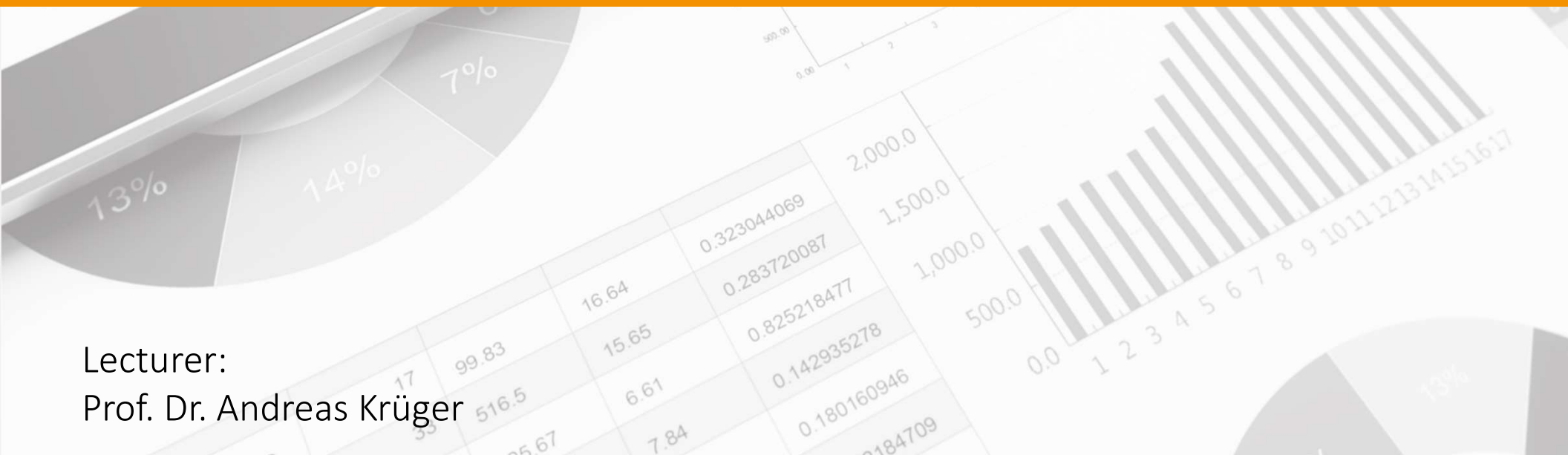




Digital Business Models



Lecturer:
Prof. Dr. Andreas Krüger



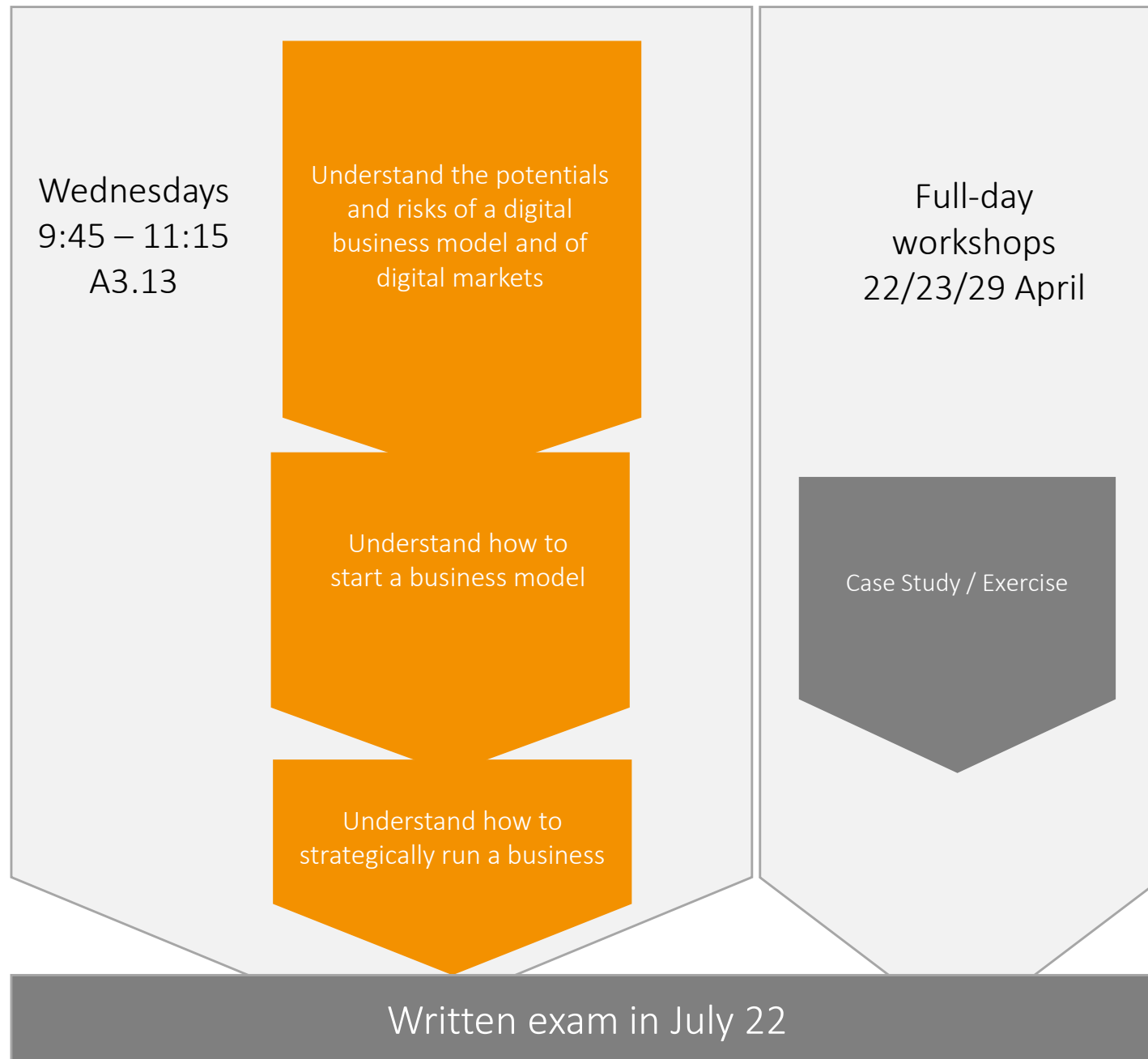
Understand the potentials
and risks of a digital
business model and of
digital markets

Understand how to
implement a new
business model

Understand how to
strategically run a business

- Introduction & Kick-off
- What is a „digital“ Business Model?
- Deep dive: Digital markets and digital value creation
- Deep dive: Digital goods and their special market dynamics
- Deep dive: Network goods and network effects
- Alternative market models
- Digitization and startup management
 - Developing a digital business model
 - Lean Startup methodology
 - Competitive strategies
 - Pricing strategies
 - Business Planning
- Fundamentals of (Strategic) Management
 - Understanding central business KPIs
 - Business Model Innovation

Case Study / Exercise



What is a business model?





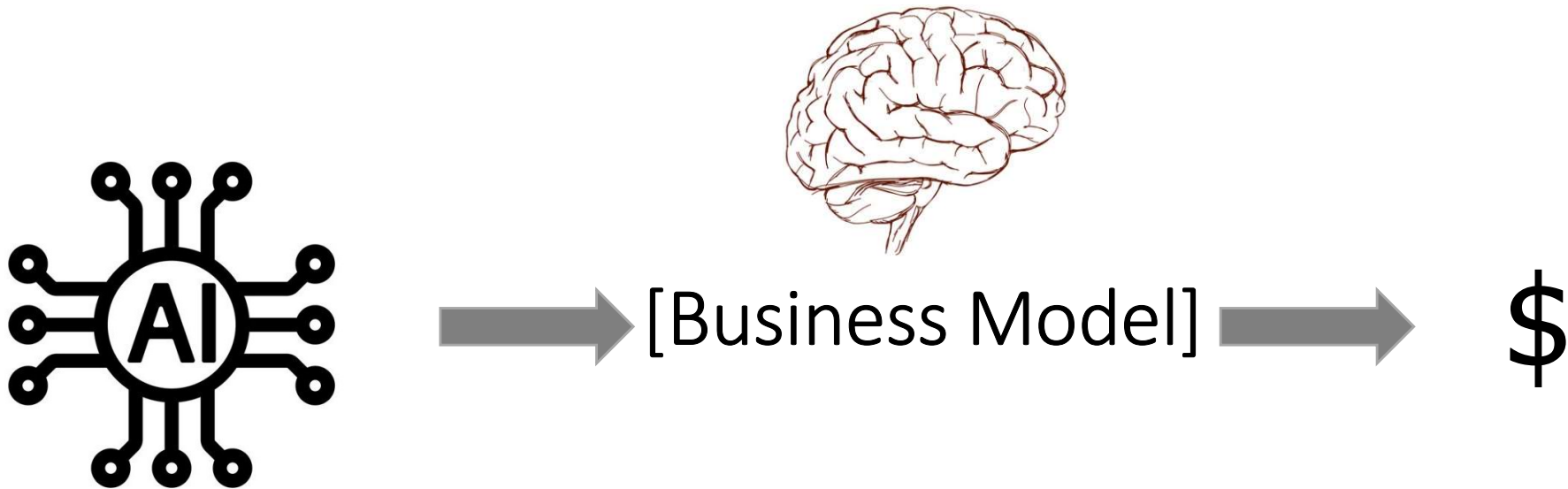
„The history of innovation is littered with companies that had a disruptive technology within their grasp but failed to commercialise it successfully, because they did not couple it with a disruptive business model.“

C. Christensen (Harvard University)



A tool is useless without an idea about what to do with it!





