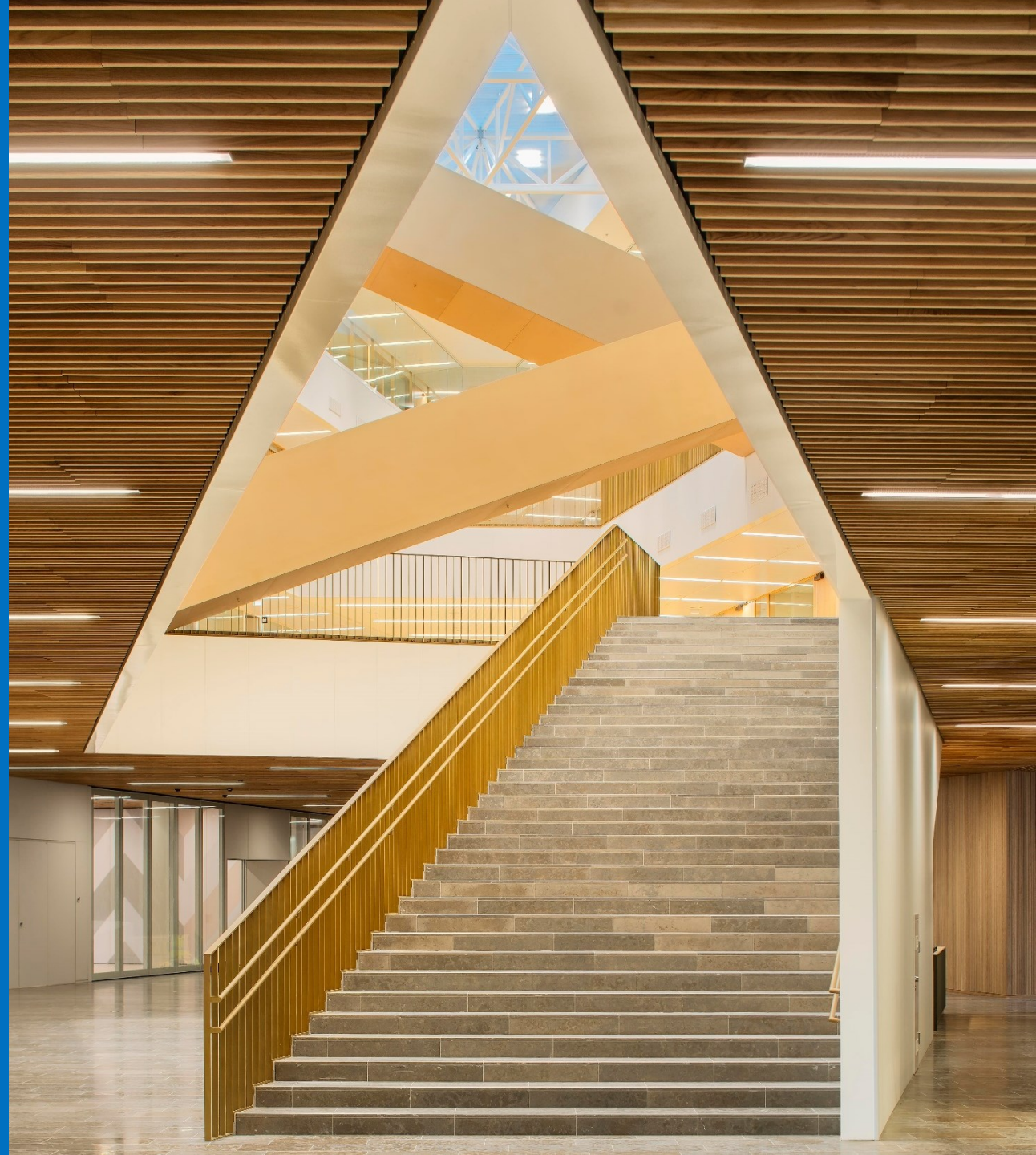


# An introduction to managerial accounting

Dr. David Derichs



# Intended Learning Outcomes (ILOs) for this session:

- **ILO 1.1:** Understand organizational value drivers and entailed decision making needs
- **ILO 1.2:** Understand the concept and role of management accounting in fulfilling those needs
- **ILO 1.3:** Gain a perspective on hireable future management accounting competencies

# Agenda

## **I. Business and Decision Making**

- i. Value Based Management
- ii. Management Accounting and Value Creation
- iii. Management Accounting and Decision Making

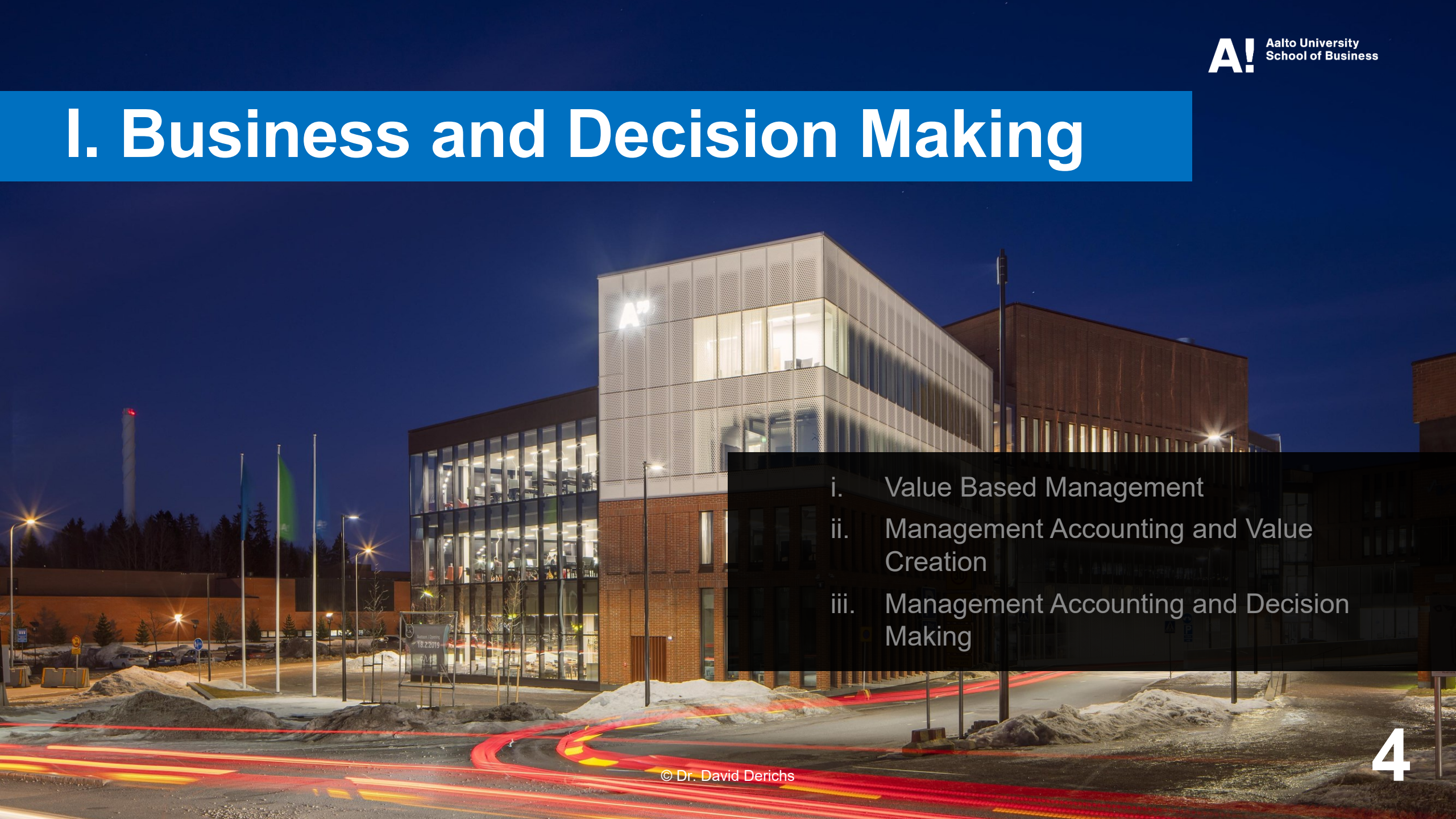
## **II. Management Accounting / Controlling**

- i. Conception of Management Accounting
- ii. The Red Management Accounting Thread

## **III. The Future of Management Accounting / Controlling**

- i. Future Management Accounting / Controlling Competencies
- ii. Future Management Accountant Roles

# I. Business and Decision Making

- 
- i. Value Based Management
  - ii. Management Accounting and Value Creation
  - iii. Management Accounting and Decision Making

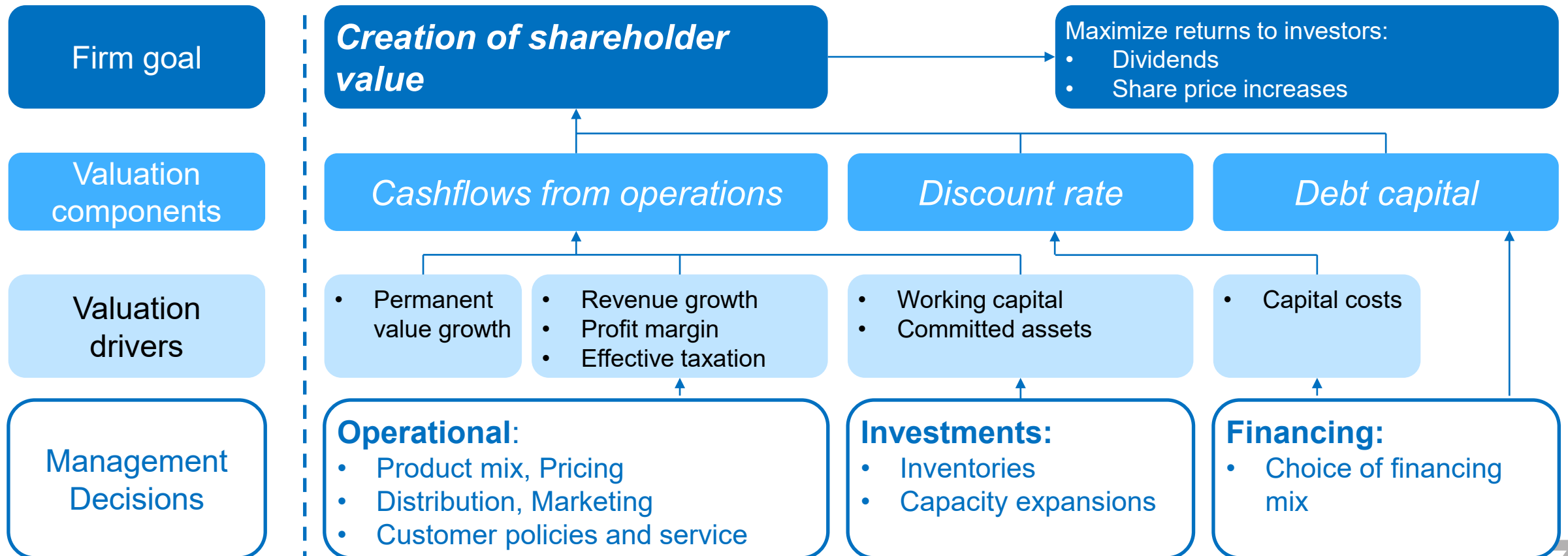
# I. Business and Decision Making

- i. Value Based Management
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# What is the purpose of the organization?

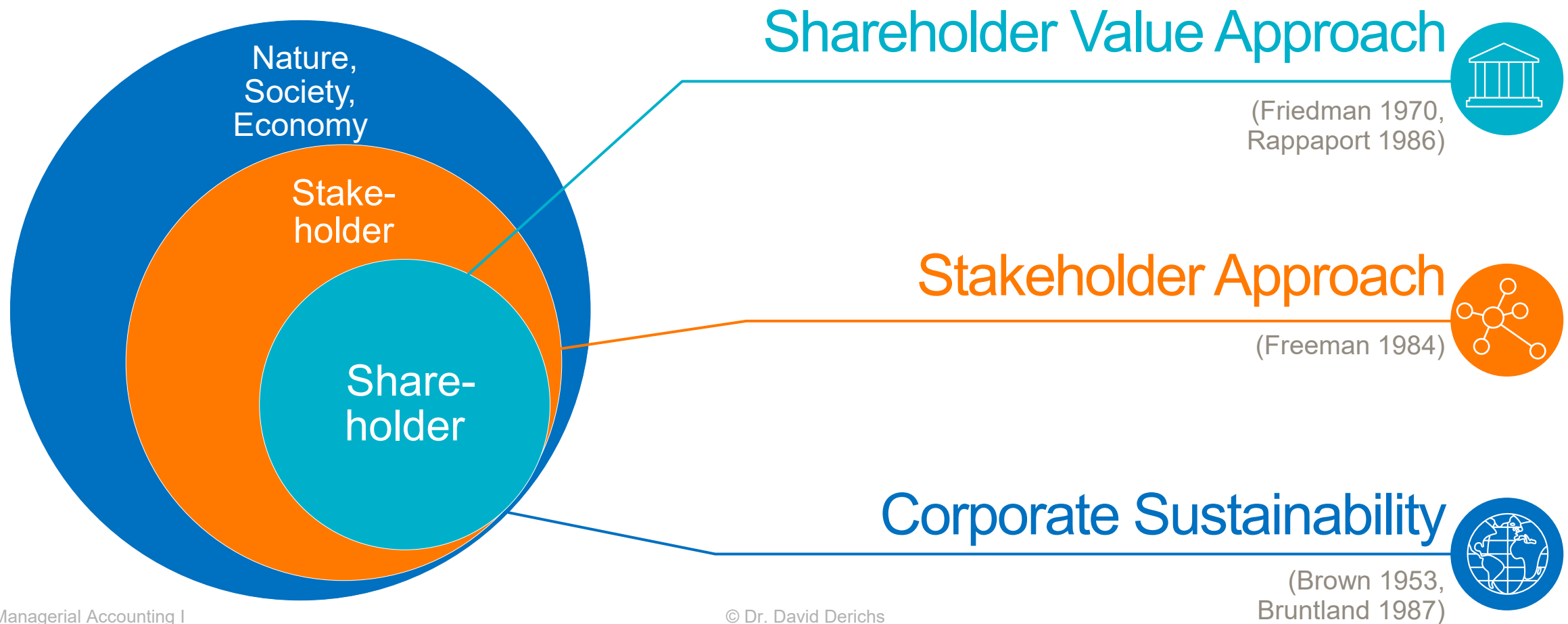
- **Profit (or impact) maximization** of capital providers is **primary economic objective**
- Organizations need to meet investor's return requirements to obtain competitive risk capital
- Investors constantly assess all organizational decisions (e.g., investment decisions) for whether they increase their invested capital
- Firm value is hence all expected future payments between company and investor

# Implications of Rappaport's (1986) shareholder value concept



Source: Rappaport's (1986)  
Managerial Accounting I

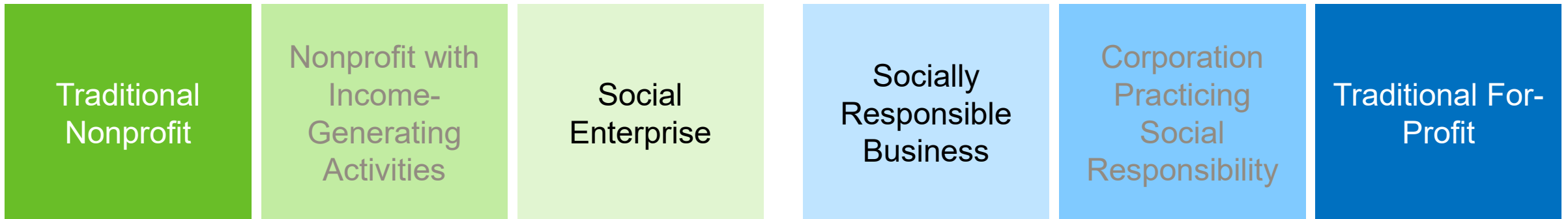
# Stakeholder/Sustainability and shareholder value not necessarily in conflict






# “The Social Responsibility of Business is to increase Profits”, Friedman (1970)

## Hybrid Spectrum



- |   |   |
|---|---|
| Mission Motive  | • Profit-making motive                  |
| Stakeholder Accountability                            | • Shareholder Accountability            |
| Income Invested in Social Programs or Operating Costs | • Profit redistribution to shareholders |

# I. Business and Decision Making

- 
- i. Value Based Management  
ii. Management Accounting and Value Creation  
iii. Management Accounting and Decision Making

# Management Accounting is of pivotal importance in implementing VBM



## (1) Strategy development

- Board develops strategy to maximize firm value
- Setting of value-based short- and long-term objectives

## (2) Planning / Budgeting

- Value-based resource allocation between competing projects

## (3) Performance measurement and reporting

- Comparison of achieved performance relative to goals
- Internal and external reporting of strategy implementation success

## (4) Incentives

- Performance-based incentives

# Measurement guides action!



**Organizational structure** and **performance measurement** of organizational units have an **impact on decisions** people make in organizations

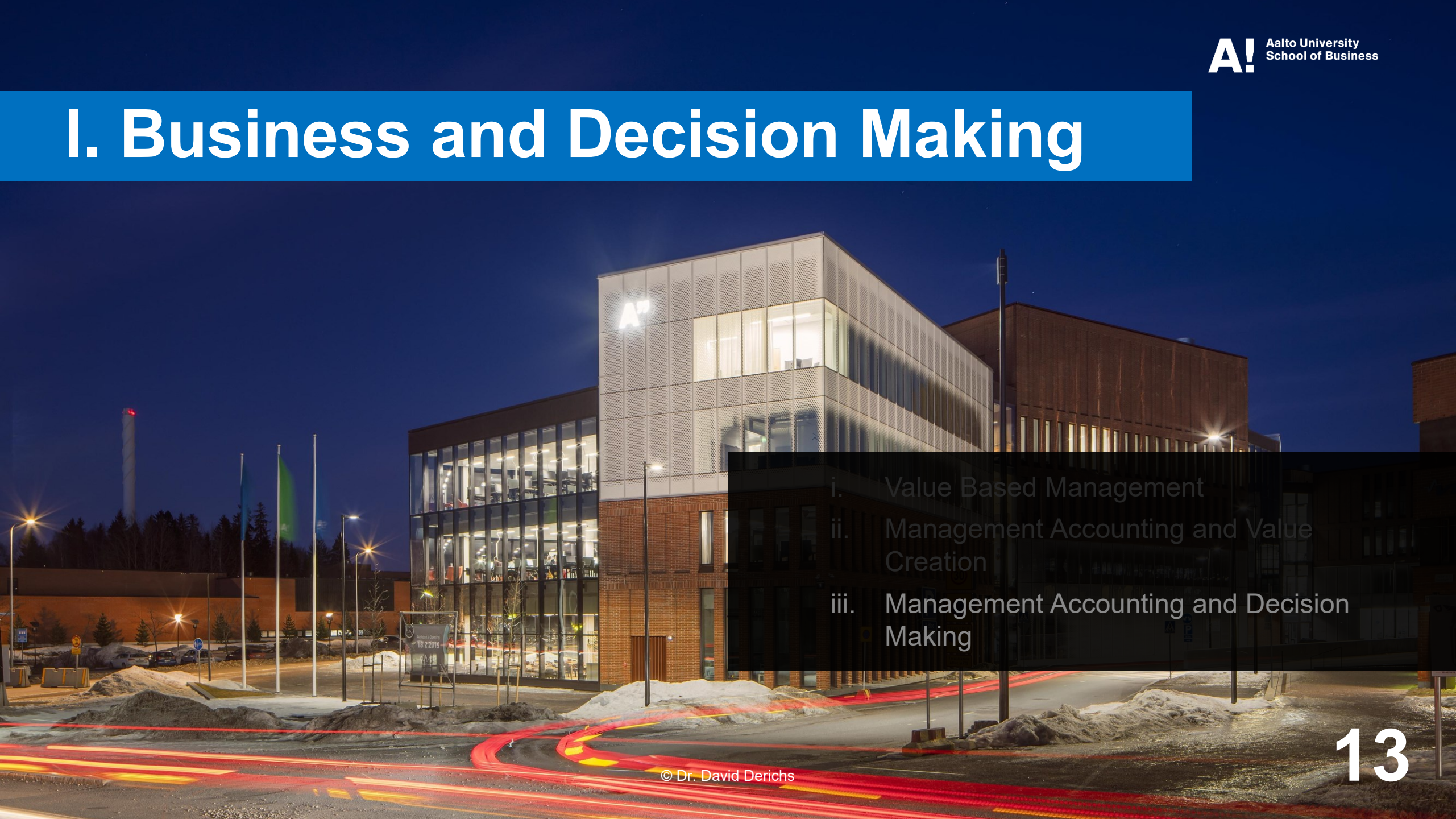


These decisions may or may not be **in line with strategy**



One key issue is to select right financial performance measures and appropriate targets for those

