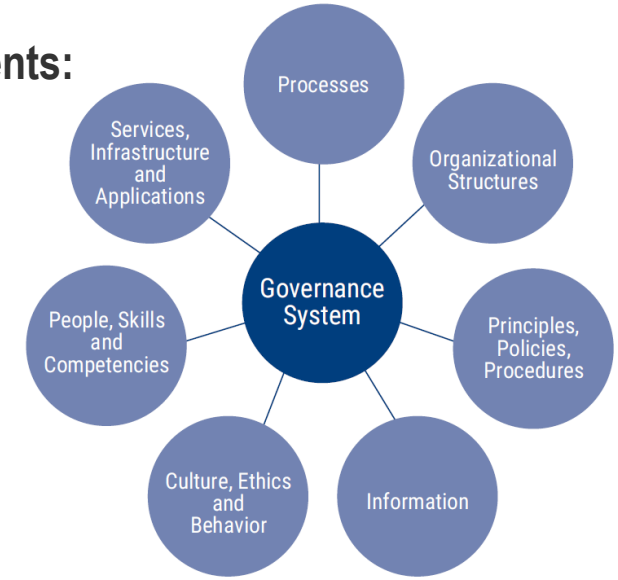
COBIT = Framework for the **governance & management of enterprise information & technology** (I&T)

- defines the **components** to build and sustain a governance system
  - **which decisions** should be taken, and **how** and **by whom** they should be taken
- defines the **design factors** that should be considered (enterprise strategy, goals, size, role of IT, IT sourcing model, compliance requirements, etc.)
- addresses governance issues by grouping relevant governance components into **governance** and **management** objectives

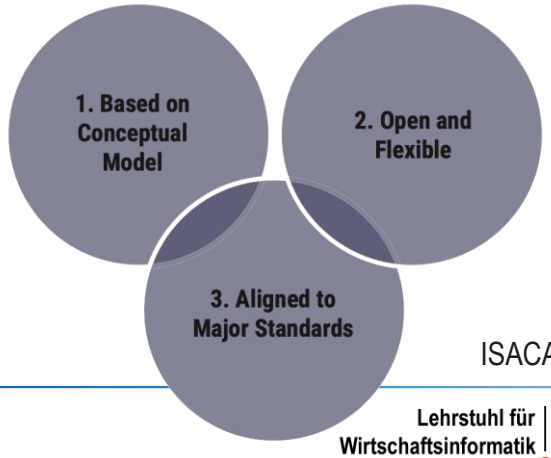
→ **no silver bullet** to design, implement and maintain effective IT governance within an organization