- ⇒ Exchange relationship between parties (“transaction”)
- ⇒ Transactions aim at generating a commercial value
- ⇒ Transactions must be intended
- ⇒ Transactions must be repetitive / not one-time



- ⇒ Simplified reflection of reality
- ⇒ Works with assumptions
- ⇒ Shows cause-effect-relationships and interdependencies
- ⇒ Can deliver solutions to known problems
- ⇒ Visualizes relationships between elements of a system (= architecture)



Peter Drucker, management consultant, educator, and author, wrote an article about the „Theory of a business“ in 1994:

Every organization, whether a business or not, has a **theory of the business**. Indeed, a valid theory that is clear, consistent, and focused is extraordinarily powerful.

These are the **assumptions** that shape any organization's behavior, dictate its decisions about what to do and what not to do, and define what the organization considers meaningful results. These assumptions are about markets. They are about identifying customers and competitors, their values and behavior. They are about technology and its dynamics, about a company's strengths and weaknesses. These assumptions are about what a company gets paid for. They are what I call a company's theory of the business.



Quelle: www.pinterest.com

Peter Drucker, management consultant, educator, and author, wrote an article about the „Theory of a business“ in 1994:

The theory of the business must be known and understood by management, but also in the organization

The theory about the environment, mission of the company and the competencies of the company must fit reality.

The assumptions need to be tested regularly.

What underlies the malaise of so many large and successful organizations worldwide is that their theory of the business no longer works.



Quelle: www.pinterest.com

Boston Consulting Group:

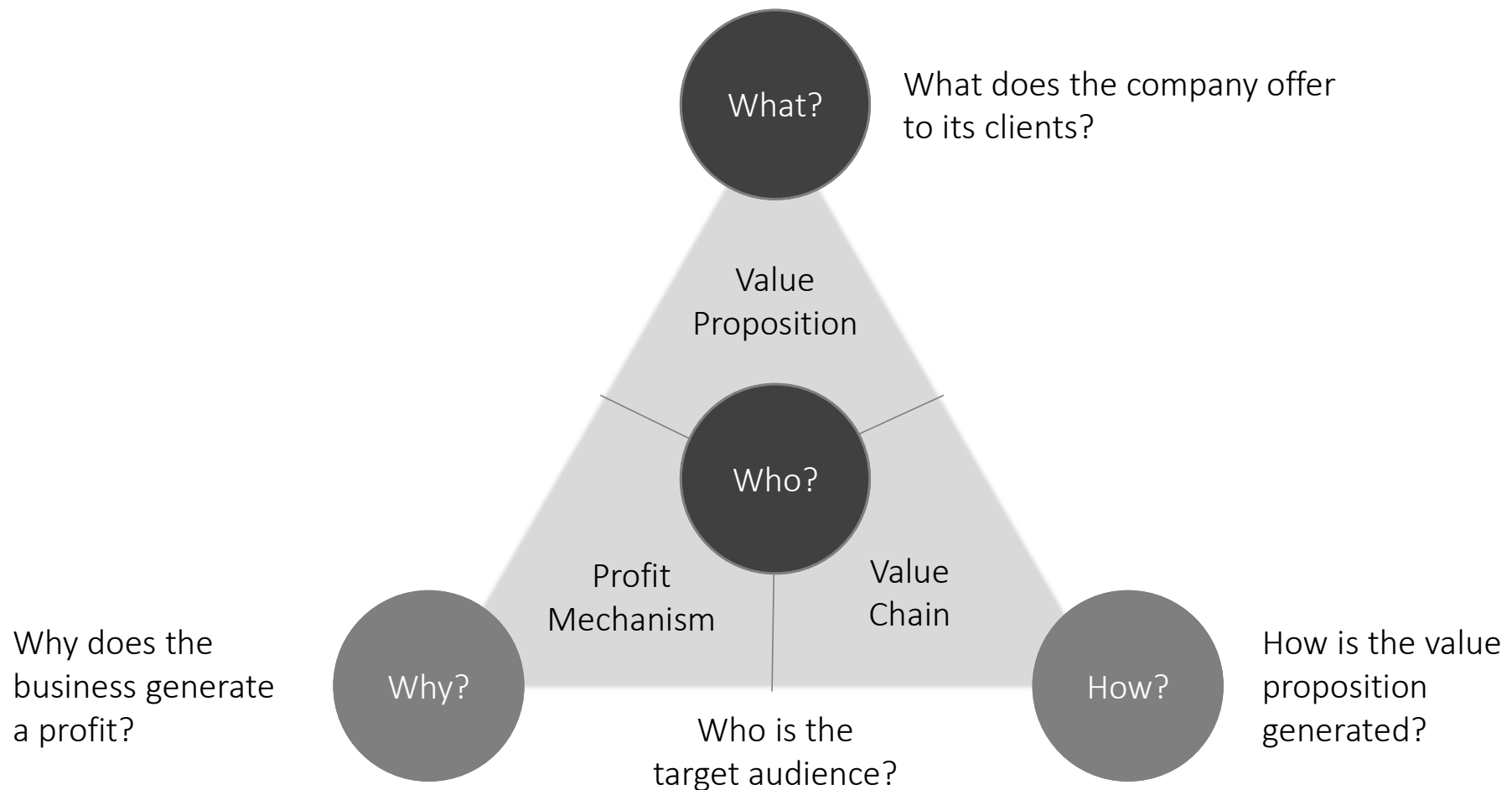
„In the last 50 years the average lifetime of a business model has decreased from 15 years to less than 5 years. As a consequence the ability to innovate the business model has become vital.”

Quelle: www.bcg.com/de-de/capabilities/strategy/business-model-innovation.aspx

What does that mean?



The following elements help to describe and explain a business model in a structured and comprehensive way:



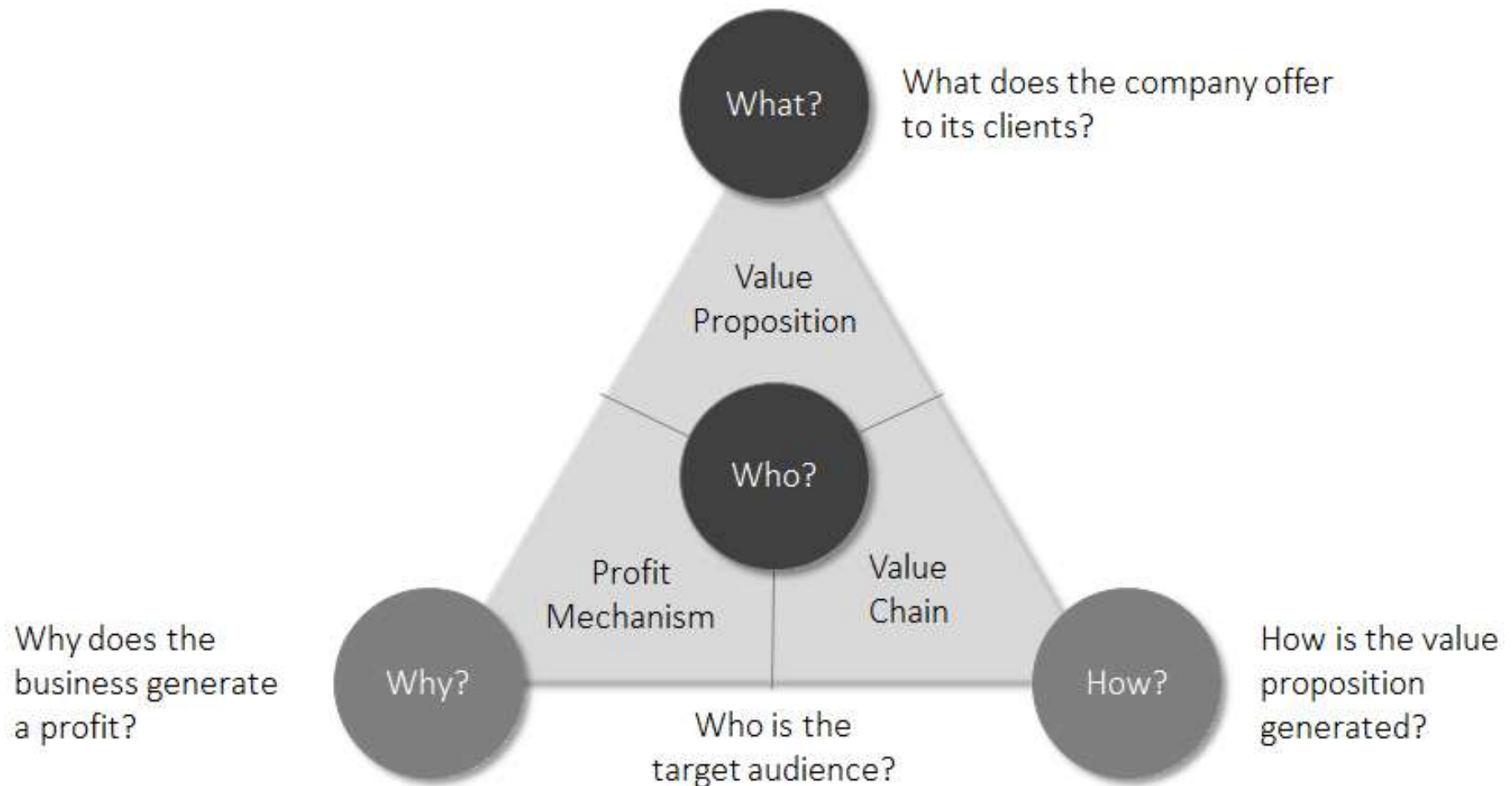
Who – What – How – Why

A business model describes who our customers are, what we sell to them, how we produce the things we sell, and why we earn money when doing that.

A company may follow more than one business model. Many of the major digital companies test and develop new business models while trying to re-use as many of their core competencies and assets as possible. This is what we call **fractal enterprise models** / business models.



Describe a business model of a company you currently work for / worked for in the past:

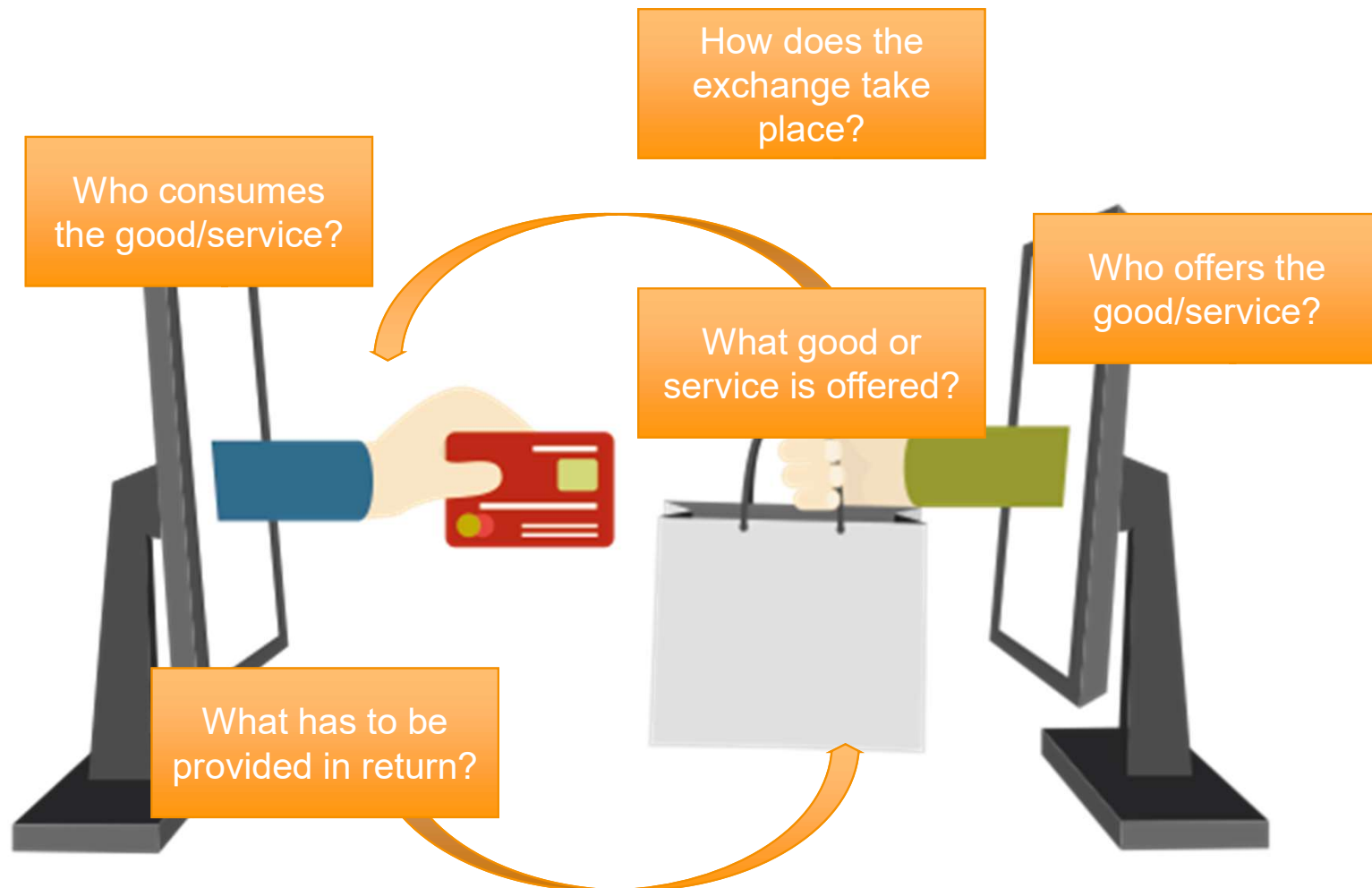


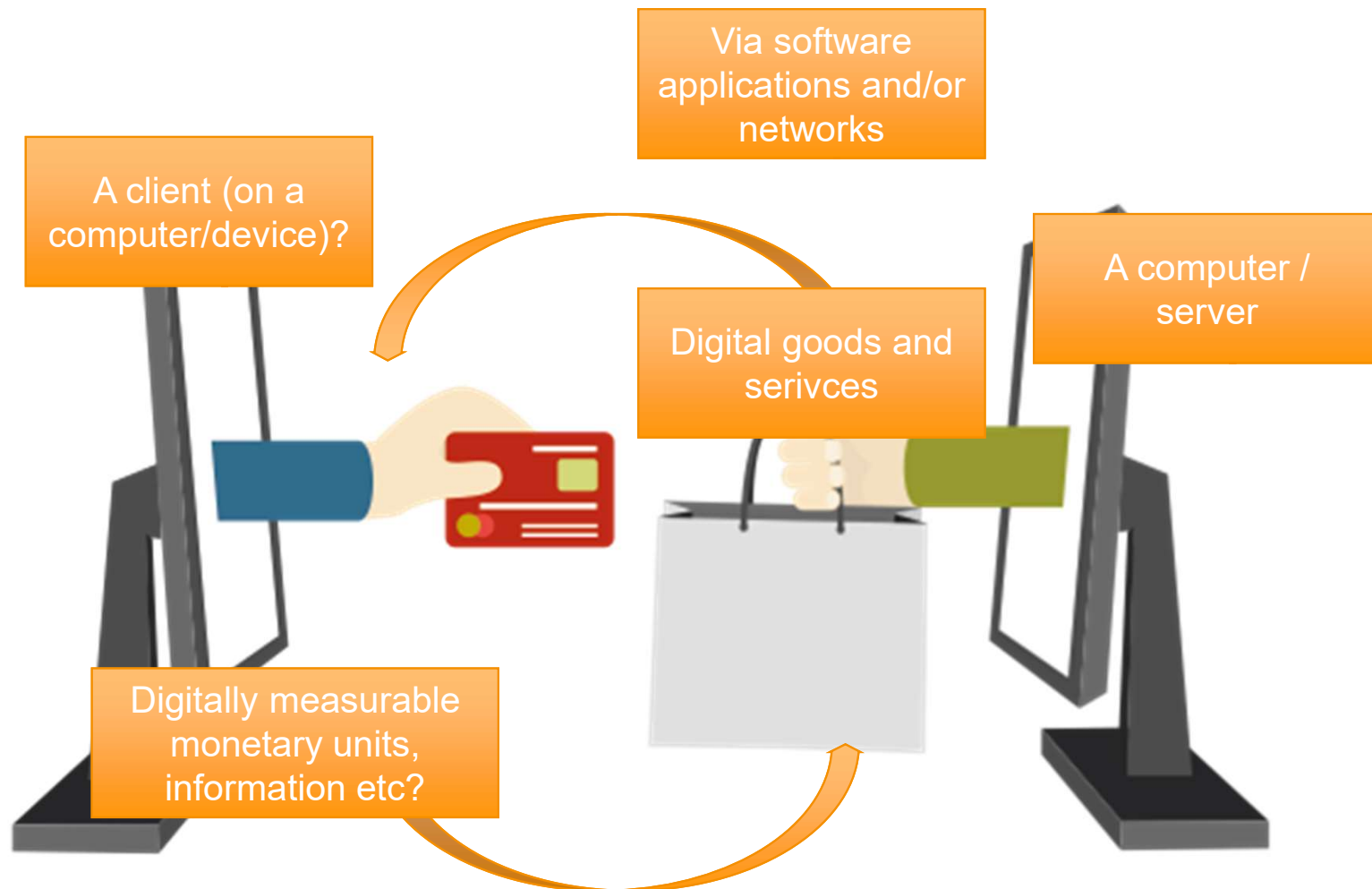
What is a DIGITAL business model?



