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EGYETEM
UNIVERSITY OF MISKOLC

Train the Trainer Program B Customer-Centric Innovations Concept and Curriculum

Prepared by:

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With the support of the
Erasmus+ Programme
of the European Union



CUSTOMER-CENTRIC INNOVATION

IClinSMEs - TRAIN THE TRAINER PROGRAM B

A 3-days train the trainer program is developed for teachers and consultants of SMEs, providing

- ✓ knowledge and skills on the acquisition, processing and implementation of customer innovations
- ✓ modern teaching methodologies.

This Training program is developed within the project "Digital methods, toolbox and training for increasing customer innovation in SMEs". (IClinSMEs, Project NO 2020-1-DE02-KA202-007397).

A close-up photograph of a person's hand pointing towards a screen. The hand is in the foreground, and the background is slightly blurred, showing other people in white shirts. The overall scene suggests a training or presentation environment.

Concept of the Train the Trainer Program

Program and content



MODULES OF THE PROGRAM

- ▶ Module 1: Welcome and ice breaker activity
- ▶ Module 2: Innovation in general
- ▶ Module 3: Customer-centric innovation. Customer-centric innovation in SMEs - Experiences of a survey and best practices.
- ▶ Module 4: Quality Function Deployment (QFD) and House of Quality (HOQ)
- ▶ Module 5: Modern teaching methods, Effective Teaching and Training Techniques
- ▶ Module 6: Digital tools for teaching and learning
- ▶ Module 7.: Project task on topic Customer-centric innovation

Program for the Train the Trainer Program B „Customer-Centric Innovations“ - 3 days training

1st Day –Innovation and Customer-centric innovation	
09:00 – 09:30	Module 1 - Welcome and ice breaker activity, Introduction to Train-the-Trainer Program, self-presentation of the participants
09:30 – 10:30	Module 2 – Innovation in general
10:30 – 11:00	Coffee break
11:00 – 12:30	Module 3 – What is Customer-centric innovation? Benefits and barriers.
12:30 – 13:30	Lunch
13:30 – 15:00	Module 3 – How to involve customers in product innovation? Methods and digital tools supporting customer-centric innovation. Tools for customer-feedback collection
15:00 – 15:30	Coffee break
15:30 – 17:00	Module 3 – Customer-centric innovation in SMEs - Experiences of a survey and best practices.
	Dinner and exchange of experience (optional)

2nd Day – Modern teaching methodology	
09:00 – 09:30	Welcome day 2
09:30 – 10:30	Module 4 – Quality Function Deployment (QFD) and House of Quality (HOQ)
10:30 – 11:00	Coffee break
11:00 – 12:30	Module 4 – Interactive case study solution for QFD and HOQ
12:30 – 13:30	Lunch
13:30 – 15:00	Module 5 – Modern Teaching Methods
15:00 – 15:30	Coffee break
15:30 – 17:00	Module 6 – Digital tools for teaching and learning
	Dinner and exchange of experience (optional)

3rd Day – Project task	
09:00 – 09:30	Welcome day 3
09:30 – 10:30	Module 7 – Introduction to the Project task on topic Customer-centric innovation
10:30 – 11:00	Coffee break
11:00 – 12:30	Module 7 – Independent work, or working in groups
12:30 – 13:30	Lunch
13:30 – 15:00	Module 7 – Presentation of participants or groups
15:00 – 15:30	Coffee break
15:30 – 17:00	Summary and conclusion of the Train-the-Trainer

Learning material is based on results of IClinSMEs project



Digital methods, toolbox and trainings for increasing customer innovation in SMEs



Study of applied instruments, methods and procedures for the integration of customer-based innovation in SMEs

Prepared by:

Monika Zajkowska, Hanseatic Institute

Melanie Mesloh, Hamburg Institute of International Economics

June, 2021



With the support of the Erasmus+ Programme of the European Union

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Customer-centric Innovation in SMEs Results of an Empirical Research

Prepared by:

University of Miskolc (PP8-MU)

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Customer-centric Innovation in SMEs

Experiences of Best Practices in the use of digital technologies supporting customer innovations by SMEs

Prepared by:

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Module 1

Welcome and ice breaker activity



Welcome and ice breaker activity

1. Greetings
2. Objectives and execution of the training -
Introduction to Train-the-Trainer Program
3. Self-presentation of the participants
4. Determination of the participants' previous
knowledge

Module 2

Innovation in general



Co-funded by the
Erasmus+ Programme
of the European Union



What is Innovation?

And what is NOT Innovation?

The goal is to highlight:

- ▶ Definition of Innovation and innovation activities
- ▶ Types of Innovation
- ▶ What is NOT innovation?

Innovation in a nutshell

Based on OSLO MANUAL 2018





What is Innovation?

Process and/or Outcome

The term “innovation” can be used in different contexts to refer to either a process or an outcome.

OSLO Manual uses the term “innovation activities” to refer to the process while the term “innovation” is limited to outcomes.

5 basic cases of business innovation (Schumpeter, 1939)

- ▶ The introduction of a new product in industry,
- ▶ the introduction of a new production process/method,
- ▶ the discovery of a new market,
- ▶ the discovery of a new resource in the input market,
- ▶ the creation of a new organization.

Sources of innovation (Drucker, 2002)

- ▶ Drucker (2002) identifies the following sources of innovation:
 - ▶ unexpected events,
 - ▶ inconsistencies,
 - ▶ process requirements,
 - ▶ and industry and market changes.

Innovation (Oslo Manual, 2018)

- ▶ ‘Innovation activities include all developmental, financial and commercial activities undertaken by a firm that are intended to result in an innovation for the firm. A business innovation is a new or improved product or business process (or combination thereof) that differs significantly from the firm's previous products or business processes and that has been introduced on the market or brought into use by the firm.’ (Oslo Manual, 2018, pp.68.)

Innovation activities include all developmental, financial and commercial activities undertaken by a firm that are intended to result in an innovation for the firm.

A **business innovation** is a new or improved **product** or **business process** (or **combination** thereof) that **differs significantly** from the firm's previous products or business processes and that has been introduced on the market or brought into use by the firm.



The minimum requirement for an innovation is “**significant**” **difference**: one or more characteristics that are **significantly different** from previously offered or used by the firm. These characteristics must be relevant to the firm or to external users.

The boundary between a change that is an innovation and one that is not an innovation is unavoidably **subjective** because it is relative to each firm’s context, capabilities and requirements.

E.g.: an improvement in online service is a minor change for a large firm in R&D-intensive industry but is a significant difference for a small firm in a less R&D-intensive industry.



The minimum requirement
for an innovation is
“**significant**” **difference**

2 types of innovation (Oslo Manual, 2018)

- ▶ ‘A **product innovation** is a new or improved good or service that differs significantly from the firm’s previous goods or services and that has been introduced on the market’. (Oslo Manual, 2018, pp.70.)
- ▶ ‘A **business process innovation** is a new or improved business process for one or more business functions that differs significantly from the firm’s previous business processes and that has been brought into use in the firm.’ (Oslo Manual, 2018, pp.70.)

Innovation types by object

There are two major types of innovation by object: innovations that change the firm's products (product innovations), and innovations that change the firm's business processes (business process innovations).

A single innovation can involve combinations of different types of product and business process innovations.

Product innovation (goods and services)

- ▶ A product innovation is a new or improved good or service that differs significantly from the firm's previous goods or services and that has been introduced on the market.
 - ▶ addition of new functions, or improvements of existing functions
 - ▶ improvements of user utility.
- ▶ Relevant functional characteristics include:
 - ▶ quality, technical specifications,
 - ▶ reliability, durability, economic efficiency during use,
 - ▶ affordability, convenience, usability, and user friendliness.

Business process innovations

A business process innovation is a new or improved business process for one or more business functions that differs significantly from the firm's previous business processes and that has been brought into use in the firm.

- ▶ Core business function of production of goods or services
- ▶ Supporting functions:
 - ▶ Distribution and logistics,
 - ▶ Marketing and sales
 - ▶ Information and communication systems
 - ▶ Administration and management
 - ▶ Product and business process development
- ▶ The relevant characteristics include:
 - ▶ greater efficacy, resource efficiency, reliability and resilience, affordability, convenience and usability

Brown's Business processes and business functions

(2008, in: Oslo Manual, 2018, pp.73)

Short term	Details and subcategories
1. Production of goods or services	Activities that transform inputs into goods or services, including engineering and related technical testing, analysis and certification activities to support production.
2. Distribution and logistics	This function includes: a) transportation and service delivery b) warehousing c) order processing.
3. Marketing and sales	This function includes: a) marketing methods including advertising (product promotion and placement, packaging of products), direct marketing (telemarketing), exhibitions and fairs, market research and other activities to develop new markets b) pricing strategies and methods c) sales and after-sales activities, including help desks other customer support and customer relationship activities.
4. Information and communication systems	The maintenance and provision of information and communication systems, including: a) hardware and software b) data processing and database c) maintenance and repair d) web-hosting and other computer-related information activities. These functions can be provided in a separate division or in divisions responsible for other functions.
5. Administration and management	This function includes: a) strategic and general business management (cross-functional decision-making), including organising work responsibilities b) corporate governance (legal, planning and public relations) c) accounting, bookkeeping, auditing, payments and other financial or insurance activities d) human resources management (training and education, staff recruitment, workplace organisation, provision of temporary personnel, payroll management, health and medical support) e) procurement f) managing external relationships with suppliers, alliances, etc.
6. Product and business process development	Activities to scope, identify, develop, or adapt products or a firm's business processes. This function can be undertaken in a systematic fashion or on an ad hoc basis, and be conducted within the firm or obtained from external sources. Responsibility for these activities can lie within a separate division or in divisions responsible for other functions, e.g. production of goods or services.

Source: Adapted from Brown (2008), "Business processes and business functions: A new way of looking at employment", www.bls.gov/mlr/2008/12/art3full.pdf and Eurostat (2018), *Glossary of Statistical Terms*, http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Business_functions.

Business model innovations

A business model includes all core business processes such as the production, logistical, marketing and co-operative arrangements in use as well as the main products that a firm sells, currently or in the future, to achieve its strategic goals and objectives.

Three types of comprehensive business model innovations: (involve both products and business functions)

- ▶ a firm extends its business to include completely new types of products and markets that require new business processes to deliver;
- ▶ a firm ceases its previous activities and enters into new types of products and markets that require new business processes;
- ▶ a firm changes the business model for its existing products, for example it switches to a digital model with new business processes for production and delivery and the product changes from a tangible good to a knowledge-capturing service.

A measures of novelty, “innovativeness” and economic impacts, whether an innovation is

- ✓ new to the firm only,
- ✓ new to the firm’s market,
- ✓ or new to the world



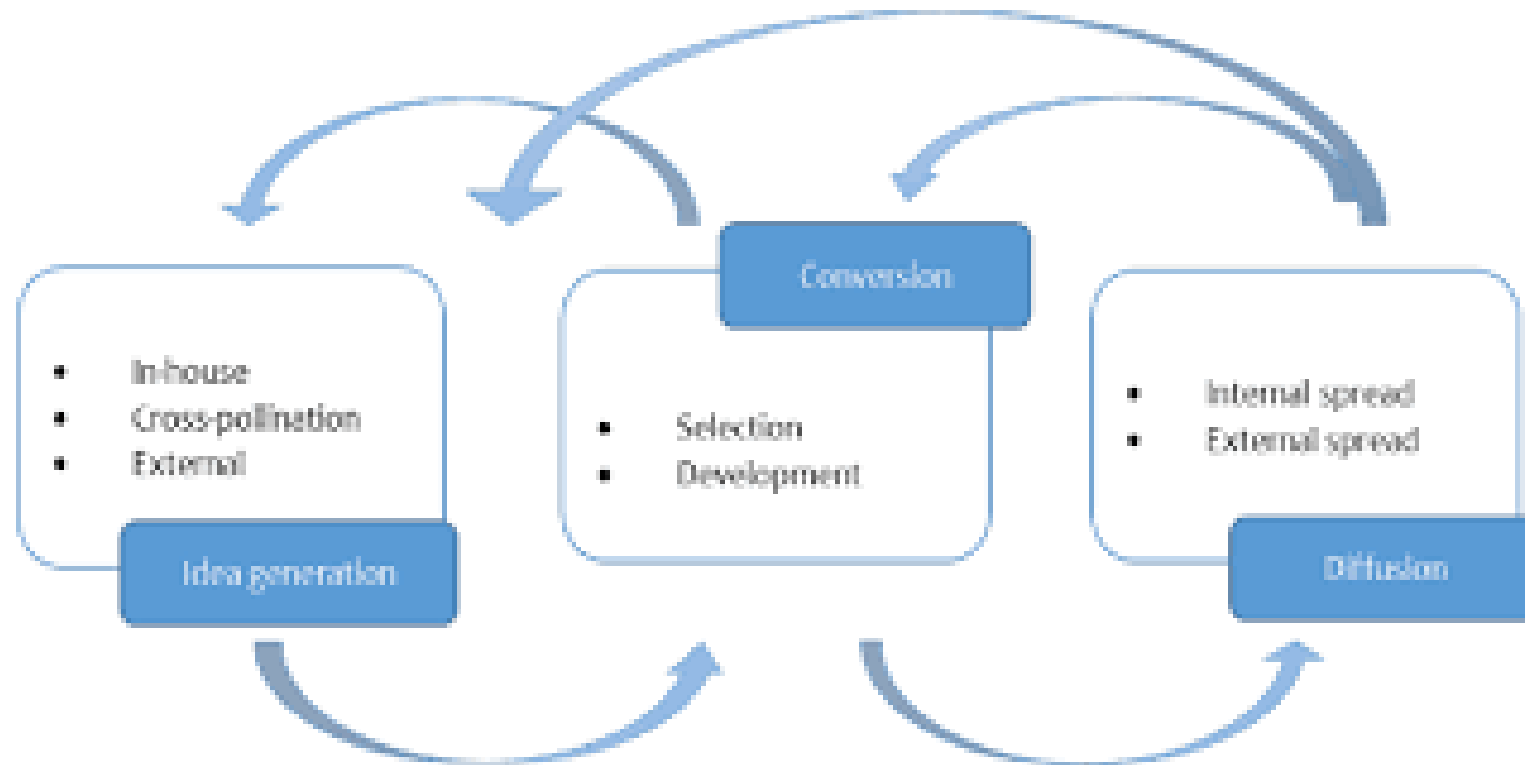
Innovation types by novelty and impacts

'There is a link between innovation and economic growth, it means that technological progress can be the engine of long-term development'.

Solow 1956



The innovation value chain (Hansen and Birkinshaw, 2007; Kline (1985) and Kline and Rosenberg (1986) in Mvulirwenande and When (2020, pp.141)



The innovation value chain - 6 tasks

According to the innovation value chain model, managers must perform six fundamentally important tasks during the phases, as follows:

- ▶ 1. internal idea generation,
- ▶ 2. cross-functional idea generation,
- ▶ 3. external idea generation,
- ▶ 4. selection of ideas,
- ▶ 5. further development,
- ▶ 6. dissemination within the company.

Innovation system approach

- ▶ Innovation is an interactive process.
- ▶ The economic structure (organizations) and the institutional system (regulations, laws, etc.) have a significant impact on the speed and direction of innovation activities.
- ▶ ‘The innovation system approach is now central to thinking about innovation and, by extension, economic growth, competitiveness, and employment’ (Edquist, 2001, p. 225).

‘The innovation system approach is now central to thinking about innovation and, by extension, economic growth, competitiveness, and employment’.

Edquist, 2001, p. 225



National innovation system (NIR, NIS)

- ▶ The core of the national innovation system (NIR, NIS) approach is the separation on a territorial basis (Lundwall, 1995, Nelson 1993), and the regional innovation system (RIR, RIS (Mészáros-Csizmadia-Grosz, 2011)).
- ▶ A well-defined territorial unit, an economy or a region, as the economic-territorial unit will be studied.

The basic principles are that an innovation




- ✓ must have been implemented
- ✓ and must be significantly different from the firm's previous products or business processes.

Changes that are not innovations

- ▶ Routine changes or updates - software updates, or seasonal changes in clothing fashions
- ▶ Simple capital replacement or extension - minor extensions and updates to existing equipment or software.
- ▶ Product introductions that only involve minor aesthetic changes, such as a change in colour or a minor change in shape,
- ▶ Firms engaged in custom production,
- ▶ An advertised concept, prototype or model of a product that does not yet exist
- ▶ The outputs of creative and professional service firms, such as reports for clients, books, or films
- ▶ The activities of newly created firms or mergers and the acquisition of other firms
- ▶ Ceasing to use a business process, ceasing to outsource a business process, or withdrawing a product from the market

- The firm and innovation are inseparable concepts.
- Hot topic.
- Innovation performance can increase the performance of the enterprises.





Module 3/a

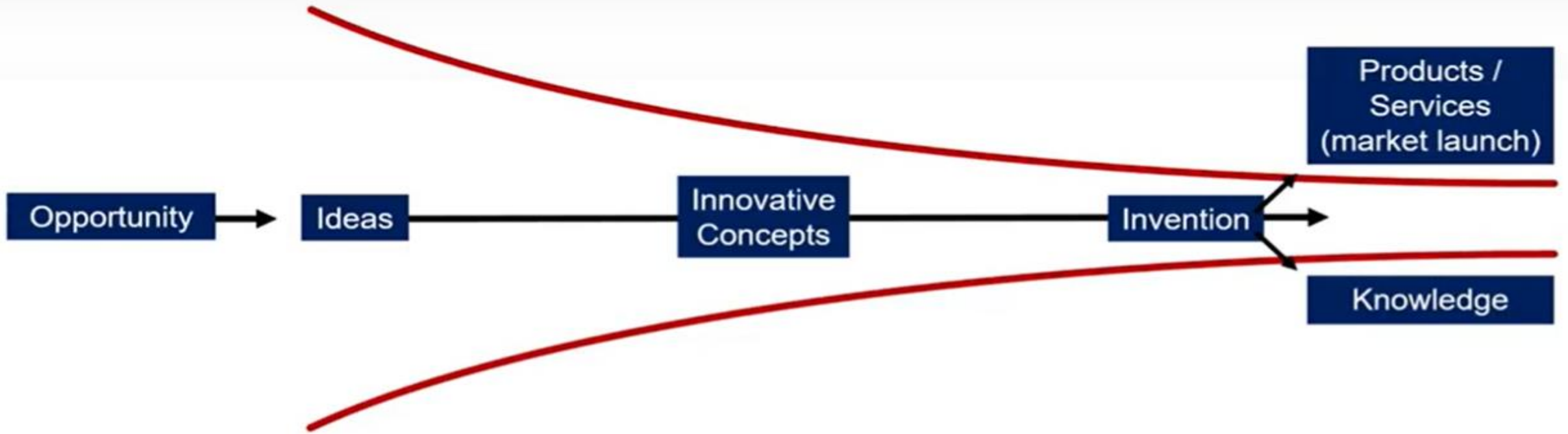
Customer-centric Innovation



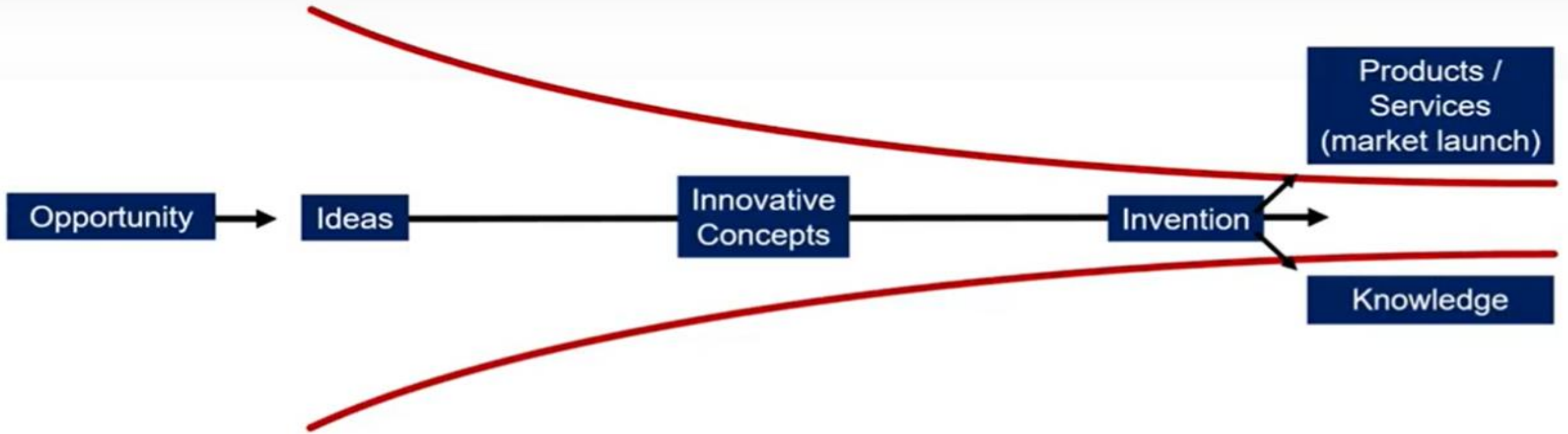
Innovation & Marketing

overlaps, synergies, priorities, sequences



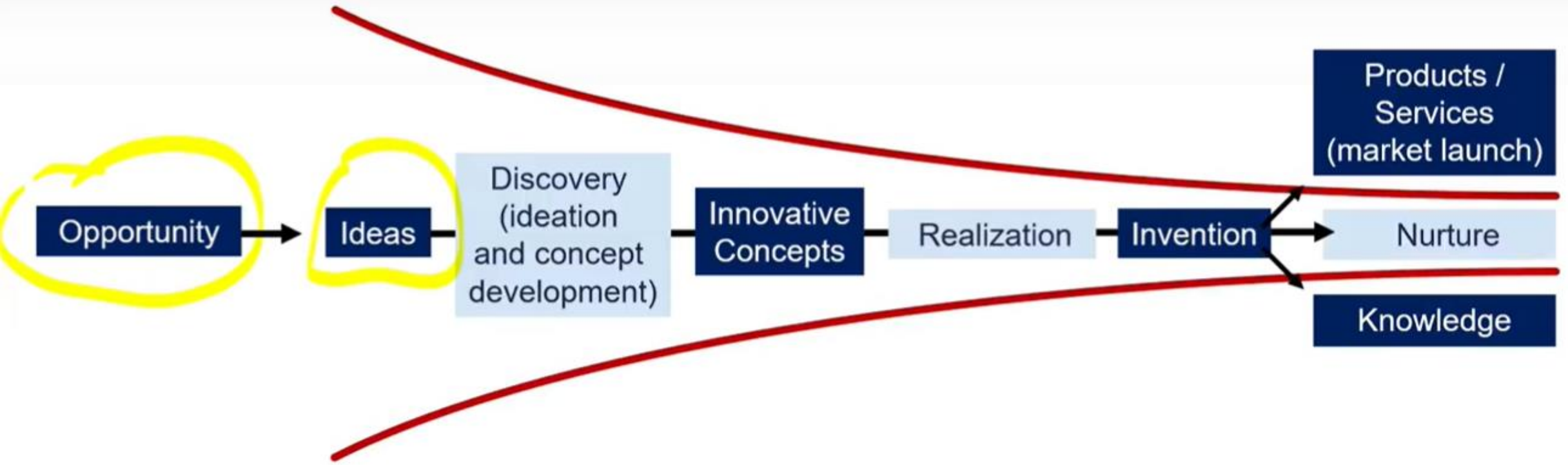


- ▶ **Development funnel:** typical picture of the development process
- ▶ funnel why as we start very broadly and then narrow it down until we come
- ▶ So an innovation process
- ▶ **starts with recognizing opportunities often coming from a gap perceived**
- ▶ in a company, creating ideas or perhaps searching for external ideas and
- ▶ turning them into concepts and this is called the discovery or ideation
- ▶ of concept development stage of an innovation process

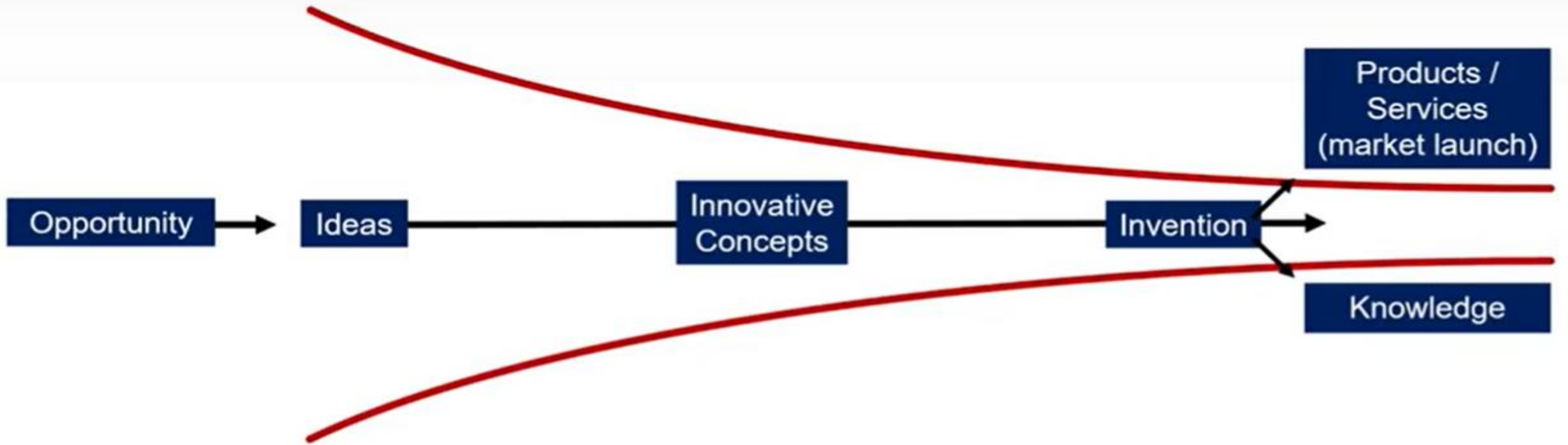


The innovation process

- ▶ starts with recognizing **opportunities** often coming from a gap perceived
- ▶ **creating ideas** or perhaps **searching for external ideas** and **turning them into concepts** and this is called the **discovery or ideation**
- ▶ Innovative concepts and invention: also in the literature find a term the **fuzzy front end of innovation**, meaning this is unstructured and can't be managed. - False!
- ▶ new product (service) development, product design in engineering size.



- ▶ Inbetween steps: DISCOVERY, REALIZATION
- ▶ GOAL: NURTURING



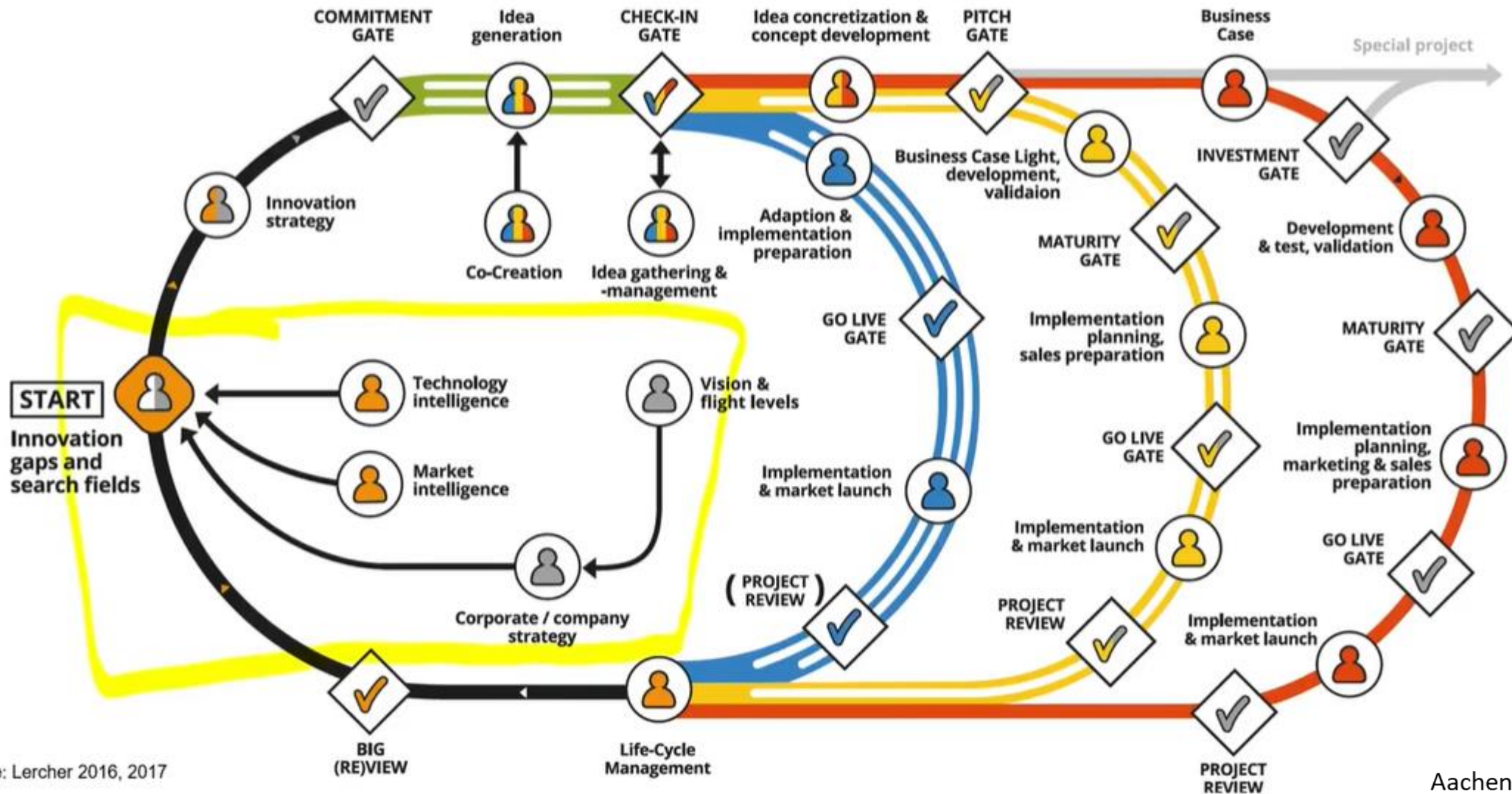
We have an invention but an invention is not an innovation. The definition of innovation is:

it is something new that is **successfully adopted by the market.**

So we have to launch it

or if you can't use this knowledge internally (perhaps out-licence the knowledge sales and technology for someone).