# I. Business and Decision Making

- 
- A photograph of a modern building at night, illuminated from within. The building has a mix of brick, wood, and glass facades. In the foreground, there are light trails from a car, creating red and yellow streaks. The sky is dark blue.
- i. Value Based Management
  - ii. Management Accounting and Value Creation
  - iii. Management Accounting and Decision Making

# Management Accounting has decision facilitating and decision influencing roles

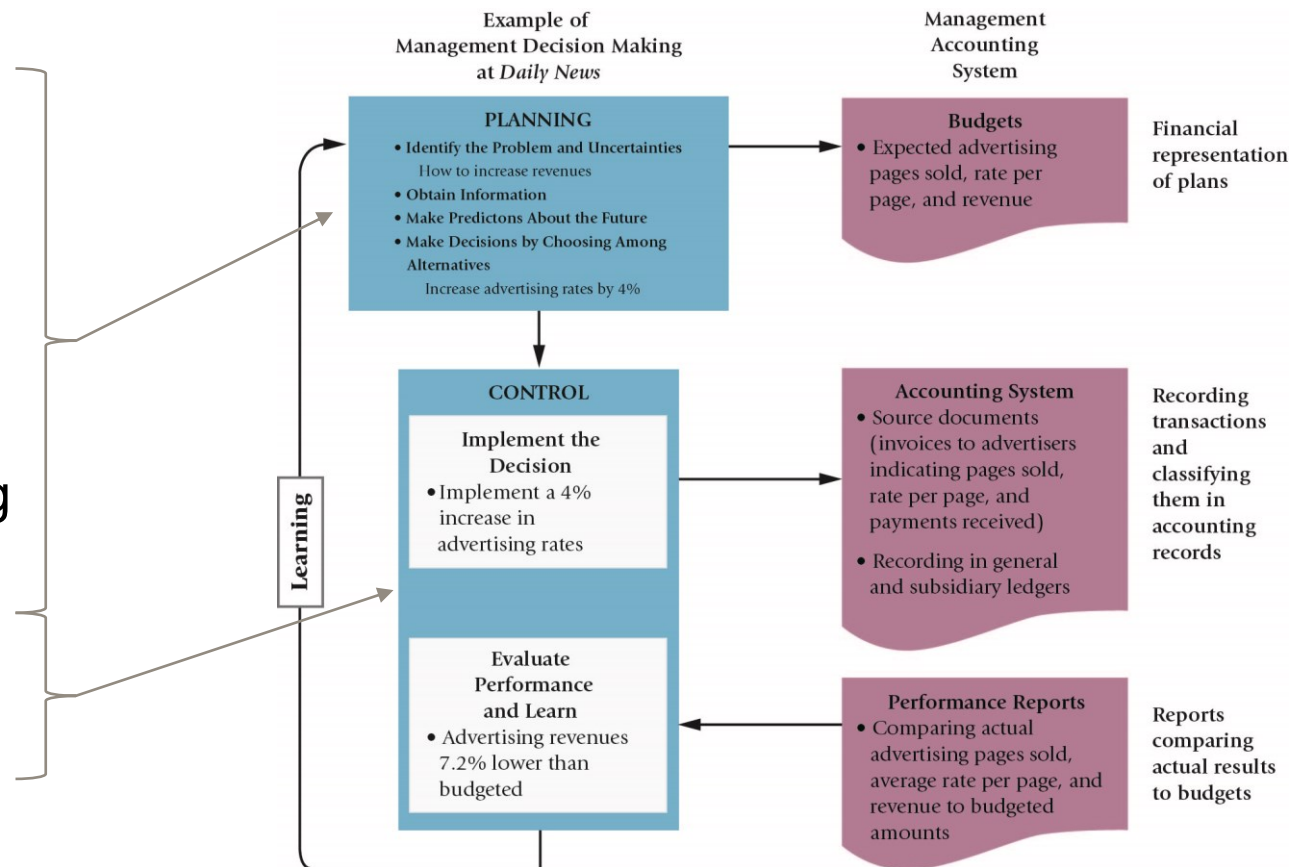
## Commonalities between different conceptions of the role of management accounting

- Oriented at organizational goals
- Decision relevancy
- Importance of information supply
- Planning and control as essential part
- Coordination

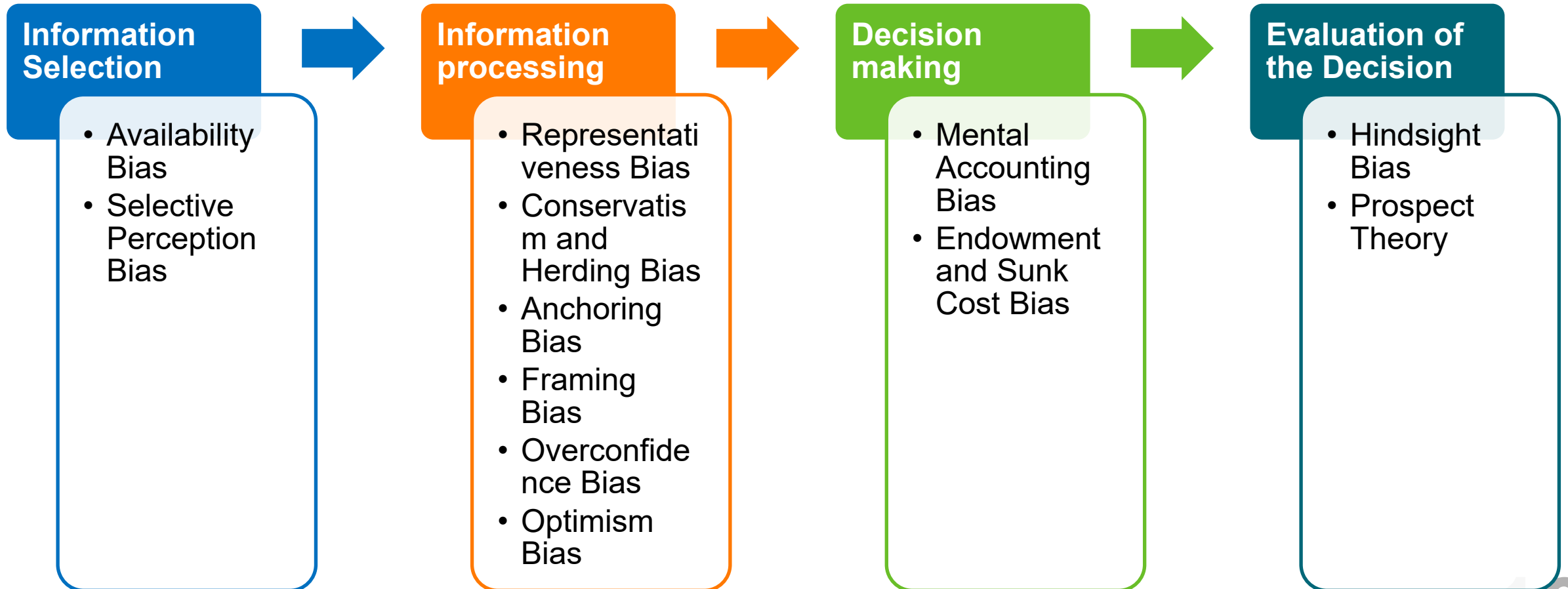
# MA guides decision making and execution - EXAMPLE

## Five steps of decision making:

1. Identify the problem/uncertainties.
2. Obtain information.
3. Make predictions about the future.
4. Make decisions by choosing among alternatives.
5. Implement the decision, evaluate performance, and learn.

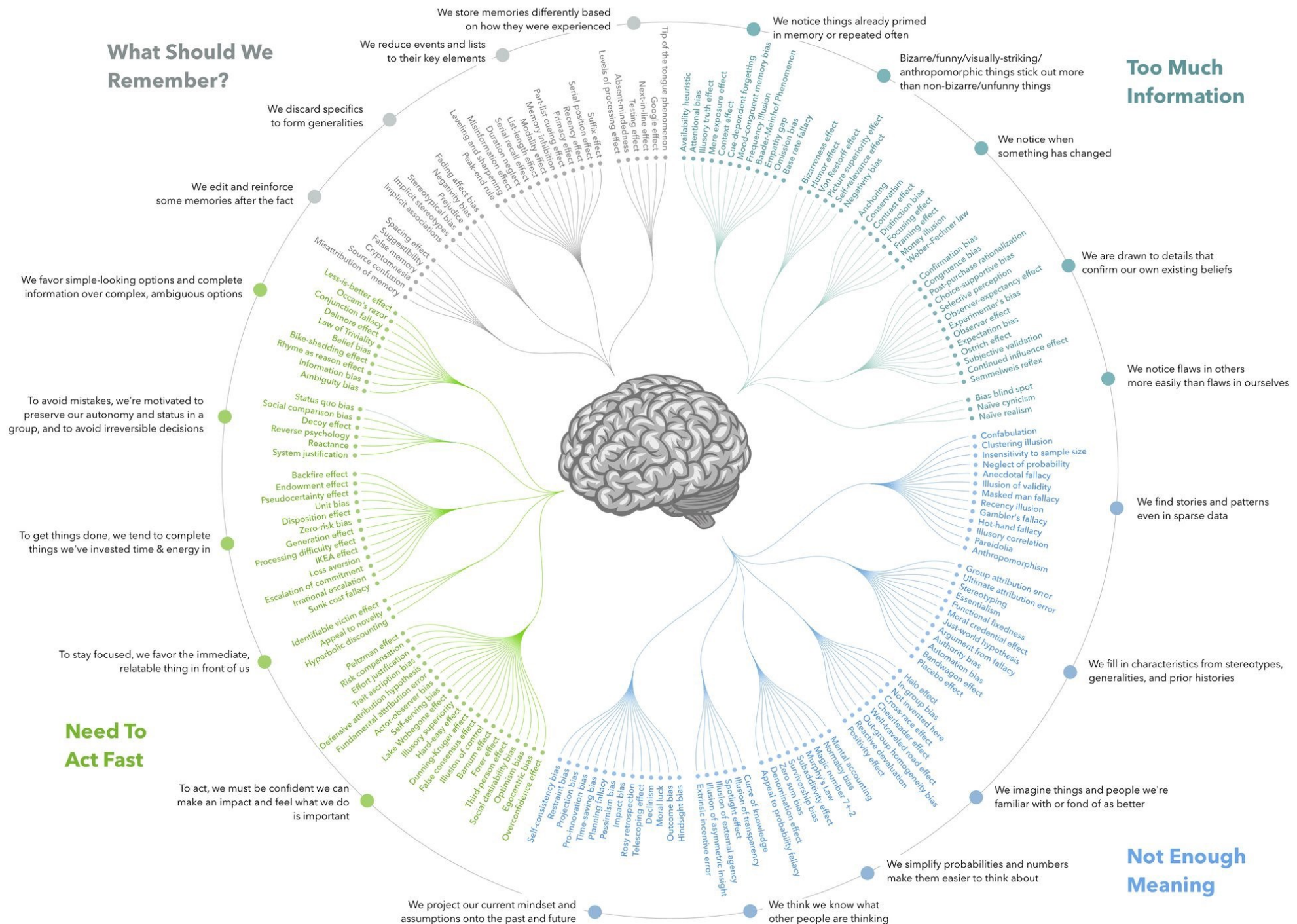


# Biases along the decision making process





# What Should We Remember?



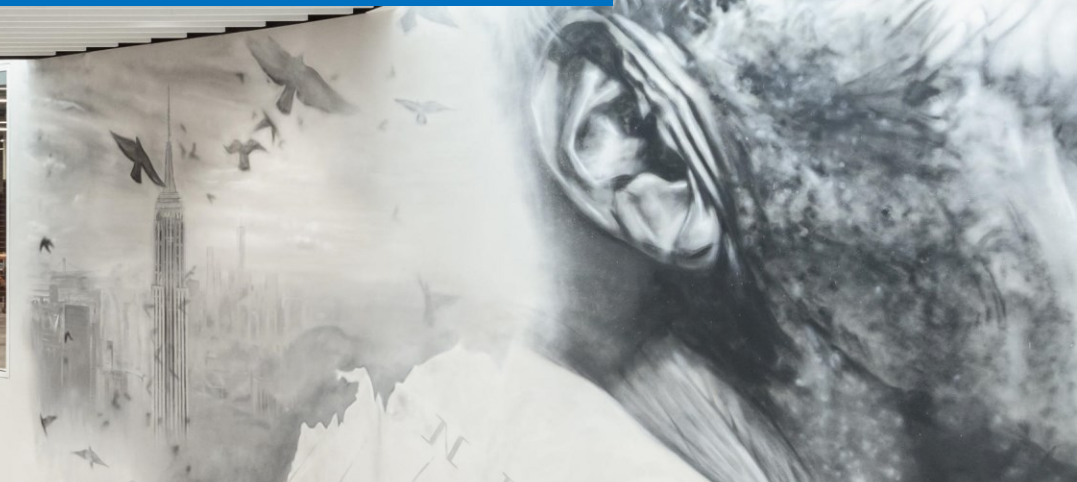
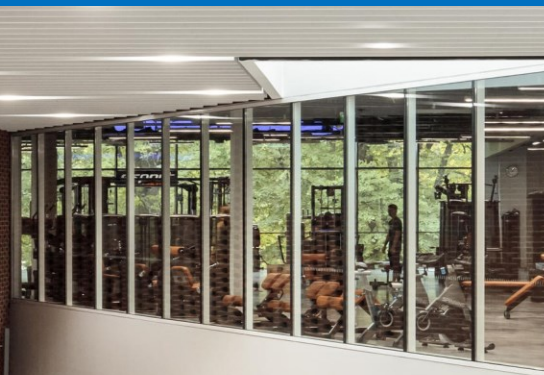
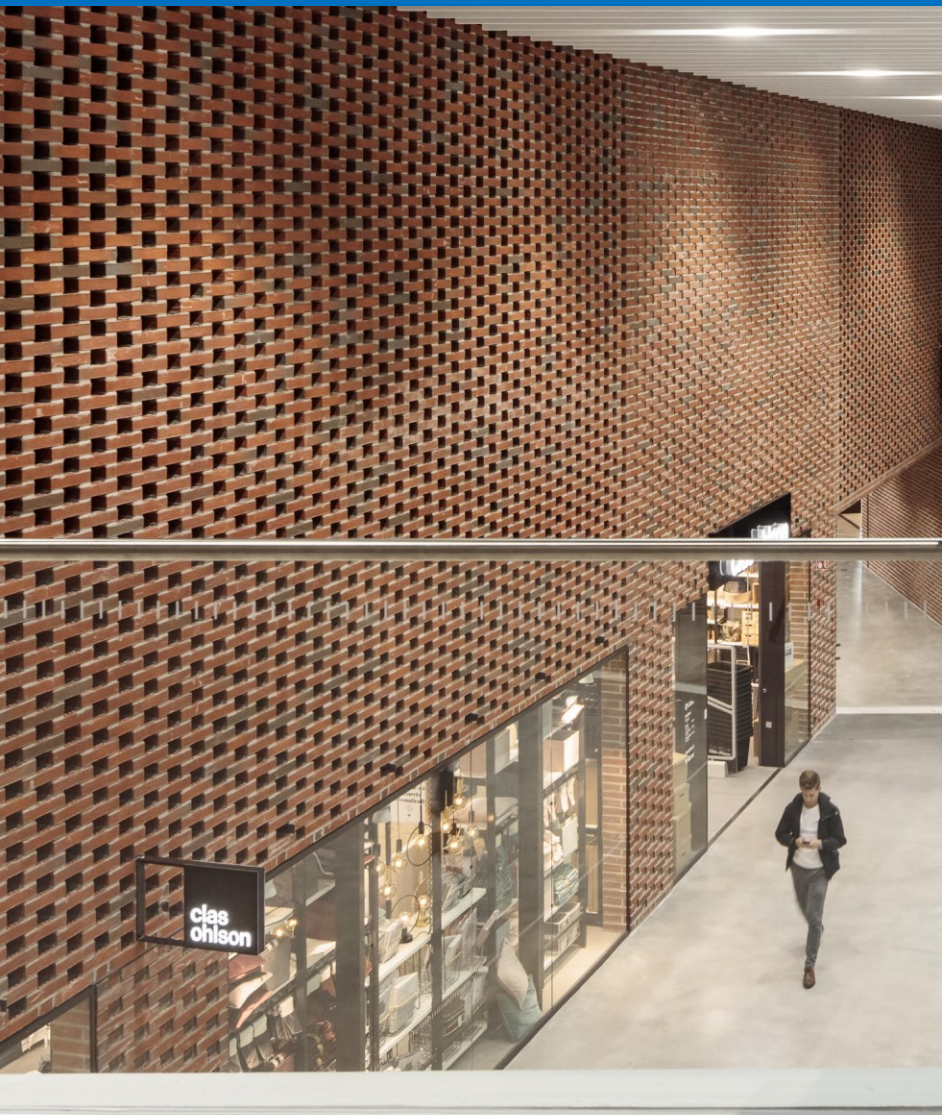
**Too Much Information**

**Not Enough Meaning**

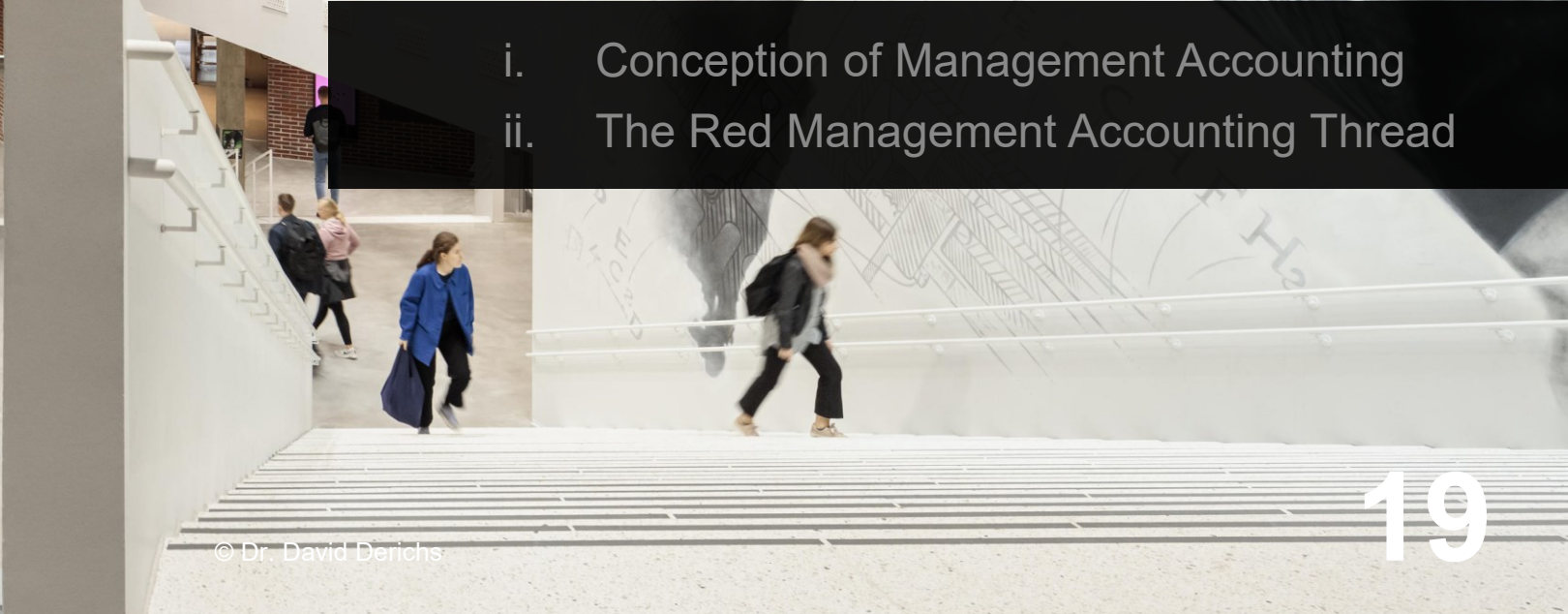
# Why do we care about cognitive biases in the organizational context?