- ⇒ Customer value is being created by utilizing information and communication technology
- ⇒ Immaterial goods and services represented by “bits & bytes”
- ⇒ Quantifiable transactions, usable by provider of the business model







Buzzword

“... a word or a phrase which has become popular or fashionable, or sounds technical or important and is used to impress people.”

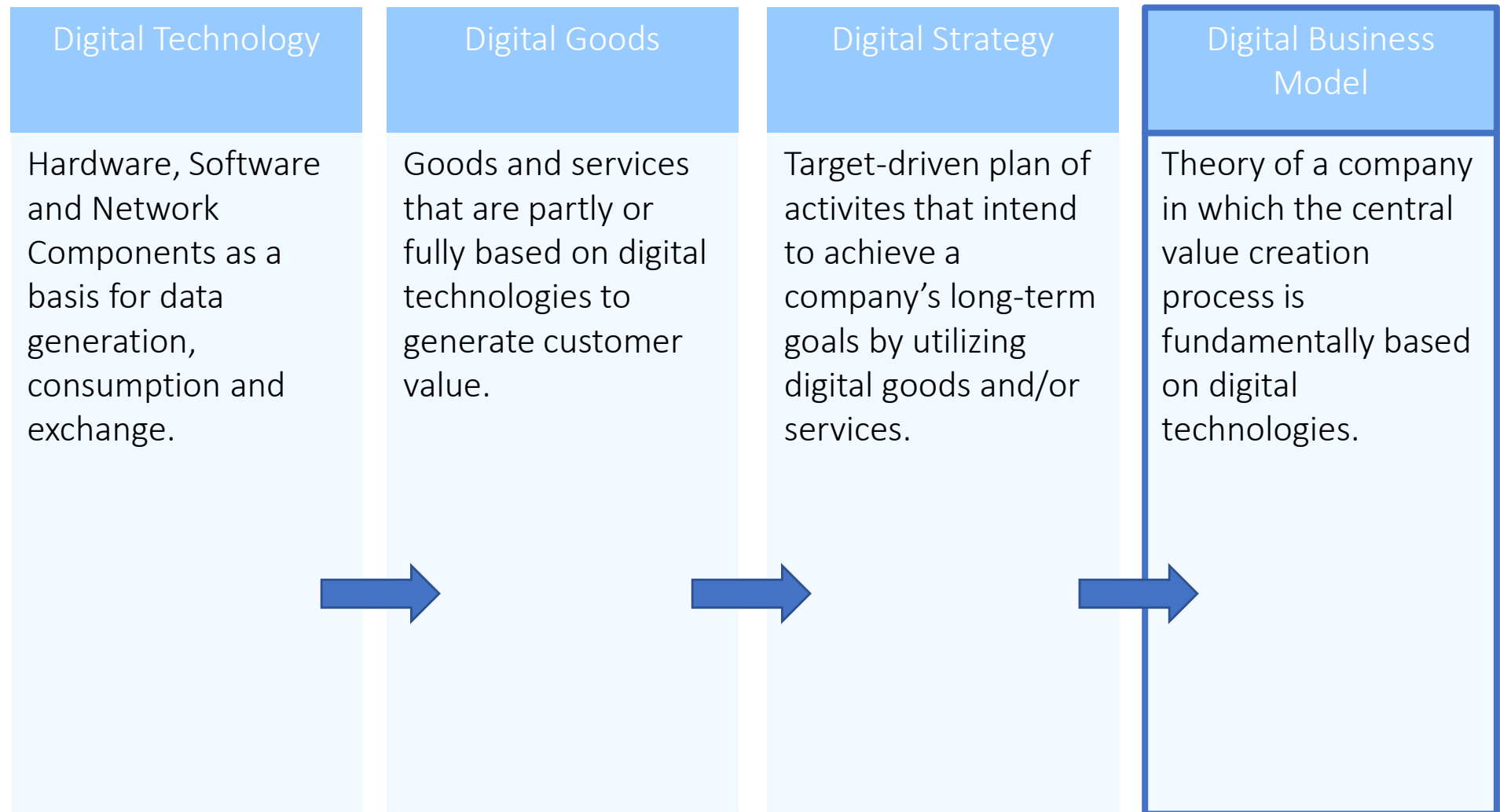
Digital Goods

Digital Technology

Digital Strategy

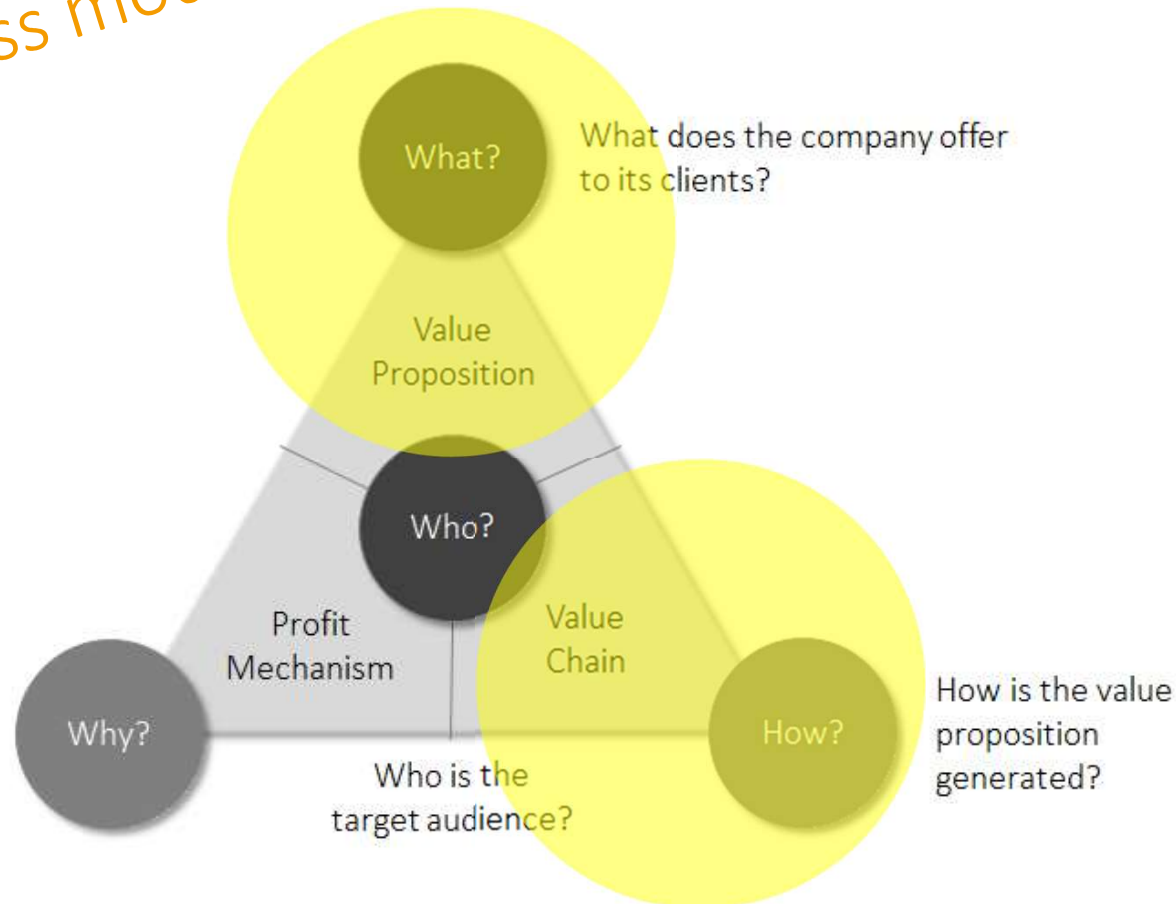
Digital Business Models

Digitization



Not every company that uses digital technologies has a digital strategy or even a digital business model!