Concept of market driven innovation processes



Customers' role in innovation

Customer

Customer-centric

INNOVATION

Customer-driven

Customer-focused



Customers' role in innovation

	Customer-driven Innovation	Customer-centric Innovation	Customer-focused Innovation
Central entity	Customer	Customer and organization	Organization
Degree of customer involvement	Innovation by customers	Innovation with customers	Innovation for customers
Role of organization	Coordinator	Communicator	Innovator
Type of innovation	Dynamic innovation	Open innovation	Closed innovation
Degree of control	Impossible to control	Difficult to control	Easy to control
Degree of coordination	Emergent coordination	Difficult to coordinate	Easy to coordinate
Critical innovation stage	Commercialization (Ideas are over-generated and developed, but difficult to commercialize)	Idea development (Ideas are abundant, but difficult to develop)	Idea generation (Ideas are scarce)
Types of innovation to focus on	Products and services, output interaction with products and services	Communication with customers; customer interaction with organization	Customer segmentation and customer analysis
Critical issues with innovation types	“Sticky” and tacit knowledge transfer requires high levels of human interaction Customer must be segmented for proper analysis	Investment in infrastructure High-quality communication needed Risk ₃ of copycats	Analysis must be ongoing Systems must be integrated Information overload possible

Source: K. C. Desouza, Y. Awazu, S. Iha, C. Dombrowski, S. Papagari, P. Baloh, Research Technology Management, Taylor & Francis 2008, pp. 35-44.

vation,

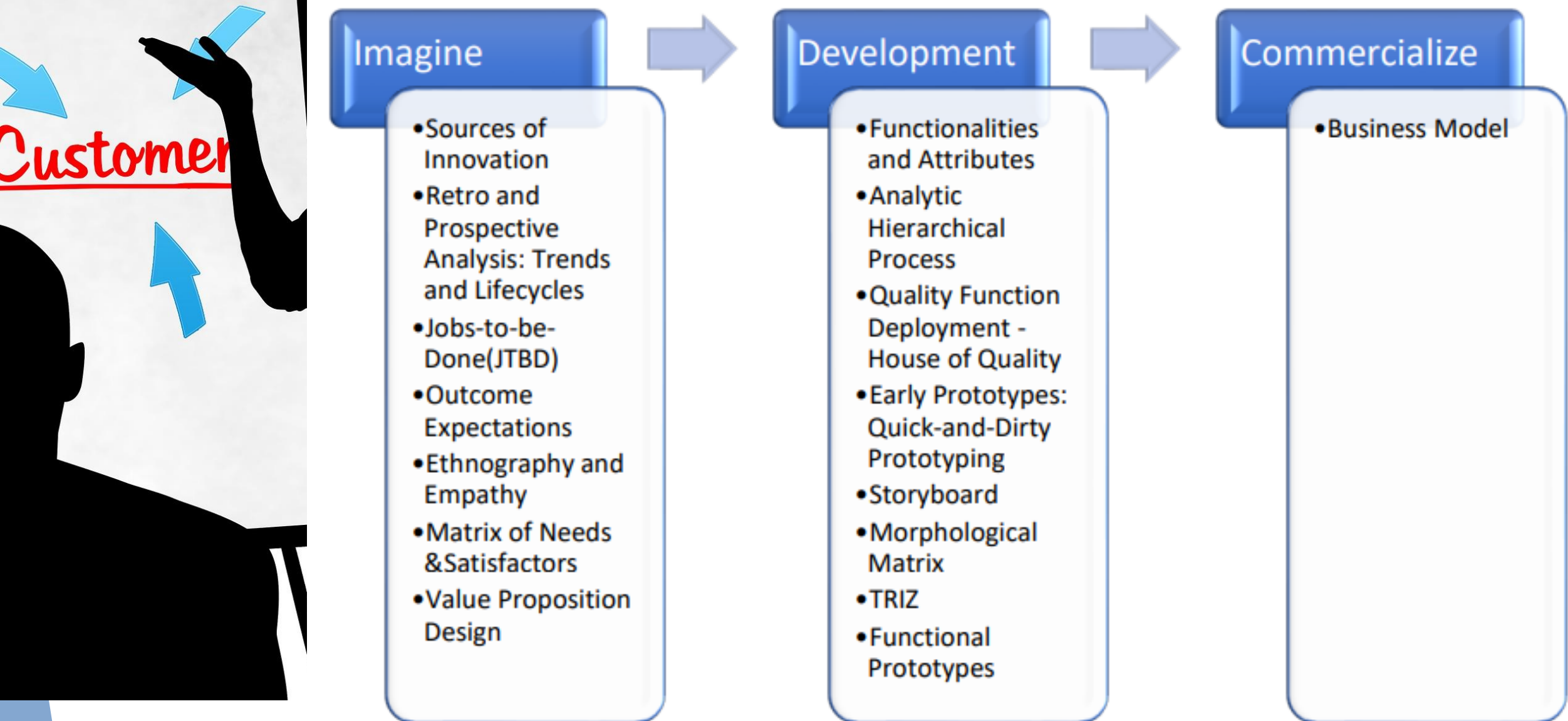
In customer-centric innovation programs:

- ✓ the customer engagement can be described as “open innovation” ,
- ✓ innovation program is open to customers and they are allowed to be involved with the process, usually at specific points in time with specific processes,
- ✓ organizations control and coordinate the innovation process,
- ✓ idea development, screening and refinement are central.



Customer-centric innovation

Customer-centric Innovation Process





Discussion

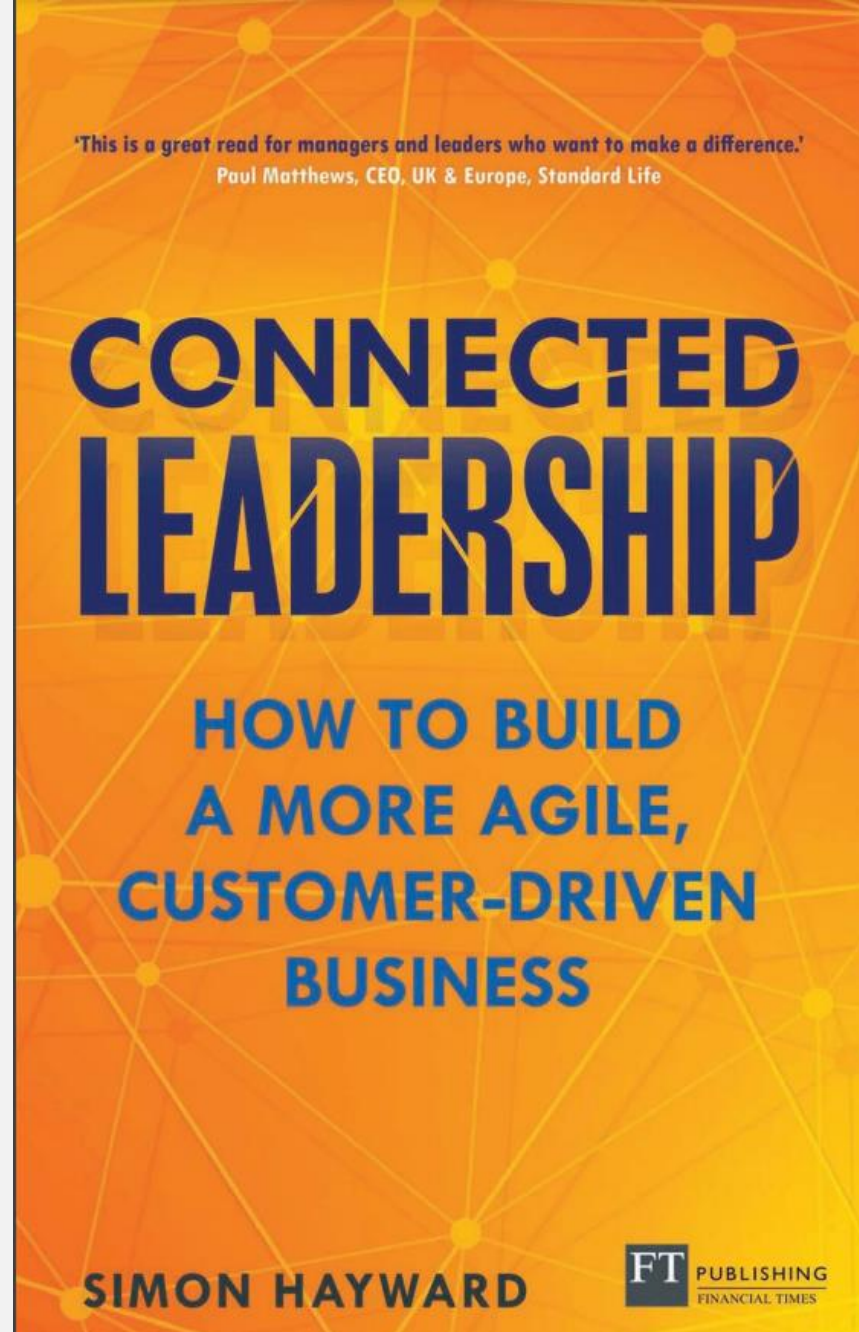
The goal is to highlight the differences among:

- ✓ Customer-driven innovation
- ✓ Customer-centric innovation
- ✓ Customer-focused innovation

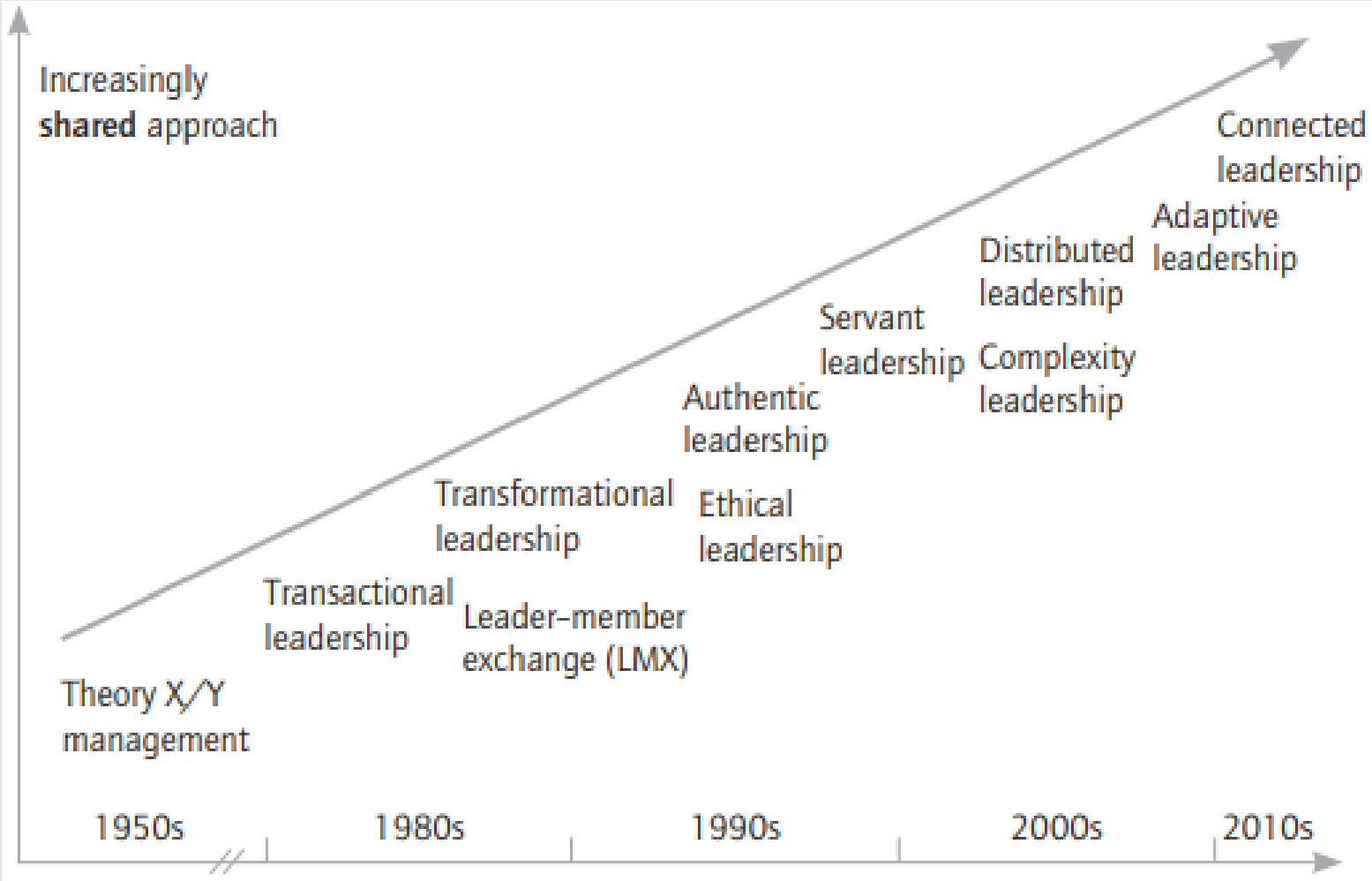
Key for customer driven innovations:

Connected leadership

Élőláb beszúrása



Development path of leadership theories



Attributes of connected leadership

What connected leadership looks like

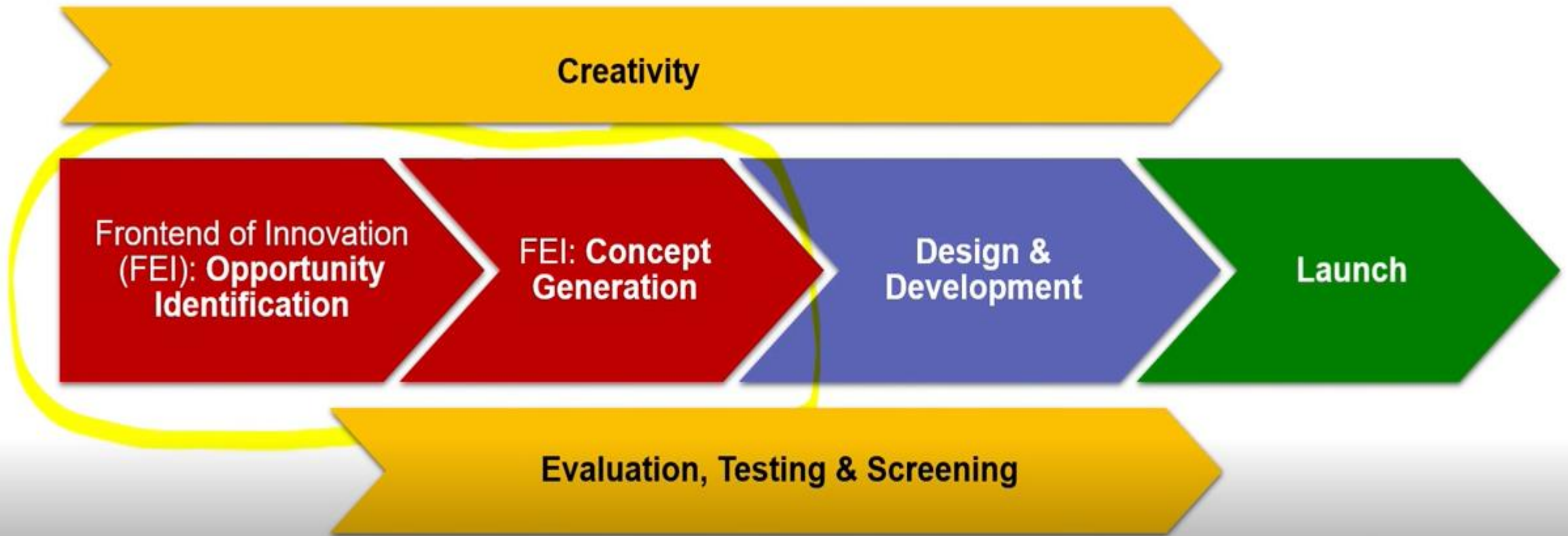
- Leaders can communicate a clear purpose, direction and values as well as inspiring others to believe in that purpose and follow the direction.
- They act as authentic role models and stewards of the organisational purpose.
- They have a strong moral compass and are accountable for their behaviour.
- They are emotionally intelligent and self-aware, able to mobilise, focus and renew the collective energy of others.
- They are not afraid to share power so that decisions are made closer to the customer by people who are capable of making them in line with overall strategy and purpose.
- Collaboration and team working are emphasised as a better way to achieve great performance than through a more traditional command-and-control approach.
- Colleagues are encouraged to learn, to experiment and to adapt within the parameters of the organisation's purpose, direction and values.



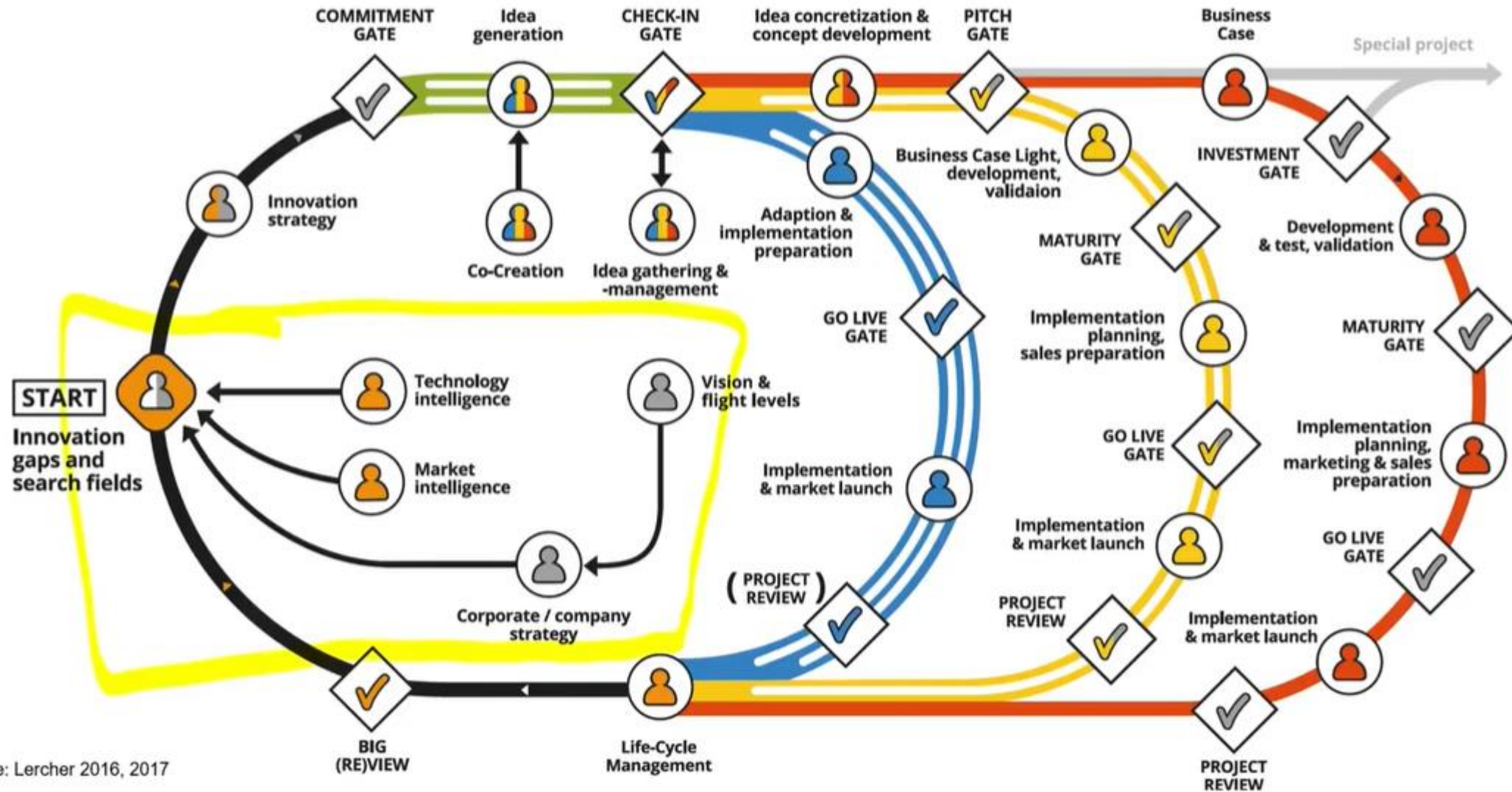
Discussion

Opinions and experiences about connected leadership


The Basic New Product* Process



Concept of market-driven innovation processes



Source: Lercher 2016, 2017



Module 3/b
Customer-centric
Innovation in SMEs



Customer-centric innovation in SMEs

- ▶ **Market-driven business models - Business model innovations**
- ▶ **New value propositions**
- ▶ **New markets - new demands**
- ▶ **Market niches**
- ▶ **Beating the competition**
- ▶ **The „customer’s voice”**

Business model innovations

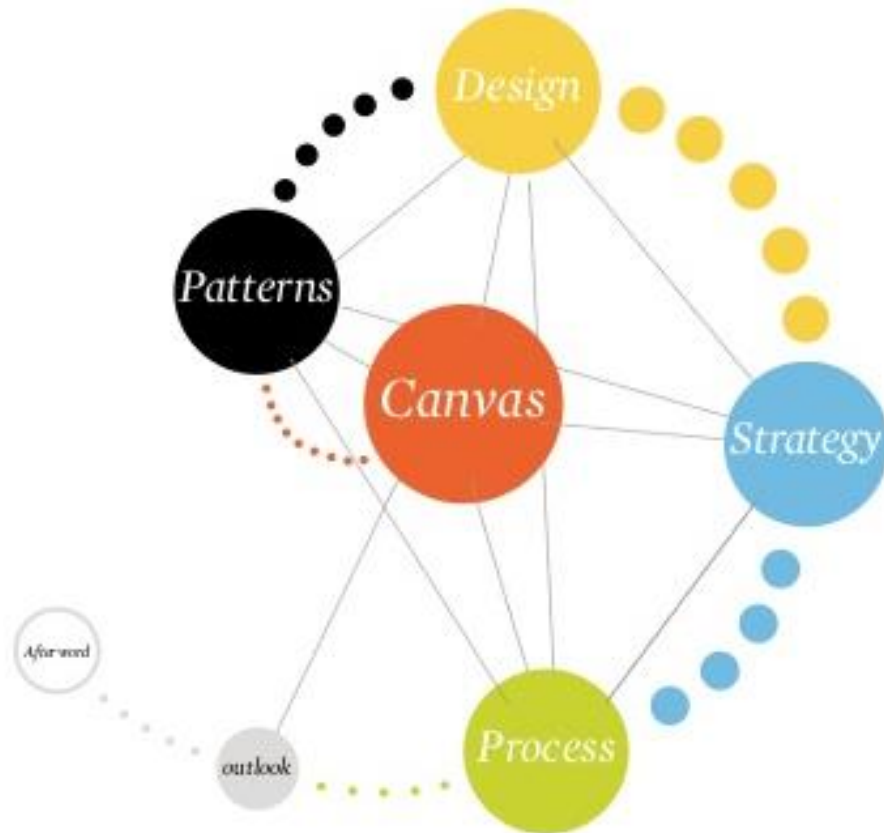
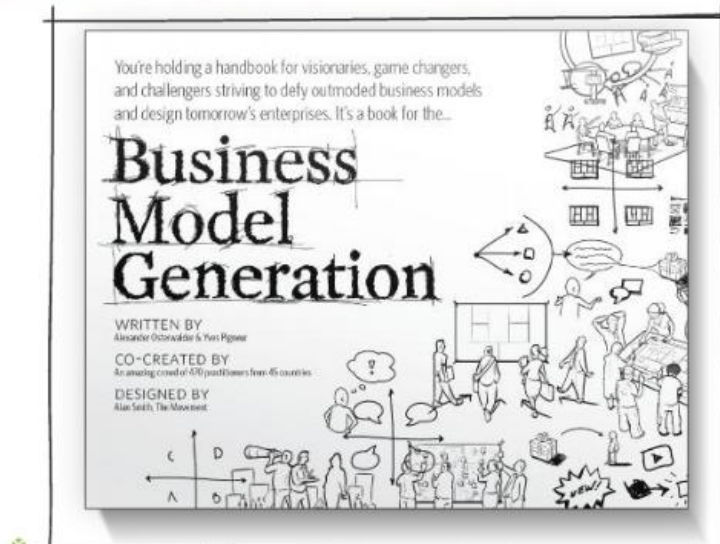
A business model includes all core business processes such as the production, logistical, marketing and co-operative arrangements in use as well as the main products that a firm sells, currently or in the future, to achieve its strategic goals and objectives.

Three types of comprehensive business model innovations: (involve both products and business functions)

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The new generation of business planning: Business Model Canvas

BUSINESS MODEL
BOOK ALEXANDER OSTERWALDER



- **Book: 2010**
- **Innovative way for business planning**
- **Method for conceptualizing business models**


Sketch Out Your Hypothesis

- Nespresso Machines
- Nespresso Pods

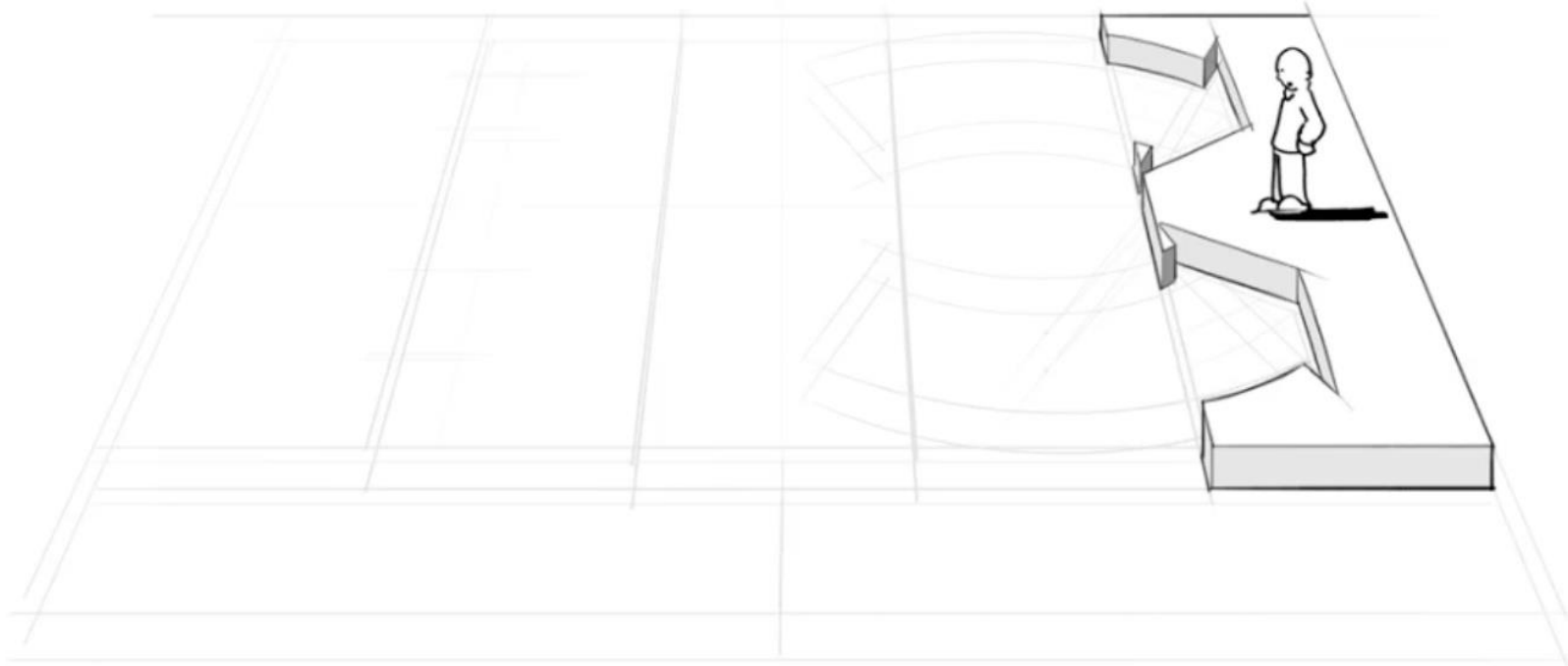


**Harvard
Business
Review**

The business model canvas lets you look at all nine building blocks of your business on one page. Each component of the business model contains a series of hypotheses that you need to test.