→ need to **tailor** to own specific context and needs

**Components:**

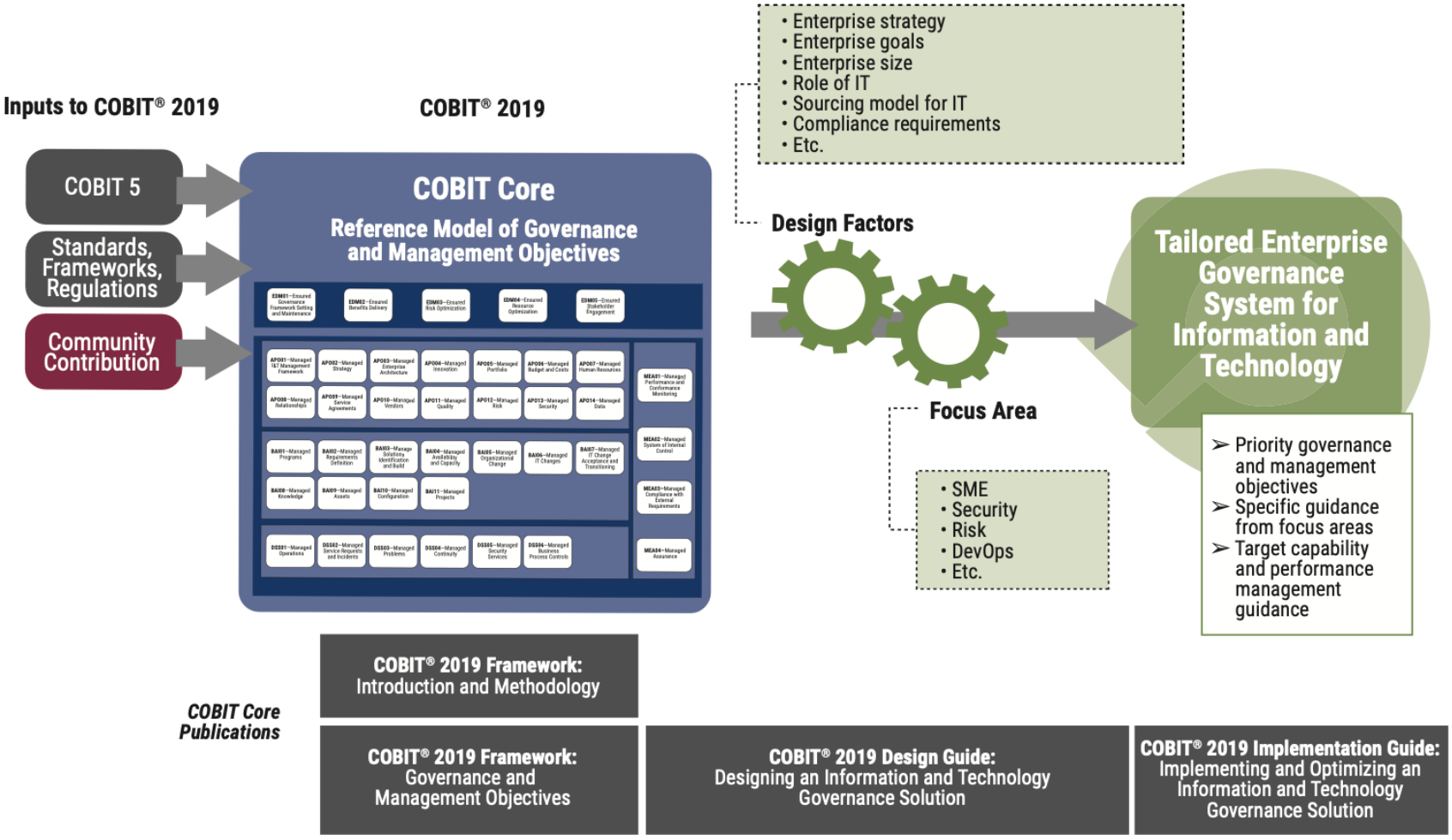



**Principles:**

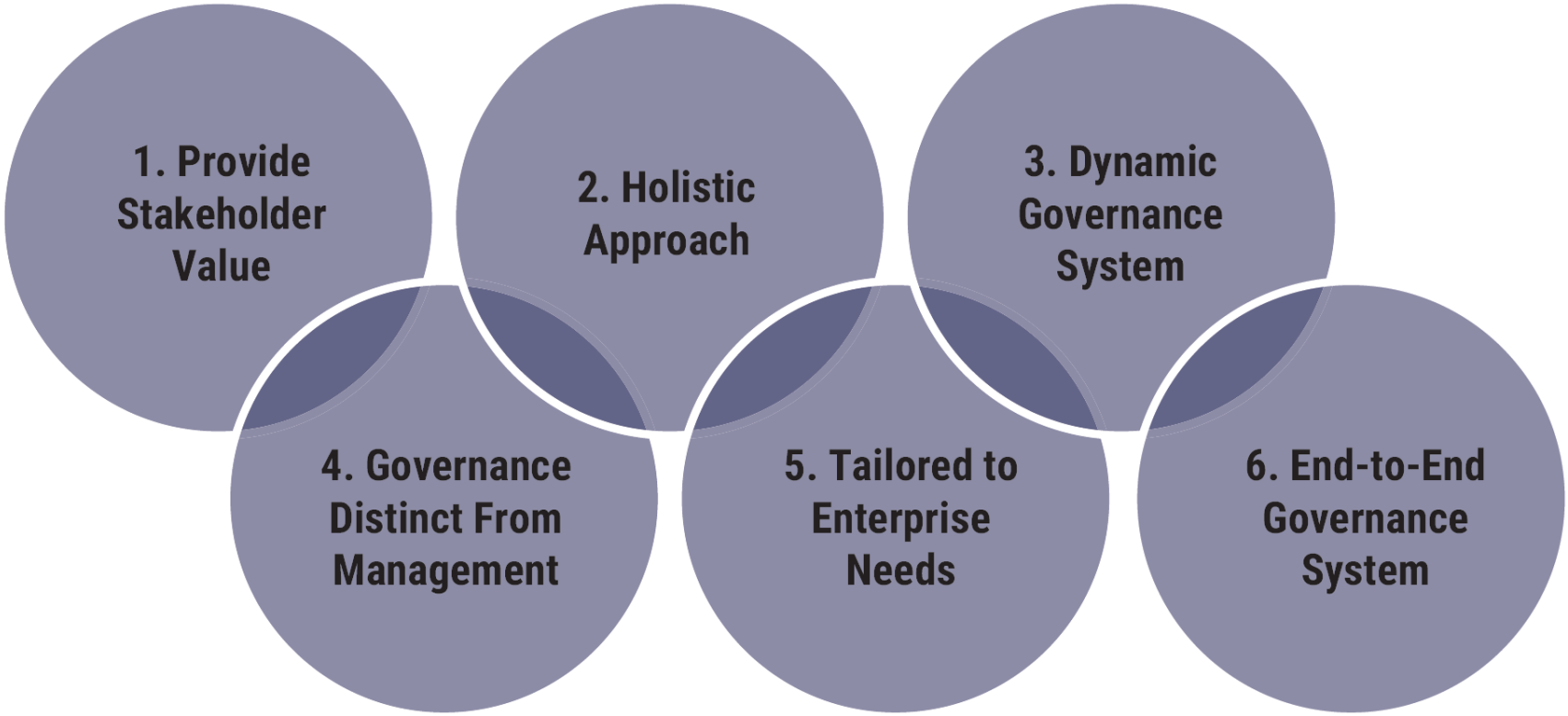



ISACA (2019)

# COBIT 2019 Overview



# COBIT 2019 Principles



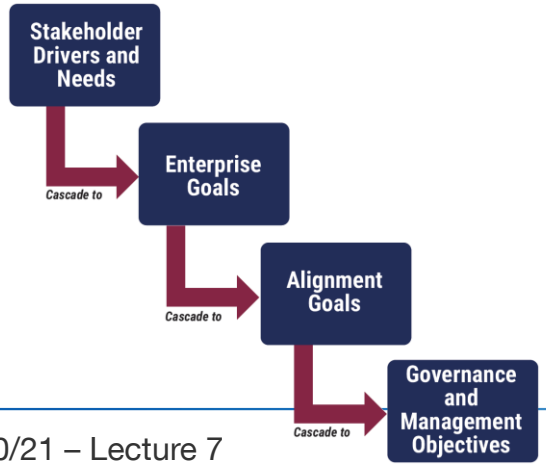

ISACA (2019)

# COBIT 2019 Principle 1: Provide Stakeholder Value

- 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**.
- Enterprises need an **actionable strategy and governance system** to realize this value.

**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 |




ISACA (2019)

# COBIT 2019 Principle 2: Holistic Approach

A governance system for enterprise I&T is built from a number of **components** that

- can be of different types and
- work together in a holistic way.


ISACA (2019)

# COBIT 2019 Principle 3: Dynamic Governance System


A governance system should be dynamic:

*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 enterprise governance of information and technology (EGIT) system must be considered.*

A dynamic view of the governance system will lead toward a viable and **future-proof** governance system.

ISACA (2019)

# COBIT 2019 Principle 4: Governance Distinct From Management

A governance system should **clearly distinguish** between governance and management activities and structures.