- A **company** is an organization **consisting of social structures** and **human decisions**, so decision-making processes are of central importance
- **Deviations of any kind should be avoided**, including those caused by cognitive errors
- Cognitive biases occur especially in an **entrepreneurial context**

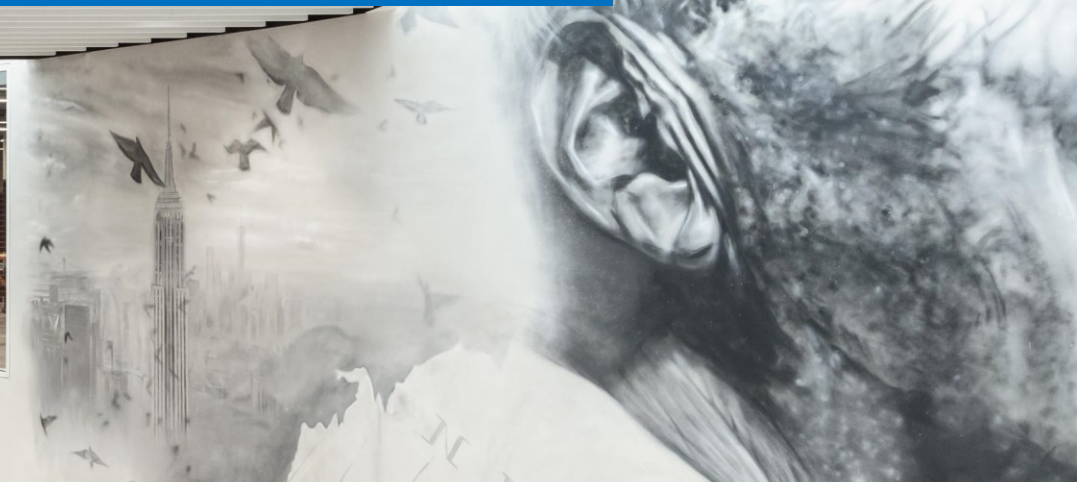
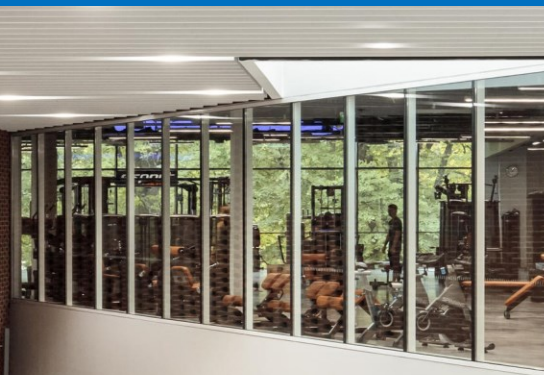
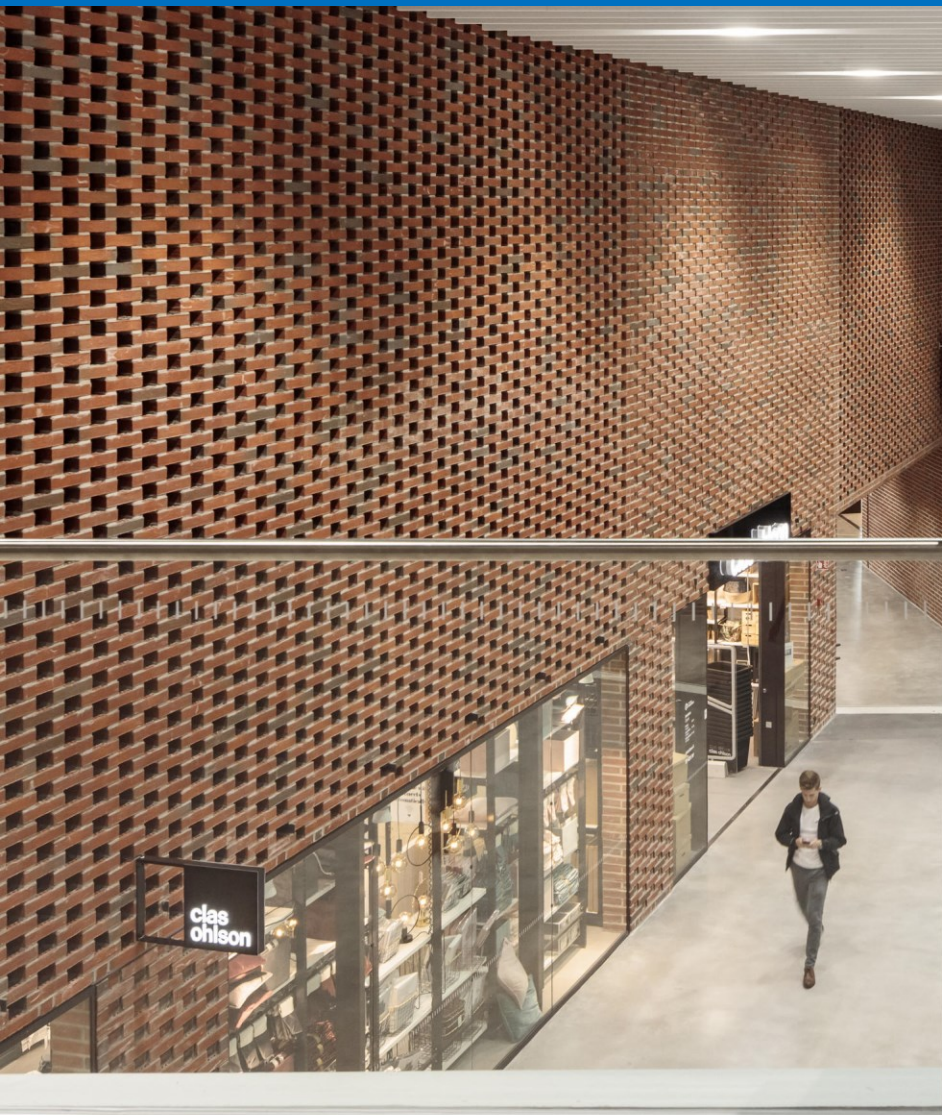
# II. Management Accounting



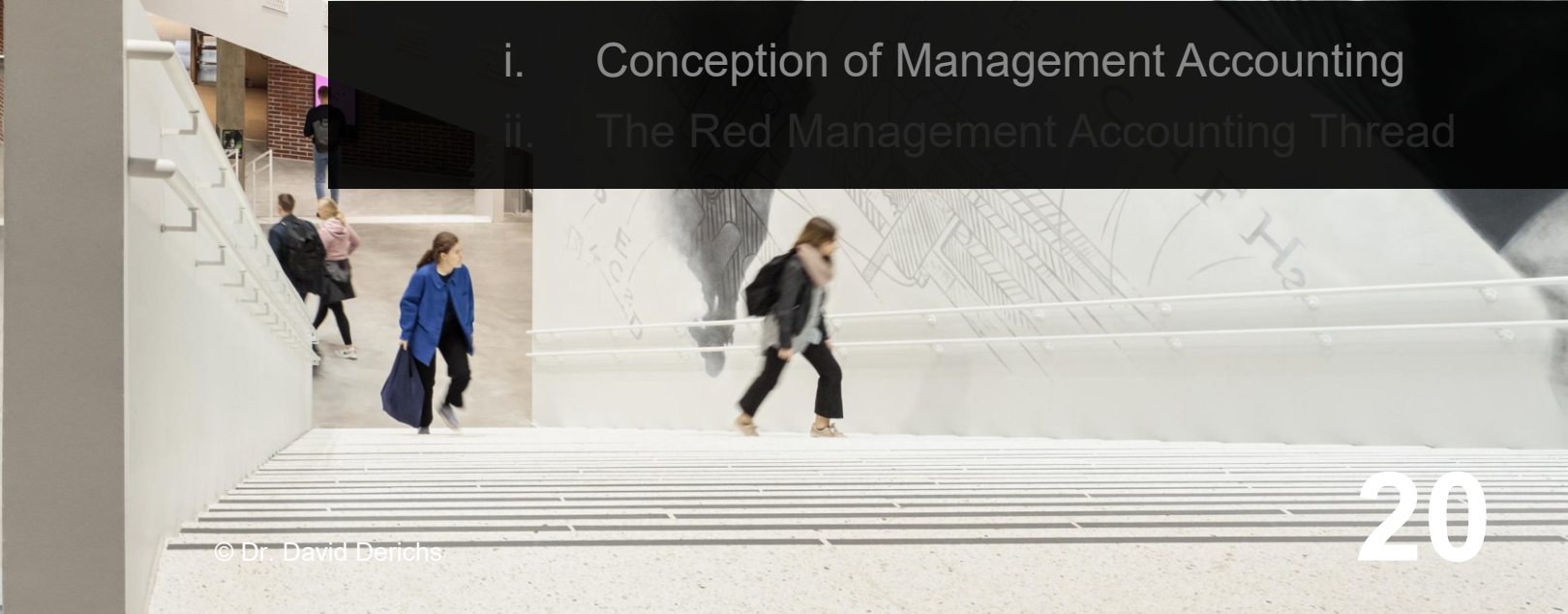
- i. Conception of Management Accounting
- ii. The Red Management Accounting Thread



# II. Management Accounting



- i. Conception of Management Accounting
- ii. The Red Management Accounting Thread



# Management Accounting informs management decision making



**Management Accounting:** measures, analyzes, and reports financial and nonfinancial information that helps managers make decisions to fulfill organizational goals

**Financial Accounting:** focuses on reporting financial information to external parties such as investors, governmental agencies, banks, and suppliers, based on GAAP (e.g., IFRS)

# MA and FA differences in detail

	Management Accounting	Financial Accounting
<b>Purpose of information</b>	Help managers make decisions to fulfill an organization's goals	Communicate an organization's financial position to investors, banks, regulators, and other outside parties
<b>Primary users</b>	Managers of the organization	External users such as investors, banks,...
<b>Focus and emphasis</b>	Future-oriented (budget for 2020 prepared in 2019)	Past-oriented (reports on 2019 performance prepared in 2020)
<b>Rules of measurement and reporting</b>	Internal measures and reports do not have to follow GAAP (e.g., IFRS) but are based on cost-benefit analyses	Financial statements must be prepared in accordance with GAAP and be certified by external, independent auditors
<b>Time span and type of reports</b>	Varies from hourly information to decades, with financial and nonfinancial reports on products, departments, territories, strategies	Annual and quarterly financial reports, primarily on the company as a whole
<b>Behavioral implications</b>	Designed to influence the behavior of managers and other employees	Primarily reports economic events but also influences behavior

**What do you associate with the controller or the management accounting?**

**A?**

# What do Management Accountants / Controllers actually do?

“Please assess this capital budgeting project so we obtain a return of 15%!”

“The Controller provided false numbers to me; my return is obviously much higher!”

“Controlling says the costs are still too high!”

“Controlling came by last week and now we have to pay for coffee in our office kitchen!”

“Controlling just provided my sales targets to me, they are unrealistic and quite plainly demotivating”



# The main reason for insolvency are mistakes in management / lack of controlling



# A brief history of MA and Controlling

- Controller positions were created for the first time in **state institutions** from the **late Middle Ages**
  - "**Coun**troller" at the English royal court (since the 15th century)
  - U.S. Government
    - "Comptroller" (since 1778, monitoring the balance between government revenues and expenditures)
    - „Controller of the Currency“ (since 1863, Bank oversight board)
    - "Comptroller General" (since 1921, audit)
  - These functions focused on accounting and control tasks
- In **private-sector institutions**, controllers are first found in US companies towards the **end of the 19th century**
  - Atchison, Topeka & Santa Fe Railway System (1880)
  - 1931 Foundation of the Controller's Institute of America
  - In 1948, large American companies have had controller positions for an average of twenty years (Jackson, n = 143)

# From Controlling to MA

- Renaming of the „Controller’s Institute of America“ ( founded 1931) into **Financial Executive Institute (FEI)** in 1962
- Willson/Roehl-Anderson/Bragg, Controllership, 1999:
  - „... before a controller can delve into the specifics of the controller job description, it is first necessary to determine **how the accounting function fits into the rest of the organization...**“ (p. 3)
    - De facto equation of controlling and accounting
- Anthony/Govindarajan, Management Control Systems, 2001:
  - „Management control is the process by which **managers influence other members of the organization to implement the organization’s strategies**“ (p. 6)
  - „We shall refer to the person who is responsible for designing and operating the management control system as the controller“ (p. 105)
    - Management Control as corporate management in the sense of targeted influence and enforcement of wills (control)
    - Controller as a responsible authority who supports the control through information and systems (especially in the field of accounting)

# Practice-oriented view of management accounting



## Wedgwood's (1993) Driver-Navigator Story

- Delineation of controller vs. manager
  - Pilot ↔ Co-pilot
  - Steering ↔ Navigation
  - Decision ↔ Decision basis
  - Result ↔ Result-transparency
- Manager and controller as a team:
  - Vision, goals, and plans
  - Future orientation

# Driver vs. Co-pilot (for a peaceful holiday trip) needs clear division of roles / tasks

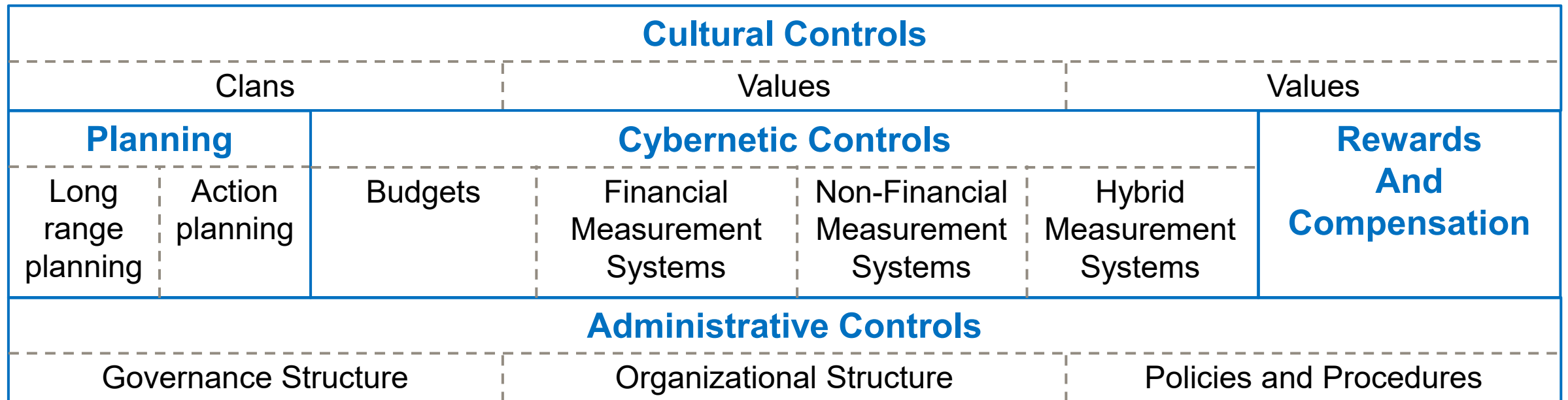
	Role / task driver	Role / task co-pilot
Prior to the trip - Planning	Mental preparation regarding: route, speed and breaks	Provision of instruments and information: Maps, gasoline prices and usage
During the trip - Steering	Driving	Directing
After the trip - Control and learning	Realization of learning effects	Analysis of route deviations, gasoline consumption, assessment condition of the driver
	<b>= Management of the driving process</b>	<b>= Controlling of the driving process</b>

# Driver vs. Co-pilot (for a peaceful holiday trip) needs clear division of roles / tasks

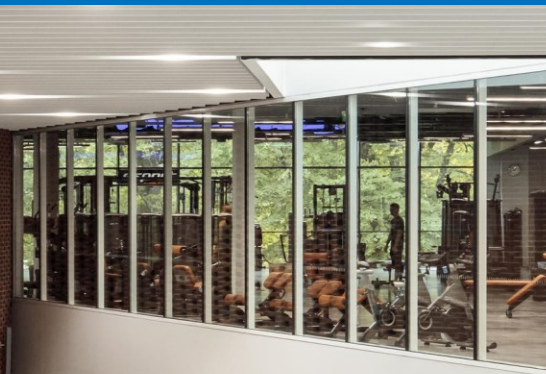
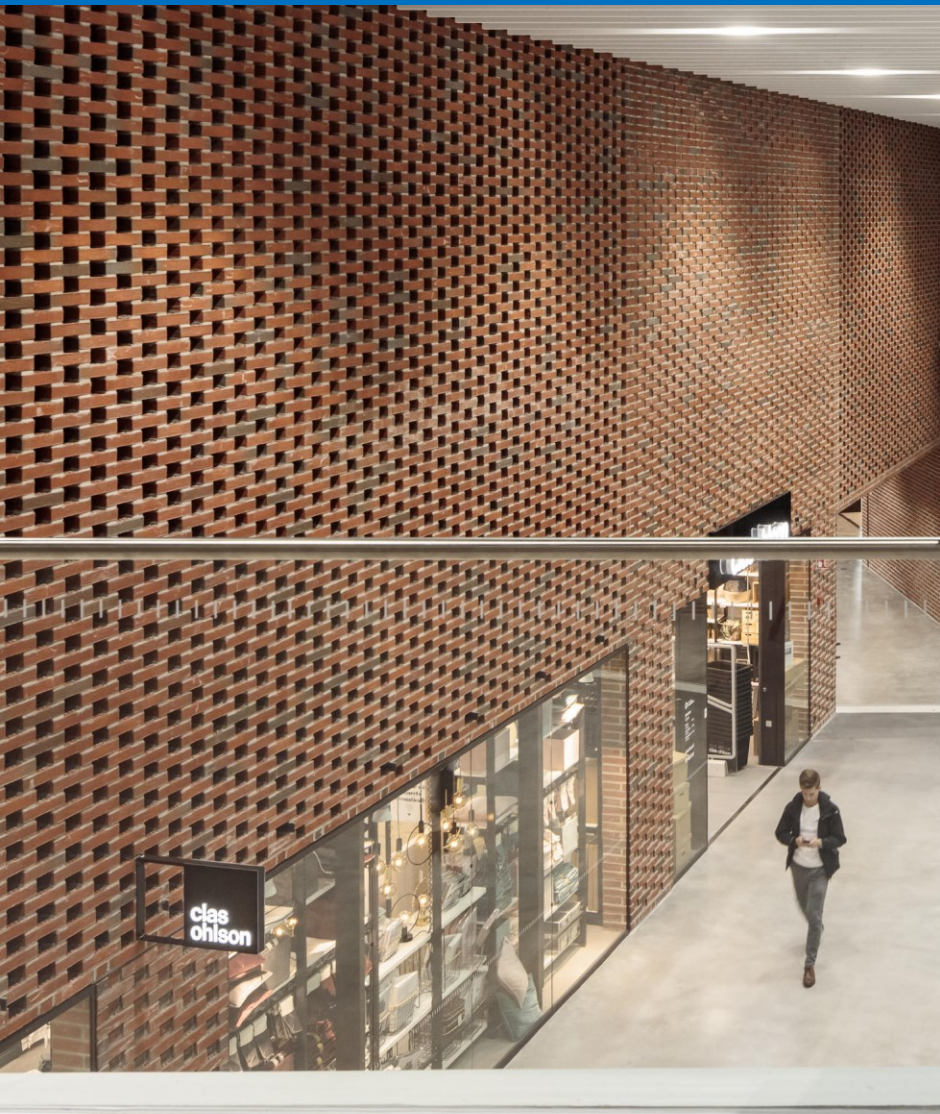
	Role / task manager	Role / task Management Accountant / Controller
Prior to a decision process - Planning	Mental preparation regarding: Visions, strategy and operative implementation	Provision of instruments and information : strategy (simulations and scenarios), operative decision support
During the decision process - Steering	Measure management	Suggestions of measures
After the decision process - Control and learning	Realization of learning effects after the analysis	Analysis of plan deviations of KPIs and strategic goals
	<b>= Management of the decision making process</b>	<b>= Controlling of the decision making process</b>