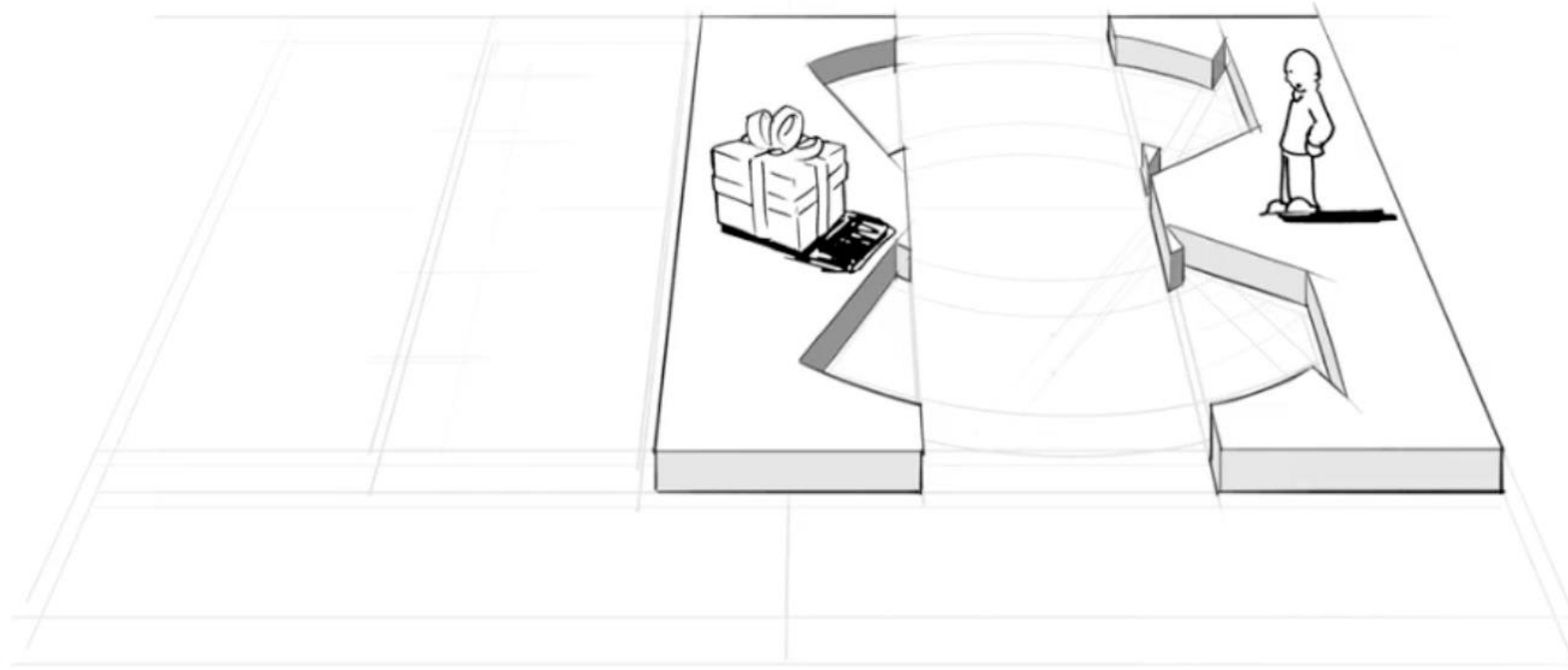
KEY PARTNERS	KEY ACTIVITIES	VALUE PROPOSITIONS	CUSTOMER RELATIONSHIPS	CUSTOMER SEGMENTS	
		 <p>Alexander Osterwalder Lead Author <i>Business Model Generation</i> Co-founder <i>Strategyzer.com</i></p>			
	KEY RESOURCES			CHANNELS	
COST STRUCTURE			REVENUE STREAMS		

CUSTOMER SEGMENTS



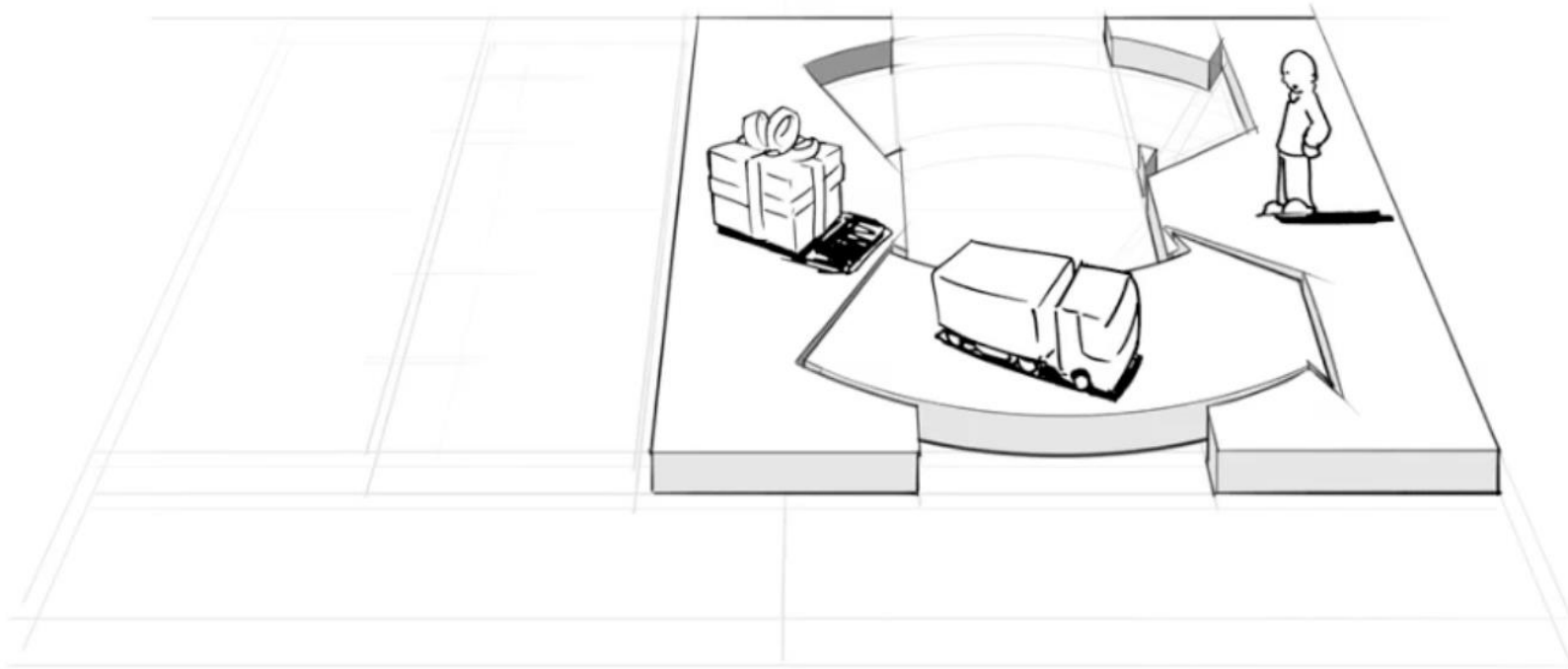
**An organisation serves one or several
Customer Segments**

VALUE PROPOSITIONS



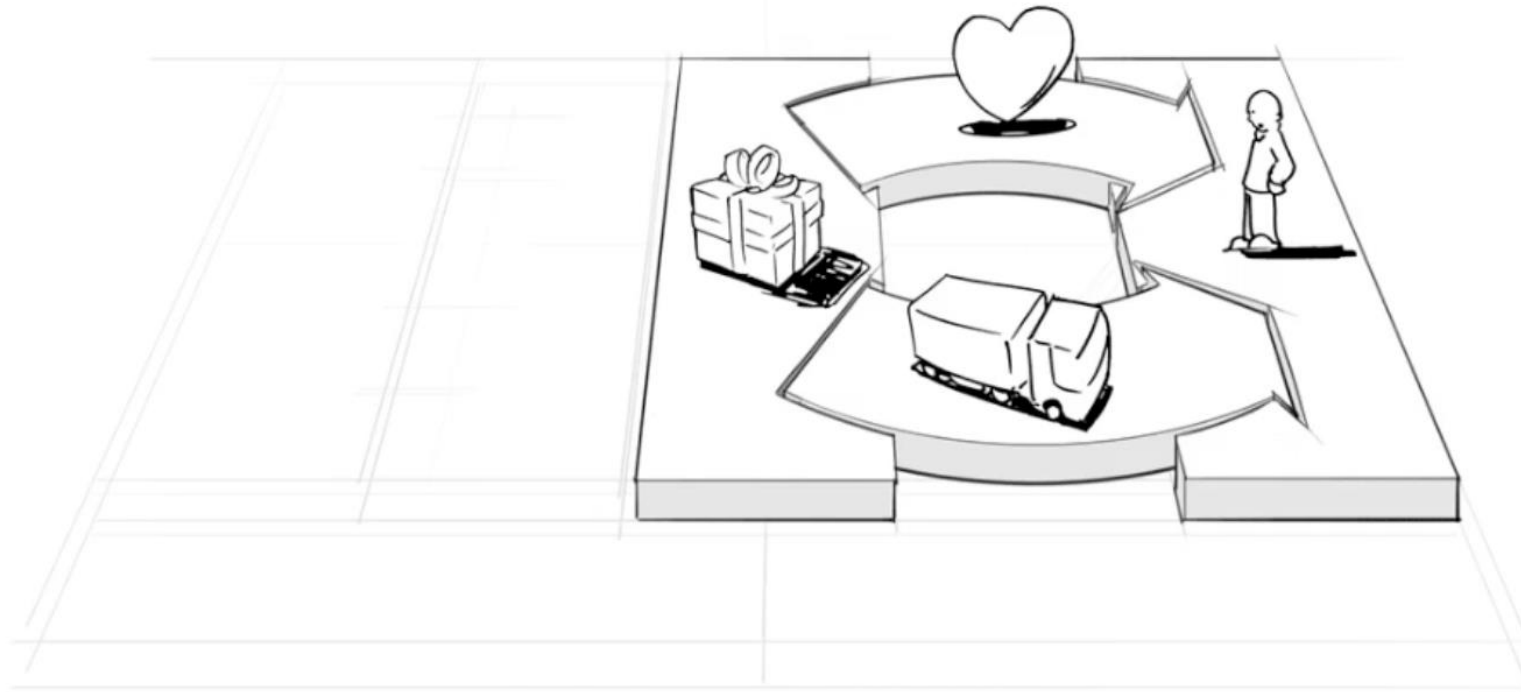
It seeks to solve customer problems and satisfy customer needs with value propositions

CHANNELS



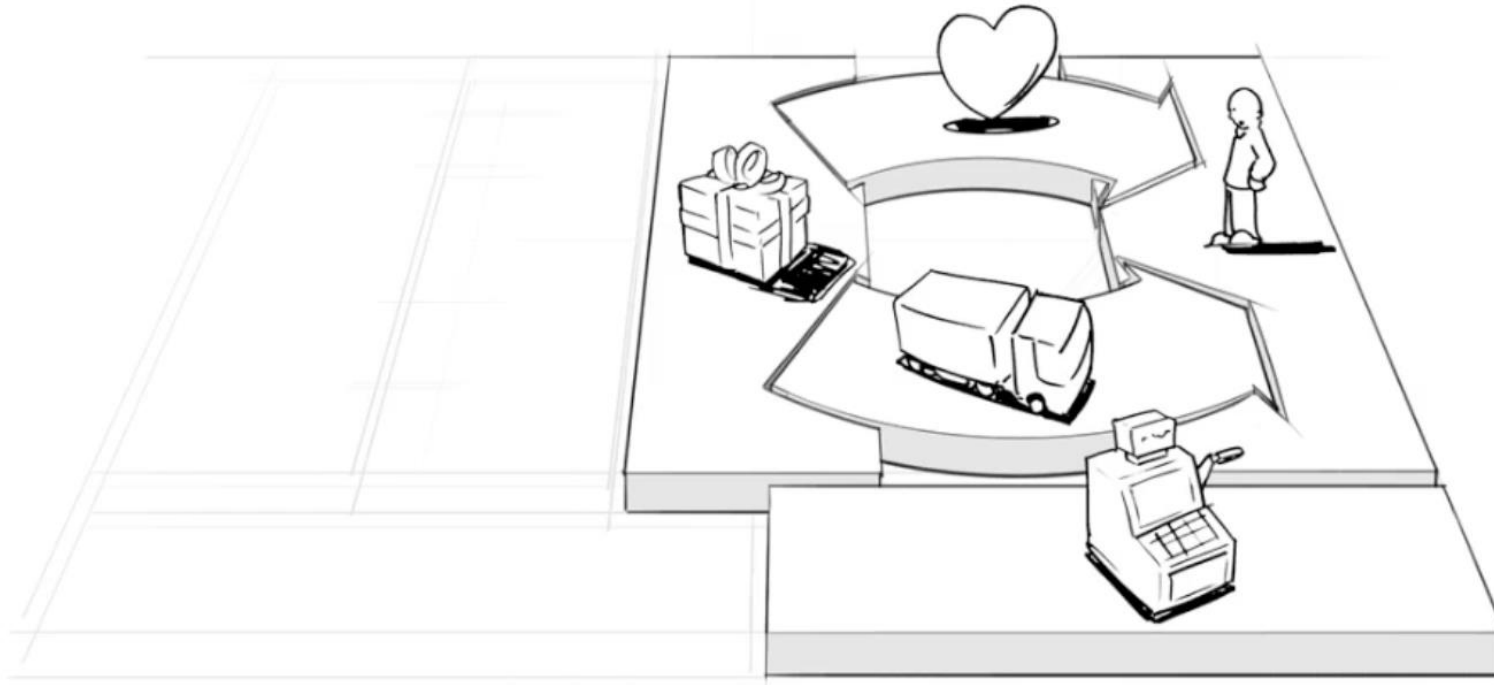
Value propositions are delivered to customers
through
communication and distribution channels

CUSTOMER RELATIONSHIOPS



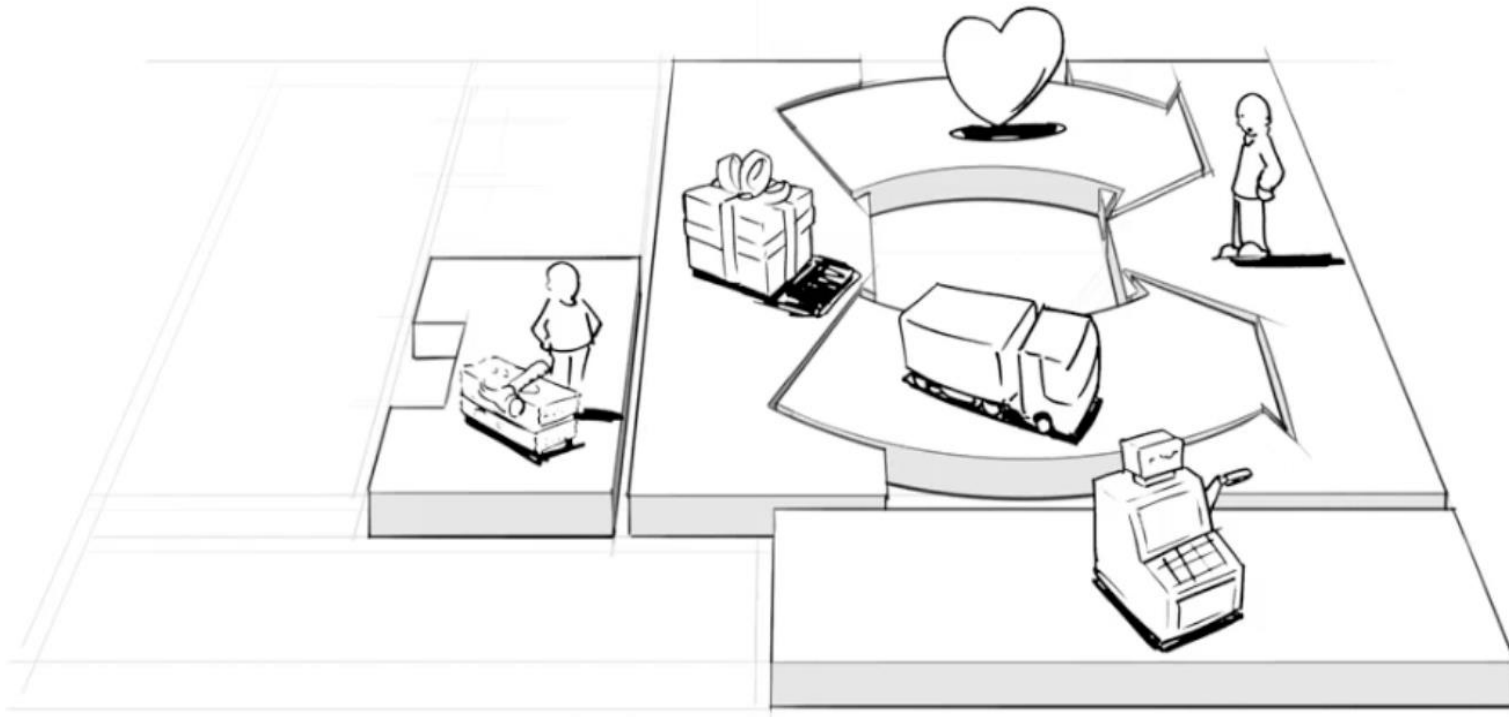
Customer relationships are established and maintained with each Customer Segment

REVENUE STREAMS



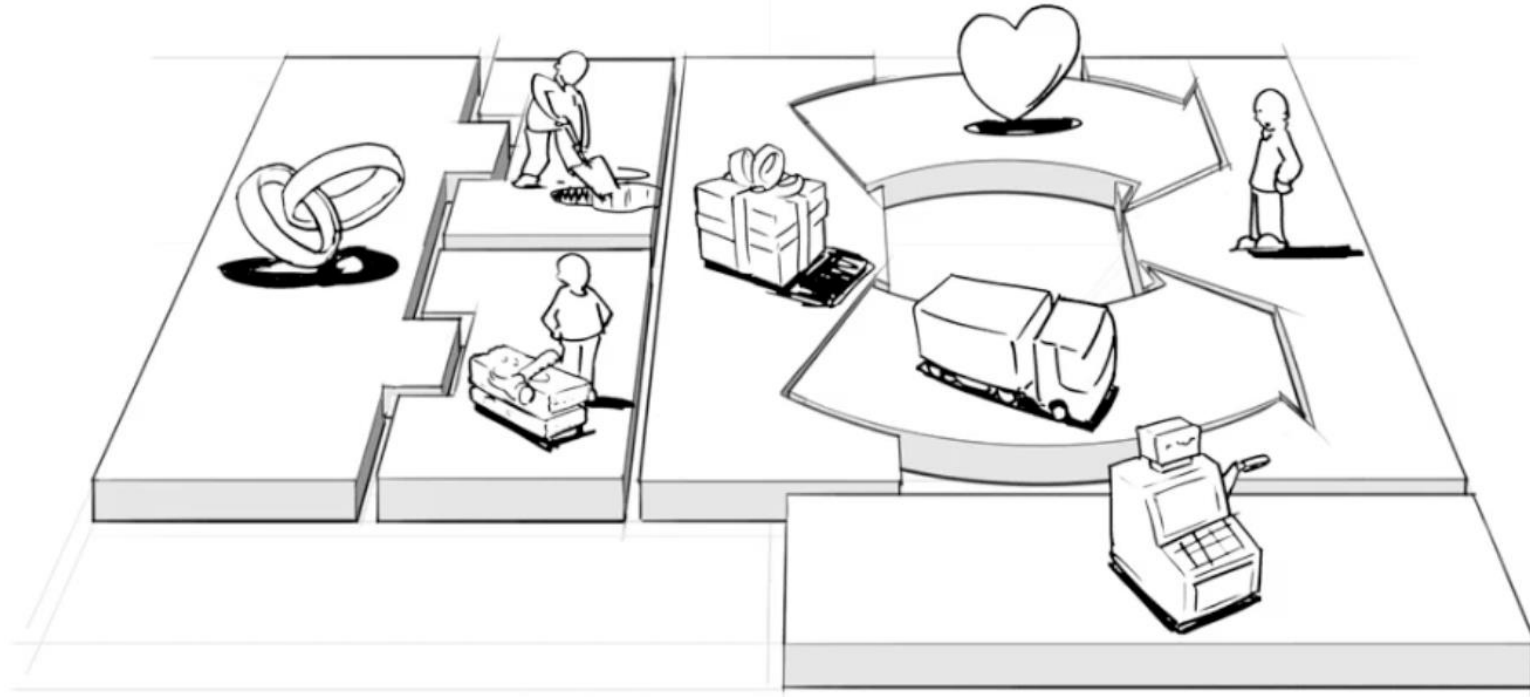
Revenue streams result from value propositions successfully offered to customers

KEY RESOURCES



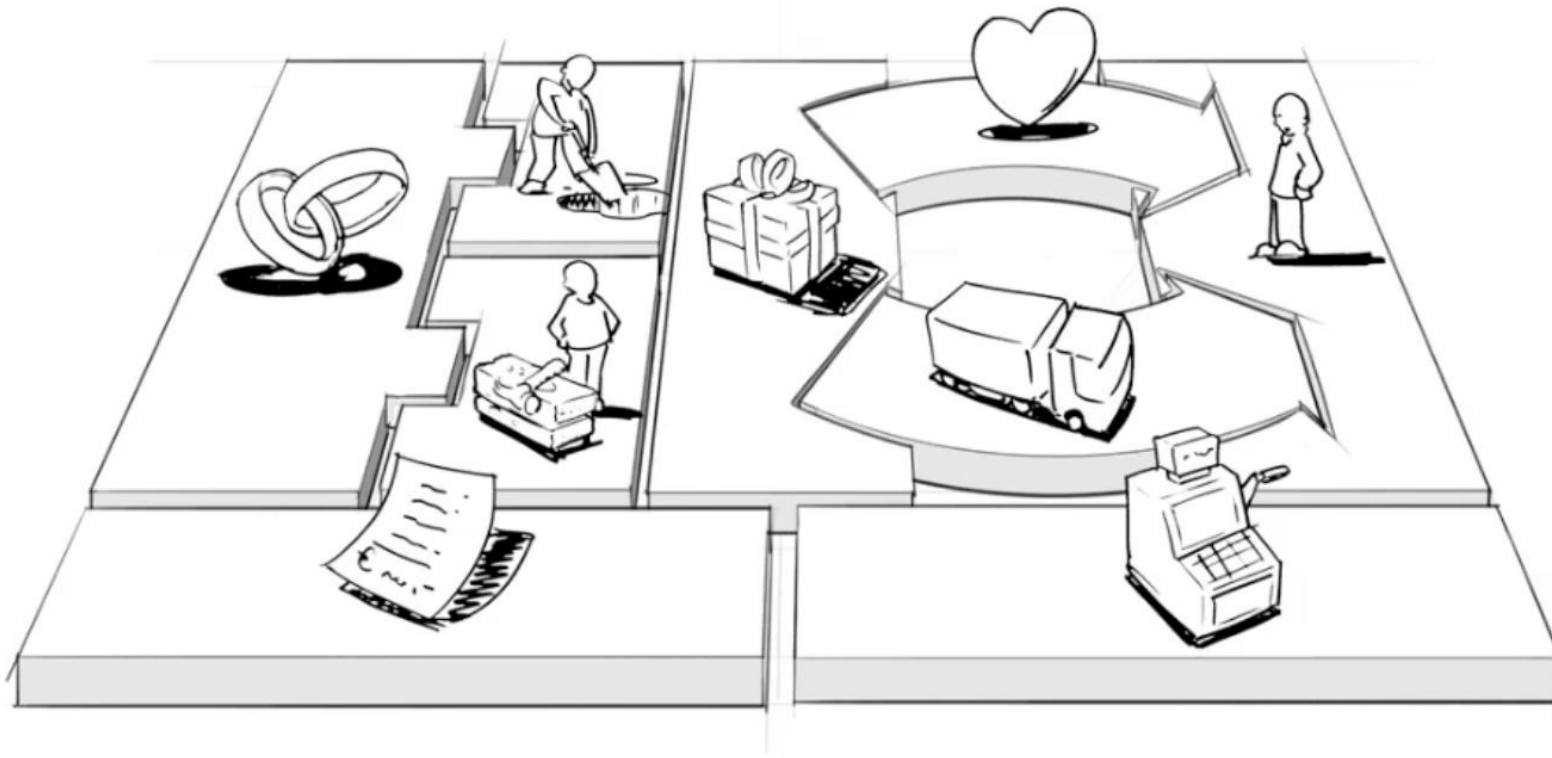
Key Resources are the assets required to offer and deliver the previously described elements

KEY PARTNERS

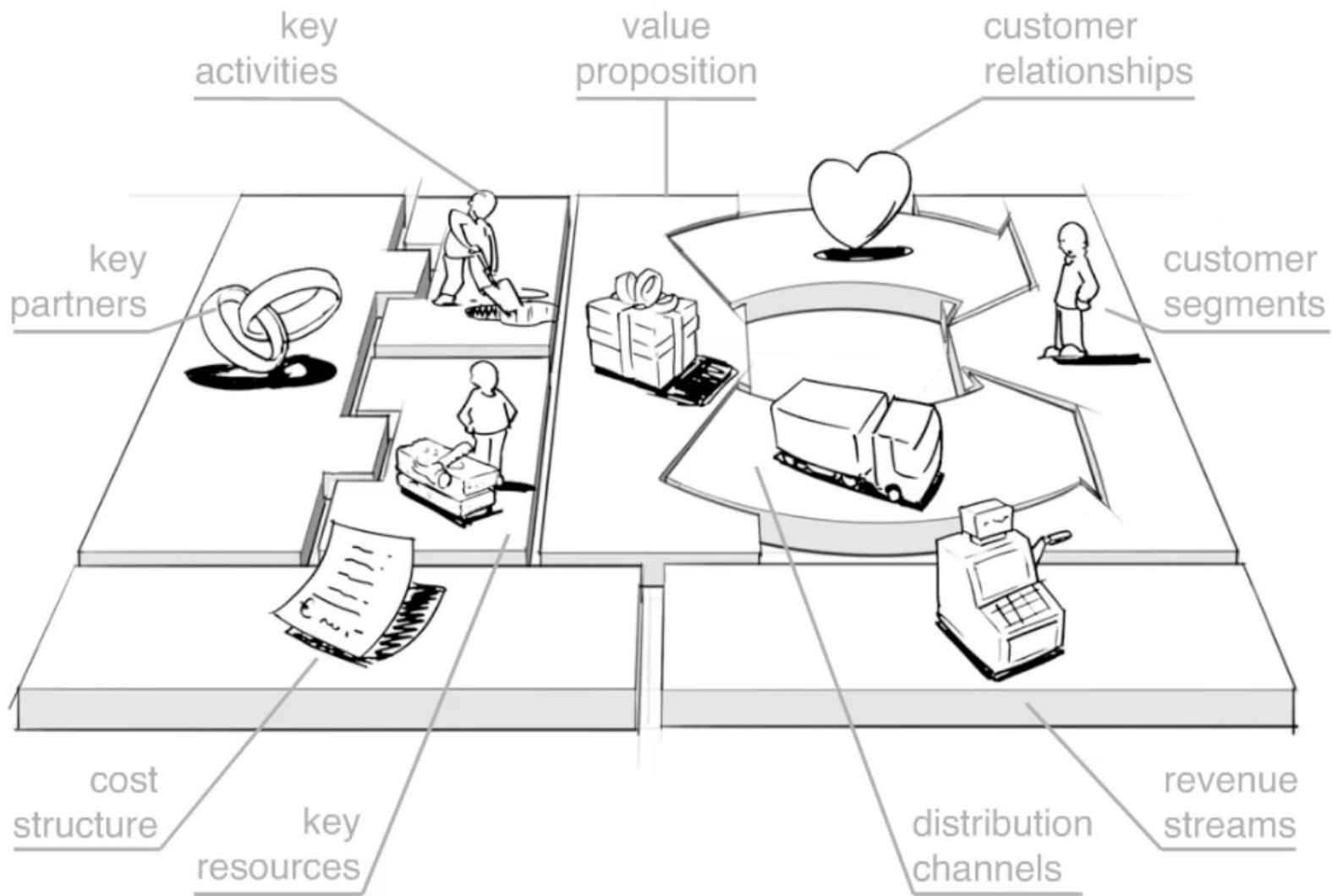


Some activities are outsourced and
some resources are acquired outside the enterprise

COST STRUCTURE



The business model elements result in the cost structure



Module 3/c

Customer-centric innovation in SMEs:

Experiences of a survey and best practices



Customers' role in innovation

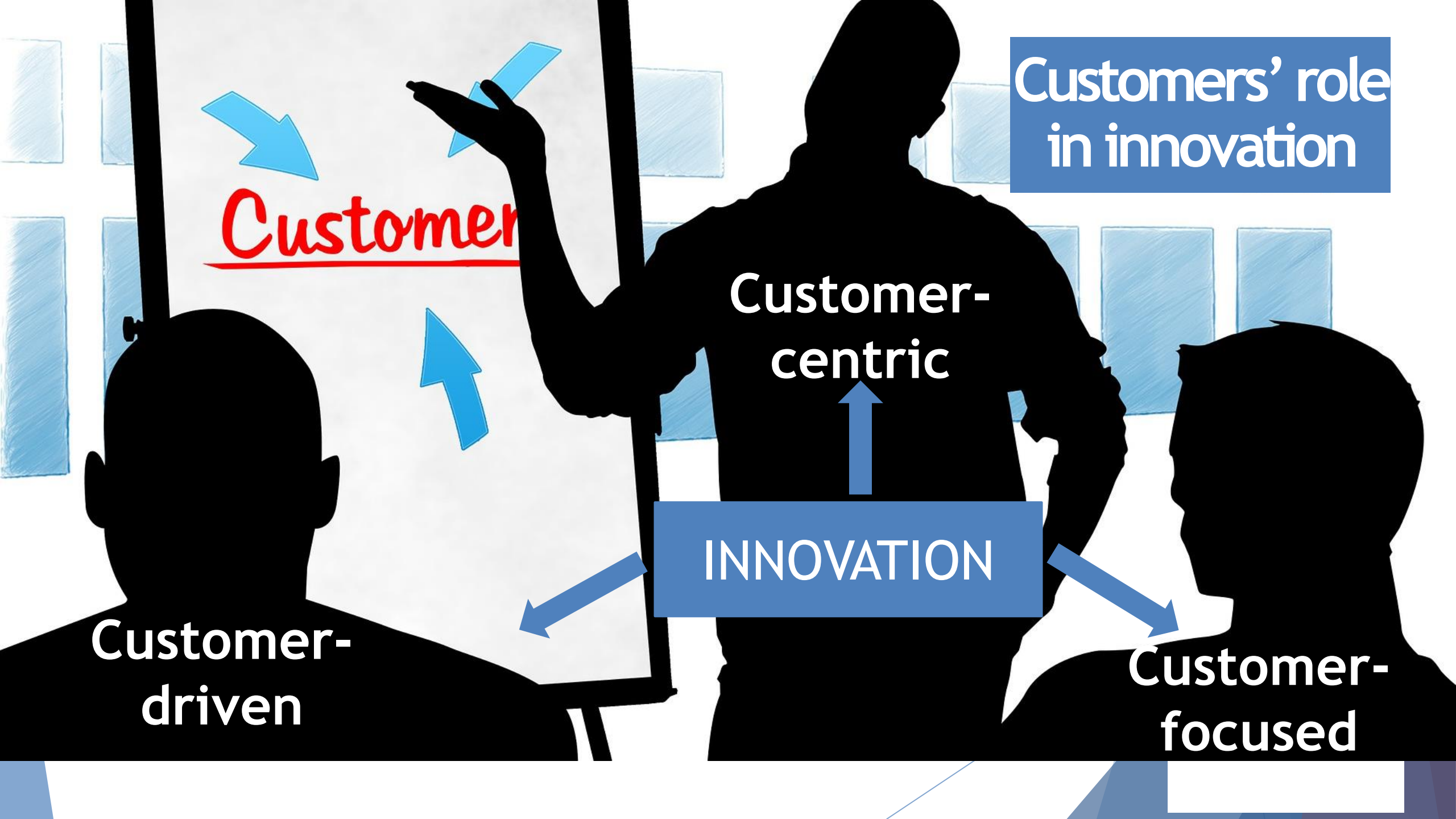
Customer

Customer-centric

INNOVATION

Customer-driven

Customer-focused





What is Customer-centric innovation?