Is Uber a digital business model?



Digital Business Model

Theory of a company in which the central value creation process is fundamentally based on digital technologies.

At least the value proposition and the value chain are based on digital technologies.



Digital Technology

- Micro-Controllers
- Network protocols
- Data compression technologies

Digital Goods

- Smartphone
- E-Book
- Software application
- Digital movie files

Digital Strategy

- Pricing strategy for a streaming service
- Online-Service-strategy for a hardware manufacturer

Digital Business Model

- Spotify
- Netflix
- Tinder
- Uber

Technology itself does not create commercial value!

However:

- Technological innovations enable business models that were not possible in the past. This can create completely new value propositions, new markets / **Blue Ocean Strategies**. (Example: Shazam)
- Technological innovations can allow **Disruptions** of known market mechanisms:
The previously known rules of the market are fundamentally changed, leading to a massive change of competition and market allocation. (Example: Uber, myTaxi)

Digital
Technology



Digital Business
Model

Digital markets



- A market is a place where buyers and sellers can meet to facilitate the exchange or transaction of goods and services.



- Markets can be physical like a food market or a retail outlet, or virtual like an e-retailer.



amazon marketplace

- Markets establish the prices of goods and services that are determined by supply and demand.

- In some markets, the transactions between buyer and seller take place directly. No intermediation is required.

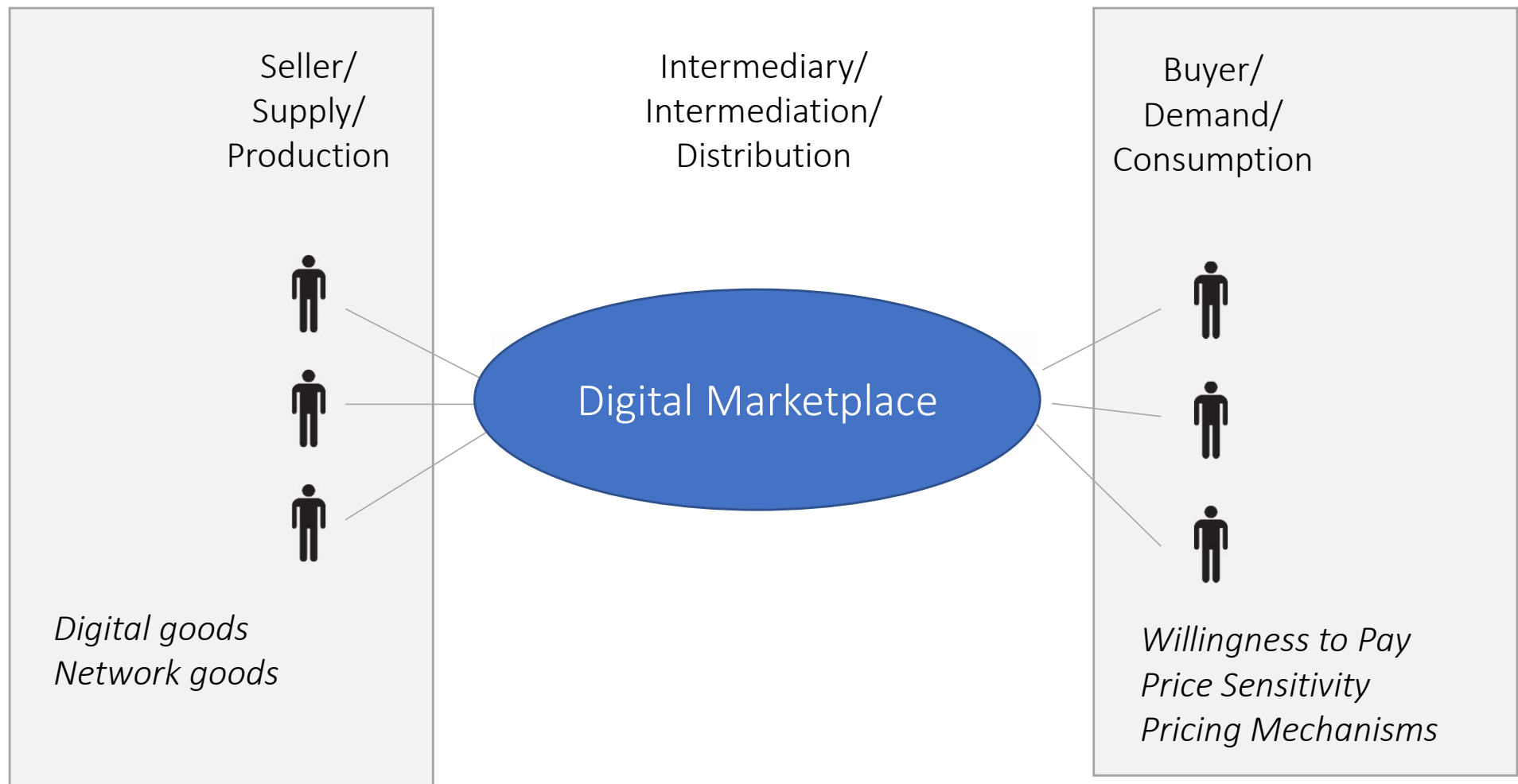


- In other markets, it is inefficient or impossible for suppliers to get into contact with individual buyers. This gap is bridged by intermediaries.



- Virtual markets that are based on digital technology are called digital markets.

Digital markets typically require an intermediation of some sort. The digital marketplace acts as a platform on which supply meets demand. Other than in physical markets, the intermediary can be virtual / technological as well:



What advantages of digital markets do you see over physical markets?

Many economic theories work with the **idealistic model** of a perfect market (**aka perfect competition**).

These markets have a range of assumptions that are hardly met in practice.

The perfect market model is **used to explain market mechanism** (e.g. price equilibrium).

In addition, it **can be analyzed what effects happen in imperfect markets**.

Are digital markets perfect markets according to that definition?

- ✓ **Large number** of **buyers** and **sellers**
- ✓ **No participant** can **manipulate the market**
- ✓ All **participants act rationally**: they chose what increases their economic utility, there are no regional or personal preferences
- ✓ **Supply** and demand **meet realtime** = sellers can provide immediately, buyers buy immediately.
- ✓ Perfect information for all participants: **All prices** offered by all sellers are **known and transparent**
- ✓ Homogeneous products: Each product can substitute the other products, they offer equal value
- ✓ **No anti-competitive activities**
- ✓ No entry or exit barriers



Communication Effect

Information is spread much faster and broader while at the same time reducing the cost of communication. Example: Price or availability alerts.