# Management Accounting as holistic approach to configure org. activities

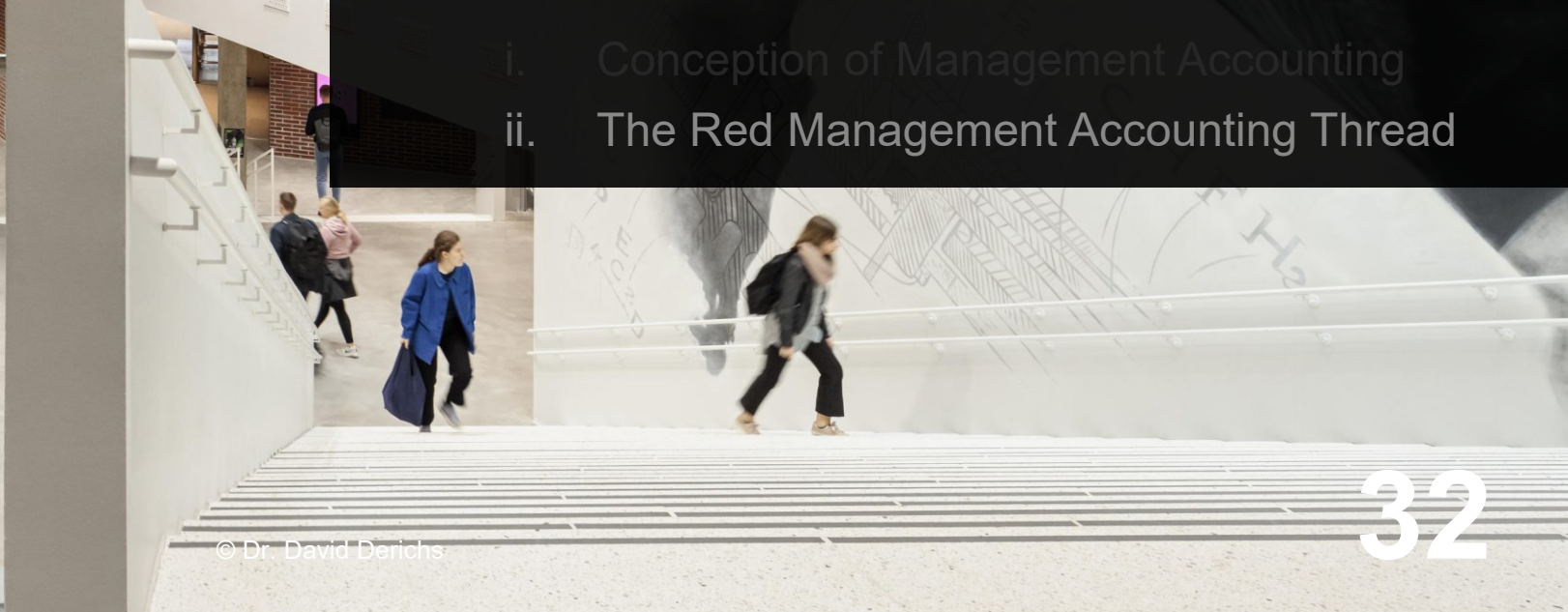
→ Management accounting as a holistic approach of achieving organizational strategic objectives



# II. Management Accounting



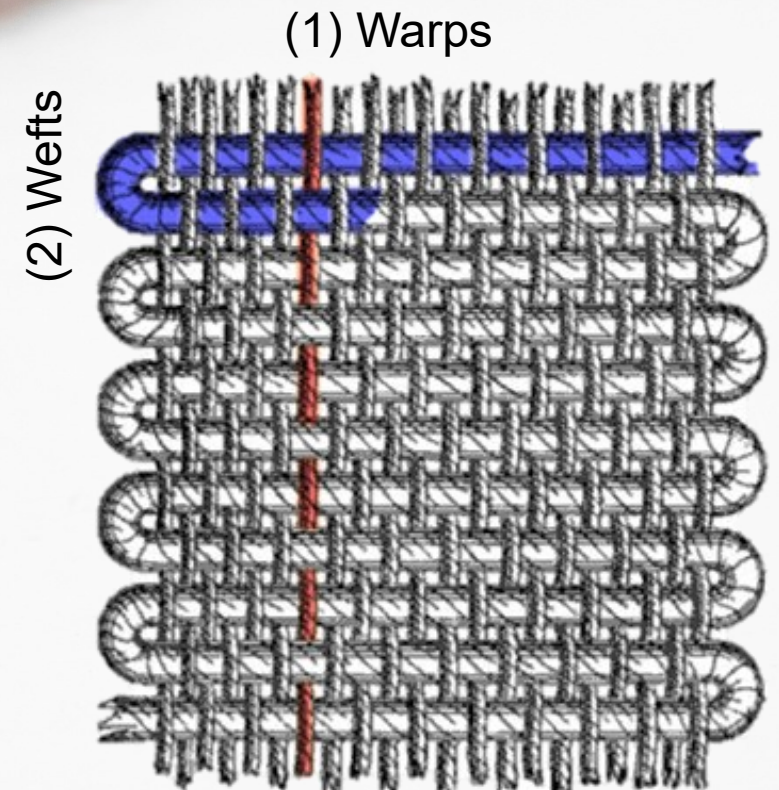
- i. Conception of Management Accounting
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# The red thread of management accounting?

- There is no red thread to management accounting education
- „**Red carpet**“ might be a better analogy:
  - The “Warps” (1) equate to the tools of organizational planning, bookkeeping and leadership
    - Budgeting, transfer pricing,...
  - The “Wefts” (2) equal to the applications of management accounting
    - Procurement controlling, marketing controlling,...



# However, there is one red thread to management accounting after all:

→ The deployment of management tools = Quantification of events / reality

**“What you can measure,  
Measure;  
What you cannot measure,  
Make measurable”**

Some poetry from the German-speaking controlling world  
according to Schmalenbach 1963 (p. 145)

**“What gets measured gets done!”**

This famous quote is attributed to several  
management scholars, among others: Peter Drucker,  
Tom Peters, Edwards Deming or Percy Breavik

# III. The Future of Management Accounting / Controlling

- i. Future Management Accounting / Controlling Competencies
- ii. Future Management Accountant Roles

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# Future MA competencies

## Finance & Controlling Expertise

- Expertise in company's finance & controlling processes
- Knowledge of financial metrics
- Expertise in finance & controlling related concepts and frameworks
- Expertise in financial accounting
- Knowledge of non-financial metrics

## Technology & Analytics Expertise

- Expertise in data visualization
- Expertise in data preparation
- Expertise in business intelligence tools (reporting, analytics, and planning tools)
- Expertise in IT systems
- Knowledge of digital technologies and trends
- Expertise in data protection & data security
- Expertise in data architecture
- Expertise in statistical model interpretation
- Expertise in data sourcing
- Expertise in statistical model building
- Expertise in programming

Source: Schäffer et al. (2019)  
Managerial Accounting I

## Management Expertise

- Expertise in project management
- Expertise in change management
- Expertise in agile techniques



## Business Acumen

- Knowledge of company's business model, value drivers, and industry
- Knowledge of success factors of traditional business models
- Strategic thinking
- Knowledge of success factors of digital business models

## Communication & Collaboration Skills

- Collaboration skills
- Discussion skills
- Presentation and storytelling skills
- Coaching and mentoring skills
- Assertiveness
- Leadership and motivation skills
- Negotiation skills

## Personal Competencies

- Analytical thinking
- Problem solving orientation
- Personal integrity and backbone
- Critical thinking and reflection
- Perseverance and grit
- Execution skills
- Ambiguity tolerance and openness

# Current state of the MA function

## Finance & Controlling Expertise

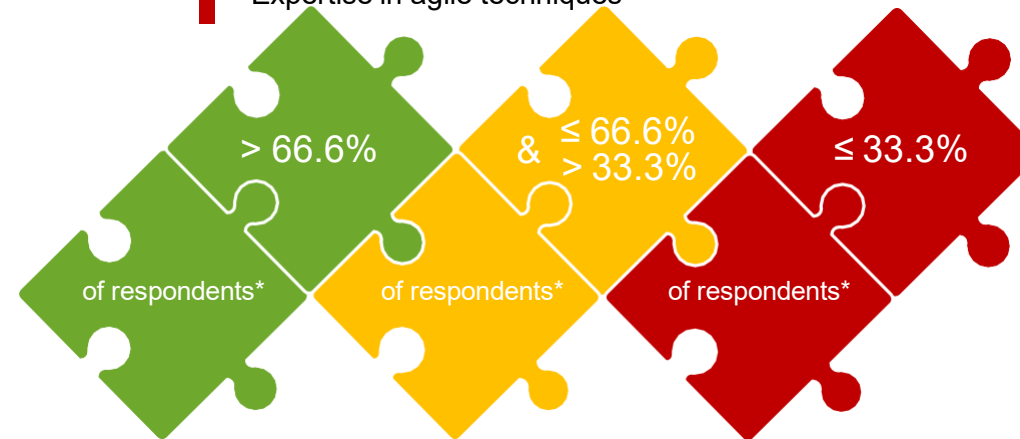
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# Current vs. new requirements - overview

## Required competencies today

- Expertise in company's finance & controlling processes
- Knowledge of financial metrics
- Expertise in financial accounting
- Presentation and storytelling skills
- Negotiation skills
- Personal integrity and backbone
- Perseverance and grit

## Change in level or type of requirement

- Expertise in finance & controlling related concepts and frameworks
- Knowledge of non-financial metrics
- Expertise in IT systems and data architecture
- Expertise in data sourcing and data preparation
- Expertise in data visualization
- Expertise in business intelligence tools (reporting, analytics, and planning tools)
- Expertise in project management
- Expertise in change management
- Knowledge of company's business model, value drivers, and industry
- Knowledge of success factors of traditional business models
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- Assertiveness
- Analytical thinking
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- Execution skills
- Strategic thinking
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## New requirements

- Expertise in statistical model building
- Expertise in statistical model interpretation
- Expertise in programming
- Knowledge of digital technologies and trends
- Expertise in data protection and security
- Expertise in agile techniques
- Knowledge of success factors of digital business models

# III. The Future of Management Accounting / Controlling

- i. Future Management Accounting /  
Controlling Competencies
- ii. Future Management Accountant Roles



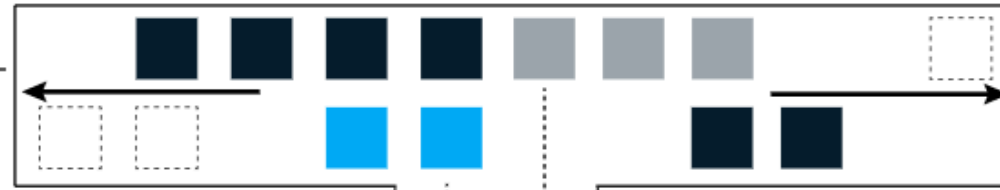
# Jack of all trades – Master of none!?



# Hardly!

## Role and person specific skill profiles!

**Breadth of essential skills**



- Personal skills
- Functional skills
- Industry specific

*“The stuff everyone should know”*

**New skill blocks** are added to the individual repository

Share a **large degree of commonality** across all learner journeys

**Build** in scope and **breadth with tenure** from Day 1 as the learner grows in experience and impact level

**Skill block**

*“The bricks building my personal skill repository”*

**Skills blocks are predefined** and belong to areas such as functional foundations (eg, lean manufacturing), industry specific skills (eg, biopharma), or personal skills

They **mirror the topics learners are working on** and their past experiences.

**Depth of expertise**

*“How I define my personal value proposition”*

**Learners select** a range of skill blocks where they can go deep to support specific interests and focus areas

**Skills blocks** mainly remain the same with tenure, but are expected to **move down the T**; developing from basic to mastery level

# Nine potential MA role profiles emerge

Person ≠ Role

## Service Expert

Ensures execution, coordination, and continuous improvement of operational controlling processes.



## Scorekeeper

Conducts routine tasks in operational controlling processes.

## Functional Lead

Defines and communicates controlling policies and guidelines; provides methods and subject matter expertise.



## Guardian

Monitors financial target achievement, risks, and opportunities; ensures compliance with guidelines.

## Change Agent

Drives transformation, the use of new technologies, and the development of new business models.

## Business Partner

Provides advice to managers, challenges them, and proactively works on business problems and opportunities.

## Data Engineer

Ensures data quality and data governance; develops or implements reporting, analytics, and planning solutions.

## Data Scientist

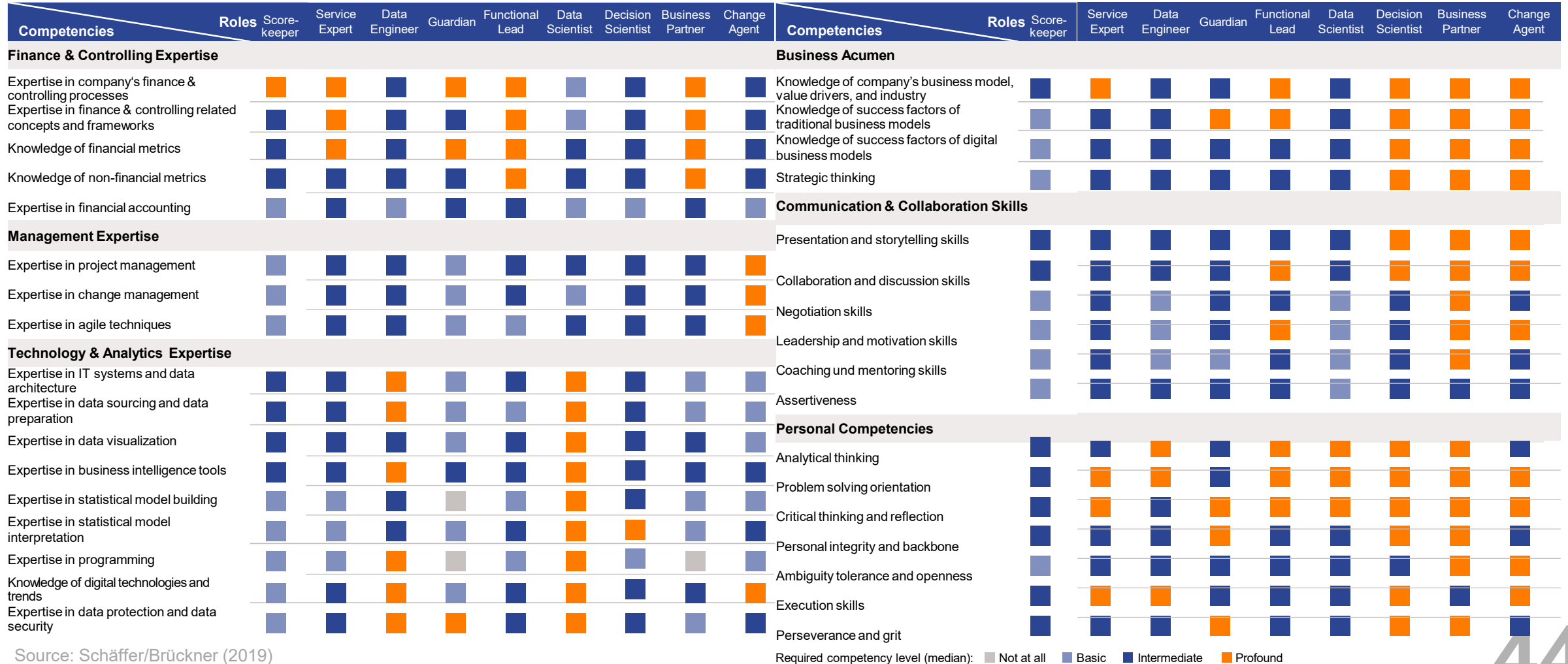
Conducts analyses of big data; builds and maintains statistical and machine learning models.



## Decision Scientist

Ensures that data science addresses relevant questions and that results of big data analyses are translated into initiatives.