Customers in focus

The goal is to highlight the differences among:

- ✓ Customer-driven innovation
- ✓ Customer-centric innovation
- ✓ Customer-focused innovation



Customers' role in innovation

Based on: Monika Zajkowska, Melanie Mesloh 2021: Study of applied instruments, methods and procedures for the integration of customer-based innovation in SMEs

Customer-centric innovation is very different from **customer-focused** and **customer-driven** innovation.

- ▶ **Customer-centric:** innovation is done with customers - organizations and customers create innovation together.
- ▶ **Customer-focused:** innovation is done by the organization.
- ▶ **Customer-driven:** innovation is done by customers, with minimum involvement by the organization. Customers are the primary source of ideas and the customers of new products and services. They can offer ideas without geographic and time constraints, and the organization must be able to apply those ideas quickly to the development of new products and services. Without the tools to support such dynamic interaction, it risks losing its customer to competitors.





	Customer-driven Innovation	Customer-centric Innovation	Customer-focused Innovation
Central entity	Customer	Customer and organization	Organization
Degree of customer involvement	Innovation by customers	Innovation with customers	Innovation for customers
Role of organization	Coordinator	Communicator	Innovator
Type of innovation	Dynamic innovation	Open innovation	Closed innovation
Degree of control	Impossible to control	Difficult to control	Easy to control
Degree of coordination	Emergent coordination	Difficult to coordinate	Easy to coordinate
Critical innovation stage	Commercialization (Ideas are over-generated and developed, but difficult to commercialize)	Idea development (Ideas are abundant, but difficult to develop)	Idea generation (Ideas are scarce)
Types of innovation to focus on	Products and services, output interaction with products and services	Communication with customers; customer interaction with organization	Customer segmentation and customer analysis
Critical issues with innovation types	“Sticky” and tacit knowledge transfer requires high levels of human interaction Customer must be segmented for proper analysis	Investment in infrastructure High-quality communication needed Risk of copycats	Analysis must be ongoing Systems must be integrated Information overload possible

Based on: Monika Zajkowska, Melanie Mesloh 2021: Study of applied instruments, methods and procedures for the integration of customer-based innovation in SMEs

Source: K. C. Desouza, Y. Awazu, S. Iha, C. Dombrowski, S. Papagari, P. Baloh, Research Technology Management, Taylor & Francis 2008, pp. 35-44.

vation,

Customer-centric innovation



“Customer-centric innovation describes a change from innovating for customers to **innovate with customers**. Therefore, the **customer takes an active role** in innovation processes and become the primary source of ideas to initiate innovation activities. By integrating the customer-centric innovation philosophy, **companies open their research and development activities**, meaning that the innovation process happens with input from inside and outside of the company. Customers are involved in all stages of the innovation process.” (Desouza et al. 2020; Steinhoff & Breuer, 2014; Zajkowska, 2017)

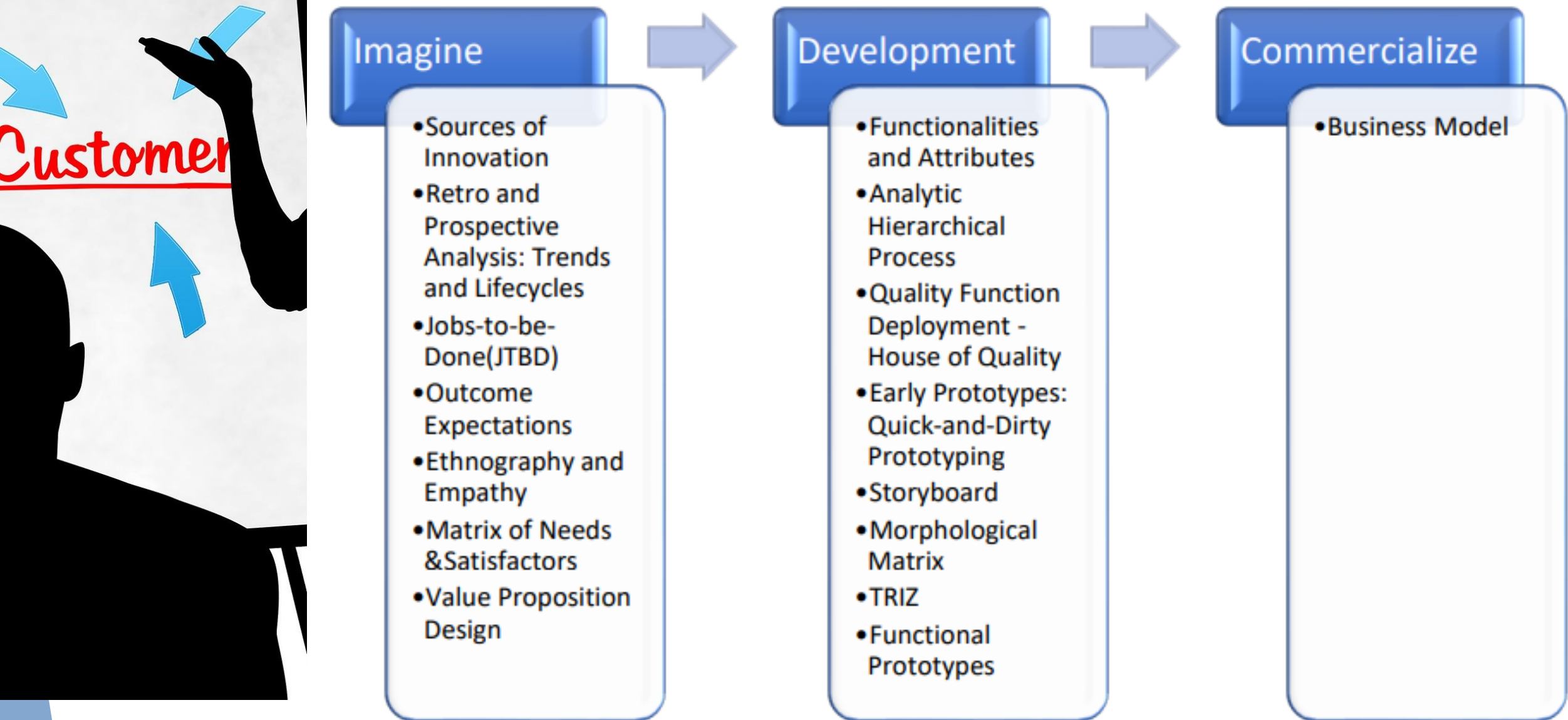
In customer-centric innovation programs:

- ✓ the customer engagement can be described as “open innovation” ,
- ✓ innovation program is open to customers and they are allowed to be involved with the process, usually at specific points in time with specific processes,
- ✓ organizations control and coordinate the innovation process,
- ✓ idea development, screening and refinement are central.



Customer-centric innovation

Customer-centric Innovation Process



Experiences of a survey and best practices.

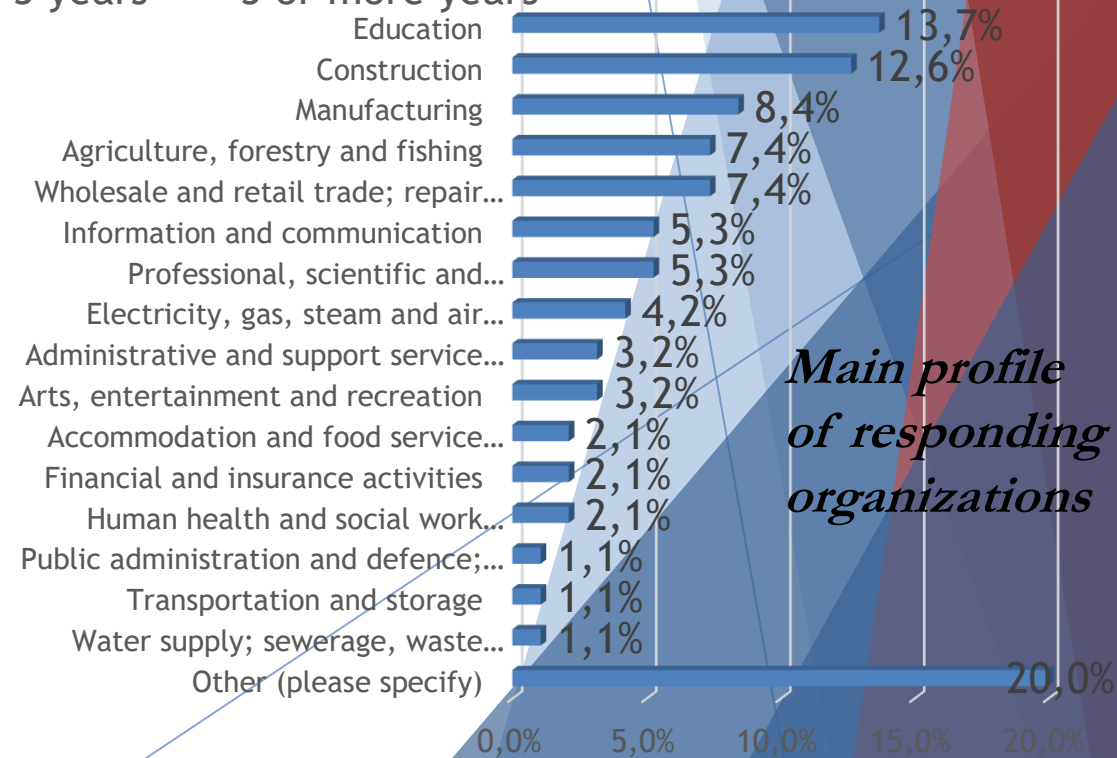
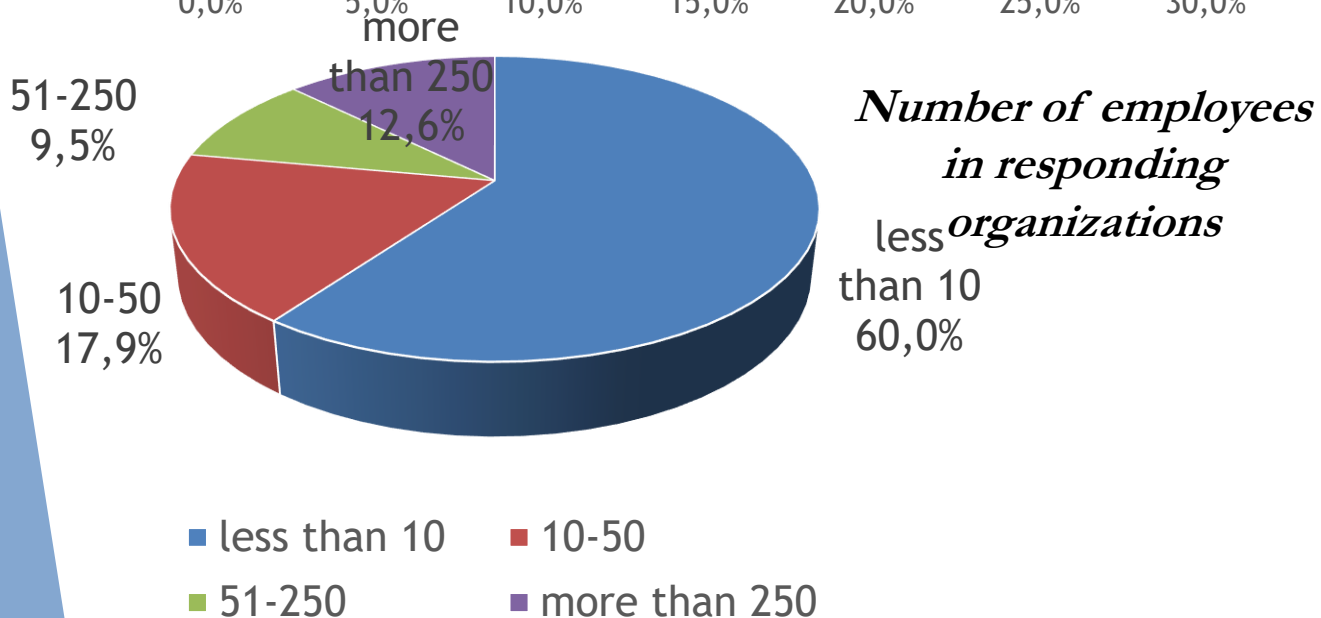
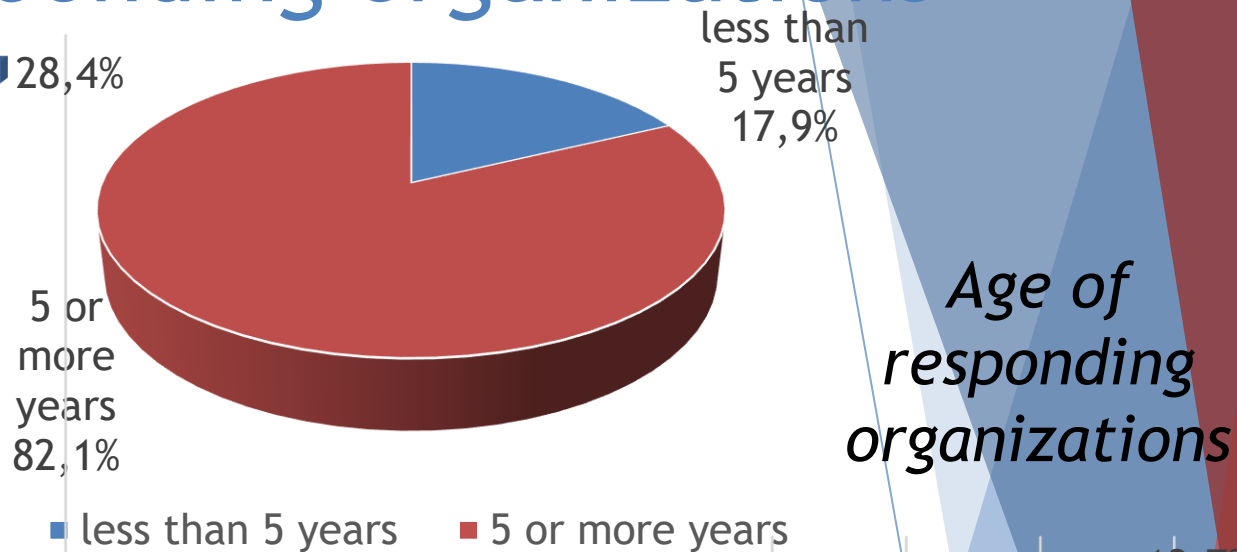
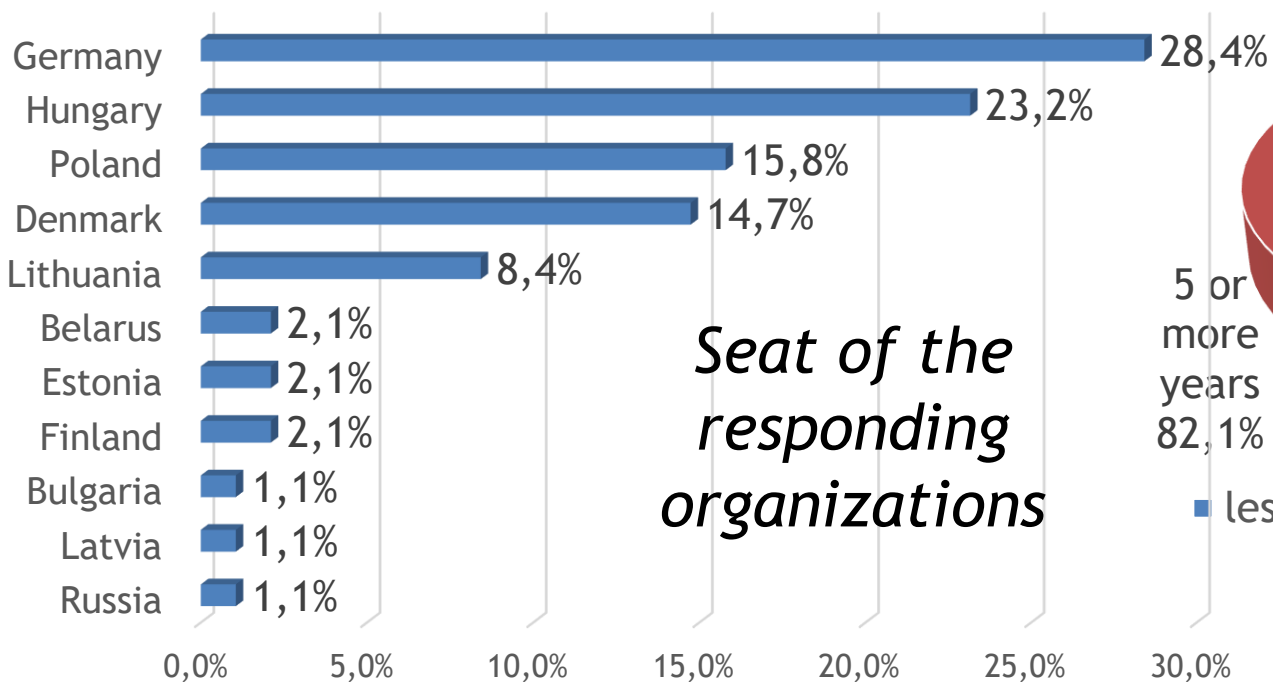
The main topics of the survey are

- ▶ Company data,
- ▶ Consumer involvement in innovation processes,
- ▶ Digital tools, ICT used in consumer-centric innovation and during business operation
- ▶ Benefits and difficulties

The survey

- ▶ The marketing research was conducted online (used Survey Monkey).
- ▶ between 7 April and 8 June 2021.
- ▶ 95 evaluable answers from 11 countries.
- ▶ The target group was clearly micro, small, and medium-sized enterprises, but large companies also appeared among the respondents.
- ▶ The sample is not representative, the results are valid only for the sample.
- ▶ Data analysis was performed with IBM SPSS Statistics 26 software package.

Features of responding organizations



Best practices in the use of digital technologies supporting customer innovations

Information about your company	
Country	
Name of enterprise	
Sector	
Activity	

Examples of products or services co-created with customers:

...

Methods of customer's involvement in innovation processes:

...

Digital tools used to support customer centric innovation:

...

Benefits realized as a result of customer innovation:

...

Best practices

We have 37 best practices from 12 countries

Country	Number of BP
Denmark	4
Estonia	1
Finland	2
Germany	5
Hungary	8
Italy	1
Lithuania	3
Norway	1
Poland	9
Sweden	1
UK	1
US	1

Products

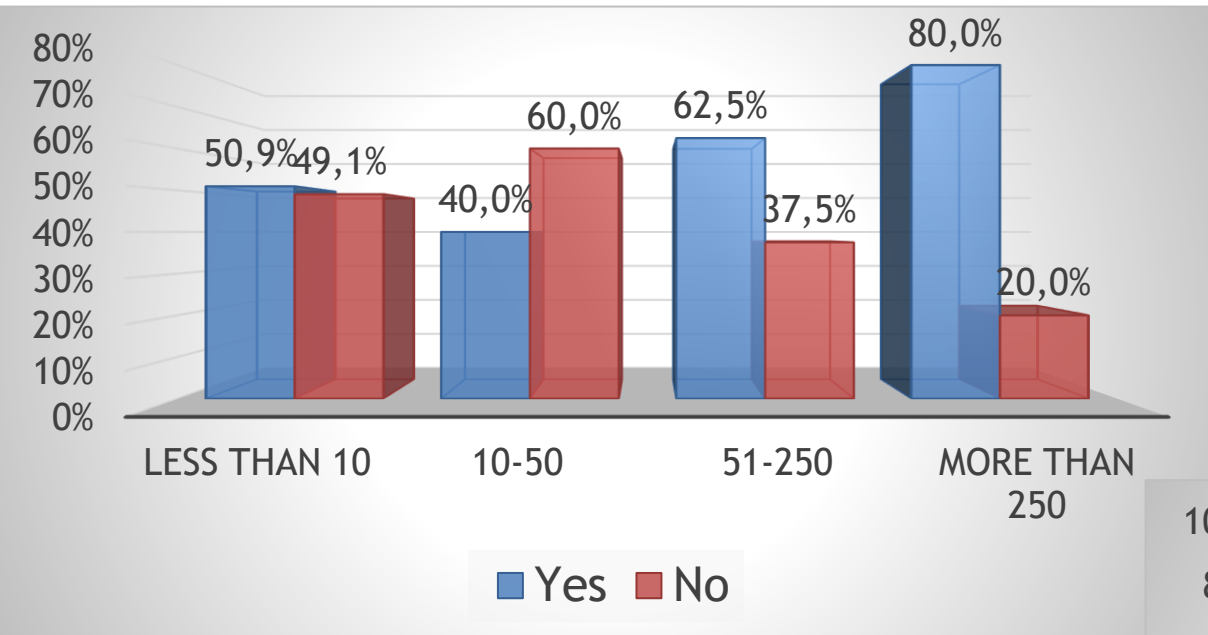
In the case studies examined, customer-centric innovation was applied to products such as:

- ▶ Recipes, DIY-Story cards, Calendar, Meal planner
- ▶ Beeswax wraps
- ▶ Sustainable jewellery
- ▶ Construction toys
- ▶ Customised and sustainable skin care, sustainable cosmetics, personalised skincare routine,
- ▶ Fair fashion and living accessories
- ▶ Design homewares and furniture
- ▶ Image design editor
- ▶ Sustainable water bottles, personalised inscriptions and prints onto water bottles, personalised product packaging
- ▶ Platform which develops new add-ins
- ▶ Power tools and hand tools for the construction, manufacturing and woodworking industries

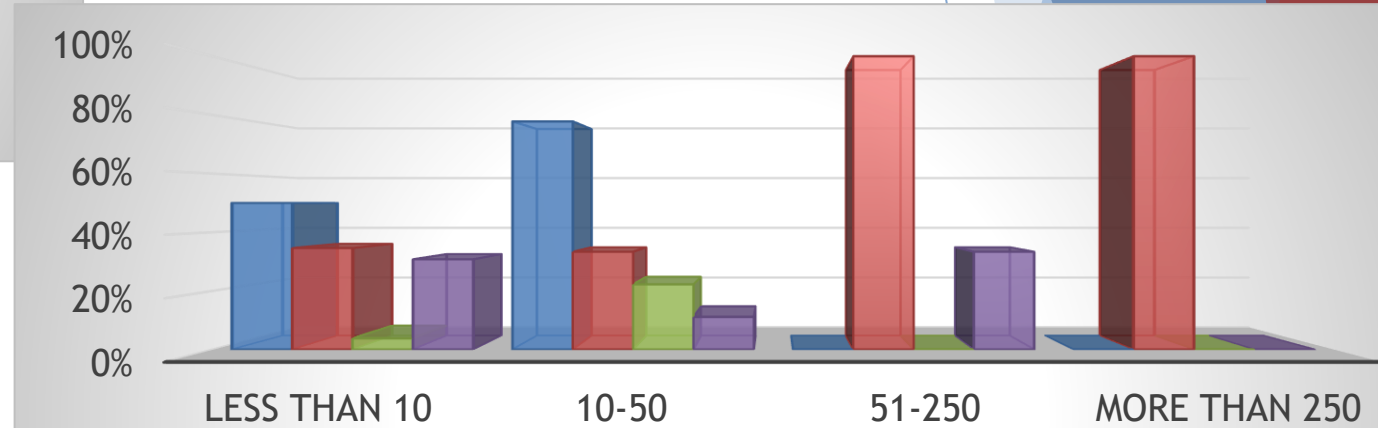
- ▶ Realway services, travel, logistics and rolling stock maintenance
- ▶ Postal service
- ▶ Prepare the apartments for sale and we refurbish apartments
- ▶ Payment Service,
- ▶ Special wall and ceiling decoration, digital wallpaper design activities.
- ▶ Water, gas heating installation
- ▶ API platform that allows to build customized payment solutions
- ▶ A retailshop for eyes control and selling glasses. Glasses, (star) binoculars, control/eyes check, contact lenses and can offer services from an eyes-doctor.
- ▶ Informatics, software development
- ▶ Digital banking software
- ▶ Manufacture of medical devices
- ▶ Operation of hairdresser saloon

Good examples of customer-centric innovation may not only appear at the product level. The efficiency of corporate operations and the complex process of customer service can be made more efficient through consumer feedback.

Involvement in customer-centric innovation



Reason for the lack of application of customer-centric innovation



- I have never heard about the concept to involve customers in my innovation processes
- I am interested in this, but need more information/support on how to use it
- I am aware of the concept, but do not see any advantages in customer-based innovation
- My products/services are too specific to allow an input by customers

Existence of customer-centric innovation



GROUP
1



How to involve customers in innovation processes?

Methods and digital tools supporting customer-centric innovation?

The goal is to explore:

- ▶ The methods of customer-involvement in innovation processes
- ▶ And the digital tools supporting customer feedback





GROUP
2



Benefits and barriers using customer-centric innovation

SMEs in focus

The goal is to explore:

- ▶ Benefits from customer-centric innovations
- ▶ Difficulties in involving customers
- ▶ Barriers to the introduction of customer-centric innovations supported by digital tools



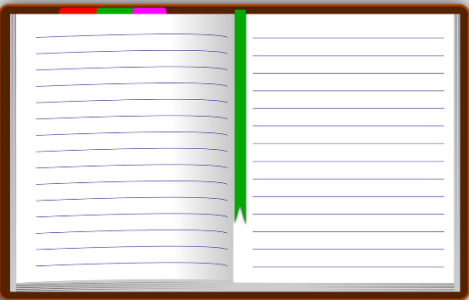
**GROUP
1**



How to involve customers in innovation processes?