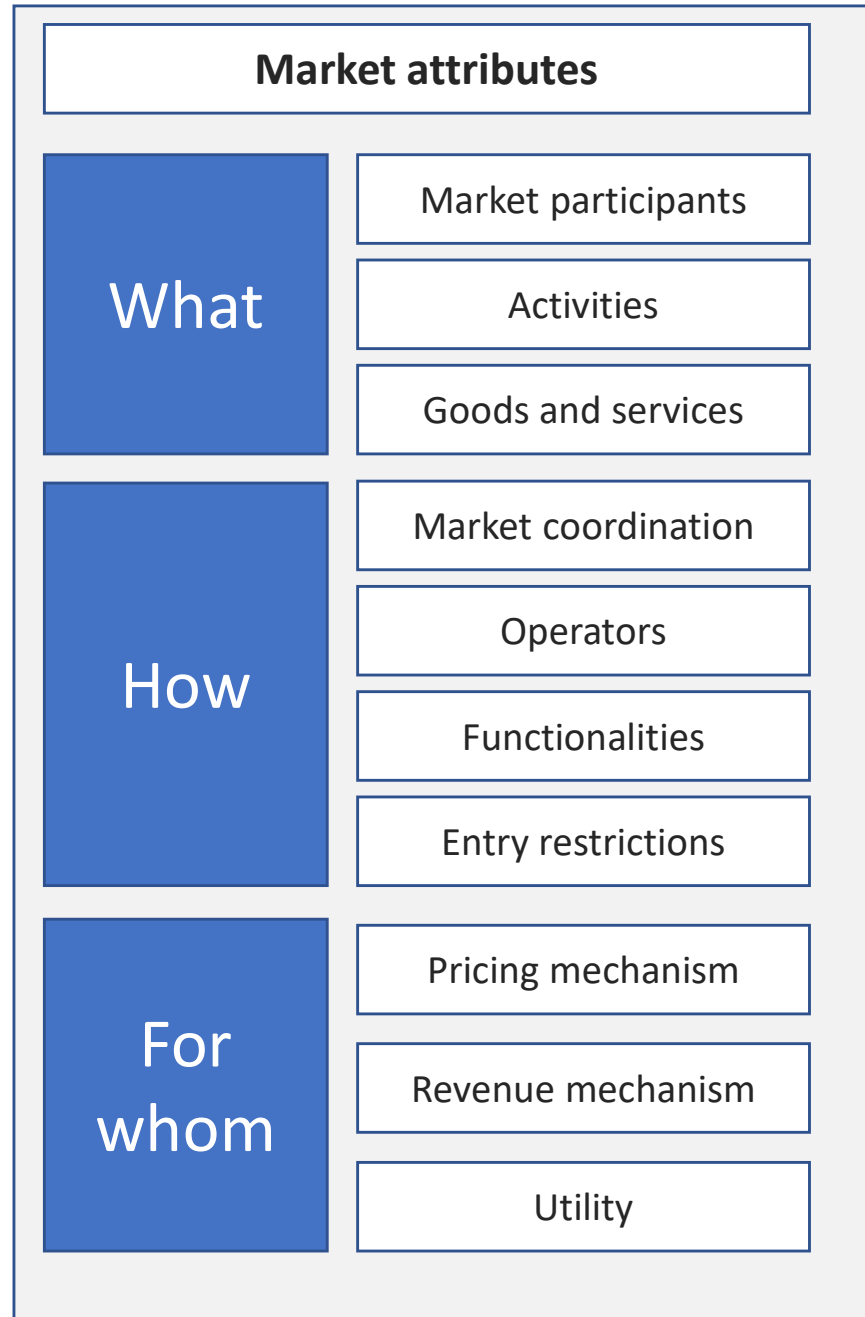
Middlemen Effect

Electronic media allow a direct link between seller and buyer. The role of the intermediary is taken over by technology and frequently highly automated. Example: auction systems.

or Amazon

Integration Effect

Previously separated transactions can be bundled. This allows efficient cross-selling. Example: electronic booking systems combine hotel, rental car and flight bookings.



A company is an active participant on a market. This is where it tries to sell its products and services.

One key success factor for existing and new companies is to know the market mechanisms.

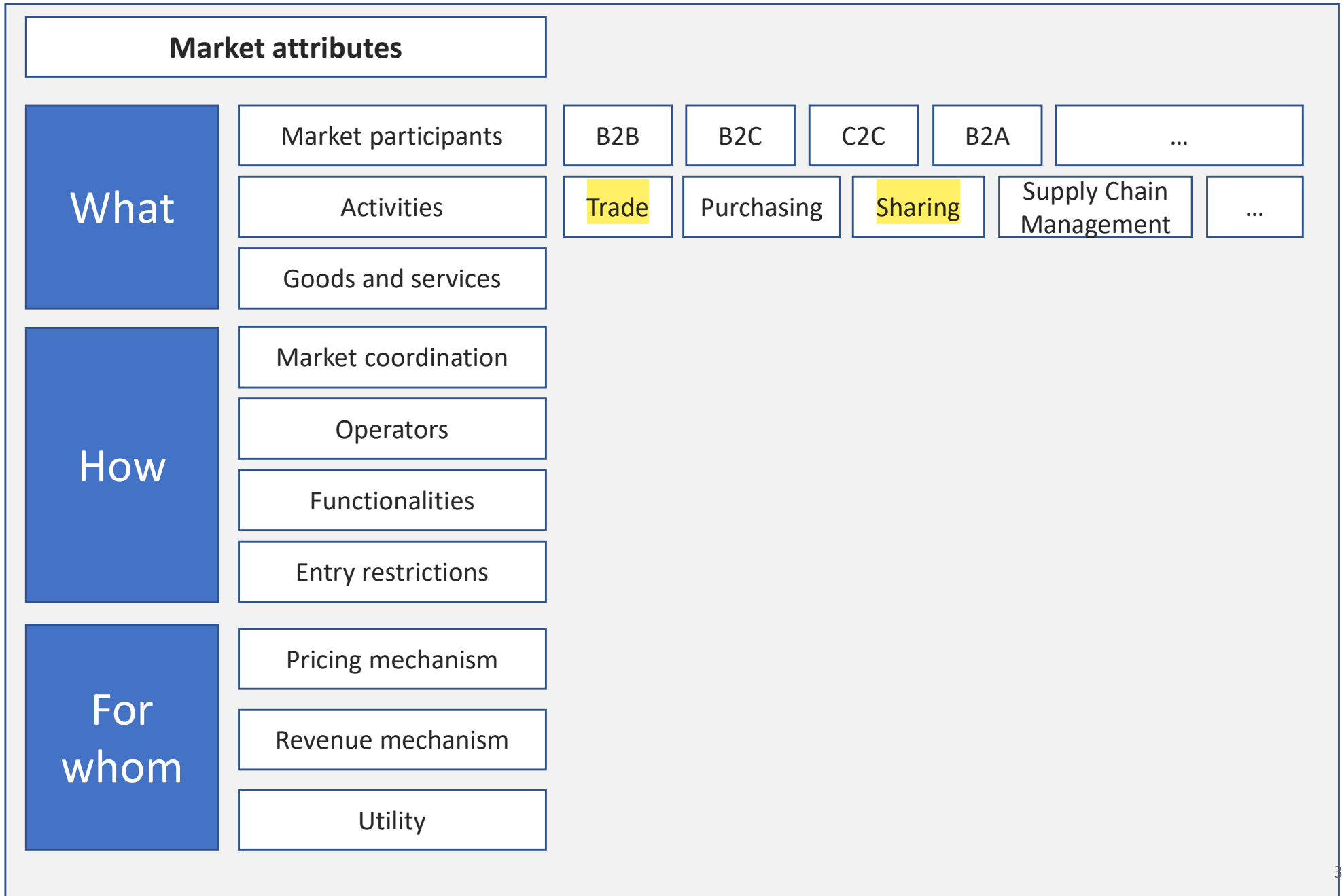


Demand Supply	Consumer	Business	Administration
Consumer	C2C:	C2B:	C2A:
Business	B2C:	B2B:	B2A:
Administration	A2C:	A2B:	A2A:

Companies (B: Business), Private consumers (C: Consumer), Public institutions (A: Administration)

Demand	Consumer	Business	Administration
Supply			
Consumer	C2C: eBay	C2B: myHammer auction	C2A: Online tax declaration
Business	B2C: Online-Shop	B2B: Procurement portals	B2A: Online tax declaration
Administration	A2C: Car registration	A2B: Public tenders for projects	A2A: Interchange between public institutions

Companies (B: Business), Private consumers (C: Consumer), Public institutions (A: Administration)