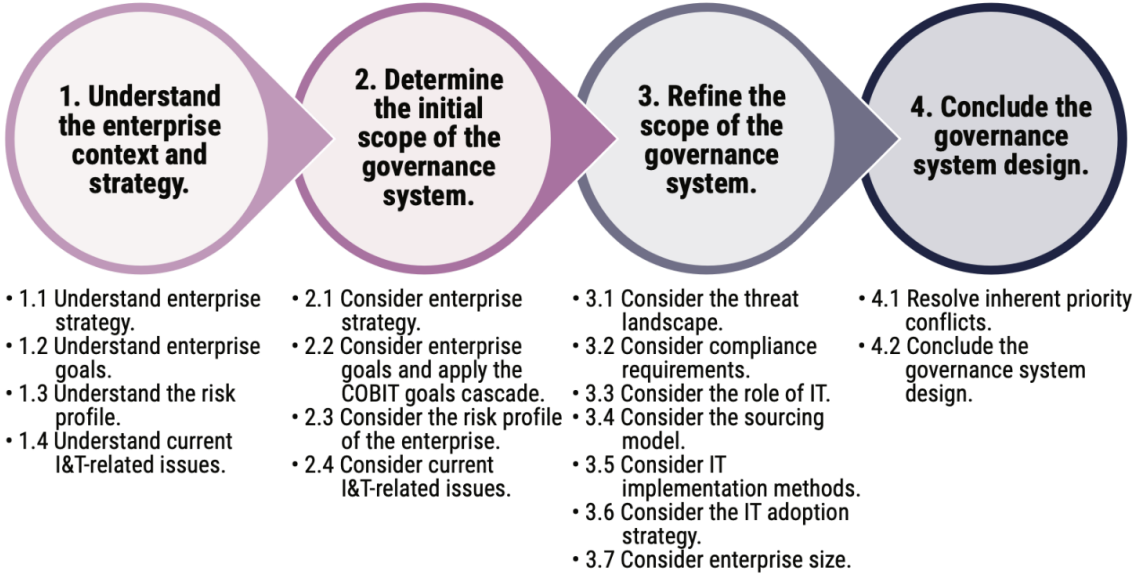
- **Governance ensures that:**
  - **Stakeholder needs**, conditions and options are evaluated to determine balanced, agreed-on enterprise **objectives**.
  - **Direction** is set through prioritization and decision making.
  - Performance and compliance are **monitored** against agreed-on direction and objectives.
- Governance is the responsibility of the **board of directors**/ supervisory board**.**
  - Specific governance responsibilities **may be delegated** to special organizational structures at an appropriate level
- **Processes**: Evaluate, Direct and Monitor (EDM)

- **Management**
  - plans, builds, runs and monitors activities,
  - **in alignment with the direction** set by the governance body,
  - to achieve the enterprise **objectives**.
- Management is the responsibility of the **executive management**, under leadership of the CEO
- **Processes**
  - Align, Plan and Organize (APO)
  - Build, Acquire and Implement (BAI)
  - Deliver, Service and Support (DSS)
  - Monitor, Evaluate and Assess (MEA)

ISACA (2019)

# COBIT 2019 Principle 5: Tailored to Enterprise Needs

- 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.
- **Governance System Design Workflow** for desiging a governance system that is tailored to the needs of a specific enterprise.




ISACA (2019)