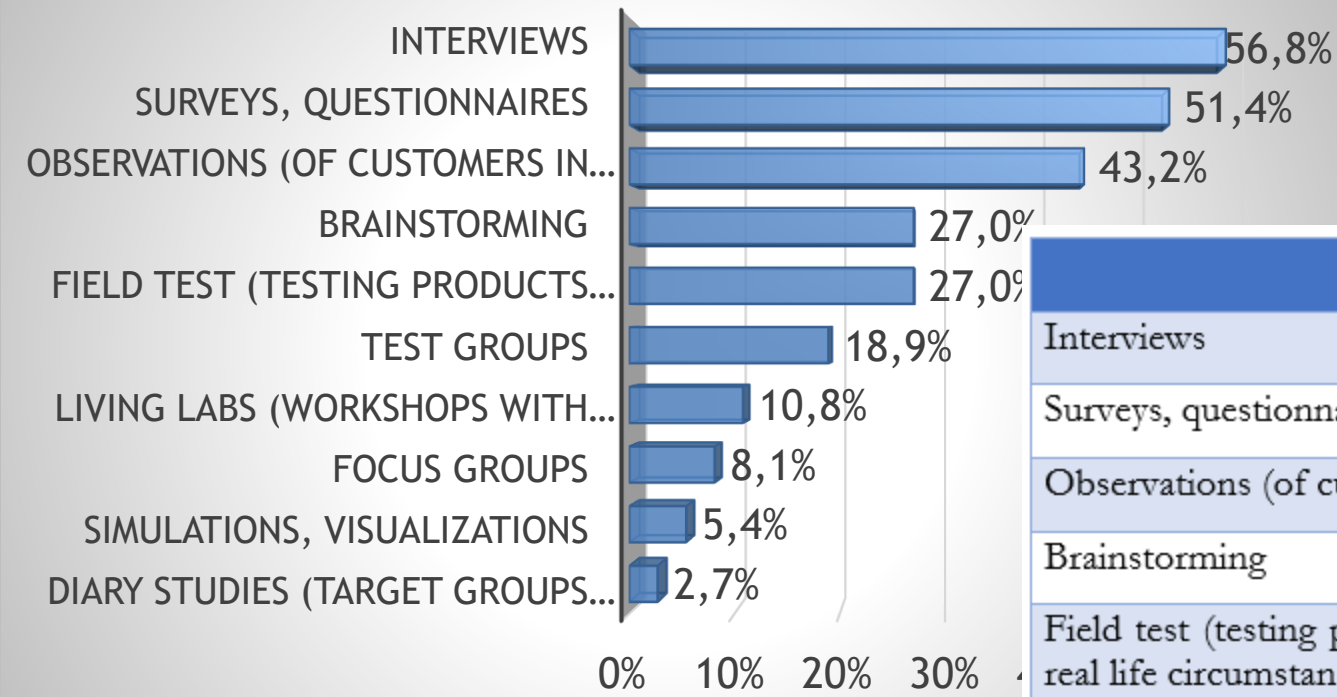
Digital tools supporting customer-centric innovation

Methods of customer involvement



- ▶ **Lead-user method:** lead users' needs will be the future demand of the market.
- ▶ **Brainstorming:** Generating many radical, creative Ideas
- ▶ **Observations:** customers are observed in daily life personally
- ▶ **Simulations and visualizations**
- ▶ **Experiments** when different groups with different demands. The groups will answer the concrete questions, and the results can be compared and the conclusion can be drawn.
- ▶ **Living labs:** Cooperation with customers in company's laboratories and workshops. There is a created spaces that is similar to the customer's home.
- ▶ **Field test** products and services will be tested in a real-life context.
- ▶ **Focus groups:** a qualitative marketing research-method when 6-8 people take part in. There is a moderator who directs the process.
- ▶ **Customer group involvement** helps developers to find better solutions for customer's needs and problems.
- ▶ **Outcome based interviews** are targeted interviews, when the needs of the different customer groups can be identified, that do not reflect the demand of the market.
- ▶ **Questionnaire** when representative research can be conducted in order to gather statistical information.
- ▶ **Diaries** the consumers who test the product will make notes about the experiences.

Experiences of survey and best practices



Methods used for involving customers in innovation processes

Methods for engaging consumers in customer-centric innovations

Methods for engaging consumers in customer-centric innovations by countries

	Denmark	Germany	Hungary	Poland
Interviews	50.0%	60.0%	50.0%	33.3%
Surveys, questionnaires	50.0%	80.0%	25.0%	66.7%
Observations (of customers in daily life)	33.3%	60.0%	66.7%	33.3%
Brainstorming	50.0%	0.0%	8.3%	50.0%
Field test (testing products and/or services in real life circumstances)	0.0%	60.0%	41.7%	0.0%
Test groups	33.3%	20.0%	8.3%	16.7%
Living labs (workshops with customers in company's laboratories)	16.7%	20.0%	0.0%	0.0%
Focus groups	16.7%	20.0%	8.3%	0.0%
Simulations, visualizations	16.7%	0.0%	0.0%	0.0%
Diary studies (target groups write about product and/or service experiences in a pre-structured online diary)	16.7%	0.0%	0.0%	0.0%

The most common method is conducting interviews, surveys, and questionnaires, which are relatively easier to implement and better known, especially among SMEs.

In some areas where tailor-made and personalized products are more important, or for smaller companies, in addition to online and traditional offline methods, face-to-face encounters may be the most inspiring methods in product development.

There are companies that use multiple methods to engage their consumers, combining offline and online methods.

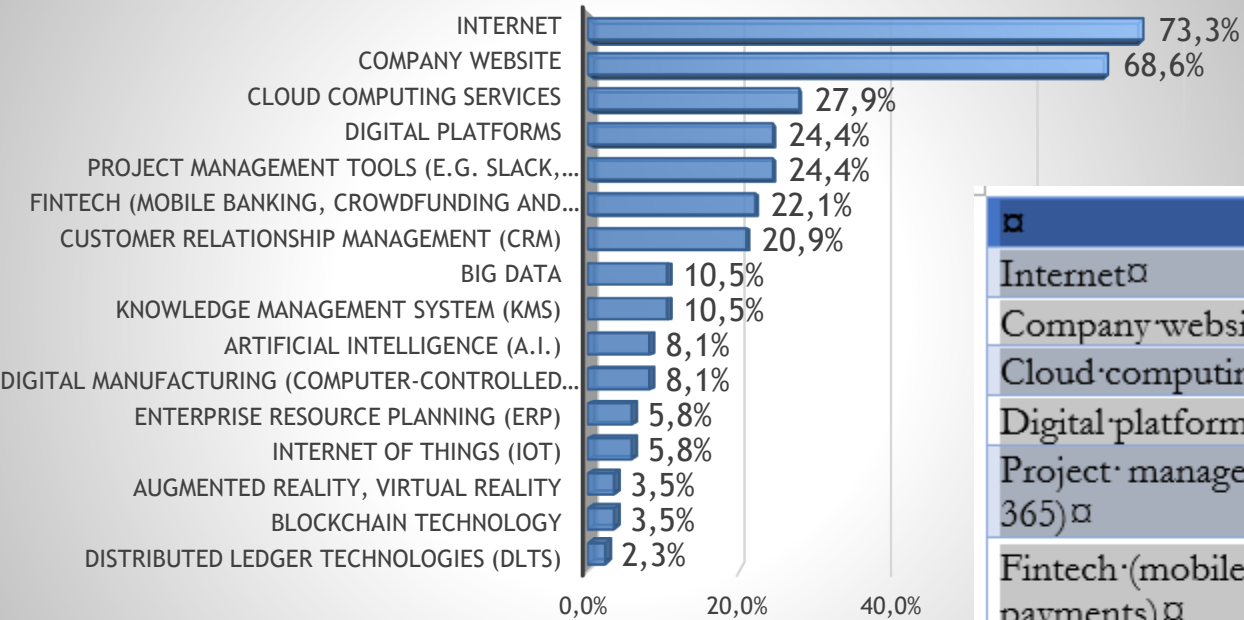
More complex, organized solutions for customer involvement are typically used by larger (primarily large and medium-sized companies) and more mature companies.

Digital Tools supporting customer-centric innovation

- ▶ Internet, Company website
- ▶ Cloud computing services, Digital platforms
- ▶ Project management tools (e.g., Slack, Microsoft 365)
- ▶ Fintech (mobile banking, crowdfunding and online payments)
- ▶ Customer relationship management (CRM)
- ▶ Big data
- ▶ Knowledge management system (KMS), Enterprise resource planning (ERP)
- ▶ Artificial intelligence (A.I.)
- ▶ Digital manufacturing (computer-controlled manufacturing processes, 3D printing, robot technology)
- ▶ Internet of things (IoT), Augmented reality, virtual reality
- ▶ Blockchain technology, Distributed ledger technologies (DLTs)

- E-mails, newsletters
- Social media platforms (e.g., Facebook, Instagram, LinkedIn)
- Online advertising tools (e.g., Google Ads, Facebook/Instagram Ads), Mobile and banner advertising
- Interactive company website, Questions and request
- Mobil apps, Chatbot
- Google forms
- Content marketing strategy (e.g. forums, blogs)
- Google My Business
- App Store, Support team
- Gamification tools

Experiences of survey and best practices



Applied info-communication tools and technologies supporting business processes in SMEs

Info-communication tools and technologies used by countries

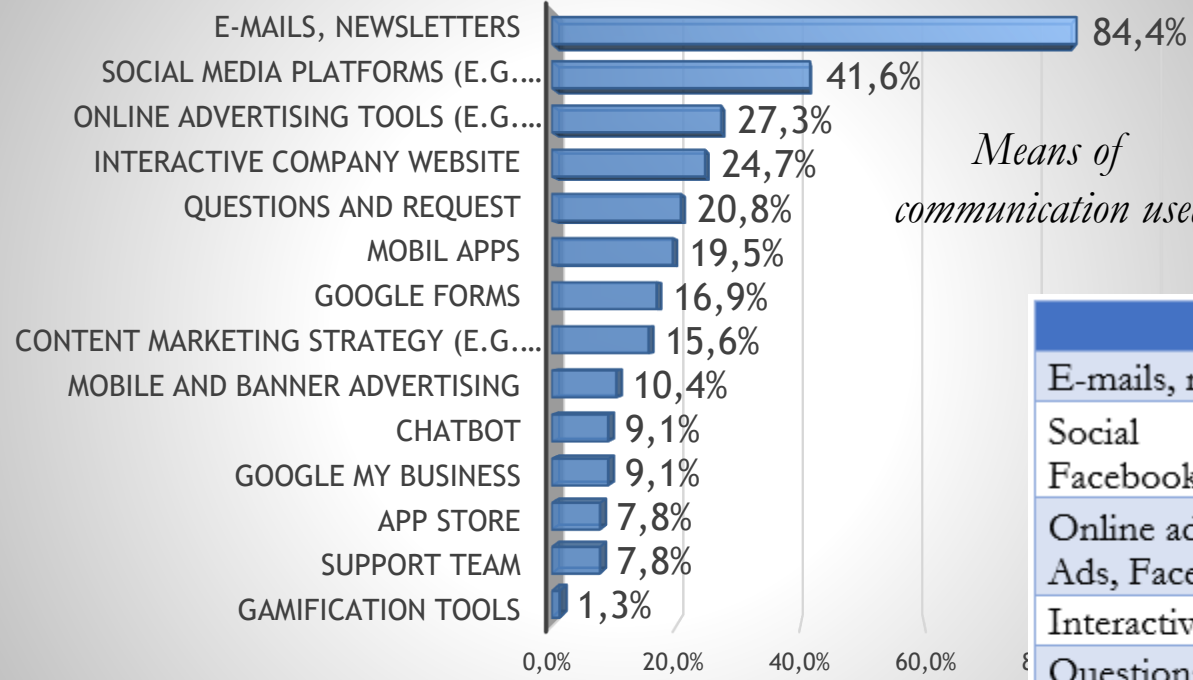
	Denmark	Germany	Hungary	Poland
Internet	61.5%	72.0%	89.5%	84.6%
Company website	84.6%	96.0%	31.6%	38.5%
Cloud computing services	23.1%	44.0%	21.1%	0.0%
Digital platforms	69.2%	24.0%	15.8%	7.7%
Project management tools (e.g., Slack, Microsoft 365)	38.5%	40.0%	10.5%	0.0%
Fintech (mobile banking, crowdfunding and online payments)	23.1%	32.0%	10.5%	15.4%
Customer relationship management (CRM)	38.5%	24.0%	0.0%	7.7%
Big data	15.4%	12.0%	5.3%	0.0%
Knowledge management system (KMS)	7.7%	24.0%	0.0%	0.0%
Artificial intelligence (A.I.)	0.0%	8.0%	5.3%	7.7%
Digital manufacturing (computer-controlled manufacturing processes, 3D printing, robot technology)	7.7%	12.0%	0.0%	0.0%
Enterprise resource planning (ERP)	0.0%	12.0%	0.0%	0.0%
Internet of things (IoT)	7.7%	12.0%	0.0%	0.0%
Augmented reality, virtual reality	7.7%	4.0%	0.0%	0.0%
Blockchain technology	15.4%	0.0%	0.0%	0.0%
Distributed ledger technologies (DLTs)	0.0%	0.0%	5.3%	0.0%

Applied info-communication tools and technologies supporting business processes

Horváth et al. 2021a: Customer-centric Innovation in SMEs. Results of an Empirical Research, University of Miskolc

Horváth et al. 2021b: Experiences of Best Practices in the use of digital technologies supporting customer innovations by SMEs, University of Miskolc

Experiences of survey and best practices



Digital communication channels used for communicating and collaborating with customers

Communication tools used by countries

	Denmark	Germany	Hungary	Poland
E-mails, newsletters	76.9%	85.7%	94.4%	81.8%
Social media platforms (e.g., Facebook, Instagram, LinkedIn)	53.8%	42.9%	33.3%	36.4%
Online advertising tools (e.g., Google Ads, Facebook/Instagram Ads)	30.8%	28.6%	11.1%	27.3%
Interactive company website	23.1%	38.1%	16.7%	18.2%
Questions and request	7.7%	19.0%	16.7%	9.1%
Mobil apps	38.5%	9.5%	27.8%	9.1%
Google forms	23.1%	4.8%	22.2%	18.2%
Content marketing strategy (e.g. forums, blogs)	23.1%	23.8%	5.6%	0.0%
Mobile and banner advertising	15.4%	0.0%	5.6%	18.2%
Chatbot	7.7%	19.0%	0.0%	9.1%
Google My Business	0.0%	28.6%	0.0%	0.0%
App Store	23.1%	4.8%	0.0%	0.0%
Support team	15.4%	9.5%	0.0%	0.0%
Gamification tools	0.0%	0.0%	0.0%	0.0%

Horváth et al. 2021a: Customer-centric Innovation in SMEs. Results of an Empirical Research, University of Miskolc

Horváth et al. 2021b: Experiences of Best Practices in the use of digital technologies supporting customer innovations by SMEs, University of Miskolc

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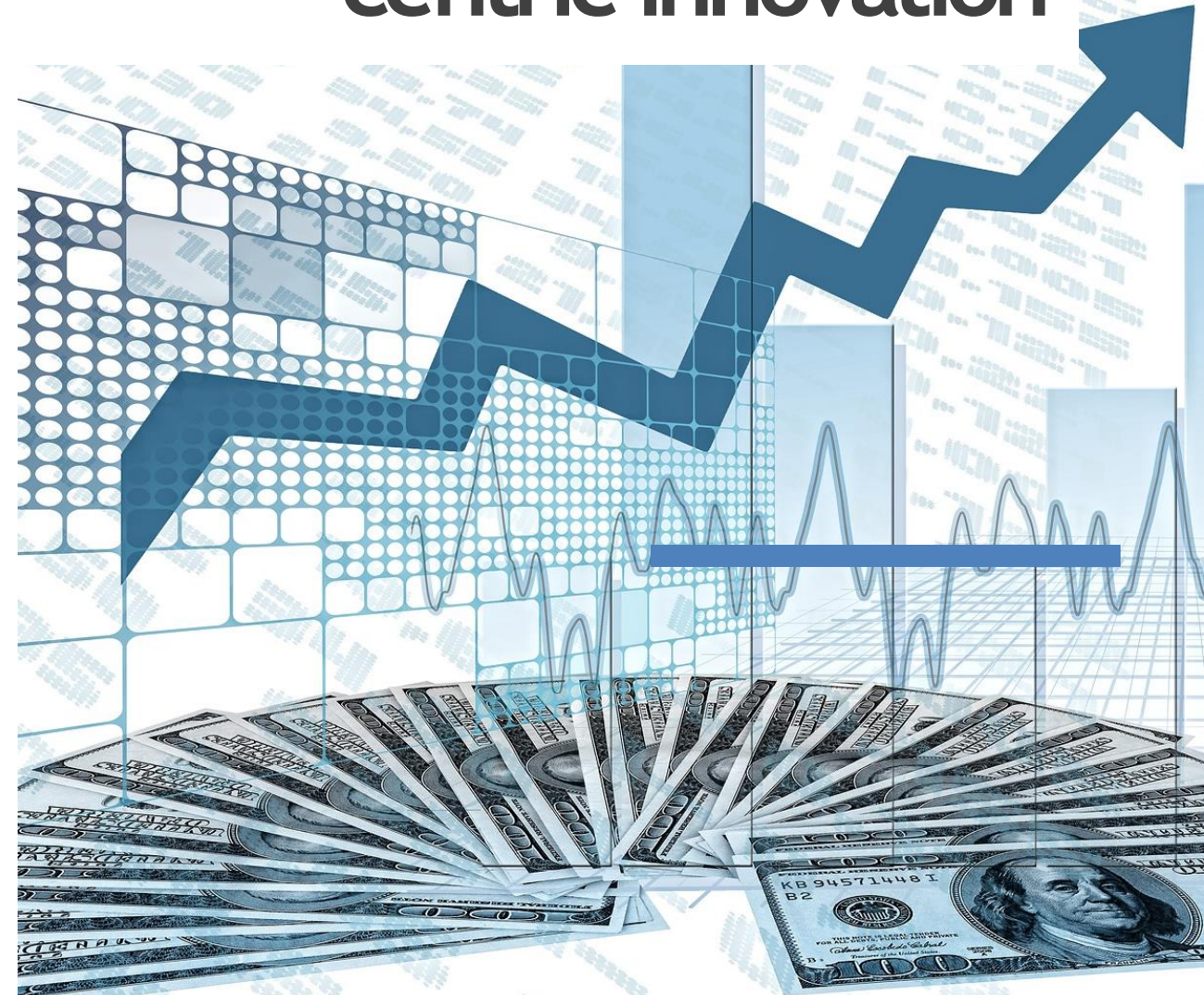
2

Benefits and Barriers



Benefits from Customer-centric innovation

- ▶ **Financial benefits** (increased sales revenue, profitability, cost reduction)
- ▶ **Growing operation effectivity** (increased sales volume, product and service portfolio, productivity, product and service quality, speed and reliability of communications and transactions, positive change in business model and business practice)
- ▶ **Market benefits** (increased number of customers and potential clients, market position, market share, entering of new markets, global trade, geographic expansion, business linkages, competitiveness)
- ▶ **Increasing customer satisfaction** (increased understanding and response to customer needs, tailor-made/customised product development, better and faster communication with the customers)
- ▶ **Improving organizational image, reputation.**



Difficulties and barriers

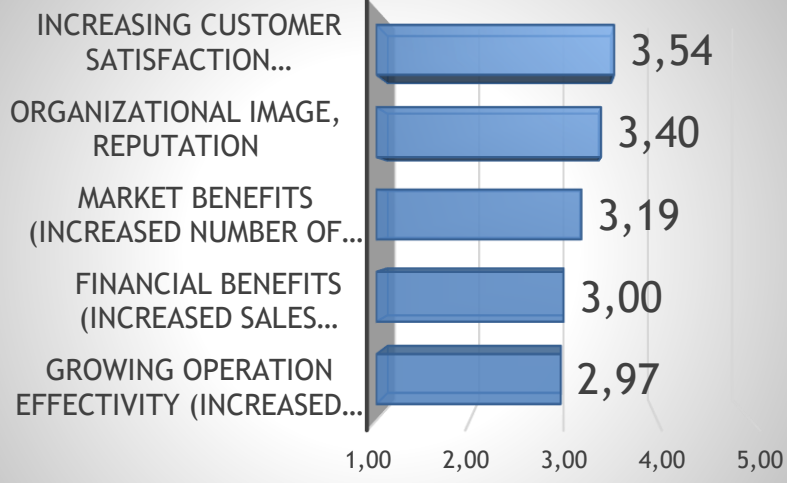


Difficulties in involving customers

- ▶ Involving consumers is time consuming
- ▶ Consumer involvement requires financial resources
- ▶ Involving consumers allocates resources, is resource-intensive (Infrastructure, technology, IT)
- ▶ It is difficult to identify customers who can provide innovative ideas during the innovation process
- ▶ It needs Know how

Barriers to use digital tools

- ▶ Financial barriers (high cost and investment needs regarding hardware, software, networks, trainings, organisational changes)
- ▶ Unclear return of investment (difficult to measure the added value, lack of objective information regarding the benefits and costs of ICT, too much risk)
- ▶ Lack of information, knowledge and digital skills (lack of professional human resources)
- ▶ Lack of corporate resources (lack of appropriate knowledge-based assets, technological capabilities)
- ▶ Lack of trust in the use of ICT (Risks in protection of intellectual property and digital rights. challenges in terms of digital security and privacy)
- ▶ Lack of organizational ICT culture
- ▶ Lack of willingness to use digital tools by the target group of customers



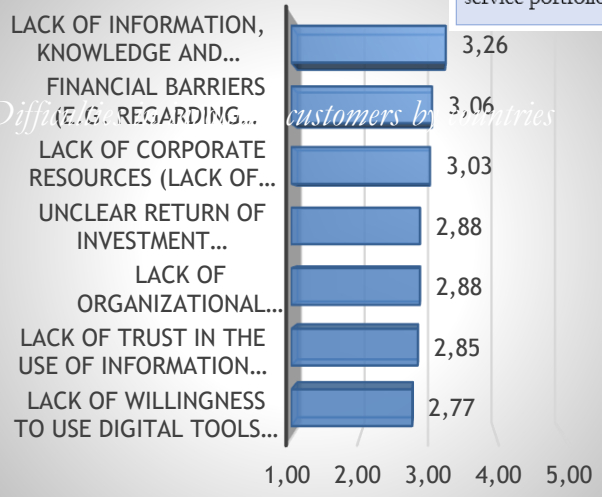
Benefits

	Denmark	Germany	Hungary	Poland
Increasing customer satisfaction (increased understanding & response to customer needs. tailor-made/customised product development. better and faster communication with the customers)	3.14	3.60	4.18	3.00
Organizational image. reputation	2.57	3.60	3.70	3.60
Market benefits (increased number of customers & potential clients. market share. entering of new markets. global trade. geographic expansion. business linkages)	2.43	3.80	3.64	3.40
Financial benefits (increased sales revenue. profitability. cost reduction)	2.57	3.60	3.30	2.80
Growing operation effectivity (increased sales volume. product & service portfolio. productivity. quality. speed. reliability)	2.43	3.60	3.20	3.00

Experiences of survey and best practices

	less than 10	10-50	51-250	more than 250
Increasing customer satisfaction (increased understanding & response to customer needs. tailor-made/customised product development. better and faster communication with the customers)	3.55	3.00	4.33	3.57
Organizational image. reputation	3.26	3.50	4.00	3.43
Market benefits (increased number of customers & potential clients. market share. entering of new markets. global trade. geographic expansion. business linkages)	3.30	3.00	2.67	3.29
Financial benefits (increased sales revenue. profitability. cost reduction)	3.00	2.50	3.00	3.43
Growing operation effectivity (increased sales volume. product & service portfolio. productivity. quality. speed. reliability)	2.89	2.80	2.67	3.43

Barriers



	less than 10	10-50	51-250	more than 250
Lack of information. knowledge. and digital skills (lack of professional human resources)	3.44	2.67	3.00	3.43
Financial barriers (e.g. regarding hardware. software. networks. trainings. organisational changes)	3.26	2.50	2.67	3.14
Lack of corporate resources (lack of appropriate knowledge-based assets. technological capabilities)	3.22	2.17	2.33	3.57
Unclear return of investment (difficult to measure the added value. lack of objective information regarding the benefits vs. the costs. too much risk)	3.11	2.00	2.33	3.29
Lack of organizational information and communications technologies culture	2.94	2.67	2.33	3.14
Lack of trust in the use of information and communications technologies (risks regarding protection of intellectual property and digital rights. challenges in terms of digital security and privacy)	2.89	2.67	2.00	3.29
Lack of willingness to use digital tools by our target groups	2.84	2.83	1.67	3.00

	Denmark	Germany	Hungary	Poland
Lack of information. knowledge. and digital skills (lack of professional human resources)	2.86	3.4	3.7	3.75
Financial barriers (e.g. regarding hardware. software. networks. trainings. organisational changes)	2.71	2.8	3.5	3.4
Lack of corporate resources (lack of appropriate knowledge-based assets. technological capabilities)	2.57	2.8	3.9	2.75
Unclear return of investment (difficult to measure the added value. lack of objective information regarding the benefits vs. the costs. too much risk)	2.43	2.6	3.3	3.25
Lack of organizational information and communications technologies culture	2.29	3	3.8	2.5
Lack of trust in the use of information and communications technologies (risks regarding protection of intellectual property and digital	2.43	3.2	3.5	2.75

- ▶ Companies face the problem that their customers are not motivated enough to give feedback to the company.
- ▶ To increase the willingness to provide feedback, it is important to encourage consumers.
- ▶ Such a tool could be, for example, when it builds on the emotions of consumers. (see, for example, Gaia's motto "We want to learn from you" or developing a sense of "belonging to a community").
- ▶ Another way to encourage consumer feedback is to generate financial interest from consumers, for example by introducing coupons, vouchers, giveaways, idea contests, or consumer loyalty programs, or even securing a percentage of sales for the best ideas.

Conclusions and recommendations



- ✓ Small and medium-sized enterprises use very different ways to involve customers in innovation processes.
- ✓ Relatively simpler engagement methods are common, such as questionnaires, surveys, group or in-depth interviews, social media tools, various loyalty programs.
- ✓ More serious customer involvement methods, such as simulation, living labs, diary studies, are used by only a few companies, where the scope of activity is also based on more advanced technology.
- ✓ There is no significant difference in the field of customer involvement methods used by the scope of activities of the companies

Conclusions and recommendations

- ✓ Customer-centric innovation can be applied for companies independently from size. Even the smallest companies can find the right and accessible methods.
- ✓ The use of digital solutions, social media platforms, and data analysis tools greatly facilitates the collection and processing of customer feedback.
- ✓ Consciously learning about customer feedback and accurately identifying customers and their needs is helpful in developing a marketing strategy and product innovations.
- ✓ **Getting to know customer feedback is not a customer-centric innovation itself. The knowledge and experience gained in this way must be integrated into the process of product development to be able to talk about innovation.**



Conclusions and recommendations



- ✓ The lack of motivation and interest of customers in the field of feedback makes it difficult to create customer-centric innovations.
- ✓ It is advisable to increase the willingness of customers to provide feedback and to create motivation. This could be, for example, the creation of a "sense of community", the impact on customers' emotions, or the creation of customers' financial interest, for example with coupons, discounts, loyalty programs, and idea competitions.
- ✓ **SMEs have little or no knowledge about customer-centric innovation and the digital opportunities that support it. Based on this, there is a great need for training that develops the knowledge and skills of SMEs in this field.**

Module 4

Quality Function

Deployment (QFD) and House of Quality (HOQ)



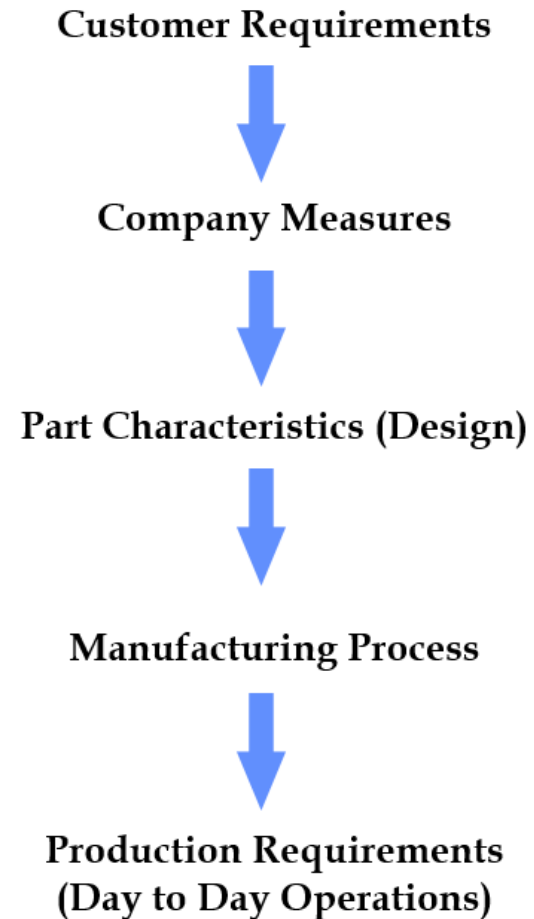
Quality Function Deployment

- ▶ **Customer driven product / process development method**
- ▶ **A system for translating customer requirements into appropriate company requirements at each stage**
 - from research and product development to engineering and manufacturing**
 - to marketing/sales and distribution**

When and why (=> where)

- 1 Customers are complaining or aren't satisfied with your product or service.
- 2 Market share has been consistently declining.
- 3 Extended development time due to excessive redesign, problem solving, or fire fighting.
- 4 Lack of a true customer focus in your product development process.
- 5 Poor communications between departments or functions.
(Over-the -wall product development).
- 6 Lack of efficient and/or effective teamwork.