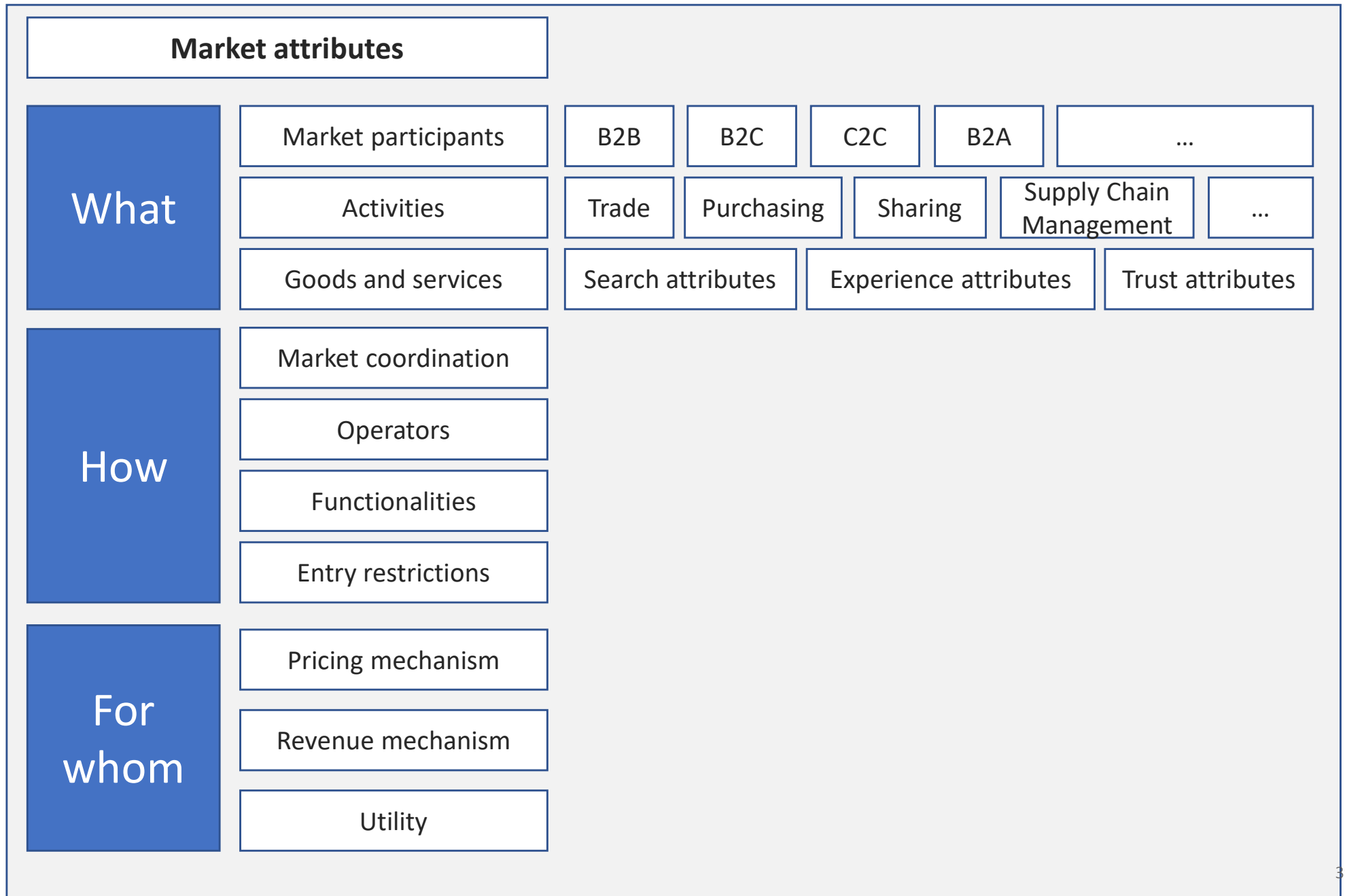


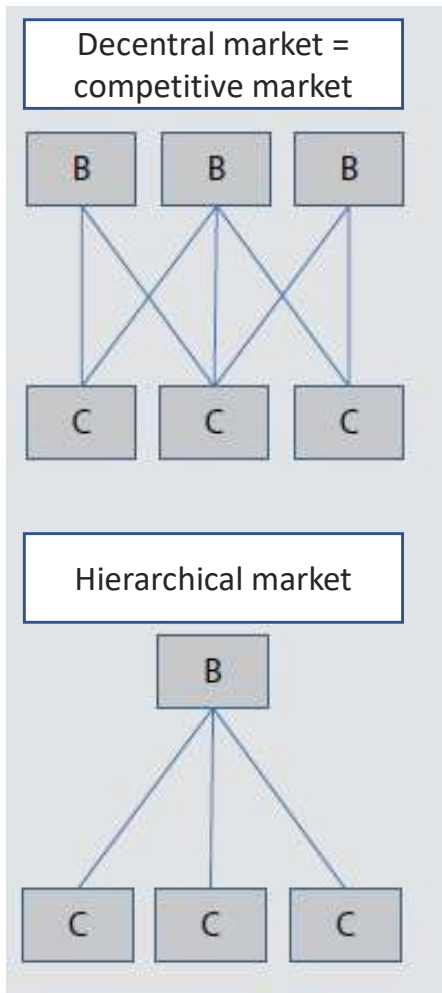
A **purchasing** transaction **runs** through **different phases**. Before the purchase, the buyer is trying to assess the quality of the offered goods. If it is difficult to judge the functionality of the provided goods or **services**, **experience** and/or **trust** are required.

Therefore not all goods and services are equally suitable for digital markets:

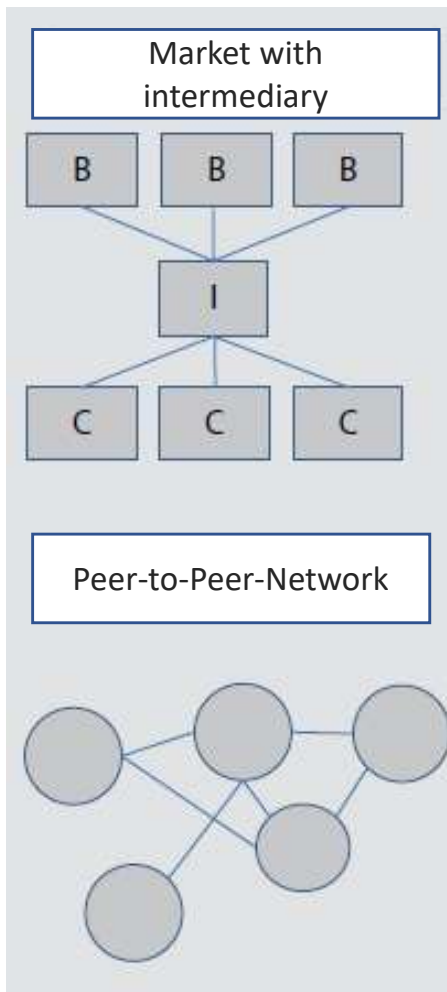
Criterion	Attribute		
Assessment of product before purchase	Good	Limited	Difficult
Support/Consulting requirements	Low	Limited	High
Possibility to specify exact requirement	Good	Limited	Difficult

Suitability





- **Competition:** many buyers – many suppliers without a central coordination instance
- **Hierarchies:** Power not equally balanced. Subordination of participants. Example: Electronic purchasing systems in automotive industry.



- **Intermediary**: very common in digital markets. Intermediaries support the structured search, quality assessment etc. They can act as trusted third parties.
- **P-2-P**: Direct interaction between participants, e.g. in sharing apps. A platform can be the technical basis, but does not act as intermediary.

Market attributes						
What	Market participants	B2B	B2C	C2C	B2A	...
	Activities	Trade	Purchasing	Sharing	Supply Chain Management	...
	Goods and services	Search attributes		Experience attributes		Trust attributes
How	Market coordination	Competition	Hierarchy	P2P-Network	Inter- mediary	
	Operators					
	Functionalities					
	Entry restrictions					
For whom	Pricing mechanism					
	Revenue mechanism					
	Utility					

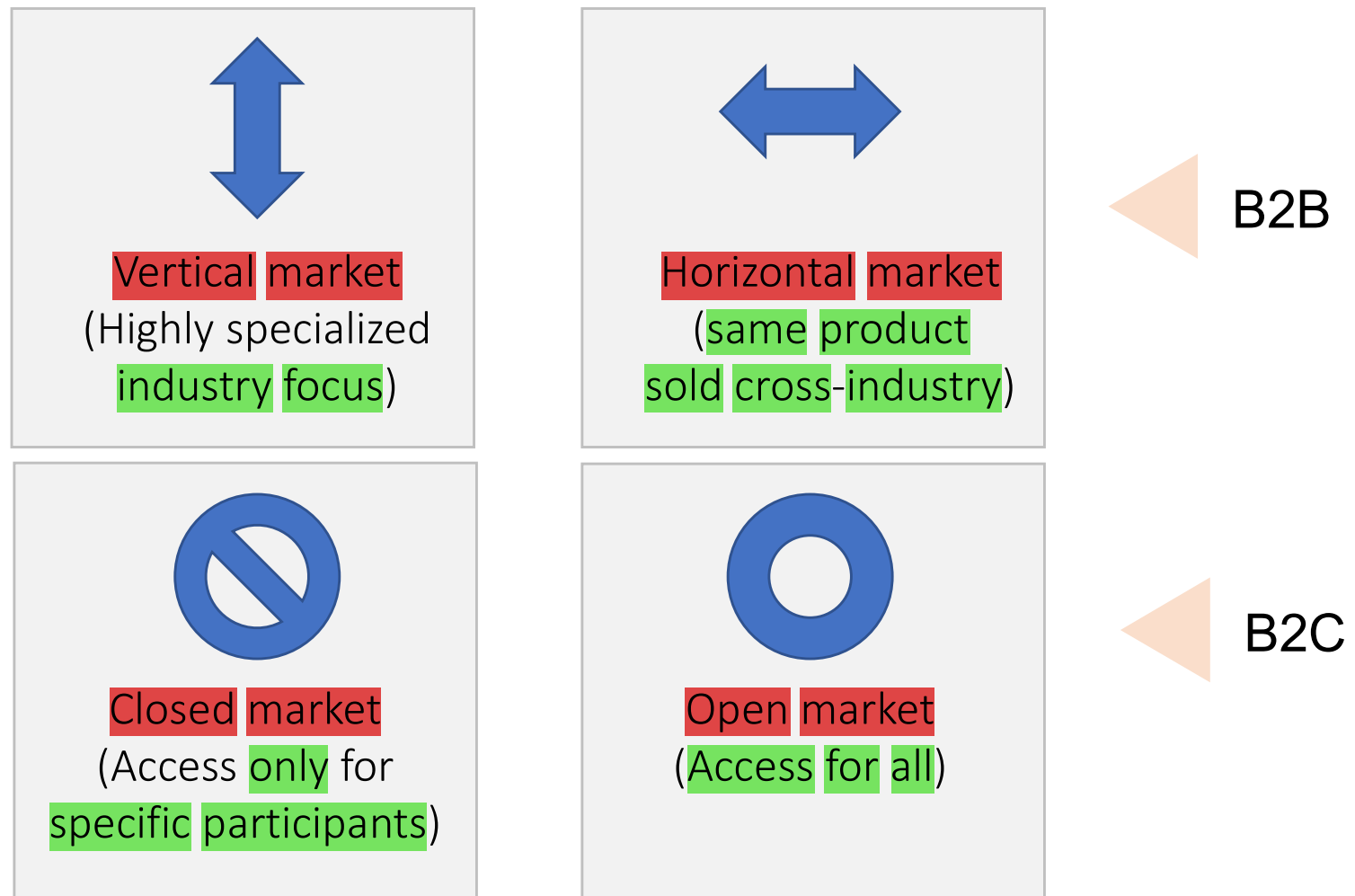
- **Neutral platforms** (*broker model*): many buyers are brought together with many sellers by an independent third party (intermediary) who runs the market (e.g. eBay).
- **Sell-sided market**: one or few suppliers operate a digital market to focus the demand on them and to allow an efficient customer relationship management (e.g. amazon).
- **Buy-sided market**: one or few strong buyers operate the market to realize cost advantages. Frequently the supply side is fragmented in these markets.