# Jack of all trades vs. role-specific profiles

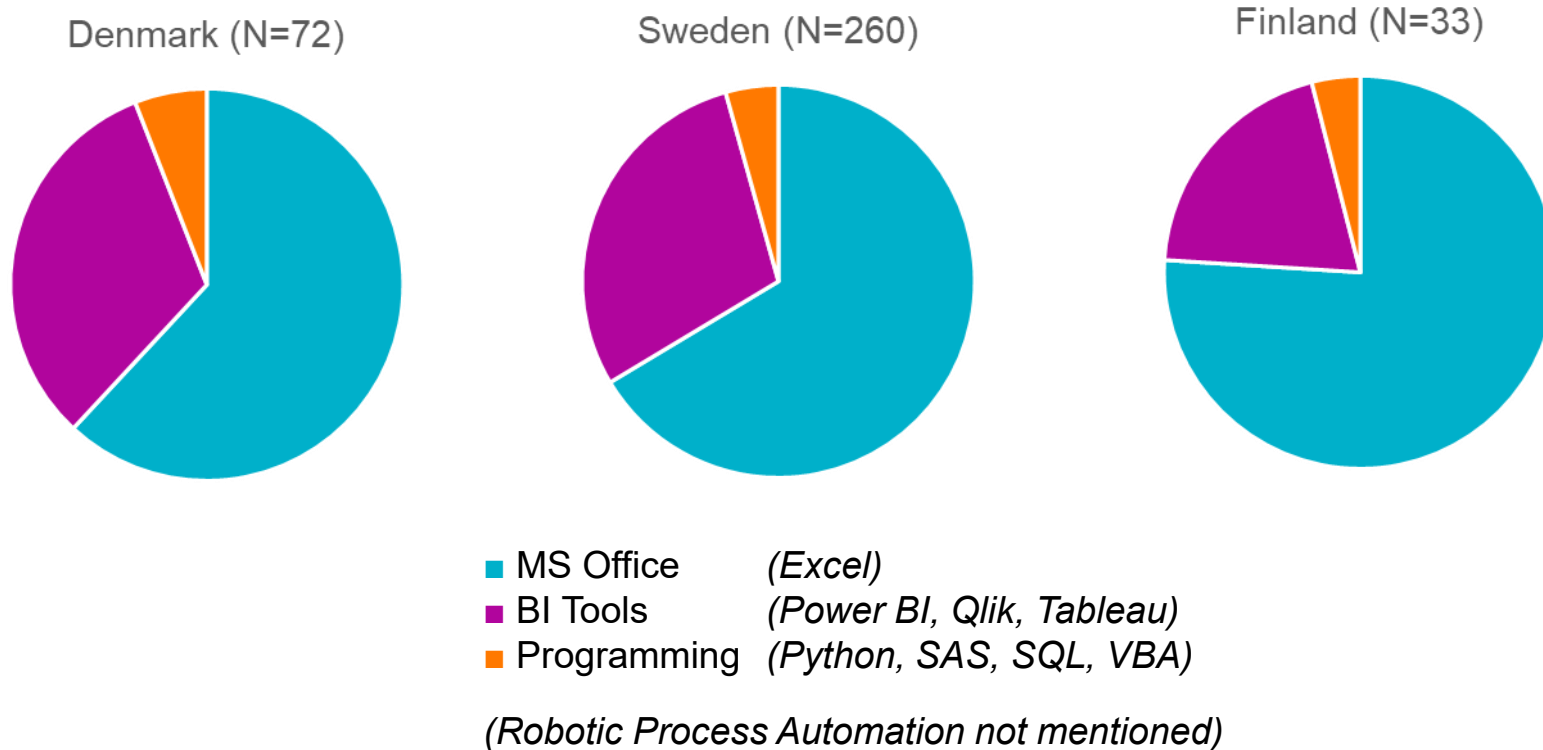


Source: Schäffer/Brückner (2019)  
Managerial Accounting I

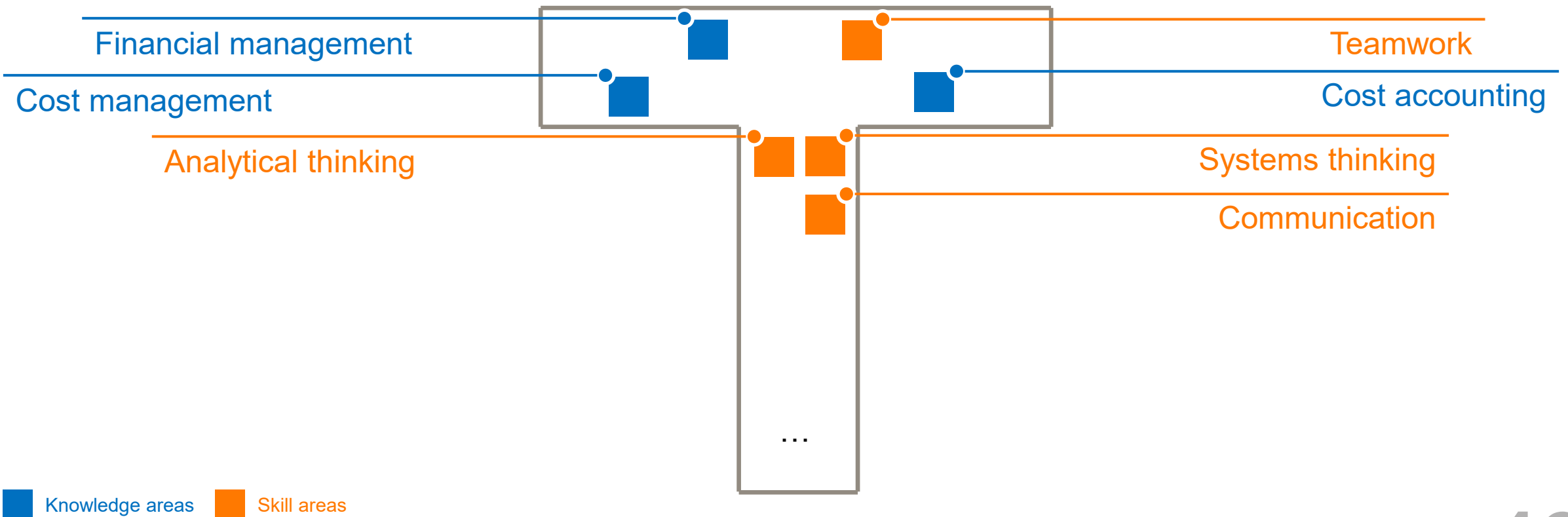
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# Analytical software skills are important!

## Technological skills required for new Business Controller positions



# This course builds the foundation of the management accounting competency “T”



# Intended Learning Outcomes (ILOs) for this session:

- **ILO 1.1:** Understand organizational value drivers and entailed decision making needs
- **ILO 1.2:** Understand the concept and role of management accounting in fulfilling those needs
- **ILO 1.3:** Gain a perspective on hireable future management accounting competencies

# References

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# An Introduction to Cost Terms and Purposes

By David Derichs, PhD



**What does the word cost mean to you?**

**A?**

# Something like this?!



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# Focus of cost accounting

**Target audience**

**Task relation**

**Time horizon**

**Frequency**

**Content**

**Goal**

**Guidelines**

**Used categories**

Company internal (management)

Planning, steering, control

Mostly short-term within time bracket

Continuously or case based

Mostly at product level – important other purposes

Maintenance of economic operations

Internal

Costs

# Tasks of cost accounting

## Internal (main) tasks

## External (secondary) tasks

### Continuous (reporting)

- Economic performance controlling
- Success controlling
- Incentive systems

### Control

### Case-based (analysis)

#### Procurement

- Suppliers
- Supply chains
- Supply quantity
- Price upper limits

#### Production

- Processes
- Order sizes
- Order

#### Sales

- Price lower limits
- Distribution areas
- Distribution chains
- Customers

#### Integration

Make or Buy  
Production  
Program

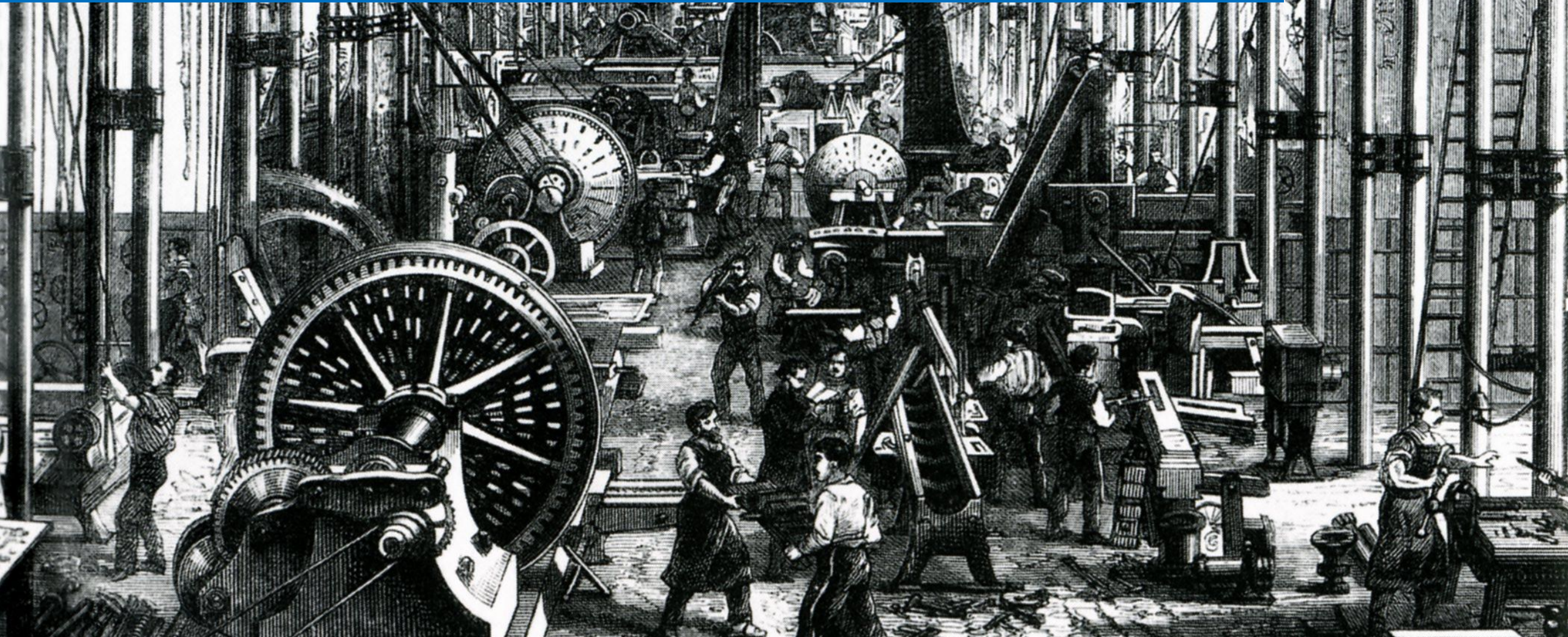
### Planning

- Cost accounting
  - Inventory valuation
  - Transfer pricing
- Cost determination for public tenders

### Documentation



**Why do we need to know product/service costs?**



# Why do we need to know product and service costs?

- Pricing decisions
- Product mix/portfolio decisions
- Process changes (re-engineering)
- Content changes (R/D)
- Markets and terms or trade
- Cost control over time
- Financial statements



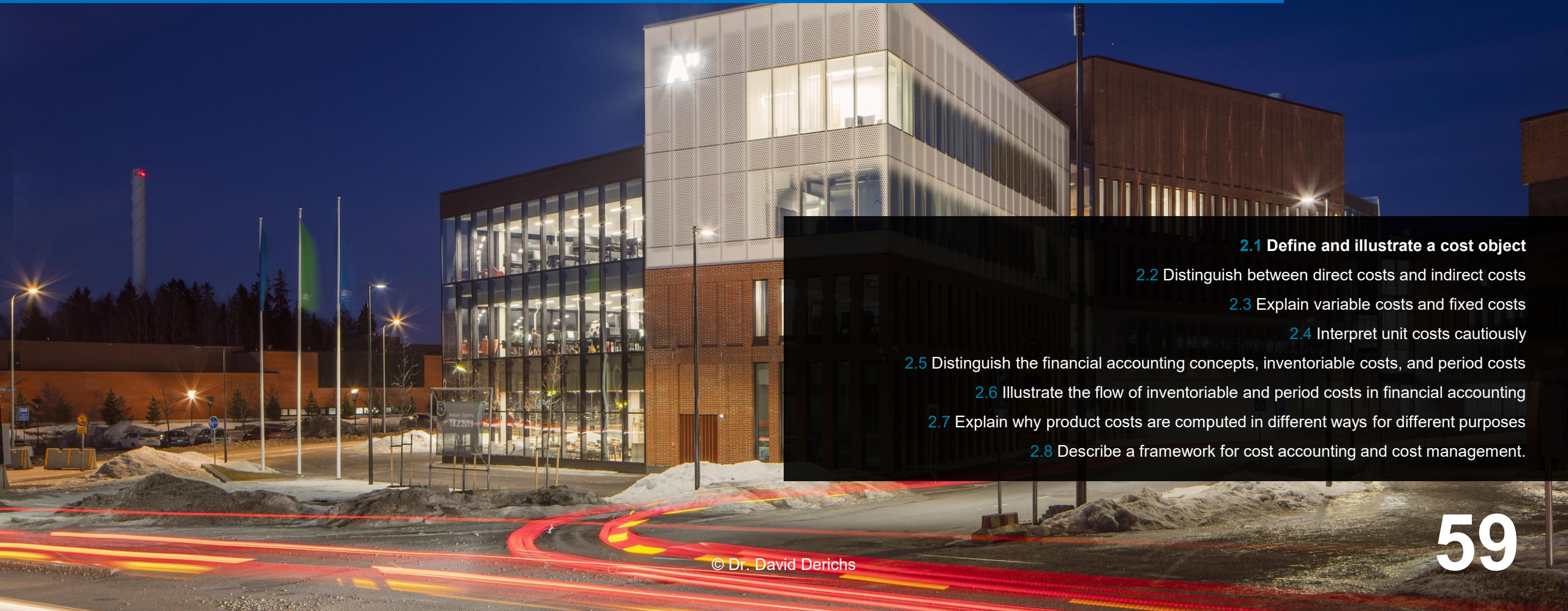
**Why is the importance of cost accounting increasing – i.e. why is the direct link disappearing?**

**A?**

# Agenda: Learning Objectives for this session

- 2.1** Define and illustrate a cost object
- 2.2** Distinguish between direct costs and indirect costs
- 2.3** Explain variable costs and fixed costs
- 2.4** Interpret unit costs cautiously
- 2.5** Distinguish the financial accounting concepts, inventoriable costs, and period costs
- 2.6** Illustrate the flow of inventoriable and period costs in financial accounting
- 2.7** Explain why product costs are computed in different ways for different purposes
- 2.8** Describe a framework for cost accounting and cost management.

# 2.1 Define and illustrate a cost object



**2.1 Define and illustrate a cost object**

2.2 Distinguish between direct costs and indirect costs

2.3 Explain variable costs and fixed costs

2.4 Interpret unit costs cautiously

2.5 Distinguish the financial accounting concepts, inventoriable costs, and period costs

2.6 Illustrate the flow of inventoriable and period costs in financial accounting

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2.8 Describe a framework for cost accounting and cost management.

# Basic Cost Terminology

- **Cost**—a sacrificed or forgone resource to achieve a specific objective
- **Actual cost**—a cost that has occurred
- **Budgeted cost**—a predicted cost
- **Cost object**—anything for which a cost measurement is desired

# Different margins

## Sales price

- Material costs (raw materials)

= **Margin 1 (Throughput margin)**

- Other variable costs (direct labour and some overhead)

= **Margin 2 (Traditional contribution margin)**

- Indirect costs traced based on causality (plant rent/depreciation)

= **Margin 3 (Similar to ideas of ABC)**

- Indirect allocated costs (ERP systems, top management)

= **Margin 4 (Full costing)**

# Cost Object Examples at Tesla

Cost Object	Illustration
Product	A Tesla Model 3 vehicle
Service	Telephone hotline providing information and assistance to Tesla stores and galleries
Project	R&D project on an electric Tesla truck
Customer	The Dubai Road and Transport Authority (RTA), which is building a large fleet of electric taxis in the city
Activity	Setting up machines for production or maintaining production equipment
Department	Worker health and safety department

# More basic cost terminology

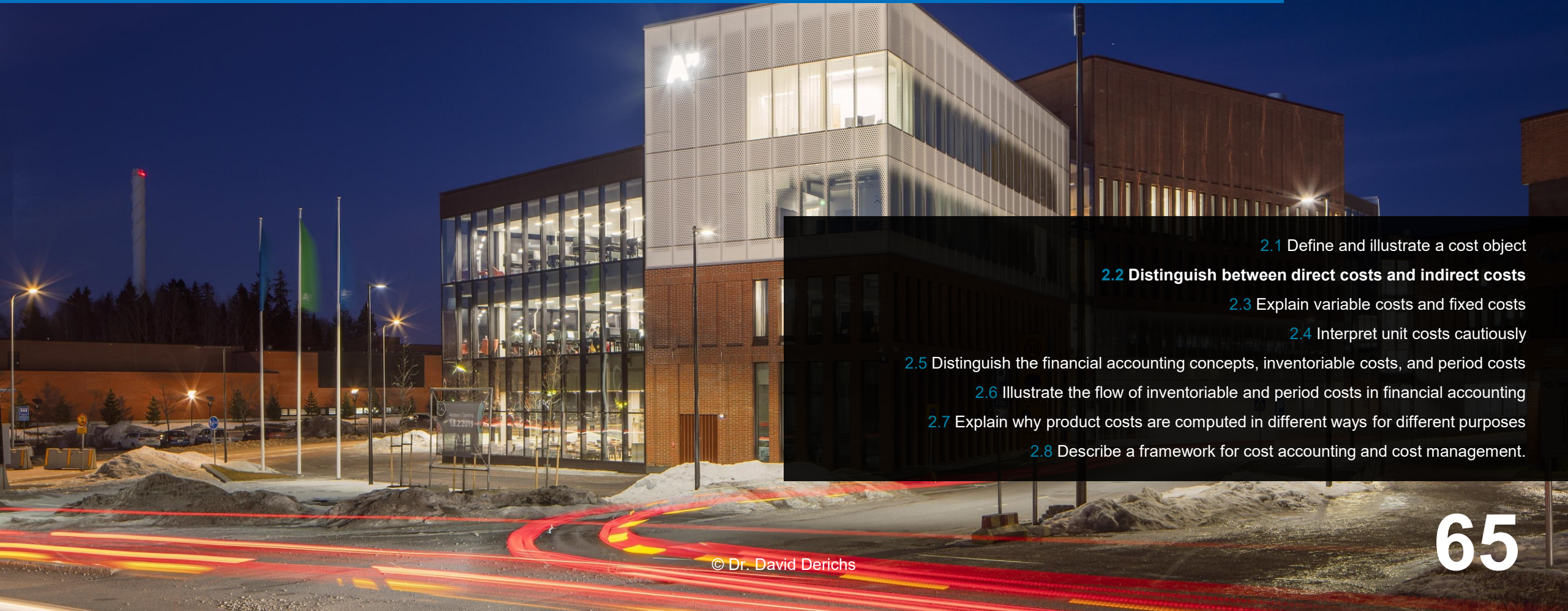
- **Cost Accumulation**—the collection of cost data in an organized way by means of an accounting system
- **Cost Assignment**—a general term that encompasses the gathering of accumulated costs to a cost object in two ways:
  - Tracing costs with a direct relationship to the cost object
  - Allocating accumulated costs with an indirect relationship to a cost object

**What costs do we have at Aalto to run this program?**

**A?**



## 2.2 Distinguish between direct costs and indirect costs




- 2.1 Define and illustrate a cost object
- 2.2 Distinguish between direct costs and indirect costs**
- 2.3 Explain variable costs and fixed costs
- 2.4 Interpret unit costs cautiously
- 2.5 Distinguish the financial accounting concepts, inventoriable costs, and period costs
- 2.6 Illustrate the flow of inventoriable and period costs in financial accounting
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# Why do we need to study different allocation methods?