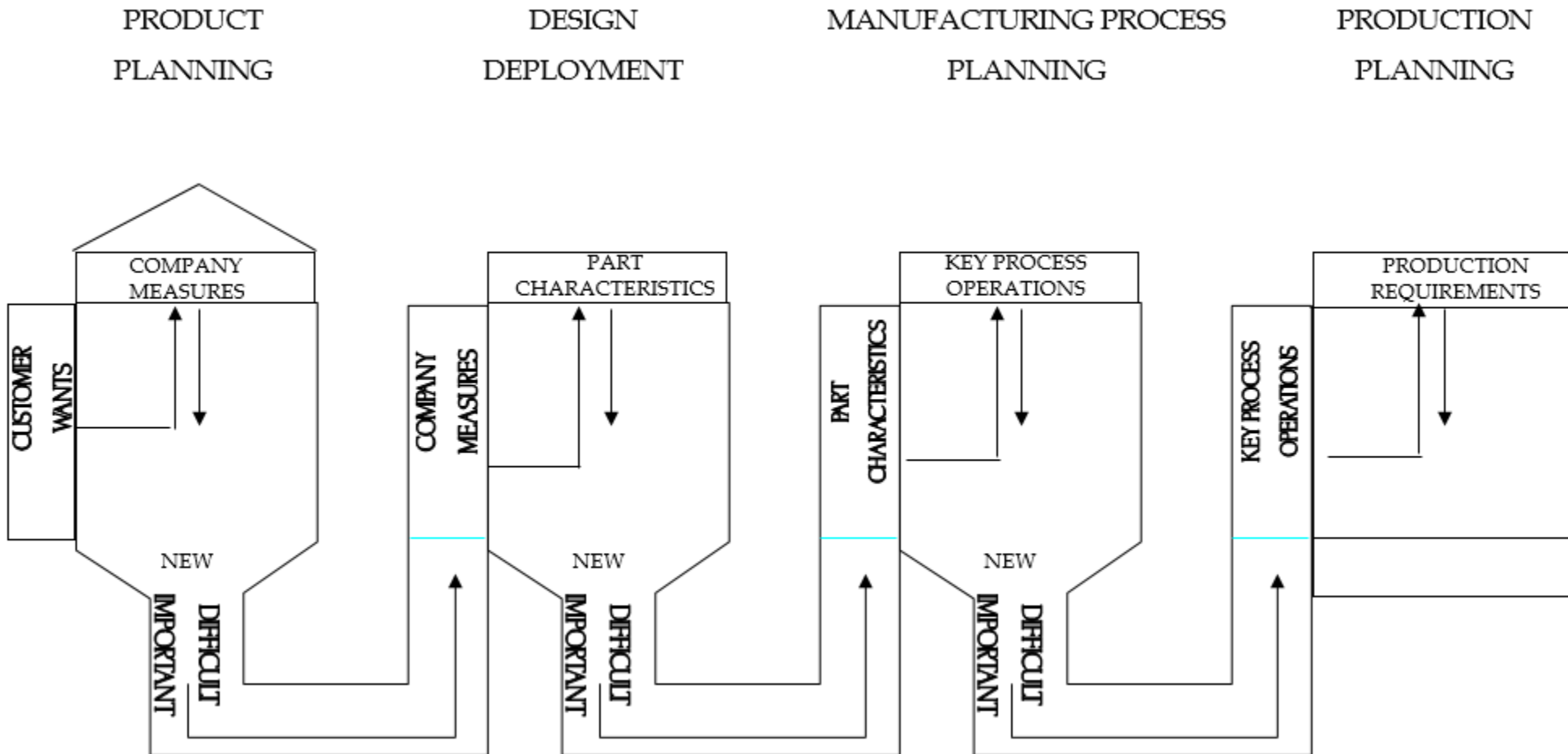
From customer requirements to production requirements



Expected results

- ▶ Fewer and Earlier Changes
- ▶ Shorter Development Time
- ▶ Fewer Start-up Problems
- ▶ Lower Start-up Cost
- ▶ Warranty Reduction
- ▶ Knowledge Transfer
- ▶ Customer Satisfaction

Phases of QFD: deploying the „voice of the customer”



QFD Process 1st step

Voice of the customer

WHAT

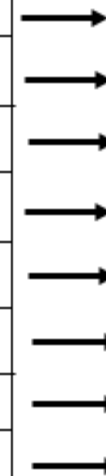
The items contained in this list are usually very general, vague and difficult to implement directly - they require further detailed definition.

One such item might be *good ride* which has a wide variety of meanings to different people.

This is a highly *desirable* product feature, but is not *directly actionable*.

Translating for action

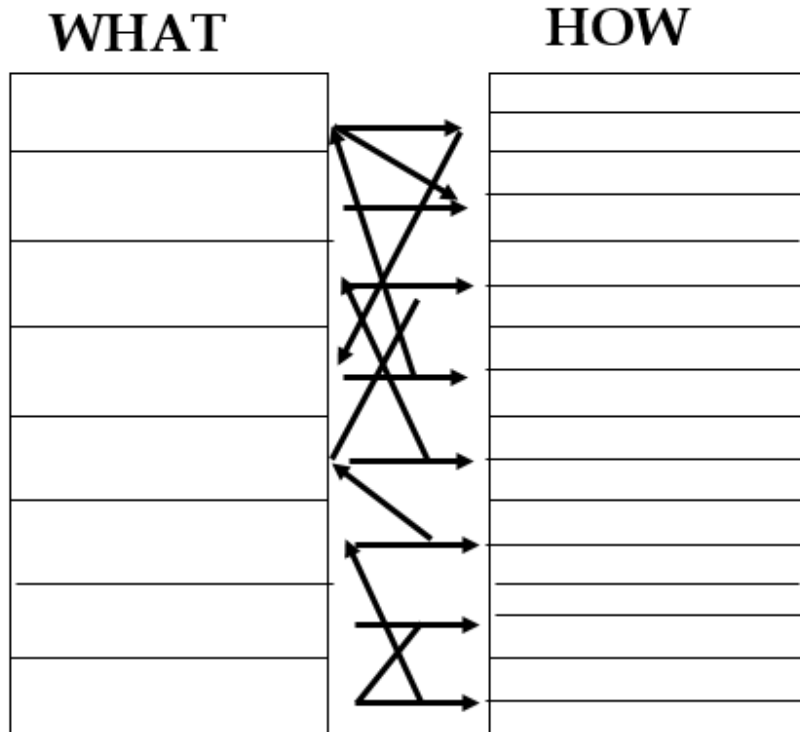
WHAT



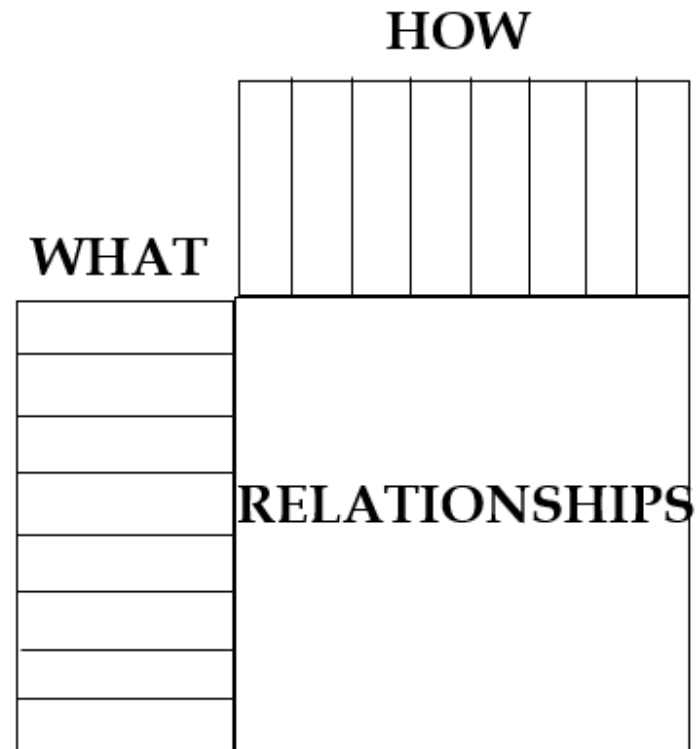
HOW

QFD Process 2nd step

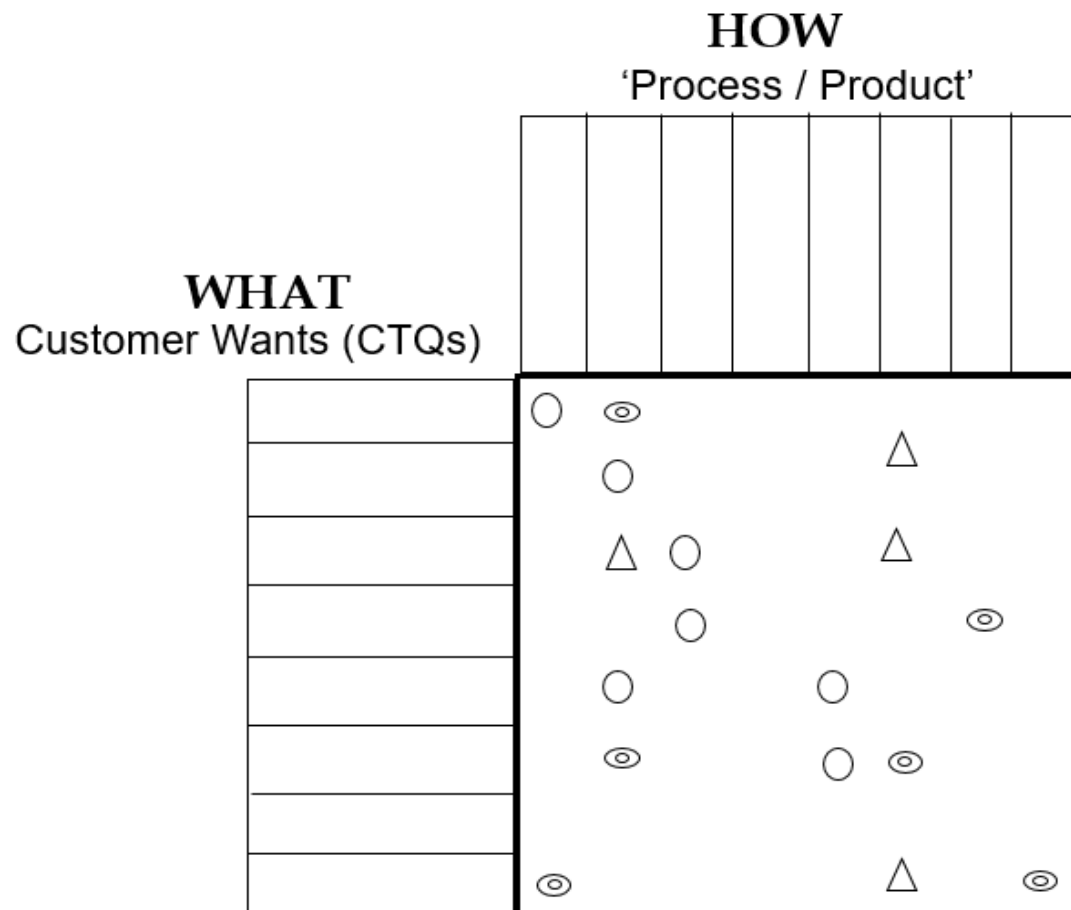
**COMPLEX
RELATIONSHIPS**



**UNTANGLING
THE WEB**



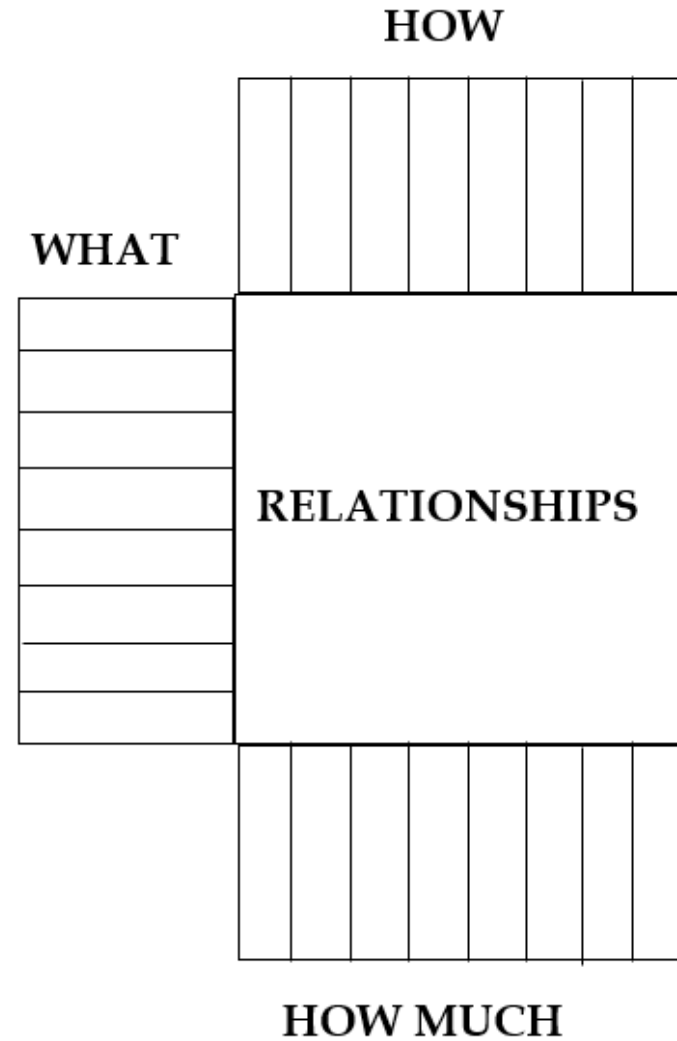
QFD Process 3rd step



Kinds of Relationships

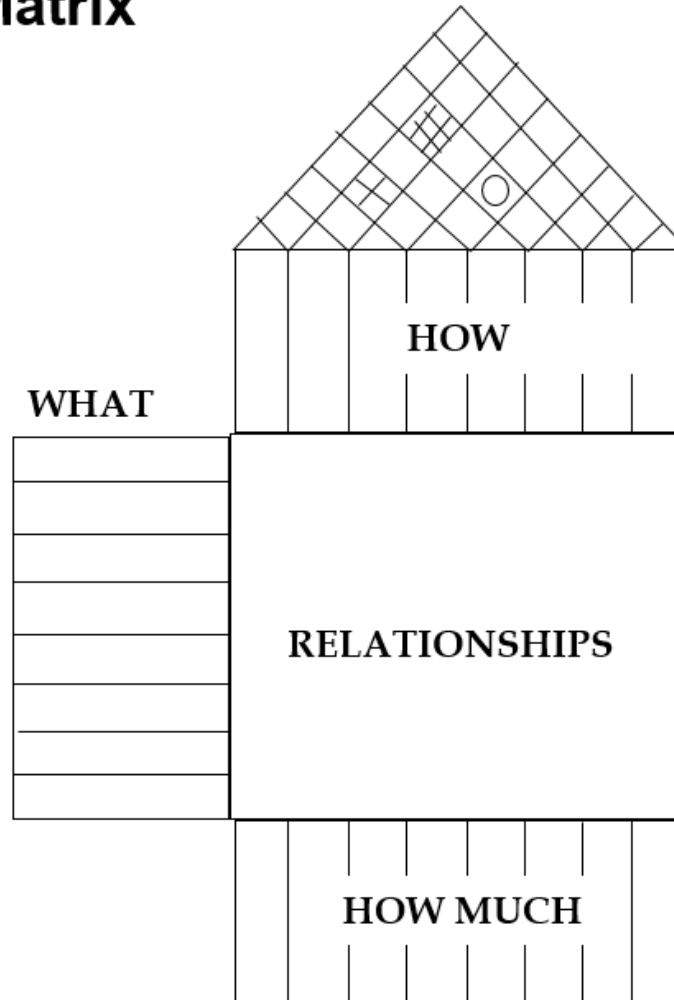
- ◎ STRONG relationship
- MEDIUM relationship
- △ WEAK relationship

QFD Process 4th step



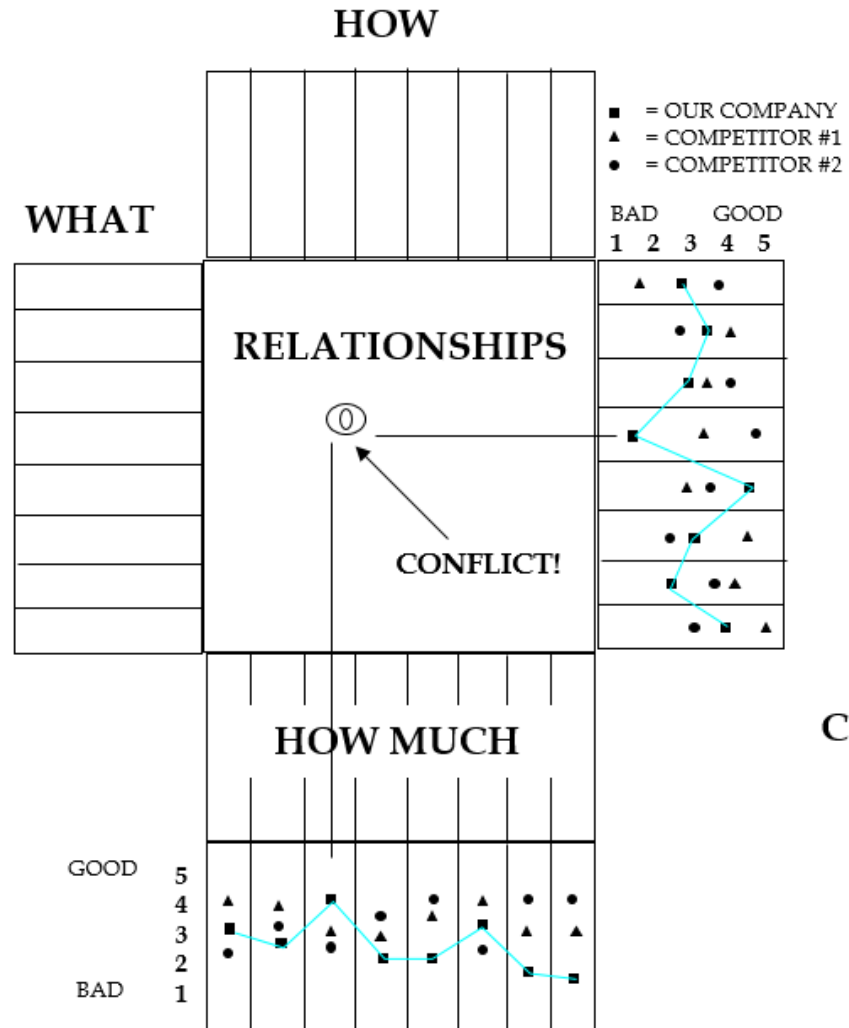
QFD Process 5th step

Correlation Matrix



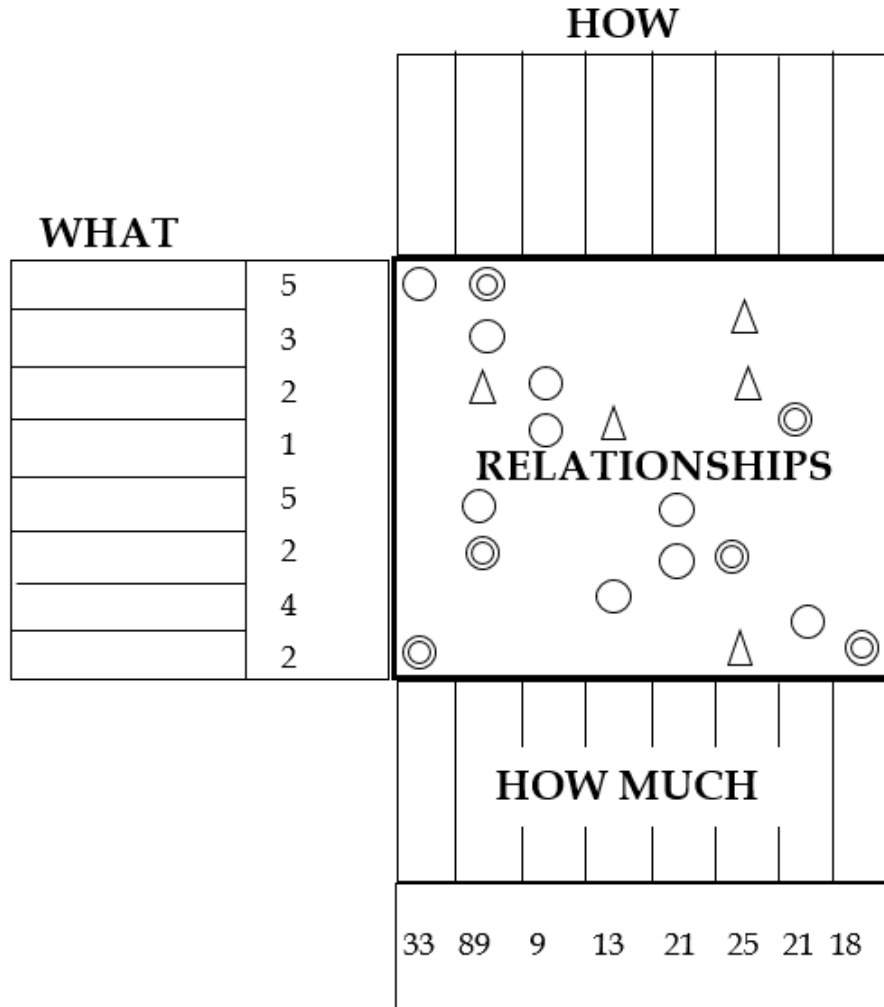
- ⊙ Strong Positive
- Positive
- × Negative
- ⊗ Strong Negative

QFD Process 6th step



COMPETITIVE ASSESSMENTS

QFD Process 7th step



△ = 1
○ = 3
◎ = 9

IMPORTANCE RATINGS

What is needed 1

- ▶ **Understand Customer Desires**

Many times, customers need outside perspective to discover what they really need to build their product or process. The goal is to understand customers perhaps even better than they understand themselves so as to open their eyes to ideal solutions.

- ▶ **Understand Customer Priorities**

During the interview stage, get to know customer needs, but then break those needs down into prioritized parts.

- ▶ For example, if a customer is building drones for media production:

- ▶ How important is battery life compared to camera quality?
- ▶ How important is aesthetic compared to quality of the drone body?

- ▶ Weights are assigned to each quality based on what is most important to the customer.

- ▶ How well each need is met is ultimately how the customer will judge your solution's value.

What is needed 2

▶ Departmental Buy-In

- ▶ Often, disagreement or misunderstanding between departments of a customer's organization can occur in relation to what is actually needed.
- ▶ Marketing may think that a drone with trending features is top priority, but engineering may think that overhaul of a problematic part is top priority.
- ▶ The process helps create a plan that addresses all true priorities and to which all departments can agree.

▶ Translate Customer Desires Into Goals & Technicalities

- ▶ This is the heart of the QFD process where the recorded desires of the customer are ranked by priority and specific process and resource planning takes place.
- ▶ They are laid out onto a useful diagram labeled the House of Quality.

What is needed 3

▶ **Specify Traceable Requirements**

- ▶ Specific requirements for the execution of the customer's product or process should be laid out.
- ▶ The how and why questions should be answered in the plan-how are we meeting the client's requirements and why are we doing it this way?
- ▶ The written requirements and should be specific enough that their completion and success are traceable.
 - ▶ One should be able to work forward and backwards in the plan and determine easily whether or not the overall plan is being executed successfully.
- ▶ **For example**, if there is a question on why something is done a certain way, one should be able to trace back to the beginning of the process to the initial requirement that determined the process needed to meet that requirement.

What is needed 4

▶ **Provide Structure**

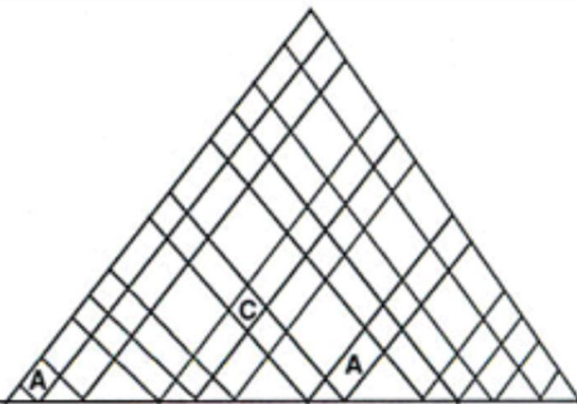
- ▶ It is easy for customers to jump all over the place stating what they desire and tossing out ideas. But, at the end of the day, your role is to hone in on what they want and provide a logical, executable, traceable structure to organize their ideas.

▶ **Allocate Resources**

- ▶ Whether developing a physical product or creating a process for a customer, resources are needed to do so.
- ▶ Humans, machines, computers, construction materials, disposable materials and more must be accounted for.
- ▶ What do we have available to us and what do the available resources allow us to do?

Prioritized customer requirements - example insurance service

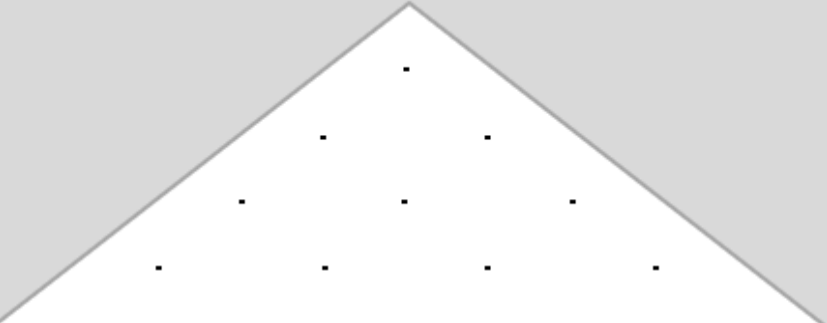
A = Strong positive correlation
B = Positive relationship
C = Negative relationship
▼ = Strong positive correlation
□ = Positive relationship
○ = Negative relationship



Product or Service Features			Response Time		Adjustor Staff		Settlement Process			
			Toll-Free Phone Number	24-Hour Staffing	On-Call Claims Representatives	Field Drafts	Certified Adjustors	Extending Geographic Coverage	Arbitration Process	Preliminary Finding Discussion
Primary	Secondary	Tertiary								
Insurance Claims Service (Auto)	Speed	Able to Report Claim 24 Hours/Day	▼	▼						
		Claims Status Report in 2 Days		□	□	▼			□	
		Final Settlement in 10 Days			○			□		
	Accuracy	Professional Adjustors					▼			
		Settlement Review before Final Action						○	▼	
		Arbitration Option (Independent)						▼		

Group work and evaluation discussion (25-30 min.)

[Practice sheet distribution]

							
		Desired direction of improvement (↑,0,↓)					
		Functional Requirements (How's) →					
1: low, 5: high	Customer importance rating	Customer Requirements - (What's) ↓					Weighted Score
1							
2							
3							
4							
5							
6							
7							
8							
9							
		Technical importance score					
		Importance %					
		Priorities rank					

Module 5

Modern teaching methods, Effective Teaching and Training Techniques



Modern teaching methods

- ▶ The difference between the generations is a major challenge in education today, which is also reflected in the change in basic habits. While learning from books was taken for granted for barely a decade, the online world today largely offers quick access to information.
- ▶ Due to the technical and technological change on the one hand and the differences between the generations, on the other hand, education is constantly evolving.
- ▶ *According to Crocket (2016), “21st-century students need the following skills to be successful in life: problem-solving, creativity, analytical thinking, cooperation, communication, ethics, agency and accountability”.*
- ▶ The focus of development is on optimizing the curriculum, the teaching method, to ensure an effective learning process.

Murugesan (2019) summarises the advantages of modern teaching methods as follows:

- ▶ They are participating in a media revolution that is profoundly affecting the way they think about and use information technologies.
- ▶ They are improving the way people learn in terms of learning fashions,
- ▶ improving their skills and abilities in applying their learning environment to real life situations,
- ▶ working in groups to learn cooperatively and collaboratively,
- ▶ to develop self-learning habits at their own pace and in their own time,
- ▶ they learn with the teacher and not from the teacher,
- ▶ to develop habits of inquiry-based learning,
- ▶ to use the right information in the right place at the right time to achieve the right goal,
- ▶ to investigate and explore qualitative data,
- ▶ share learning experiences and information with other students and teachers around the world.