Market attributes						
What	Market participants	B2B	B2C	C2C	B2A	...
	Activities	Trade	Purchasing	Sharing	Supply Chain Management	...
	Goods and services	Search attributes		Experience attributes		Trust attributes
How	Market coordination	Competition	Hierarchy	P2P-Network		Inter-mediary
	Operators	Buy-sided		Sell-sided		neutral
	Functionalities					
	Entry restrictions					
For whom	Pricing mechanism					
	Revenue mechanism					
	Utility					

Market attributes	
What	Market participants
	Activities
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For whom	Revenue mechanism
	Utility

B2B	B2C	C2C	B2A	...
Trade	Purchasing	Sharing	Supply Chain Management	...
Search attributes	Experience attributes	Trust attributes		
Competition	Hierarchy	P2P-Network	Intermediary	
Buy-sided	Sell-sided	neutral		
Product Information	Payment	Auction	Process Integration	...

The term „market“ suggests a free access. However, for various reasons there are markets that **limit access** to participants **of a specific industry or group**:



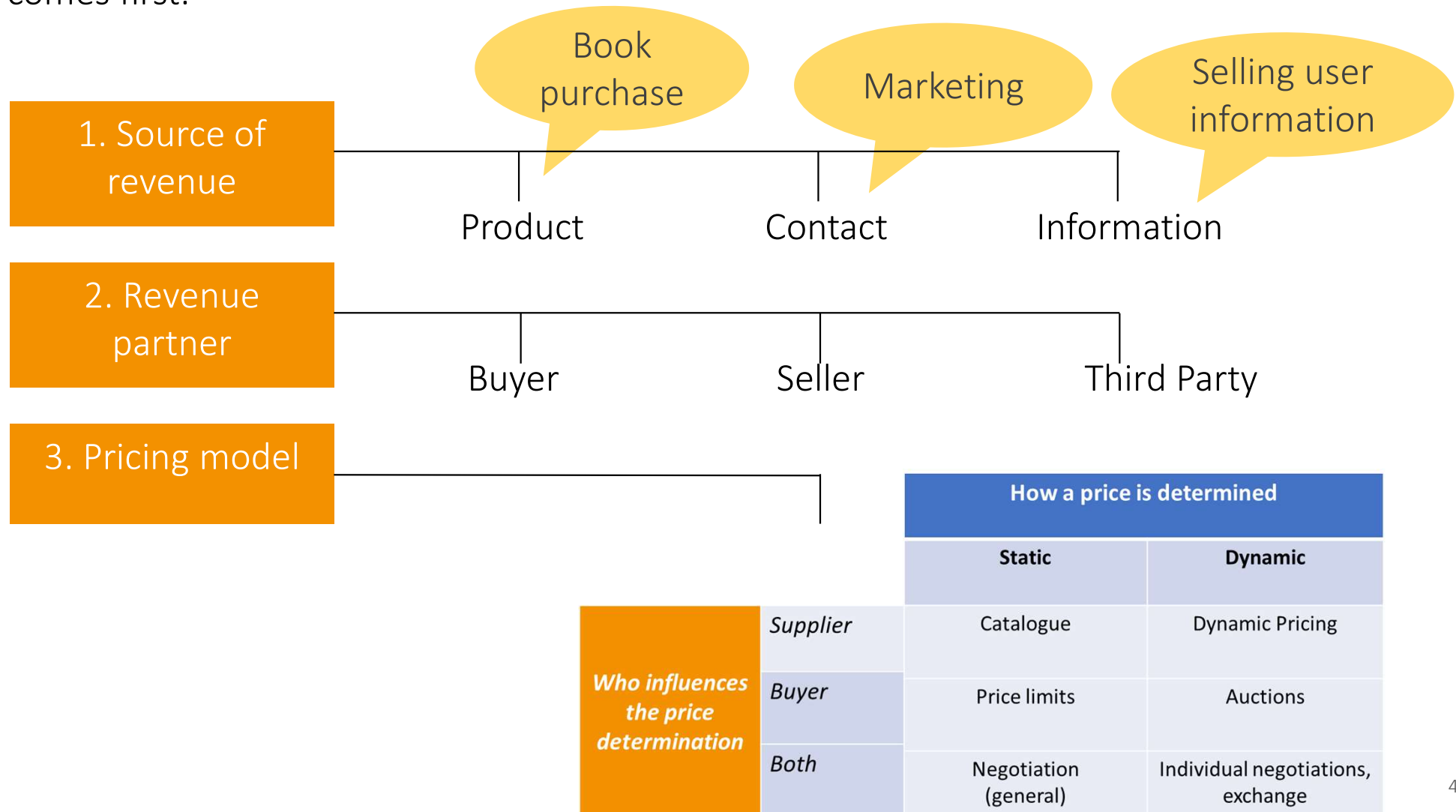
Market attributes						
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	Activities	Trade	Purchasing	Sharing	Supply Chain Management	...
	Goods and services	Search attributes		Experience attributes		Trust attributes
How	Market coordination	Competition	Hierarchy	P2P-Network		Intermediary
	Operators	Buy-sided		Sell-sided		neutral
	Functionalities	Product Information	Payment	Auction	Process Integration	...
	Entry restrictions	technological		legal		financial
For whom	Pricing mechanism					
	Revenue mechanism					
	Utility					



		How a price is determined	
		Static	Dynamic
Who influences the price determination	Supplier	Catalogue	Dynamic Pricing
	Buyer	Price limits	Auctions
	Both	Negotiation (general)	Individual negotiations, exchange



One advantage of digital business models is that the pricing mechanism can be decoupled from the revenue generation mechanism. In real markets pricing usually comes first.



Direct and indirect forms of revenue

The main source of revenue often is the core product or service. Next to that, there are other sources of income. Sometimes, they are even the primary source.

- **Singular-Principle:** sold core product is the only source of income.
- **Plural-Principle:** there is a paid core product, but revenue is also generated from other products and services (e.g. selling usage data).
- **Symbiosis-Principal:** the core product is mostly for free or without profit in order to generate indirect revenue in other areas.



	Direct Revenues	Indirect Revenues
Transaction-based		
Not transaction-based		

Utility generation in digital markets according to the **4C-Business-Net-Typology**

	Content	Commerce	Context	Connection
Content	Collection, selection, compilation and provision of content	Initiate, negotiate and execute business transactions	Classification and systematisation of available information	Establish an information exchange between users
Goal	Provide user-focused personalized content online	Substitute or complement traditional transactions	Reduce complexity, make navigation easier	Commercial or communicative relationships in networks
Revenue	Indirect (primarily advertising)	Transaction depending, direct or indirect	Indirect	Direct or indirect

Market attributes						
What	Market participants	B2B	B2C	C2C	B2A	...
	Activities	Trade	Purchasing	Sharing	Supply Chain Management	...
	Goods and services	Search attributes		Experience attributes		Trust attributes
How	Market coordination	Competition	Hierarchy	P2P-Network		Intermediary
	Operators	Buy-sided		Sell-sided		neutral
	Functionalities	Product Information	Payment	Auction	Process Integration	...
	Entry restrictions	technological		legal		financial
For whom	Pricing mechanism	static		dynamic		Static/dynamic
	Revenue mechanism	Provision	Fees	Licence	Advertising	
	Utility	Content	Commerce	Context	Connection	