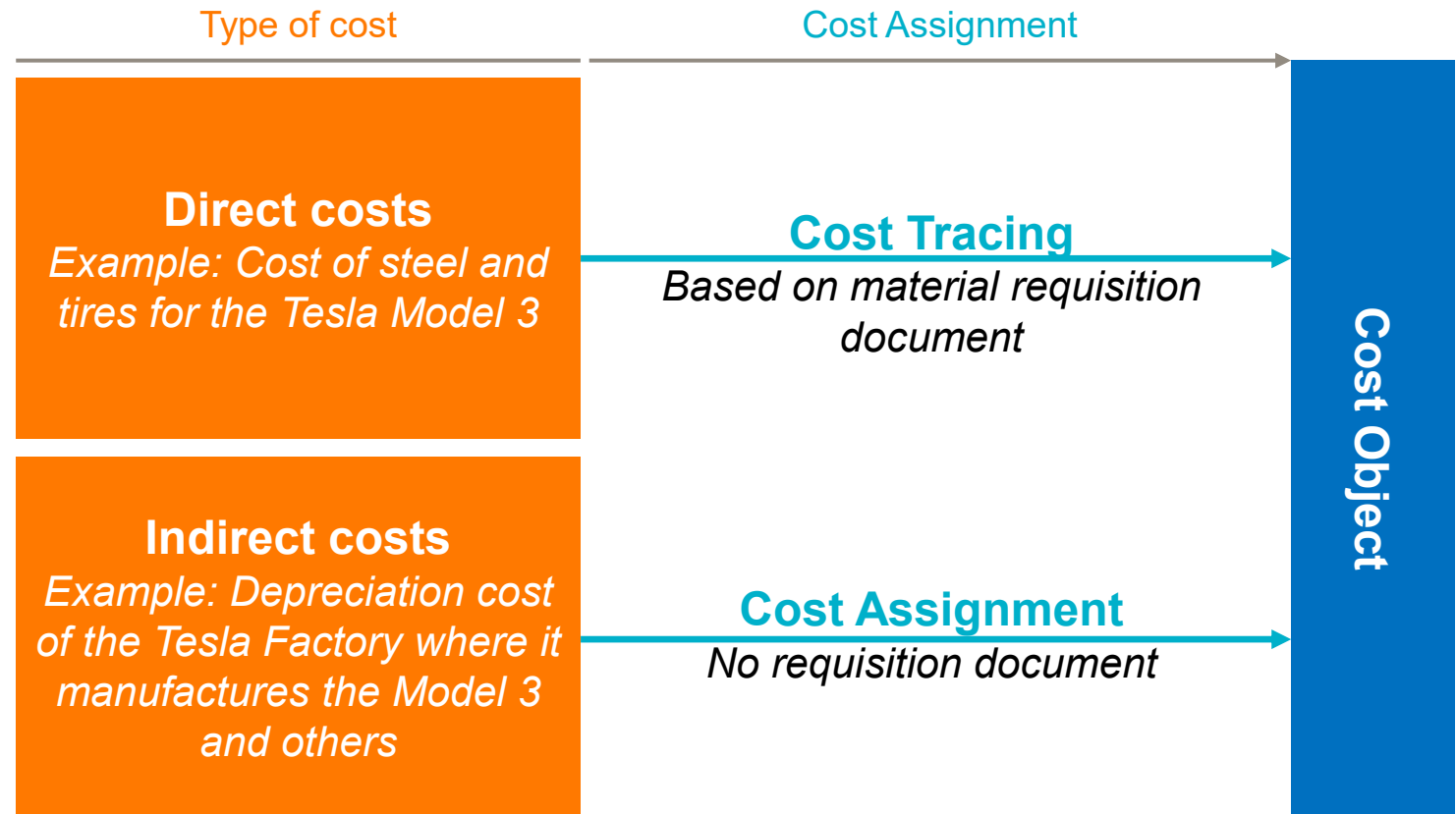
- **There is no right way of dealing with overheads**, but there are better and worse methods to allocate them
- Different allocation methods produce different product costs => right decisions?
- Every manager needs to understand how costs are calculated in his/her organization, and whether the figures can be trusted to be "correct". It is not enough to say that the finance people take care of these, so they must be right!
- For what type of decisions you need "full" costs?

# All cost systems function in a similar way

- 
- **Expense categories** are created – starting from book-keeping (ledger accounts)
  - Costs are **mapped** to departments, production centers or activities
  - Costs are then **attached to cost objects** (= Two-Stage Allocation, sometimes more simple procedures used)
  - **The way activities are determined** and **links** between stages (allocations) are made makes the **difference**

# Direct and Indirect Costs + Example Tesla

- **Direct costs** can be conveniently and economically traced (tracked) to a cost object.
- **Indirect costs** cannot be conveniently or economically traced (tracked) to a cost object.
  - Instead of being traced, these costs are allocated to a cost object in a rational and systematic manner.



# Why are cost figures sometimes hard to interpret?

- Most cost systems do a fairly good job in assigning direct costs to cost objects
- Often **large proportion of costs is indirect (overheads)** and **some of these costs** can **not** be assigned to cost objects following **causality**
- It is the proper treatment (or allocation) of these overhead costs that makes cost accounting to appear difficult

# Cost examples

## Direct costs

- Material (steel or tires for a car, as an example)
- Labor (assembly-line worker wages)

## Indirect costs

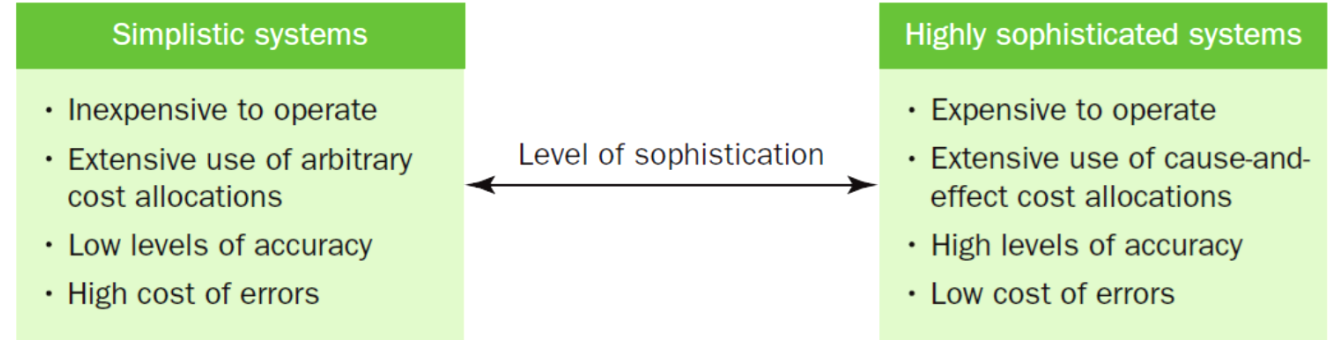
- Electricity
- Rent
- Property taxes
- Plant administration expenses

# Factors Affecting Direct/Indirect Cost Classifications

- The **materiality** of the cost in question
- The **available information**-gathering technology
- **Design of operations**

NOTE: a specific cost may be both a direct cost of one cost object and an indirect cost of another cost object.

*The direct/indirect classification depends on the cost object that one is trying to determine the cost of.*

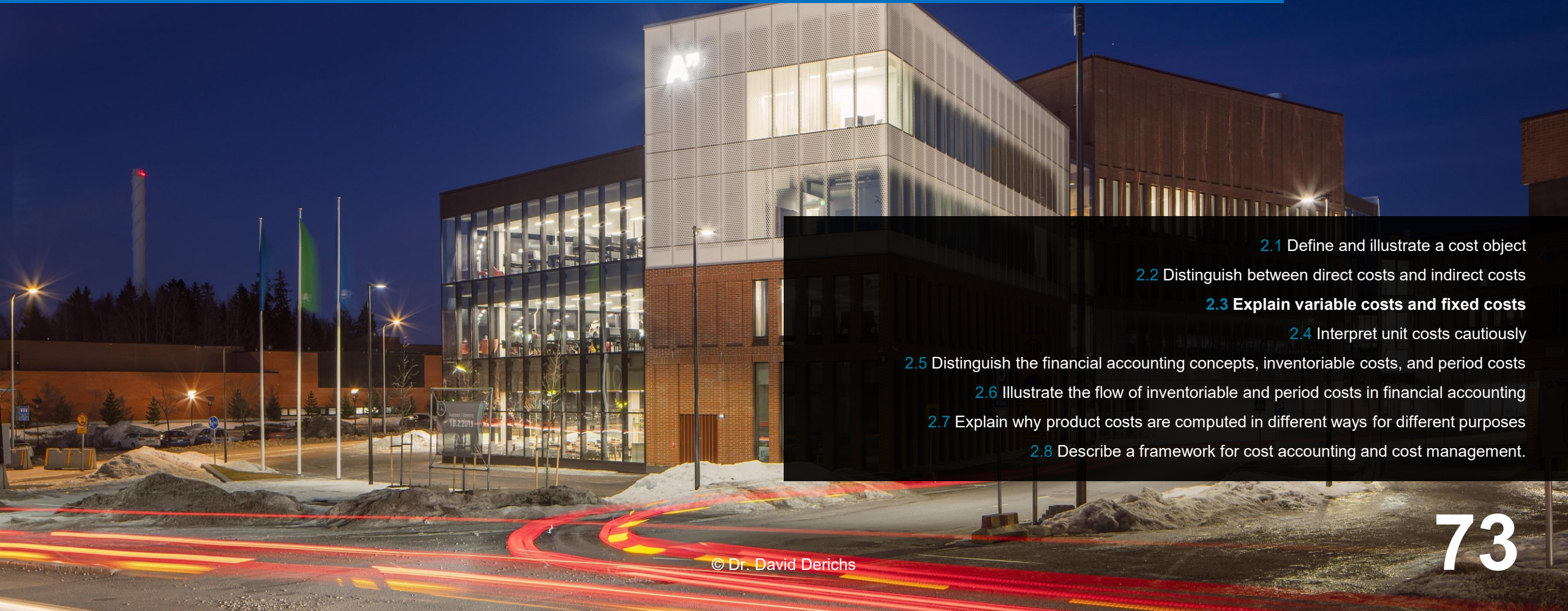


**Let's now classify your program costs  
as direct or indirect!**

**A?**



## 2.3 Explain variable costs and fixed costs



2.1 Define and illustrate a cost object

2.2 Distinguish between direct costs and indirect costs

**2.3 Explain variable costs and fixed costs**

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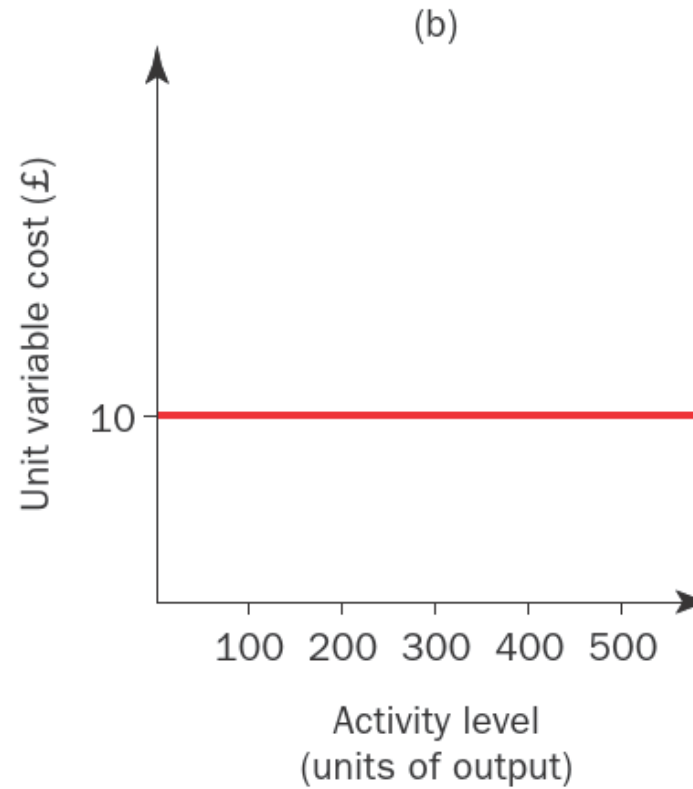
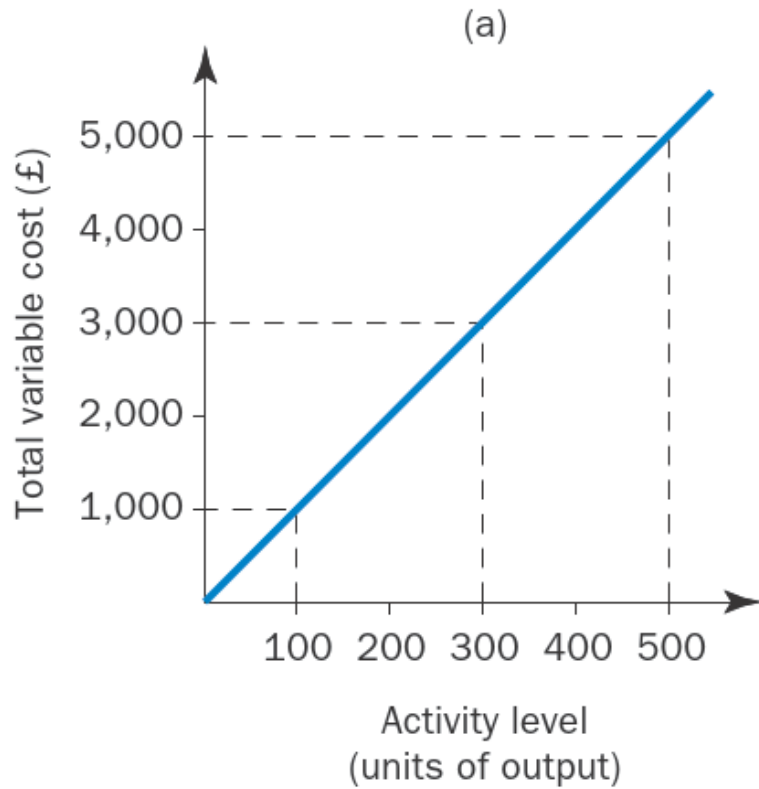
# Cost Behavior Patterns: Variable Costs and Fixed Costs

- **Variable costs** change, *in total*, in proportion to changes in the related level of activity or volume of output produced.
  - Variable costs are **constant on a per-unit basis**. That is, if a product takes 5 pounds of material each, it stays the same per unit regardless if one, ten, or a thousand units are produced.
- **Fixed costs** remain unchanged, *in total*, for a given time period, despite changes in the related level of activity or volume of output produced.
  - Fixed costs per unit **change inversely with the level of production**. As more units are produced, the same fixed cost is spread over more and more units, reducing the cost per unit.
- Costs are fixed or variable for a specific activity and/or for a given time period.

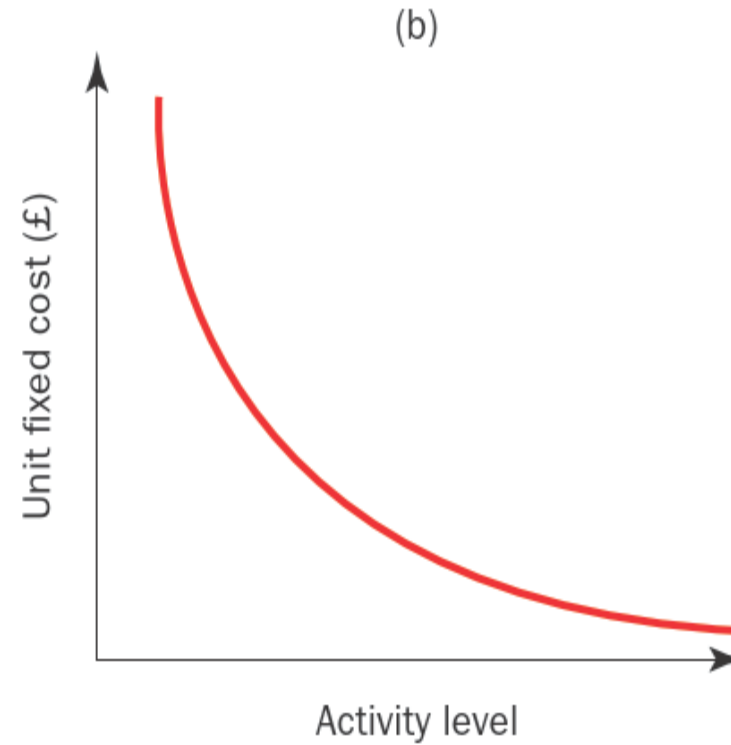
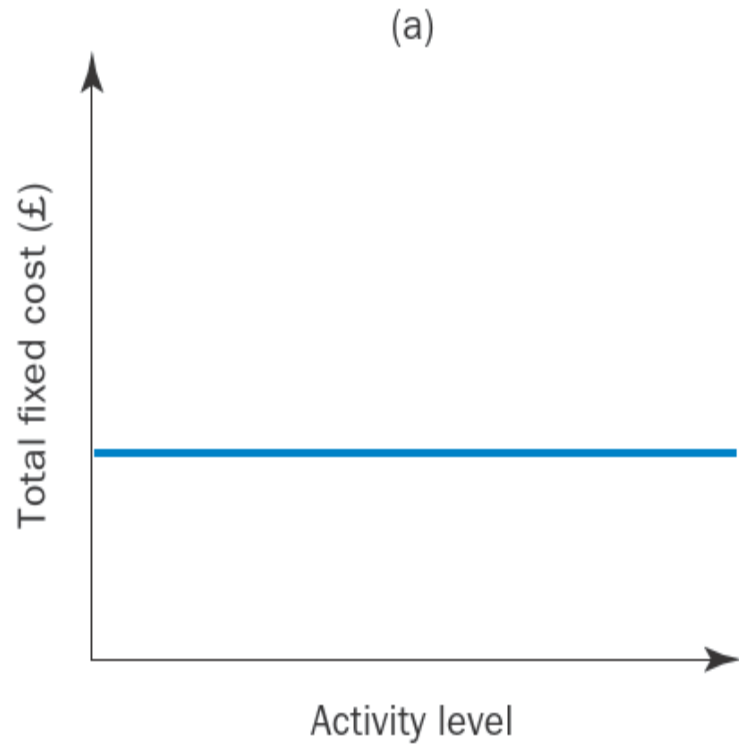
# Cost Behavior Summarized

<b>COSTS</b>	<b>TOTAL DOLLARS</b>	<b>COST PER UNIT</b>
<b>VARIABLE COSTS</b>	Change in proportion with output (more output = more cost)	Unchanged in relation to output
<b>FIXED COSTS</b>	Unchanged in relation to output (within the relevant range)	Change inversely with output (more output = lower cost per unit)

# Variable costs in charts

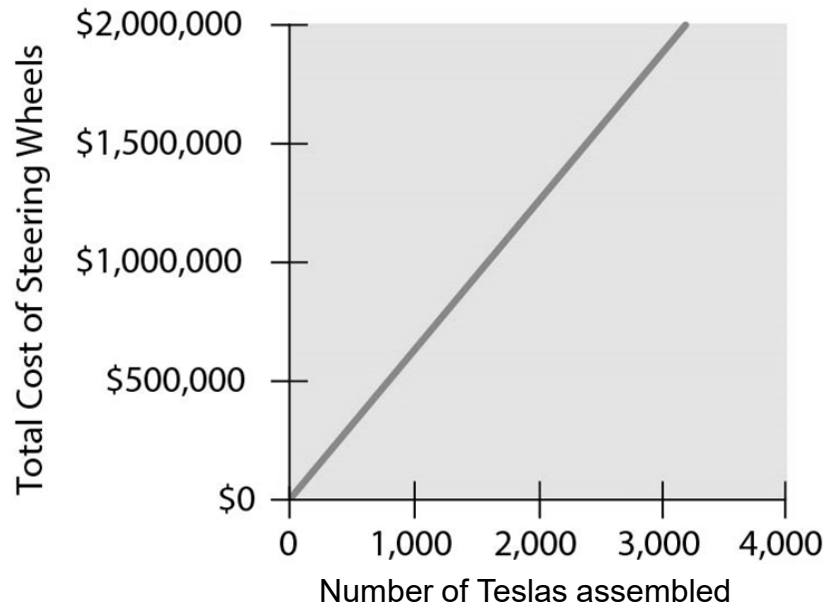


# Fixed costs in charts

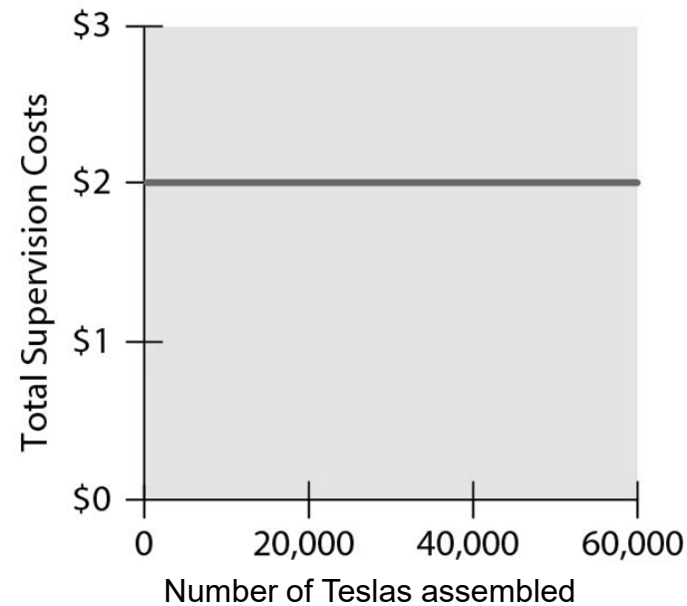


# Fixed vs. variable costs example Tesla

**Variable costs per unit (e.g., steering wheels)**



**Fixed costs per unit (e.g., supervision costs)**



# Other essential Cost Concepts

**Mixed costs** have both fixed and variable elements.

**Cost driver**—a variable, such as the level of activity or volume, that causally affects costs over a given time span

**Relevant range**—the band or range of normal activity level (or volume) in which there is a specific relationship between the level of activity (or volume) and the cost in question