Modern teaching methods in a nutshell

- ▶ **Problem-based learning** uses complex, real-world cases as subject matter and helps students develop problem-solving skills and learn concepts rather than just absorbing facts. Thus, it is not about the traditional transmission of information and knowledge, but about solving an operational life situation using a practical example. Case study method can be a good example of it.
- ▶ The **case study** provides a practical example of scenarios based on a real business situation. Teachers begin by having students read the case and summary together. Students then work in small groups to solve the case. Teachers set milestones that define what students should accomplish so they can better manage their time.
- ▶ **Gamification** is the use of game elements and techniques (not in a game context) to engage people and solve problems (Deterding et al., 2011). Play is not just a self-serving, fun leisure activity, but a potentially value-adding tool that can transform all areas of life, make them effective and, not least, improve well-being and leisure mood (Fromann, 2017). This is exactly what is needed in 21st century education on a new foundation, namely easy learning when students can create interest, engage in collaboration, and learn through play.
- ▶ **Presentation skills** are an essential part of modern teaching methodology, making it easier for students to navigate the future workplace. The main purpose of presentations is to develop professionalism. By using advanced technology, students can improve their skills.
- ▶ **Project-based learning** is a teaching method in which students apply their knowledge and skills through an experience that provides them with opportunities to deepen contextual learning and develop important skills. It is more than just doing a project. This method connects students to the real world and prepares them to take on and overcome the challenges.

Modern teaching methods in a nutshell

- ▶ In the **flipped classroom**, the learning process is disconnected from the average. It is a learning method where students read and watch the content already at home and then absorb it at school. This has the advantage that students can acquire the information at their own pace.
- ▶ **Cooperative learning** is an instructional strategy in which small teams of students are formed. They have different skills and abilities so that they can learn from each other. At the same time, their understanding and cooperative skills improve. It is easy to implement and not expensive.
- ▶ **Design thinking** is a student-centred approach that can support creative thinking and problem solving in innovative ways. It is an iterative process and provides a solution-focused thinking that helps achieve empathy with the target audience.
- ▶ **Thinking-based learning** teaches students how to think and make decisions. In class, students practice critical and creative thinking as they put theoretical knowledge into practice. The teacher's primary role is to show students how to find and analyze relevant information.
- ▶ In **competency-based learning**, students' desired outcomes are the focus of the learning process. In this method, students are encouraged to learn in a specific way so that they can acquire the required competencies. It is a flexible way to provide a personalised learning path.
- ▶ If we summarize the new methodology, we can state that the online environment, information technology, is an integral part of the development of new learning methods. When the three components of learning - cognitive, affective, and conative - and even metacognition are well balanced, these domains create a holistic learning experience that enables knowledge acquisition, self-directed learning, and lifelong learning skills. (Leary, 2012).

Mood barometer with Jamboard

How was your week?

https://jamboard.google.com/d/1JJZ9z1_VEk6jTLGuXwjXnALLmzczk3LNhYxJ2KJTWflg/edit?usp=sharing



YES!



How was your week? Mark the most appropriate impression with an X.

Playing: Left or right brain test

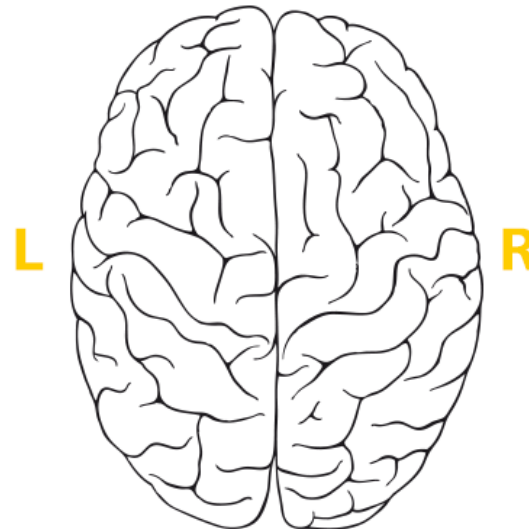
<http://braintest.sommer-sommer.com/en/>



SOMMER  SOMMER

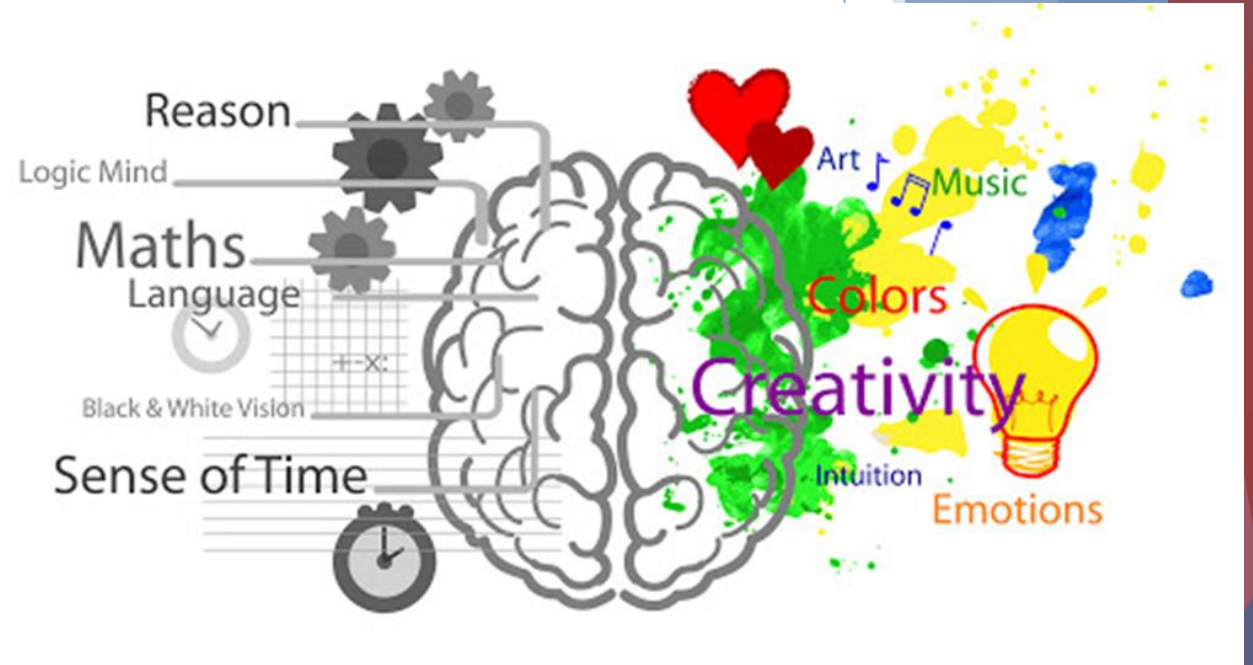
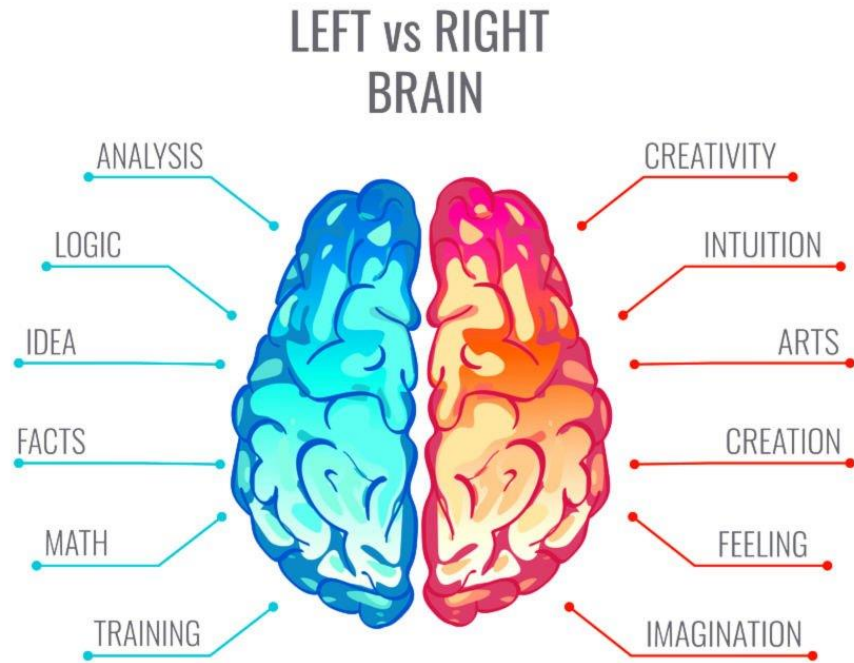
Which side of your brain is more dominant?

The 30-Second Brain Test



START

Functions



<https://www.lucidmindcenter.com/right-brain-left-brain-test/> <http://experimentexchange.com/living-systems/test-your-brain-for-its-dominant-side/>

Balanced left and right brain with music

left and right brain balanced music

SZŰRŐK

Keresési szűrők megnyitása and right brain balance music

- ★Left Brain/Right Brain Hemispheric Synchronization Formula★(Binaural Beats Healing Frequency Music)**
1,4 M megtekintés • 5 évvel ezelőtt
Quadible Integrity - Healing Frequency Music
Left Brain Right Brain Hemispheric Synchronization Formula • Website: <https://spirilution.com> DOWNLOAD ATTUNED ...
- Left Brain / Right Brain | Hemispheric Synchronization Formula | Ambidexterity | 360Hz | Pink Noise**
29 E megtekintés • 3 évvel ezelőtt
Relaxing Music & Binaural Beats
Left Brain / Right Brain | Hemispheric Synchronization Formula | Ambidexterity | 360Hz | Pink Noise #ambidexterity #pinknoise ...
- Brain Balance Music - Right Brain Weak**
14 E megtekintés • 8 hónappal ezelőtt
Brian Dangerous
Right Brain Weak Musical Compositions Sound in the form of music has a very powerful effect on brain activity. The musical ...
- GET LEFT BRAIN RIGHT BRAIN SYNCHRONIZATION FAST - FREQUENCY WIZARD**
46 E megtekintés • 1 évvel ezelőtt
Binaural Beats Frequency Wizard
GET LEFT BRAIN RIGHT BRAIN SYNCHRONIZATION FAST - FREQUENCY WIZARD <https://www.FREQUENCYWIZARD>.



Left vs. Right Brain Teaching Techniques

Left brain teaching techniques

- ▶ Write an outline of the lesson on the board.
- ▶ Go ahead and lecture! These participants love to listen to an expert and take notes.
- ▶ Discuss vocabulary words and create a crossword puzzle.
- ▶ Discuss the big concepts (abstract concepts).
- ▶ Assign individual assignments so participants may work alone.
- ▶ Ask the participants to write a research paper (detail and conceptual analysis).
- ▶ Keep the room relatively quiet and orderly.

<https://www.funderstanding.com/brain/left-brain-vs-right-brain-teaching-techniques/>

Right brain teaching techniques

- Write the main points on the board or pass out a study guide outline that participants can fill.
- Use the board frequently to help the participants “see” and comprehend the points.
- Have some time for group activities.
- Let the participants create a project.
- Play music during the training.
- Use pictures, graphs, maps, etc.

The attention span

The Attention span – Dr. Elisabeth Weber (2021)

- ▶ **Educated adult 20 minutes.**
- ▶ Significantly shorter the more information the brain has to process simultaneously and/or the more demanding the learning environment is.
- ▶ **Virtual sessions (50% lower) 10 minutes.**
- ▶ **Training/courses in foreign language (50% reduce) and ONLINE 5 minutes.**

<https://www.youtube.com/watch?v=4Gt3oM6Y30o>

Solution: The big 5 of Motivation – Dr. Elisabeth Weber (2021)

1. **Purpose:** Make the purpose of the content you cover in training explicit.
2. **Appreciation:** Mindset and heart attitude. (feel safe and accepted)
3. **Recognition:** Cherish the attention, effort and personal commitment. Show appreciation, recognition and praise. (3 levels of difficulty: **Simple question** – minimum requirement, **So-So question** – medium difficulty, **Stinker question** – for excellents or who enjoy challenges)
4. **Rapport:** want, respect and appreciate → active participation
5. **Activation:** after 10-20 minutes the brain needs change!

<https://www.youtube.com/watch?v=gKDfirtBdkUE>

Problem-based learning

Origin of PBL

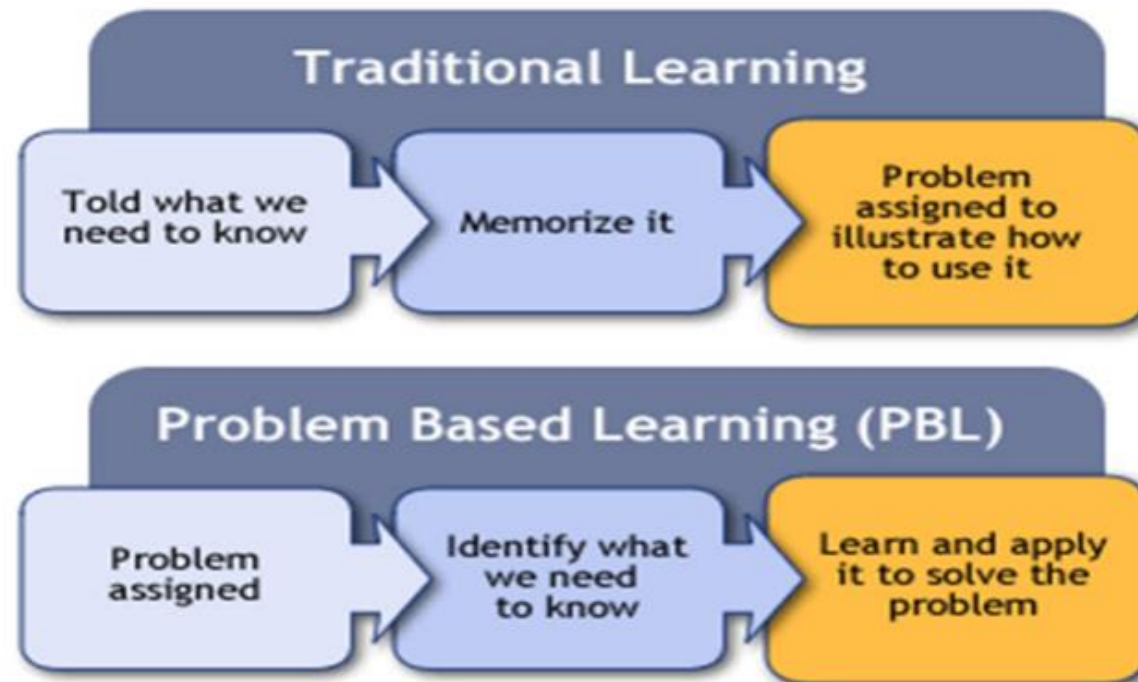
- ▶ Problem-based learning has been brought to life in practice since it was applied at McMaster Medical College in Canada in the 1960s (Schwartz, P. et al., 2001).
- ▶ Theoretical knowledge is deepened when experienced by students in practice as it provides the opportunity to see causal relationships.
- ▶ Problem-based learning creates a special environment where the student becomes a small group or individual while acquiring new knowledge in a different way than traditional learning.
- ▶ After its initial successes, problem-based learning has expanded to other disciplines as it can be applied to any subject with a little creativity.

Content

- 1 Principles
- 2 Features
- 3 Aims
- 4 Advantages & disadvantages
- 5 Role of trainer & participants
- 6 Application
- 7 Evaluation

Difference between traditional learning and PBL -

Sheeba Sardar Ali (2019)



Why PBL should be used? – Nilson (2010)

Nilson (2010) lists the following learning outcomes that are associated with PBL. A well-designed PBL project provides students with the opportunity to develop skills related to:

- ▶ Working in teams.
- ▶ Managing projects and holding leadership roles.
- ▶ Oral and written communication.
- ▶ Self-awareness and evaluation of group processes.
- ▶ Working independently.
- ▶ Critical thinking and analysis.
- ▶ Explaining concepts.
- ▶ Self-directed learning.
- ▶ Applying course content to real-world examples.
- ▶ Researching and information literacy.
- ▶ Problem solving across disciplines.



Features of PBL – Weber (2007)

1. Active learning and active participation of students.
2. Learning is a self-directed process.
3. Students build their own knowledge.
4. Students are aware of what they have learned on their own, with which they can better understand or solve a given problem.
5. Students participate in structured processes in different roles in order to contribute to an effective learning and problem-solving process in the group. This requires teamwork and communication skills.

Goals of PBL – Nilson (2010)

The goals of PBL include helping students develop:

- ▶ flexible knowledge,
- ▶ effective problem-solving skills,
- ▶ SDL skills,
- ▶ effective collaboration skills,
- ▶ intrinsic motivation.



Principles of PBL - Sheeba Sardar Ali (2019)

PBL is a process that is used to identify problems with a scenario to increase the knowledge and understanding.

Some of the principles are listed below.

- ▶ 1) Independent and self- directed learning.
- ▶ 2) Learning happens in a group and teacher is a facilitator.
- ▶ 3) All groups have to participate equally.
- ▶ 4) Students' learn about motivation, teamwork, problem-solving and engagement with the task.
- ▶ 5) Materials such as Data, photographs, articles, can be used to solve the problem.

Principles of PBL – Barrows (1998)

1. It is problem-based, that is, it begins with the presentation of a real (authentic) problem.
2. Problem-solving, so it supports the application of problem-solving skills needed in practice. The role of educators is to help apply and develop an effective problem-solving process.
3. Student-centered. Students take responsibility for their own learning, in which the instructor is given an operating role. Instructors should avoid the development of an addictive situation, more specifically, that students' knowledge depends solely on them.
4. You are guided learning that develops research skills. Students should learn how to find current and relevant information when needed. This is a basic skill for proper professional performance.
5. Reflection that follows the problem-solving work. It is preferred to have it in a group discussion. The purpose of reflection is to make the learning processes and problem-solving skills that are decisive for a new problem a daily routine.

Advantages of PBL - Savin-Baden (2000)

- ▶ adaptation and participation in change,
- ▶ ingenuity in new and future situations,
- ▶ creative and critical thinking,
- ▶ holistic problem orientation,
- ▶ recognizing and acknowledging differences / similarities between perspectives,
- ▶ cooperation in groups,
- ▶ the possibility of recognizing learning gaps and strengths,
- ▶ strengthening self-directed learning,
- ▶ developing effective communication skills,
- ▶ management of different data sources.



Disadvantages of PBL -Akinoğlu és Özkardeş Tandoğa (2007)

- ▶ A challenge to change teaching style.
- ▶ Students take more time to solve problematic situations.
- ▶ Some groups may finish the work sooner or later.
- ▶ PBL requires good curriculum and research reports.
- ▶ It is difficult to implement PBL in all classes, especially for students who do not fully understand the value and scope of problems related to social content.



Complex cognitive model of problem solving (Tóth, 2007)

Problem solving				
Critical thinking	Analysis		Synthesis	
	<ul style="list-style-type: none"> • schema recognition • classification • recognition of assumption 		<ul style="list-style-type: none"> • analogical thinking • summary and systematization • hypothesis 	
	Evaluation, 'exploration'		Elaboration, 'discovery'	
	<ul style="list-style-type: none"> • taking stock of relevant knowledge • definition of criteria • prioritization of criteria • recognition of erroneous conclusion • verification, inspection 		<ul style="list-style-type: none"> • expanding the existing knowledge • modification and concretization of existing knowledge, • creation of new conceptual categories 	
	Find connections		Recognizing connections	
	<ul style="list-style-type: none"> • comparison • logical thinking • inductive and deductive inference 		<ul style="list-style-type: none"> • originality and fluency of thinking • flexibility in thinking • intuition • heuristic thinking 	
Existing knowledge		Commitment to the problem	Metacognitive knowledge	
Declarative	Procedural			

Creative thinking

Roles of participants

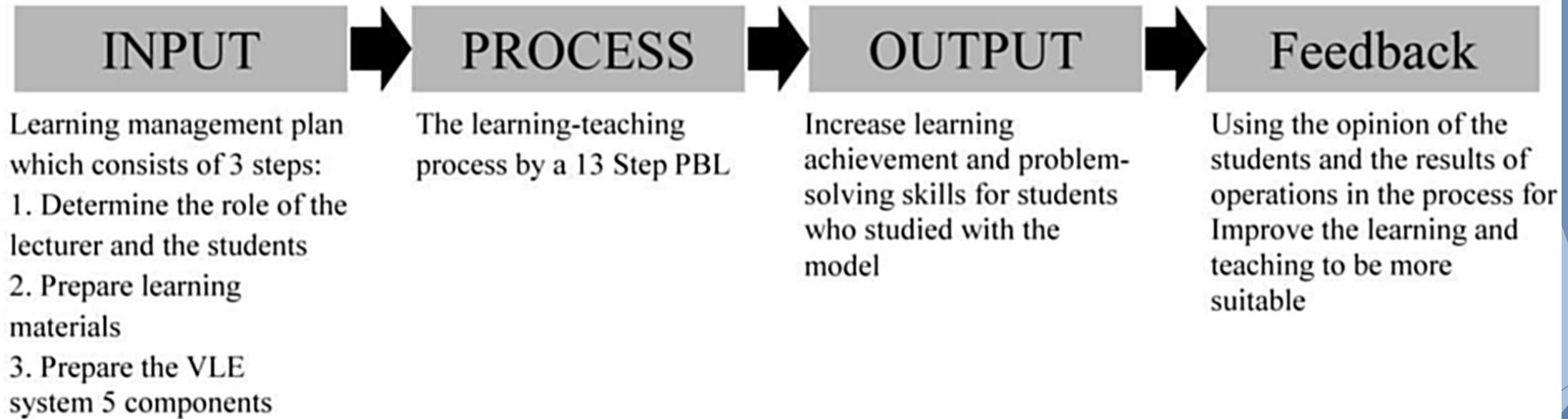
- ▶ Active role
- ▶ Group work
- ▶ **It is not the teacher who passes on new knowledge to the students, but they themselves realize what knowledge is still lacking to solve the problem.**
- ▶ Cooperation
- ▶ Better understanding
- ▶ Critical view
- ▶ Different roles: leader, information gatherer, researcher, problem solver, decision maker, communicator, presenter.



Application of PBL - Barrett et al. (2005)

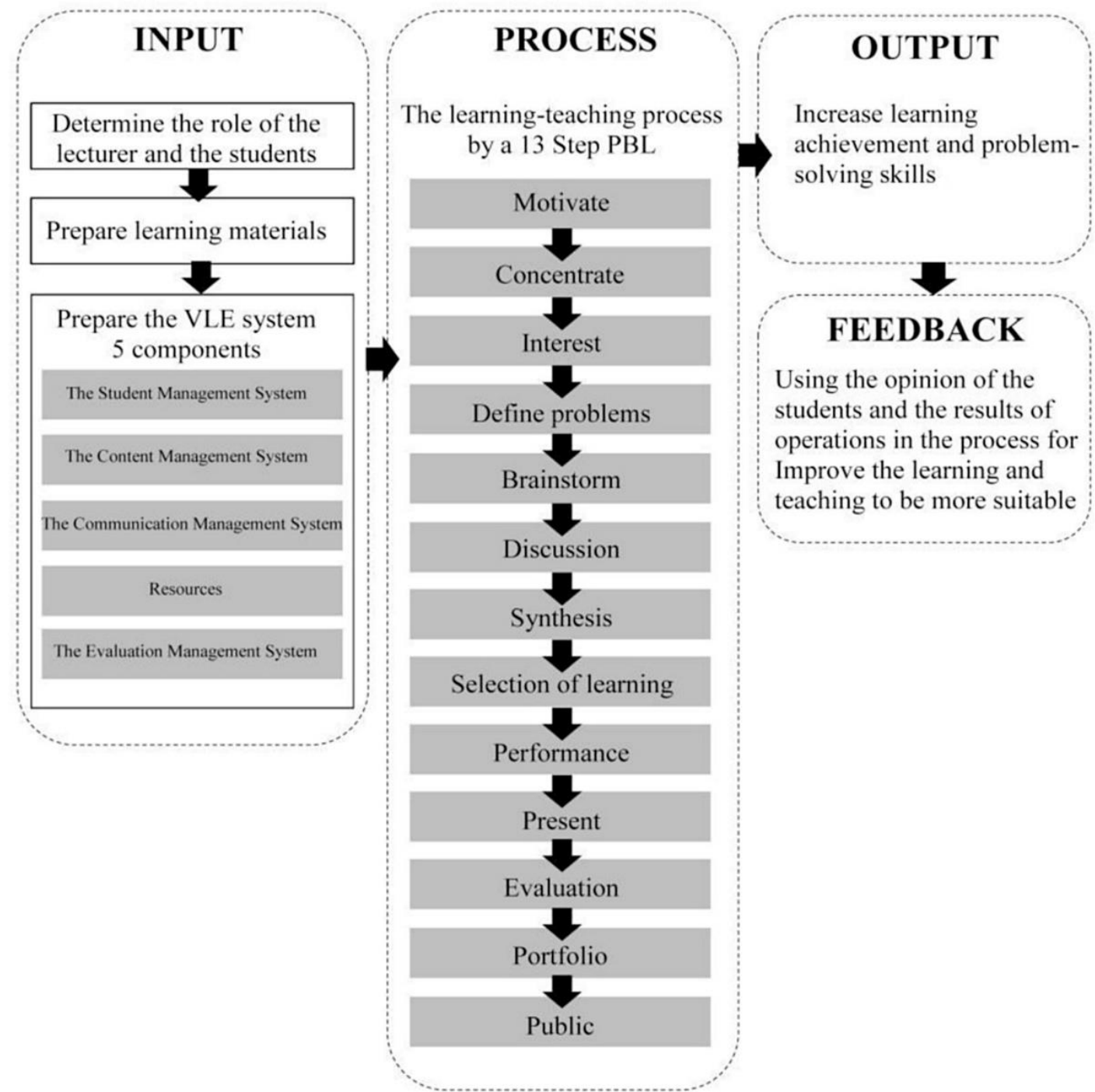
1. First, students face with the problem.
2. Students discuss the problem in a small group.
 - ▶ The details of the case are clarified.
 - ▶ They pinpoint the problem.
 - ▶ They do brainstorming based on their existing knowledge.
 - ▶ They determine what they need to learn to deal with the problem, what they don't know yet (curriculum).
 - ▶ They discuss the problem.
 - ▶ An action plan is drawn up to solve the problem.
3. In addition to the lesson, students develop the content of the curriculum independently. The source of information is libraries, databases, the Internet and professionals.
4. We return to the PBL presentation, share the information in the group, and work together on the problem.
5. Students present and discuss the solution to the problem.
6. Students repeat what they learned in solving the problem.
7. Evaluate the process as well as the contribution of each student to the task.

Concept of PBL in a virtual learning environment I. Phungsuk et al. (2017, pp. 302)



Concept of PBL in a virtual learning environment II.

Phungsuk et al. (2017, pp. 302)



Evaluation of the task

- ▶ oral reports,
- ▶ process logs,
- ▶ self-assessment,
- ▶ interrelated assessment of student groups,
- ▶ qualification prepared by an instructor,
- ▶ teacher observations, notes about individuals,
- ▶ tracking online interactions.



Youtube videos worth watching

- ▶ Problem-Based Learning at Maastricht University

<https://www.youtube.com/watch?v=xLqnxIR2Fj4>

- ▶ Our students on Problem-Based Learning

<https://www.youtube.com/watch?v=HhJi5ZYcf0k>



Articles worth reading

- ▶ Elaine H. J. Yew and Karen Goh (2016): Problem-Based Learning:

An Overview of its Process and Impact on Learning

<https://www.sciencedirect.com/science/article/pii/S2452301116300062>

Michael T. Nietzel (2019): New, Strong Evidence For Problem-Based Learning

- ▶ <https://www.forbes.com/sites/michaelt Nietzel/2019/10/29/new-strong-evidence-for-problem-based-learning/>

Case study method

Case Study method - Form of problem-based learning

Bruner (1991) explains that the case method:

- ▶ “It is effective: it employs active learning, involves self-knowledge, and the teacher acts as a facilitator.
- ▶ It promotes critical thinking skills: it uses the teacher's questioning skills and employs discussion and debate.
- ▶ Practises an administrative point of view: it requires students to develop a framework for decision making.
- ▶ Models a learning environment: it allows for the exchange and flow of ideas from one person to another and builds trust, respect, and risk-taking.
- ▶ Models the process of inductive experiential learning: it is valuable for promoting lifelong learning. It also promotes more effective contextual learning and long-term retention.
- ▶ It mimics the real world: Decisions are sometimes based not on absolute values such as right or wrong, but on relative values and uncertainty.”

Steps of the case study method

1. Choose an appropriate case that best fit for the topic.
2. Develop effective questions.
3. Set ground rules with students.
4. Get student prepared.
5. Share the solutions.
6. Evaluate, comment.



Helping hand

“Depending on the goals of the course, the instructor may encourage students to be systematic in their analysis. For example:

- What is the problem?
- What is the goal of the analysis?
- What is the context of the problem?
- What important facts should be considered?
- What alternatives are available to decision makers?
- What would you recommend - and why?” (BU, 2021)

Common elements

“Most "full-fledged" cases have these common elements:

- A decision maker grappling with an issue or problem that needs to be resolved.
- A description of the context of the problem (a law, an industry, a family).
- Supporting data, which can range from data tables to links to URLs, cited statements or testimony, supporting documents, images, video, or audio” (BU, 2021).

Competencies can be developed

The following competencies can be developed using the case study method.