# COBIT 2019 Principle 6: End-to-End Governance System

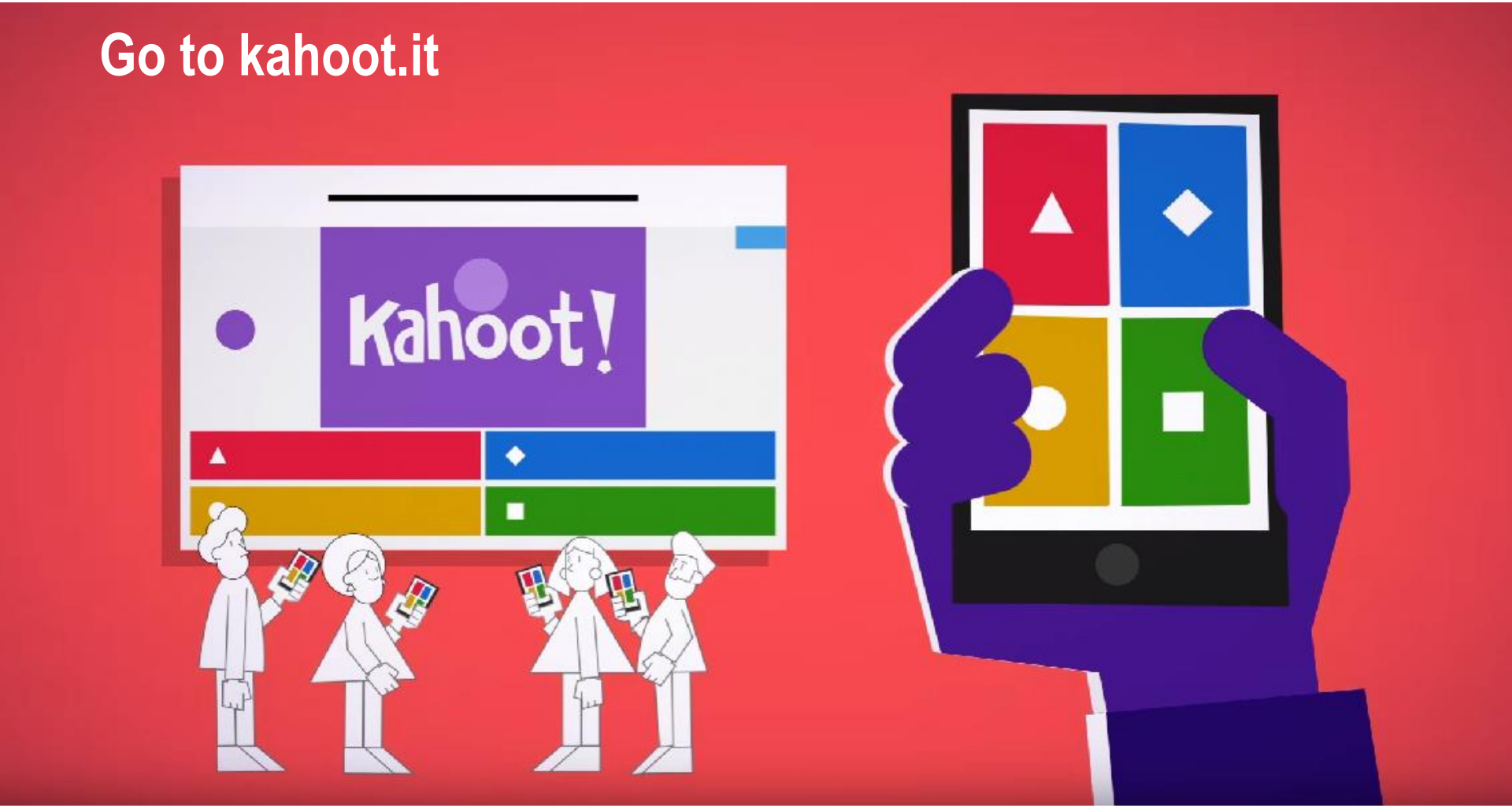
- Governance should cover the enterprise **end-to-end**
  - focusing not only on the IT function
  - but on **all I&T processing the enterprise puts in place to achieve its goals**, regardless where the processing is in the enterprise.

- COBIT emphasizes an enterprise-wide view of governance of I&T
  - I&T are pervasive in enterprises
  - **neither possible nor good practice to separate** business and IT-related activities.
  - ➢ The governance and management of enterprise I&T should be
    - implemented as an **integral part of enterprise governance**,
    - covering the full **end-to-end business and IT functional areas** of responsibility.

ISACA (2019)

# Quiz Time!

## Go to kahoot.it



# Core Literature: Krcmar, Informationsmanagement (2015)

1. Einleitung (pp.1-8)
2. Begriffe und Definitionen (pp.11-26)
3. Modellierung (pp. 31-78)
4. Aufgabe des Informationsmanagements: Informationsmanagement (pp. 85-109)
5. Aufgabe des Informationsmanagements: Management der Informationswirtschaft (pp. 113-165)
6. Aufgabe des Informationsmanagements: Management der Informationssysteme (pp. 173-302)
7. Aufgabe des Informationsmanagements: Management der Informations- und Kommunikationstechnik (pp. 315-385)
8. Führungsaufgaben des Informationsmanagements
   8.2 IT-Governance (pp. 444-471)
   8.3.2 Ziele und Aufgaben des IT Controllings (pp.497-515)
9. Referenzmodelle des Informationsmanagements (pp. 601-630)
10. Einsatzfelder und Herausforderungen des Informationsmanagements (pp. 633-753)
11. Fallstudie „Rockhaus AG“ (pp. 767-783)

# Literature

**Additional Reading**


- **Gadatsch, A., & Mayer, E. (2014).** Masterkurs IT-Controlling (5 ed.). Wiesbaden: Springer Fachmedien.
- **ISACA (2019).** COBIT 2019 Framework.
- **Weill, P., & Ross, J. W. (2004).** IT Governance: How Top Performers Manage IT Decision Rights for Superior Results. Boston, USA: Harvard Business Press

# References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