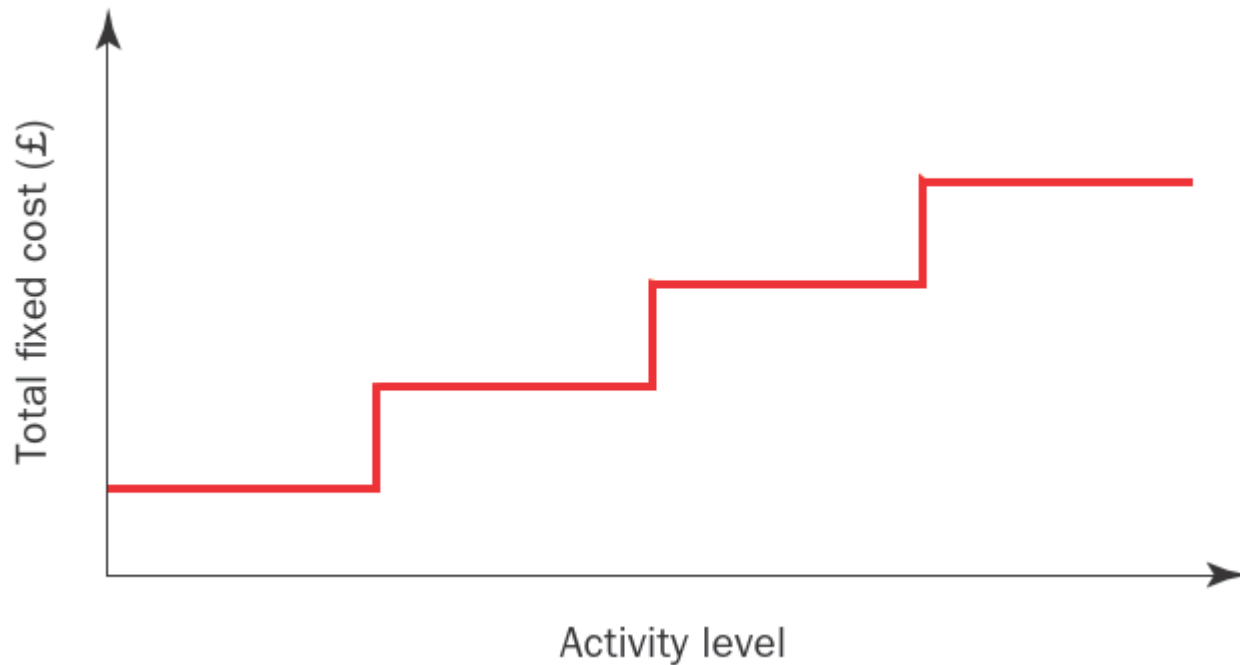
→ Fixed costs are considered fixed only within the relevant range.

# Exercise Time – E1





# Fixed costs in charts – Step wise increases of fixed costs – relevant range



# Multiple Classifications of Costs

- Costs may be classified as
  - **Direct/Indirect** and
  - **Variable/Fixed.**
- These multiple classifications give rise to important **cost combinations**:
  - Direct and variable
  - Direct and fixed
  - Indirect and variable
  - Indirect and fixed

		Assignment of Costs to Cost Object	
		Direct Costs	Indirect Costs
Cost-Behavior Pattern	Variable Costs	<ul style="list-style-type: none"> <li>• Cost object: Teslas produced</li> <li>Example: Tires used in assembly of automobile</li> </ul>	<ul style="list-style-type: none"> <li>• Cost object: Teslas produced</li> <li>Example: Power costs at Spartanburg plant. Power usage is metered only to the plant, where multiple products are assembled.</li> </ul>
	Fixed Costs	<ul style="list-style-type: none"> <li>• Cost object: Teslas produced</li> <li>Example: Salary of supervisor on Teslas assembly line</li> </ul>	<ul style="list-style-type: none"> <li>• Cost object: Teslas produced</li> <li>Example: Annual lease costs at Spartanburg plant. Lease is for whole plant, where multiple products are produced.</li> </ul>

# Let's classify those cost from previously further into the following scheme!

A?

		Assignment of Costs to Cost Object	
		Direct Costs	Indirect Costs
Cost-Behavior Pattern	Variable Costs	<ul style="list-style-type: none"><li>• Cost object: BMW X6s produced Example: Tires used in assembly of automobile</li></ul>	<ul style="list-style-type: none"><li>• Cost object: BMW X6s produced Example: Power costs at Spartanburg plant. Power usage is metered only to the plant, where multiple products are assembled.</li></ul>
	Fixed Costs	<ul style="list-style-type: none"><li>• Cost object: BMW X6s produced Example: Salary of supervisor on BMW X6 assembly line</li></ul>	<ul style="list-style-type: none"><li>• Cost object: BMW X6s produced Example: Annual lease costs at Spartanburg plant. Lease is for whole plant, where multiple products are produced.</li></ul>

# 2.4 Interpret unit costs cautiously



2.1 Define and illustrate a cost object

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**2.4 Interpret unit costs cautiously**

2.5 Distinguish the financial accounting concepts, inventoriable costs, and period costs

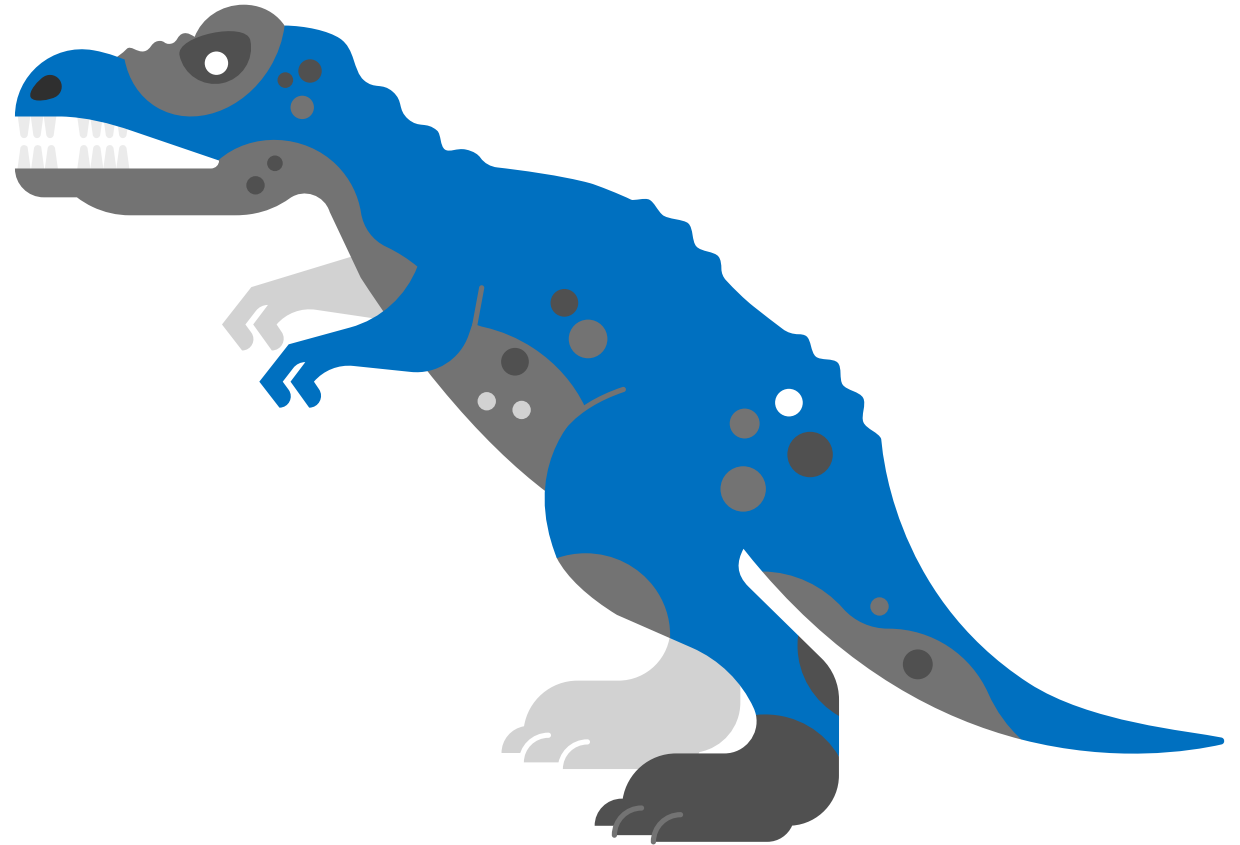
2.6 Illustrate the flow of inventoriable and period costs in financial accounting

2.7 Explain why product costs are computed in different ways for different purposes

2.8 Describe a framework for cost accounting and cost management.

# Use Unit Costs Cautiously

Although unit costs are regularly used in financial reports and for making product mix and pricing decisions, **managers should think in terms of total costs rather than unit costs for many decisions**



# More pitfalls

- **Avoidable and Unavoidable Costs**

- Avoidable costs are those costs that can be saved by not adopting a given alternative.
- Unavoidable costs cannot be saved.
- Avoidable/unavoidable costs are alternative terms sometimes used to describe relevant/irrelevant costs.

- **Sunk costs**

- Sunk costs are the costs of resources already acquired and are unaffected by the choice between the various alternatives (e.g. depreciation).
- Sunk costs are irrelevant for decision-making.

- **Opportunity costs**

- A cost that measures the opportunity that is lost or sacrificed when the choice of one course of action requires that an alternative course of action be given up.

# Sunk and Opportunity costs illustrated

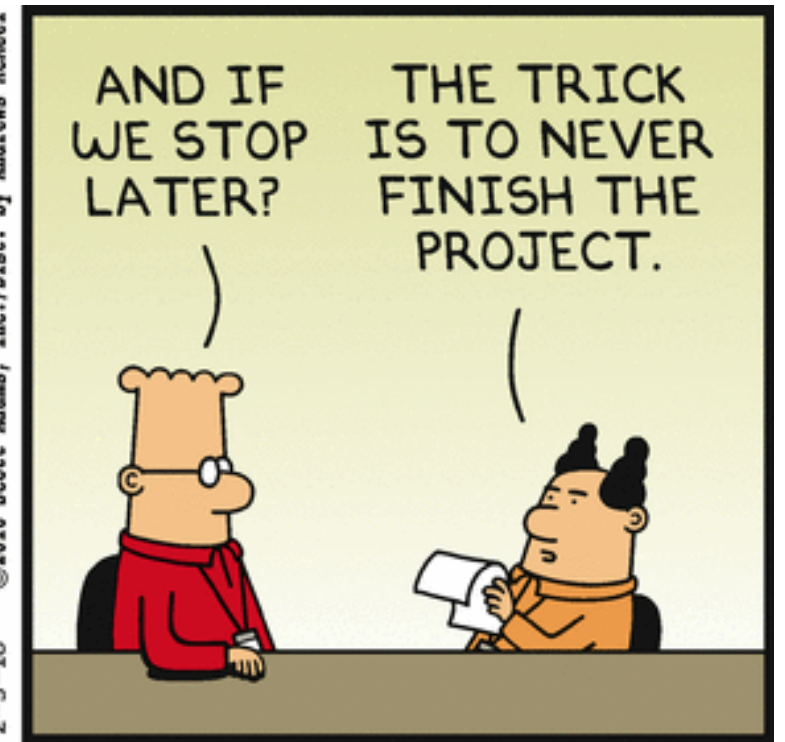
## EXAMPLE

A company has an opportunity to obtain a contract for the production of a special component. This component will require 100 hours of processing on machine X. Machine X is working at full capacity on the production of product A, and the only way in which the contract can be fulfilled is by reducing the output of product A. This will result in a lost profit contribution of £200. The

contract will also result in *additional* variable costs of £1,000.

If the company takes on the contract, it will sacrifice a profit contribution of £200 from the lost output of product A. This represents an opportunity cost and should be included as part of the cost when negotiating for the contract. The contract price should at least cover the additional costs of £1,000 plus the £200 opportunity cost to ensure that the company will be better off in the short term by accepting the contract.

# Wo what are we talking about here?





# Exercise Time – E2



# 2.5 Distinguish the financial accounting concepts, inventoriable costs, and period costs

2.1 Define and illustrate a cost object

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**2.5 Distinguish the financial accounting concepts, inventoriable costs, and period costs**

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# Different business models with different cost flows

1. **Manufacturing-sector companies** purchase materials and components and convert them into various finished goods.
2. **Merchandising-sector companies** purchase and then sell tangible products without changing their basic form.
3. **Service-sector companies** provide services (intangible products) like legal advice or audits.

# Types of Inventory in Manufacturing

**Direct materials**—resources in-stock and available for use

**Work-in-process (or progress)**—goods partially worked on but not yet completed, often abbreviated as WIP

**Finished goods**—goods completed but not yet sold

*Note:* Merchandising-sector companies hold only one type of inventory: Merchandise Inventory



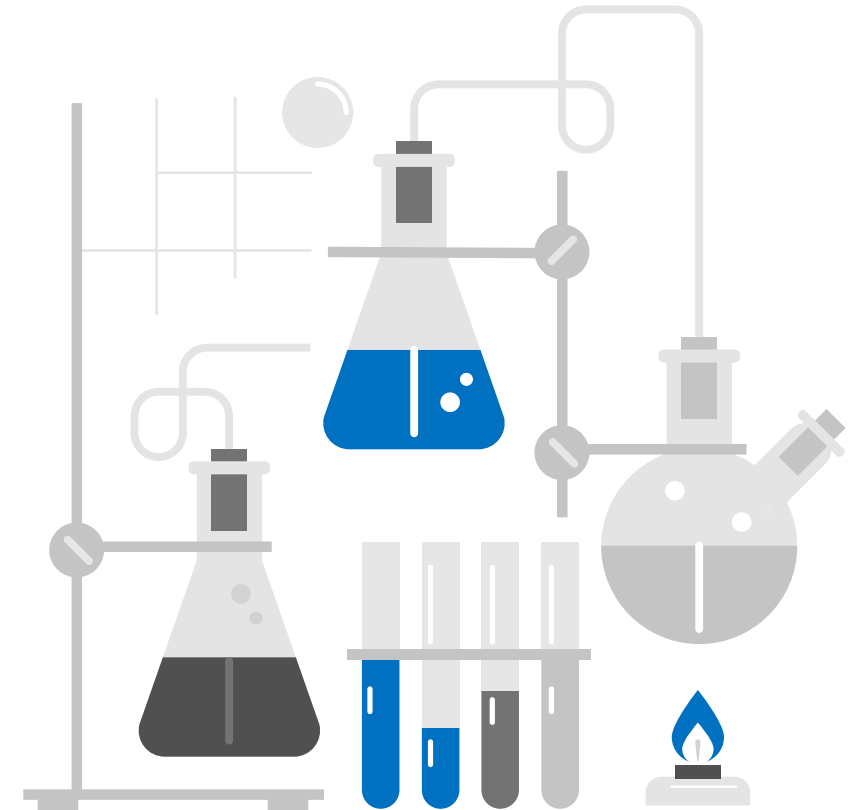
# Commonly Used Classifications of Manufacturing Costs

Also known as inventoriable costs:

**Direct materials**—acquisition costs of all material that will become part of the cost object

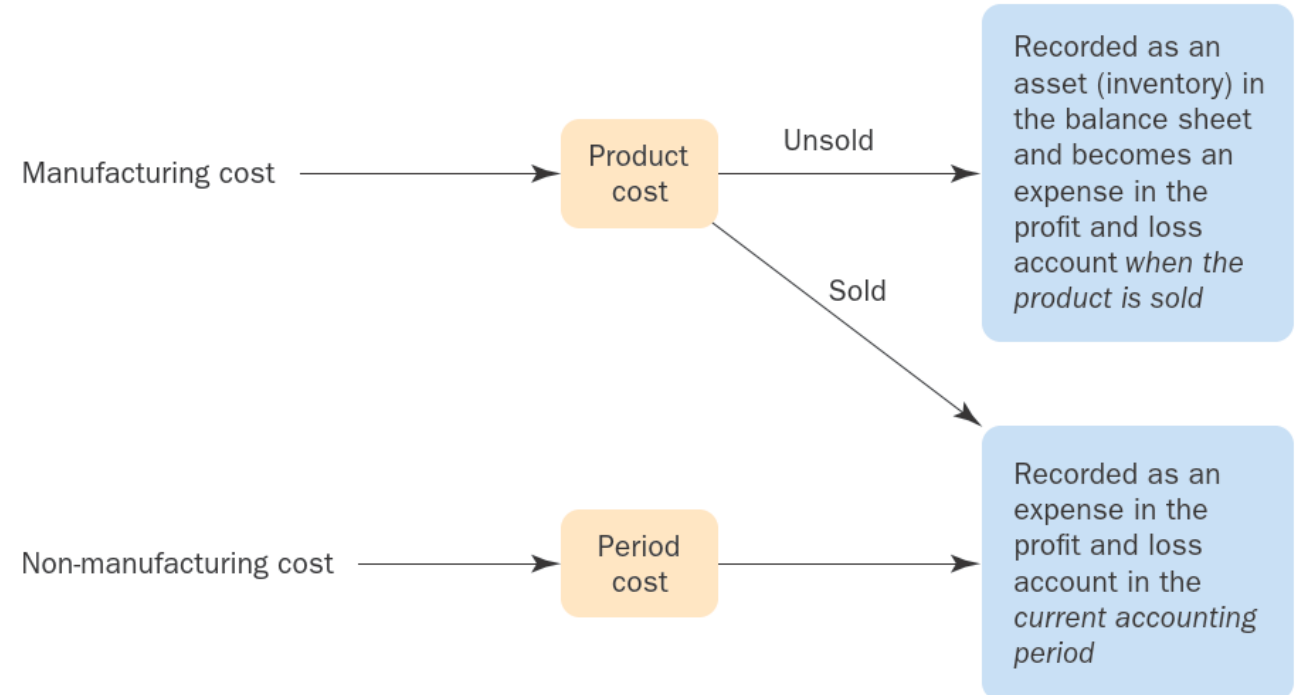
**Direct labor**—compensation of all manufacturing labor that can be traced to the cost object

**Indirect manufacturing**—all manufacturing costs that are related to the cost object but cannot be traced to that cost object in an economically feasible way



# Inventoriable Costs vs. Period Costs

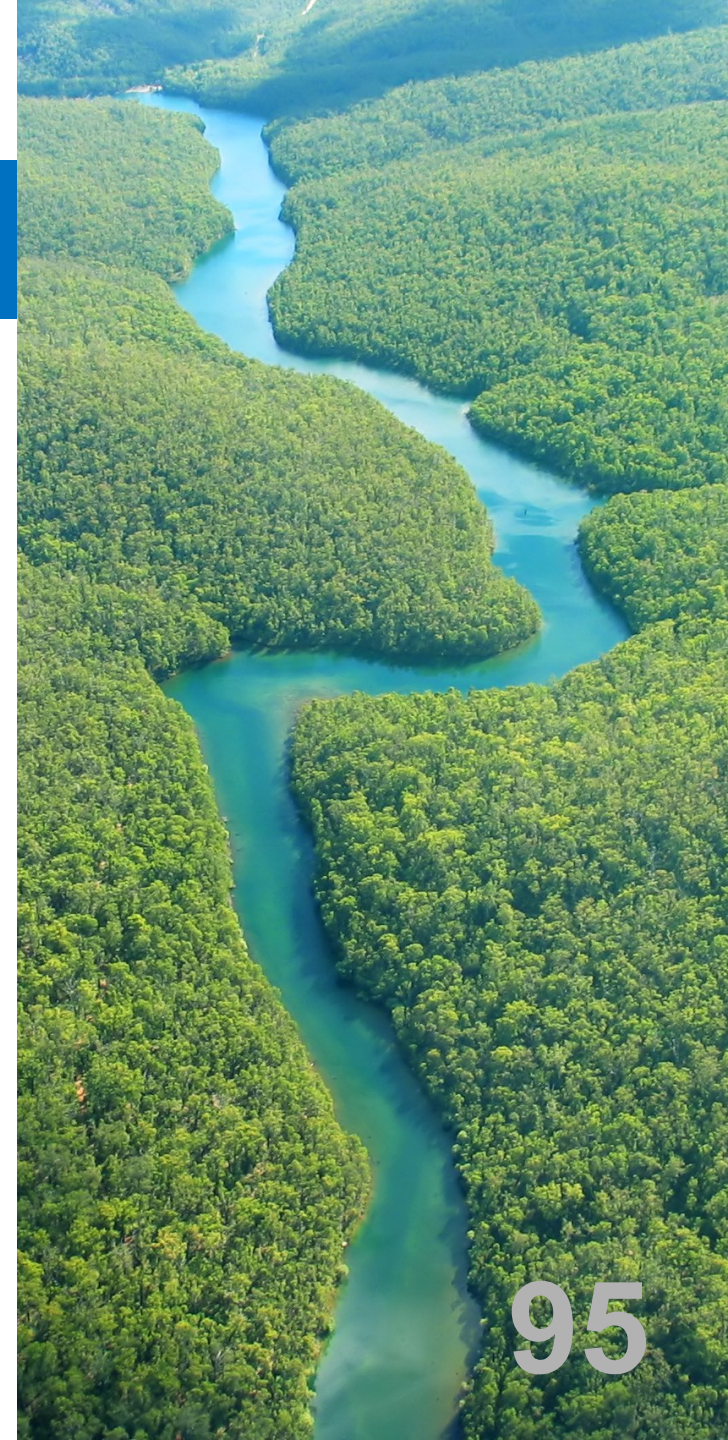
- **Inventoriable costs** are all costs of a product that are considered assets in a company's balance sheet when the costs are incurred and that are expensed as cost of goods sold only when the product is sold. For manufacturing companies, all manufacturing costs are inventoriable costs.
- **Period costs** are all costs in the income statement other than cost of goods sold. They are treated as expenses of the accounting period in which they are incurred.



# Cost Flows

The **Cost of Goods Manufactured** and the **Cost of Goods Sold** section of the income statement are **accounting representations** of the actual **flow** of costs through a production system.

*Note:* Inventoriable costs go through the balance sheet accounts of direct materials, work-in-process, and finished goods inventory before entering the cost of good sold in the income statement.



# 2.6 Illustrate the flow of inventoriable and period costs in financial accounting

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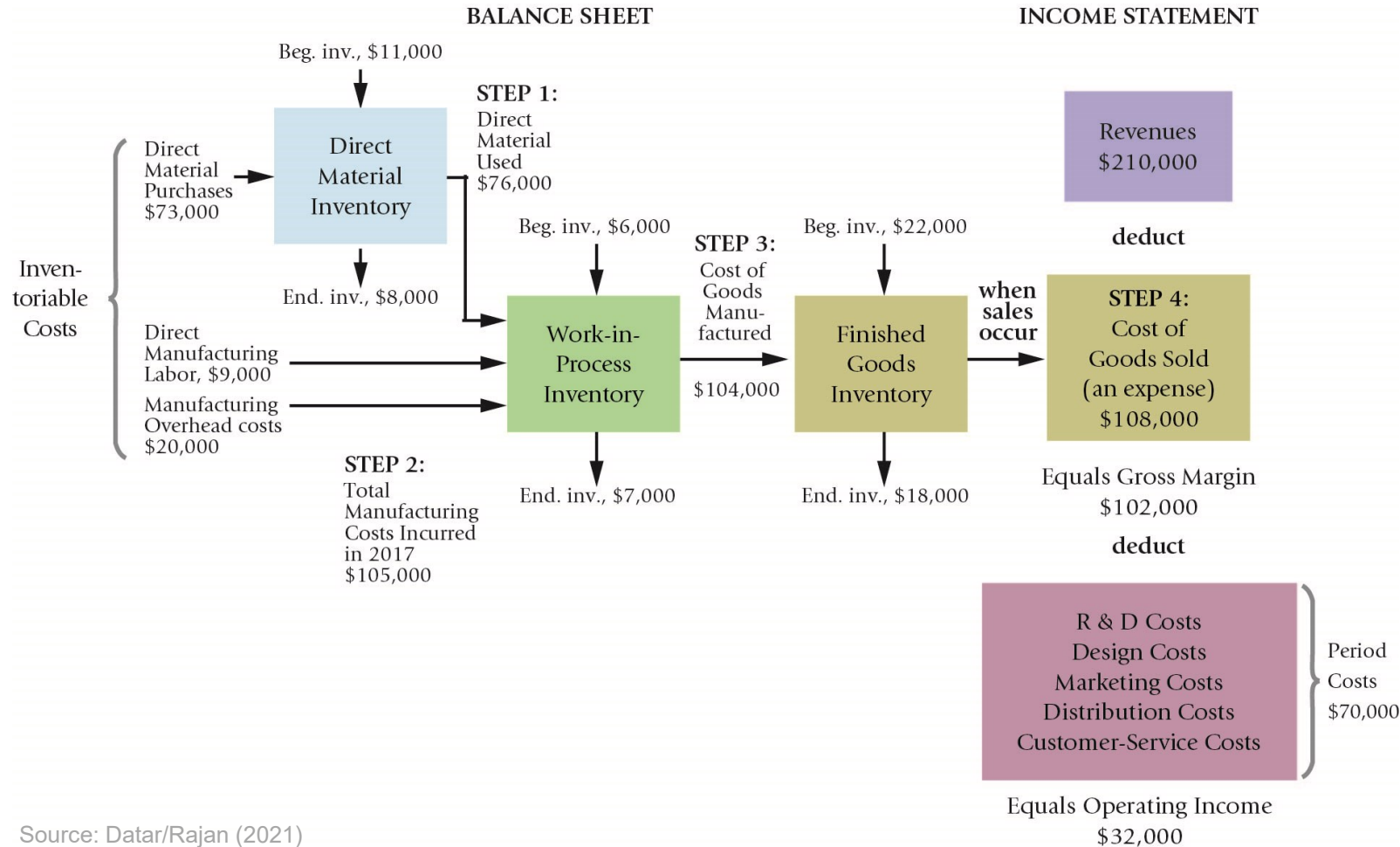
2.8 Describe a framework for cost accounting and cost management.



**Do you from financial accounting recall  
how costs flow from balance sheet to  
income statement?**

**A?**

# Cost Flows for Manufacturing Illustrated



# Multiple-Step Income Statement

STEP 4

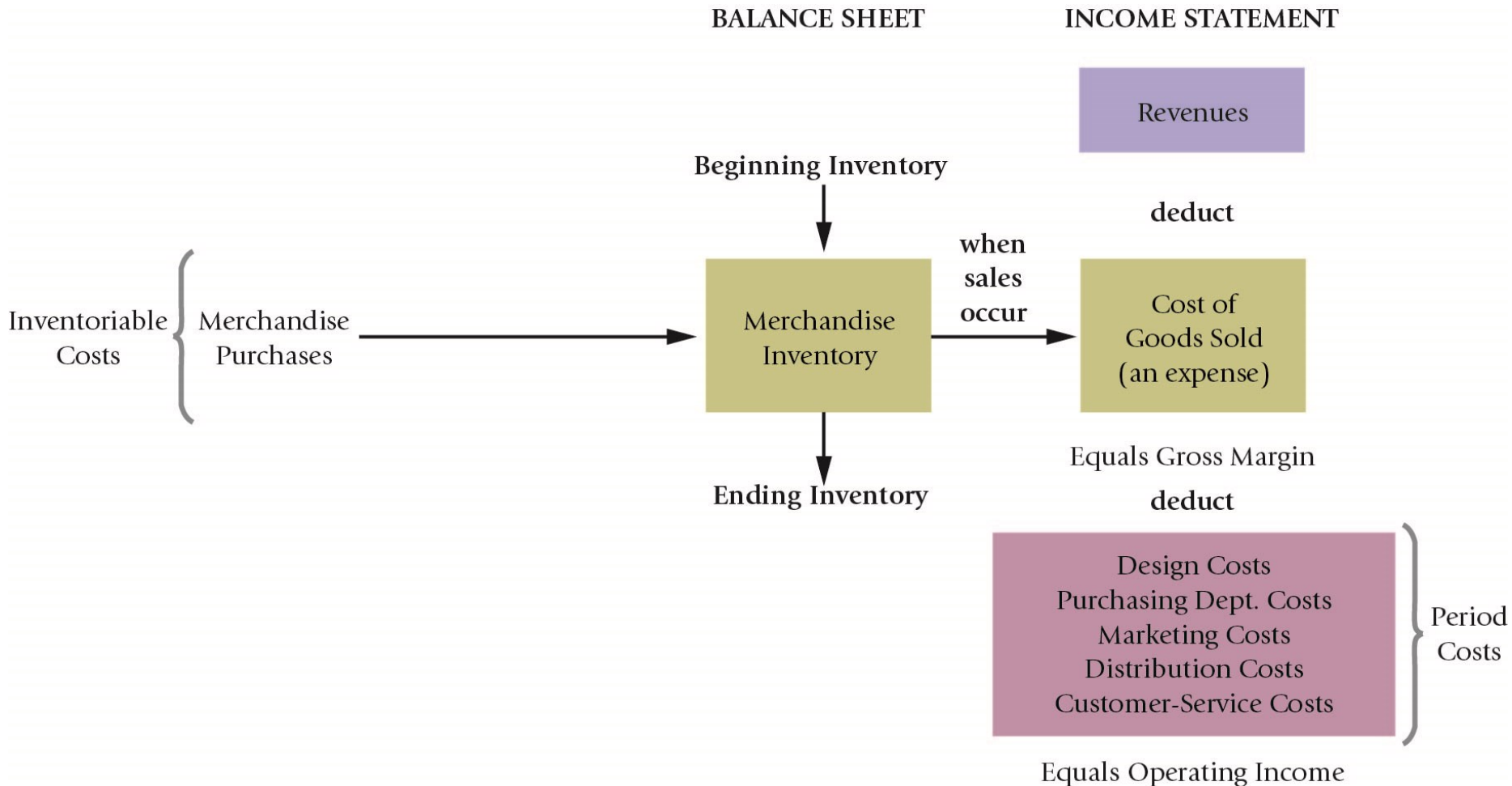
	A	B	C	D
1	<b>PANEL A: INCOME STATEMENT</b>			
2	Cellular Products			
3	Income Statement			
4	For the Year Ended December 31, 2017 (in thousands)			
5	Revenues		\$210,000	
6	Cost of goods sold:			
7	Beginning finished goods inventory, January 1, 2017	\$ 22,000		
8	Cost of goods manufactured (see Panel B)	104,000		
9	Cost of goods available for sale	126,000		
10	Ending finished goods inventory, December 31, 2017	18,000		
11	Cost of goods sold		108,000	
12	Gross margin (or gross profit)		102,000	
13	Operating (period) costs:			
14	R&D, design, mktg., dist., and cust.-service cost	70,000		
15	Total operating costs		70,000	
16	Operating income		\$ 32,000	
17				
18	<b>PANEL B: COST OF GOODS MANUFACTURED</b>			
19	Cellular Products			
20	Schedule of Cost of Goods Manufactured <sup>a</sup>			
21	For the Year Ended December 31, 2017 (in thousands)			
22	Direct materials:			
23	Beginning inventory, January 1, 2017	\$ 11,000		
24	Purchases of direct materials	73,000		
25	Cost of direct materials available for use	84,000		
26	Ending inventory, December 31, 2017	8,000		
27	Direct materials used		\$ 76,000	
28	Direct manufacturing labor		9,000	
29	Manufacturing overhead costs:			
30	Indirect manufacturing labor	\$ 7,000		
31	Supplies	2,000		
32	Heat, light, and power	5,000		
33	Depreciation—plant building	2,000		
34	Depreciation—plant equipment	3,000		
35	Miscellaneous	1,000		
36	Total manufacturing overhead costs		20,000	
37	Manufacturing costs incurred during 2017		105,000	
38	Beginning work-in-process inventory, January 1, 2017		6,000	
39	Total manufacturing costs to account for		111,000	
40	Ending work-in-process inventory, December 31, 2017		7,000	
41	Cost of goods manufactured (to income statement)		104,000	
42	<sup>a</sup> Note that this schedule can become a schedule of cost of goods manufactured and sold simply by including the beginning and ending finished goods inventory figures in the supporting schedule rather than in the body of the income statement.			

STEP 1

STEP 2

STEP 3

# Cost Flows for Merchandising Illustrated



# Other Cost Considerations

- **Prime cost** is a term referring to all direct manufacturing costs (materials and labor).
- **Conversion cost** is a term referring to direct labor and indirect manufacturing costs.
- **Overtime premium labor costs** are considered part of indirect overhead costs.
- **Idle time** refers to the wages paid for unproductive time caused by lack of orders, machine or computer breakdown, work delays, poor scheduling, and the like.

# 2.7 Explain why product costs are computed in different ways for different purposes

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2.8 Describe a framework for cost accounting and cost management.

# Measuring Costs Requires Judgment

**Because management can define and classify costs in multiple ways, judgment is required.**

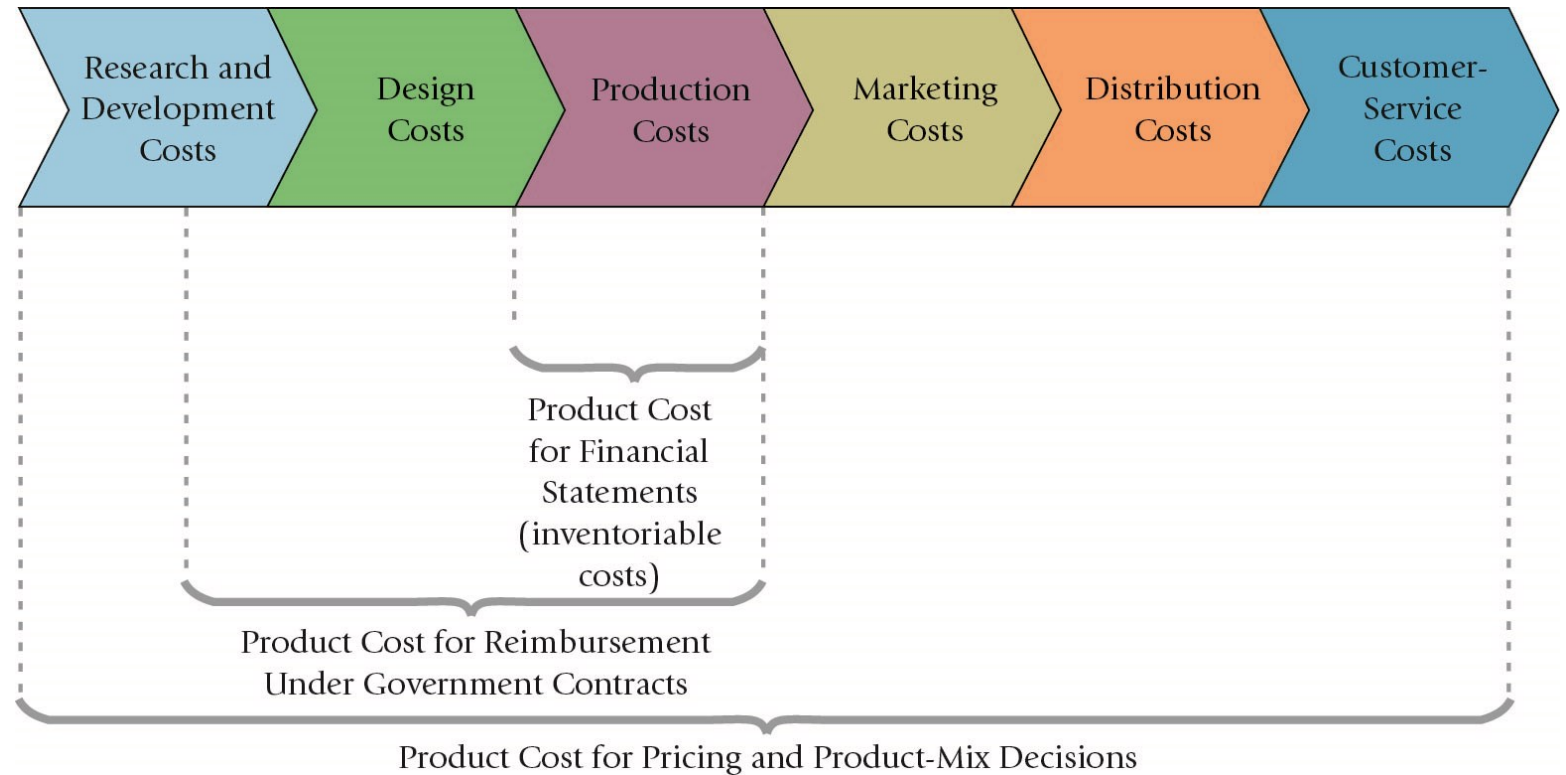
Managers, accountants, suppliers, and others should agree on the classifications and meaning of the cost terms introduced in this chapter and throughout the book.

# Different Product Costs for Different Purposes

**Pricing and product-mix decisions**—decision about pricing and maximizing profits

**Contracting with government agencies**—very specific definitions of allowable costs for “cost plus profit” contracts

**Preparing external-use financial statements**—GAAP-driven product costs only





# 2.8 Describe a framework for cost accounting and cost management.

2.1 Define and illustrate a cost object

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**2.8 Describe a framework for cost accounting and cost management.**

# A Framework for Cost Accounting and Cost Management

The following three features of cost accounting and cost management can be used for a wide range of applications (for helping managers make decisions):

1. Calculating the cost of products, services, and other cost objects
2. Obtaining information for planning and control and performance evaluation
3. Analyzing the relevant information for making decisions

**Let's now cost you!**

**A?**

# Conclusion



# Learning Objectives for this session

- 2.1** Define and illustrate a cost object
- 2.2** Distinguish between direct costs and indirect costs
- 2.3** Explain variable costs and fixed costs
- 2.4** Interpret unit costs cautiously
- 2.5** Distinguish the financial accounting concepts, inventoriable costs, and period costs
- 2.6** Illustrate the flow of inventoriable and period costs in financial accounting
- 2.7** Explain why product costs are computed in different ways for different purposes
- 2.8** Describe a framework for cost accounting and cost management.

# Can you define all concepts?

Actual cost

Average cost

Budgeted cost

Conversion costs

Cost

Cost accumulation

Cost allocation

Cost assignment

Cost driver

Cost object

Cost of goods manufactured

Cost tracing

Direct costs of a cost object

Direct manufacturing labor costs

Direct material costs

Direct materials inventory

Factory overhead costs

Finished goods inventory

Fixed costs

Idle time

Indirect costs of a cost object

Indirect manufacturing costs

Inventoriable costs

Manufacturing overhead costs

Merchandising-sector companies

Operating income

Overtime premium

Period costs

Prime costs

Product cost

Relevant range

Revenues

Service-sector companies

Unit cost

Variable cost

Work-in-process inventory

Work-in-process

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## Supplementary materials

- Drury, C; Management and Cost Accounting (Eleventh Edition); 2021; Cengage