- Social competence: working cooperatively in a group, solving problems together,
- Cognitive competence: developing shared thinking, developing a systems approach,
- Communicative competence: developing communication skills and competencies through group discussion and adaptation.
- Personal competence: recognizing individual strengths through teamwork.

Advantages

“A major advantage of teaching with case studies is that students are actively involved in figuring out the principles by abstracting from the examples. This develops their skills in:

- (1) Problem solving,
- (2) Analytical tools, quantitative and/or qualitative, depending on the case,
- (3) Decision making in complex situations,
- (4) Dealing with ambiguities” (BU, 2021).

Bonney (2015) has shown that the case study teaching method improves student performance and perceptions of learning gains.

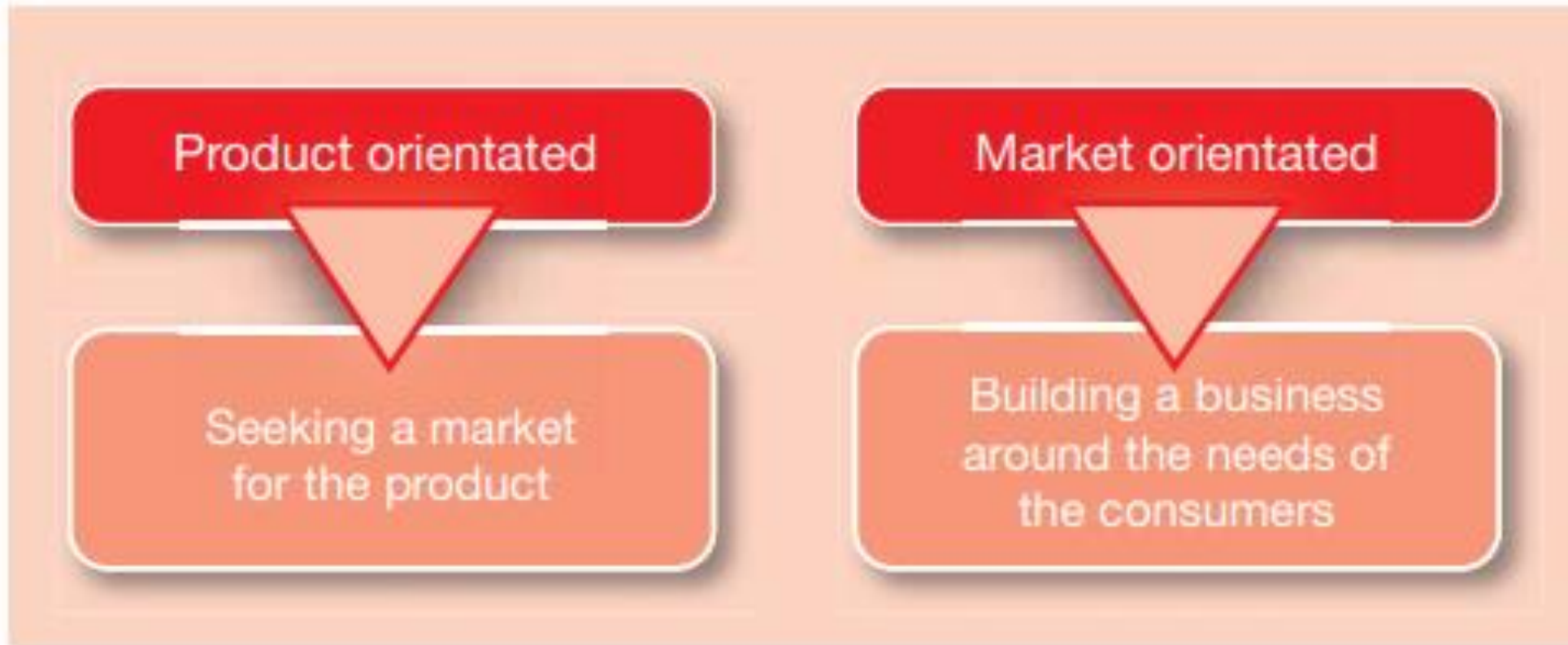
Group work

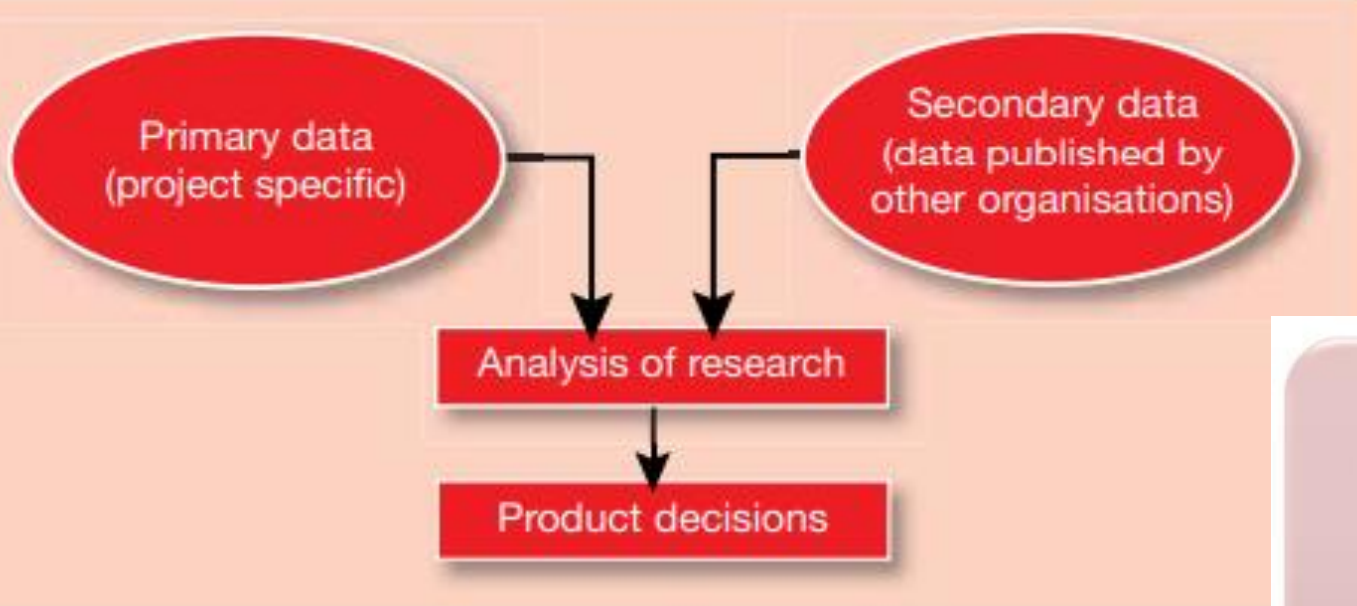
- ▶ Case study: New products from market research
<http://www.ibbusinessandmanagement.com/uploads/1/1/7/5/11758934/kelloggs-edition-15-full.pdf>



Kellogg's[®]

Why carry out a market research?





Types of research

Qualitative Market Research

- Based on opinions and experiences
- Smaller sample
- Interviews, focus group
- In-depth analysis
- Open Ended questions

Quantitative Market Research

- Based on numbers
- Larger sample
- On-line & postal surveys, CATI surveys
- % of people agreed with a statement
- Mostly Closed questions

Stages of New Product Development

Stage 1: Discovery

Stage 2: Selecting the best idea

Stage 3: Crafting the idea into a complete new product

Stage 4: Forecasting sales for the new Crunchy Nut Bites

Glossary

Sustainable growth: Developing the business to meet the needs of consumers today, while respecting the needs of future generations.

New product development (NPD): Term used to describe the processes involved in creating a new product.

Sales value: The value of sales made over a fixed period of time.

Brand extension: The use of a well known brand to launch a new and complementary product.

Variant: Alternative to the core product introduced by the maker of the brand.

GLOSSARY

Product orientated: A business strategy that focuses on the product rather than the customer.

Market orientated: Focusing an organisation on the needs of its customers.

Competitive advantage: A strategic element that enables an organisation to compete more effectively than its rivals.

Primary research: Research that is carried out for the first time to meet a specific objective.

Qualitative research: Associated with consumer responses, feelings, attitudes and descriptions.

Quantitative research: Associated with figures or numbers that help to make the research more objective - usually taken from a large number of consumers.

Focus groups: Small group, usually of 6 to 8 people, used as part of a process of research to elicit feedback.

Prototypes: A single example of a planned product that can be tested and modified before entering production.

Mean: Average of all values.

Secondary research: Uses data that has already been collected and/or published e.g. in newspapers, books or reports.

GLOSSARY

Budgets: Financial plans for the future that show where costs and revenues will come from.

Supply chain: The chain of processes linking the manufacture of products with physical distribution management so

that goods are moved quickly and efficiently through various processes to meet consumer needs.

GLOSSARY

GLOSSARY

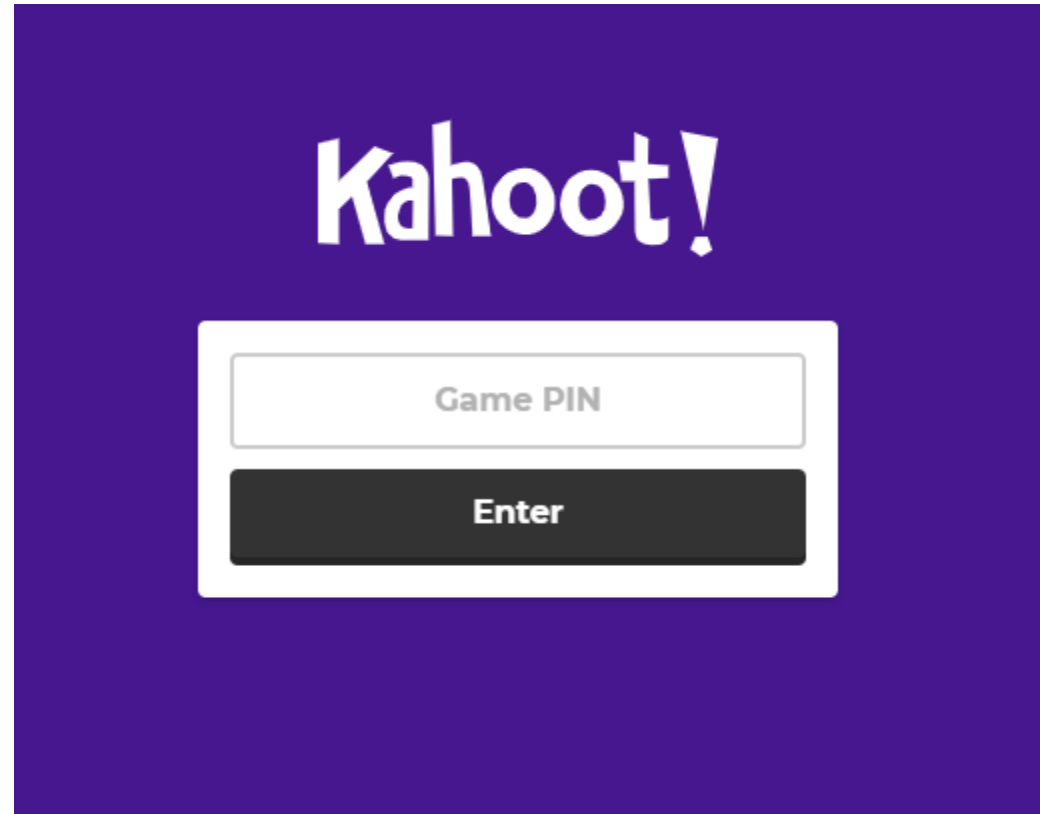
Questions to discuss

1. Describe the purpose of market research.
2. Explain the difference between primary research and secondary research.
3. Analyse why an organisation like Kellogg's would use both qualitative and quantitative data.
4. Evaluate why market research can reduce the risks of a new product launch.

QUESTIONS

Let's Play Kahoot!

- ▶ Kahoot.it



Padlet

What do You know about Kellogg's company?

<https://padlet.com/noika01/3pexphteq155wbwg>

<https://padlet.com/noika01/Kolding11112021>



Youtube videos worth watching

- ▶ The HBS Case Method Defined

<https://www.youtube.com/watch?v=h80hmEAGBbM>

- ▶ Teaching Technique 24: Case Studies

<https://www.youtube.com/watch?v=kwjx1PV9Rjl>



Articles worth reading

- ▶ BU Center for Teaching and Learning: Using Case Studies to Teach

<https://www.bu.edu/ctl/teaching-resources/using-case-studies-to-teach/>

- ▶ University Of Illinois Urbana-Champaign: Center for Innovation in Teaching & Learning

<https://www.forbes.com/sites/michaelnietzel/2019/10/29/new-strong-evidence-for-problem-based-learning/>

Gamification

The background features abstract geometric shapes in various shades of blue and red, overlapping and creating a dynamic, modern aesthetic. The shapes are primarily triangles and polygons, some semi-transparent, set against a white background.

Gamification

- ▶ "The growing gap between generations, due in part to the information technology revolution, presents a significant challenge, especially for educators and educational institutions" (Frommann and Damsa, 2016, p. 77).
- ▶ The use of gamification is a great opportunity in traditional education, where we often deal with unmotivated students, making it difficult for educators to engage them in learning activities (Marcos et al., 2014).
- ▶ Prievara (2015) found that gamification can improve collaboration between students and between teachers and students.
- ▶ According to Rab (2013), "the right approach to gamification in education can be based on changing attitudes".
- ▶ Fitz-Walter et al (2012) have shown that this method is extremely effective in engaging students in extracurricular activities.

Operating principles - Rigóczy's (2016)

- ▶ The game is self-contained,
- ▶ voluntary,
- ▶ promises success,
- ▶ liberated feeling (flow),
- ▶ the game has a guaranteed time,
- ▶ transparent - the results are predictable,
- ▶ the rules are clear, the player sees how things stand - or the game takes place in a social space where players can communicate with each other, help each other.
- ▶ Kapp et al. (2014) "distinguishes between two directions of game-based learning: content-based game, where the curriculum itself becomes a game (e.g., with a frame story), and structural game, where game elements and mechanisms are assigned to the curriculum" (Rigóczy, 2016, p. 73).

RECIPE – Nicholson (2015, pp.4.)

“To operationalize these concepts, six elements inspired by game design will now be explored more indepth:

- ▶ Play – facilitating the freedom to explore and fail within boundaries
- ▶ Exposition – creating stories for participants that are integrated with the real-world setting and allowing them to create their own
- ▶ Choice – developing systems that put the power in the hands of the participants
- ▶ Information – using game design and game display concepts to allow participants to learn more about the real-world context
- ▶ Engagement – encouraging participants to discover and learn from others interested in the real world setting
- ▶ Reflection – assisting participants in finding other interests and past experiences that can deepen engagement and learning.”

Elements of Gamification – Barabási (2018) I.

- ▶ **Points, scoring systems:** they are available for successfully completing a task and provide feedback to game participants. They add up over the course of the game, so they are constantly growing. However, thanks to the immediate feedback, the player also has the opportunity to correct his mistakes.
- ▶ **Levels:** by reaching a certain number of points, the player advances in the game, his character develops, which also provides feedback on performance.
- ▶ **Leaderboards:** they are used for comparison, so that the participant of the game can track his position compared to other players.
- ▶ **Badges:** on the one hand they can express rank, on the other hand they symbolize continuous progress. In some cases, they can also trigger levels.

Elements of Gamification – Barabási (2018) II.

- ▶ **Onboarding:** the impression the player gets in the first few minutes is crucial for the rest, so it is important to make the start interesting and fun for them. To achieve this, it is not advisable to load a lot of information.
- ▶ **Challenges and Quests:** show the player what they have to do in the game, but also flash the bigger goal in front of them. Short-term and moderately difficult challenges tend to have the most motivational power.
- ▶ **Virtual Goods / Wealth and Gifts:** obtained by solving tasks. These can vary: they can stand out from the rest of the player, or they can be given away or given to teammates later.
- ▶ **Customization:** in the game you can choose avatars, select the background, edit the user profile. All this is possible to make the player feel comfortable and loyal to the game.
- ▶ **Feedback:** is displayed in cycles so the player knows what position they are in.

Benefits of Gamification

The benefits of gamified learning are:

- ▶ Students feel that they are responsible for their learning.
- ▶ A more relaxed atmosphere in terms of failure, as learners can simply try again.
- ▶ More fun in the classroom.
- ▶ Learning becomes visible through progress indicators.
- ▶ Learners can discover an intrinsic motivation for learning.
- ▶ Learners can explore different identities through different avatars or characters.
- ▶ Learners often feel more comfortable in game environments and are therefore more proactive and open to making mistakes.
- ▶ Higher levels of student engagement and concentration.
- ▶ The opportunity to think outside the box. Tasks are no longer just about completing a worksheet - what are the wider implications of a game.

Youtube videos worth watching

- ▶ Pedagogy I - Video 4: Gamification

<https://www.youtube.com/watch?v=QuDW44s105A>

- ▶ TOP 5 Gamification Examples In Education today!

<https://www.youtube.com/watch?v=1CZtIly7tRU>



Articles worth reading

- ▶ University of Waterloo: Centre for Teaching Excellence: Gamification and Game-Based Learning

<https://uwaterloo.ca/centre-for-teaching-excellence/teaching-resources/teaching-tips/educational-technologies/all/gamification-and-game-based-learning>

- ▶ Dichev, C., Dicheva, D. Gamifying education: what is known, what is believed and what remains uncertain: a critical review. Int J Educ Technol High Educ 14, 9

<https://educationaltechnologyjournal.springeropen.com/articles/10.1186/s41239-017-0042-5>

Project-based learning

Origin of Project-based learning

- ▶ Emerged in the United States in the early twentieth century
- ▶ It was based on the principles of John Dewey, who emphasized the following connections:
 - ▶ Learning should be based on personal experience.
 - ▶ Instruction should take into account the developmental needs and interests of the learner.
 - ▶ The learner must be actively involved in shaping his or her learning process.
 - ▶ The learner should be educated to participate actively in the affairs of the community and to become a citizen who feels responsible for the community.

The essence of the method

- ▶ “Project-based learning (PBL) is a model that organizes learning around projects” (Thomas, 2000).
- ▶ “The core idea of Project Based Learning is that real-world problems capture students’ interest and provoke serious thinking as the students acquire and apply new knowledge in a problem-solving context.” (David, 2008)
- ▶ “In project-based learning, students work in groups to solve challenging problems that are authentic, curriculum-based, and often interdisciplinary. Learners decide how to approach a problem and what activities to pursue. They gather information from a variety of sources and synthesize, analyze, and derive knowledge from it. Their learning is inherently valuable because it's connected to something real and involves adult skills such as collaboration and reflection.” (Solomon, 2003)

Steps of the method

STEP 1

Preliminary planning

Preliminary concept development for the project.

Choice of topic

Objective

STEP 2

Planning and organizational tasks

Assess what is needed
plan and a schedule

Organize working groups, assign tasks

Create a task

STEP 3

Create a project protocol

Project diary

- Individual
- Collective

Blog engine

STEP 4

Conclusion and evaluation

The evaluation should follow a system with four criteria.

- How effective the joint work was?
- What learning took place during the implementation of the project?
- Whether the team was able to work together?
- Did the project meet the goals set?

Advantages and disadvantages of the method

Advantages

- ▶ It provides students with the opportunity to transform themselves during the learning process.
- ▶ It is generally accepted as an effective method for teaching processes, such as problem solving and decision making.
- ▶ Experts should help in developing character's emotional, social elements apart from cognitive.
- ▶ Reduction of student's anxiety.
- ▶ Enhancement of student's learning quality.

Disadvantages

- ▶ It is marginalized by the educators themselves, since they lack both training and experience in implementing this approach.
- ▶ Deficient finance and technology are challenges that teachers have to overcome.
- ▶ Evaluation can be also ineffective when students use technology.

Success of the method

This method is successful when some essential elements are fulfilled.

- ▶ Teachers should engage student's interest and "need to know" and at the same time stimulate them by making a capturing driving question.
- ▶ Students are in charge of deciding whether they will use resources, how they will cooperate and communicate in order to achieve the goal of their challenging project.
- ▶ Critical thinking is enhanced and students can easily conduct their inquiry as well as innovate by exploiting sometimes the advantages of technology.
- ▶ Feedback and revision are also important before student's presentation in front of a real audience.

Module 6

Digital tools for teaching and learning



Digital tools for teaching and learning

Tool	Discription
Google Classroom	<p>Google Classroom is a free blended learning platform for schools that aims to simplify creating, distributing, and grading assignments. The primary purpose of Google Classroom is to streamline the process of sharing files between teachers and students.</p> <ul style="list-style-type: none"> Website: classroom.google.com Cost: Free. Availability: Online
Gmail	<p>Gmail is a free web-based email service from Google. Also part of G Suite.</p> <ul style="list-style-type: none"> Website: gmail.com Cost: Free Availability: Online
Microsoft Teams	<p>Microsoft Teams is the team workspace in Office 365.</p> <ul style="list-style-type: none"> Website: teams.microsoft.com Cost: Office365 requires a subscription Availability: Online
Quizizz	<p>Find and create quizzes. It works on any device with any browser. Live.</p> <ul style="list-style-type: none"> Website: quizizz.com Cost: Free. Availability: Online
Canva	<p>Canva is a graphic design platform that allows users to create social media graphics, presentations, posters and other visual content.</p> <ul style="list-style-type: none"> Website: canva.com Cost: Free and Premium plans Availability: Online and iPad app
Genially	<p>Genially is a single platform for all types of interactive content</p> <ul style="list-style-type: none"> Website: genially.com Cost: Free and premium versions Availability: Online
Adobe Spark	<p>Adobe Spark is an integrated suite of media creation applications It comprises three separate design apps: Spark Page, Spark Post, and Spark Video.</p> <ul style="list-style-type: none"> Website: spark.adobe.com Cost: Free. Availability: Online. Download app
Moodle	<p>Moodle is an open-source learning platform for K12, higher education and workplace training.</p> <ul style="list-style-type: none"> Website: moodle.org Cost: Free. Open-source Availability: Download
EdPuzzle	<p>Edpuzzle lets you take any video off the web, edit it, add notes and questions for students and create virtual classrooms where you can monitor student work.</p> <ul style="list-style-type: none"> Website: edpuzzle.com Cost: Free.

Digital tools for teaching and learning

Tool	Discription
	<ul style="list-style-type: none"> ▪ Availability: Online
Kahoot	<p>Kahoot is a game-based learning platform for business and education.</p> <ul style="list-style-type: none"> ▪ Website: getkahoot.com ▪ Cost: Free and premium plans ▪ Availability: Online
Mentimeter	<p>Mentimeter is a tool that lets you engage and interact with your audience in real-time.</p> <ul style="list-style-type: none"> ▪ Website: mentimeter.com ▪ Cost: Free and Premium versions ▪ Availability: Online
WhatsApp	<p>Not just a personal messaging app, it's broadcasting and group functionalities make it a valuable communication tool</p> <ul style="list-style-type: none"> ▪ Website: whatsapp.com ▪ Cost: Free ▪ Availability: Download app
Telegram	<p>Telegram is a cloud-based mobile and desktop messaging app with a focus on security and speed.</p> <ul style="list-style-type: none"> ▪ Website: telegram.org ▪ Cost: Free ▪ Availability: Download
Google Docs & Drive	<p>Google Docs is used to create documents, Google Sheets for spreadsheets, and Google Slides for slide sets individually or collaboratively. Google Drive is the cloud storage service, where you can also up host other files.</p> <ul style="list-style-type: none"> ▪ Website: google.com/docs ▪ Cost: Free ▪ Availability: Online
Google Forms	<p>With Google Forms, you can create and analyze surveys online.</p> <ul style="list-style-type: none"> ▪ Website: google.com/forms/ ▪ Cost: Free ▪ Availability: Online
Google Translate	<p>Google Translate is a free online service for instantly translating text and web pages.</p> <ul style="list-style-type: none"> ▪ Website: google.com/translate ▪ Cost: Free. ▪ Availability: Online
Mural	<p>A digital workspace for visual collaboration</p> <ul style="list-style-type: none"> ▪ Website: www.mural.co ▪ Cost: Paid plans ▪ Availability: Online
Padlet	<p>Padlet is an online noticeboard, which means it can be used for personal note-keeping as well as collaborative brainstorming.</p> <ul style="list-style-type: none"> ▪ Website: padlet.com ▪ Cost: Free

Digital tools for teaching and learning

Tool	Description
	<ul style="list-style-type: none">▪ Availability: Online
Camtasia	<p>TechSmith's Camtasia is a tool to record, edit and enhance on-screen activity in the form of screencasts.</p> <ul style="list-style-type: none">▪ Website: techsmith.com/camtasia.html▪ Cost: Commercial. Free trial▪ Availability: Download
YouTube	<p>This video platform is both a key learning resource as well as a place for anyone to share their video content.</p> <ul style="list-style-type: none">▪ Website: youtube.com▪ Cost: Free▪ Availability: Online
Zoom	<p>Zoom unifies cloud video conferencing, simple online meetings, and cross-platform group chat into one easy-to-use platform.</p> <ul style="list-style-type: none">▪ Website: zoom.us▪ Cost: Free and Premium versions▪ Availability: Online
Google Meet	<p>Previous known as Google Hangouts Meet, it is now known as Google Meet. It is a place to hold impromptu video meetings as well as scheduled virtual training classes around the world</p> <ul style="list-style-type: none">▪ Websites: meet.google.com▪ Cost: Free.▪ Availability: Online

Module 7

Project task on topic Customer-centric Innovations in SMEs



Project task on topic Customer-Centric Innovation

Prepared by:

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Task 1: Group formation

- ▶ Ask the participants to form groups of 3.
 - ▶ Group formation can be spontaneous or guided,
 - ▶ the idea is to form groups of 3 people who will work together for the rest of the project task.

Task 2: Choosing an industry

- ▶ Assign 1 industry to each group. This will be the industry in which the consumer-centred product development process will be carried out by the groups.
- ▶ Suggested industries:
 - ▶ Information and communication technology
 - ▶ Households and kitchens
 - ▶ Foods and drinks
 - ▶ Sport and games
 - ▶ Transport
 - ▶ Clothes and accessories

Task 3: Collecting ideas, generating ideas

- ▶ This task consists of three parts.
 - ▶ The first is to present 5 to 5 innovations related to the previously defined industries to inspire.
 - ▶ **In the second part, the groups are asked to suggest ways to involve consumers in the process of idea generation and brainstorming.**
 - ▶ In the third part, each group will be asked to brainstorm 5-5 product ideas in their industry. For each idea they have to provide a name and a short description/explanation.

Task 4: Filter the ideas, select the "winning" idea

- ▶ This task also consists of three parts.
 - ▶ **First, the teams are asked to make suggestions on how to involve customers in the idea selection process.**
 - ▶ The second step is for each team to present the 5-5 product/service ideas they have "generated", accompanied by a short (5 slide) presentation.
 - ▶ The third part of this exercise is that the other groups, who are now "surrogates" for potential customers, vote on each product idea and whichever idea receives the most votes will continue with the more detailed development of that idea.

Task 5: Develop the concept in detail

- ▶ In this task, the groups develop their chosen product idea in detail. They describe the main features and functions of the product/service.
- ▶ **Part of the task is to identify these decision points where customer involvement is necessary/possible.**
- ▶ The detailed concept is also presented by each group in a short (5 slides) presentation

Task 6: Outline marketing plan for the product/service

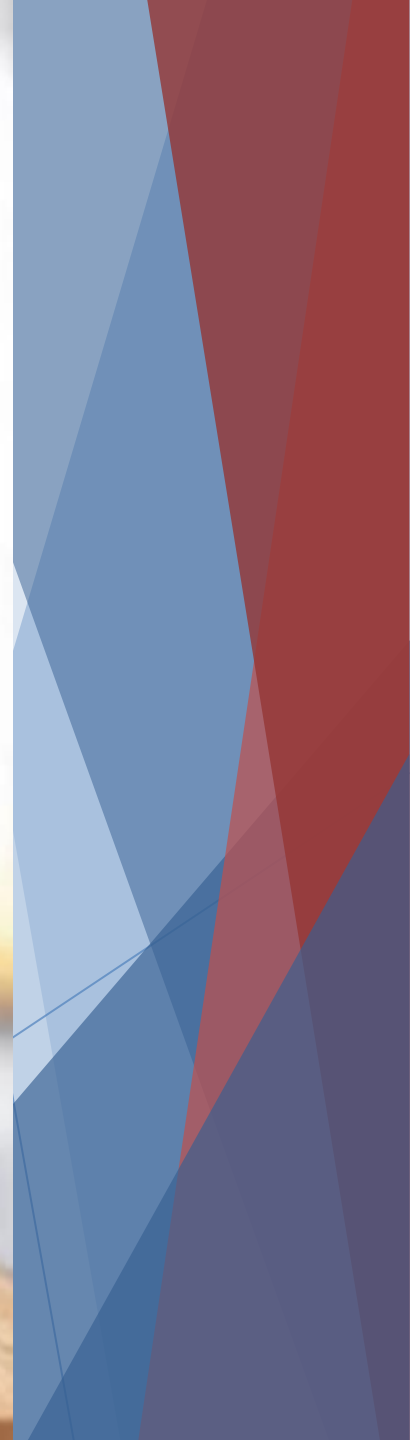
- ▶ Following the development of the product concept, the teams will draw up an outline marketing plan, covering the target group for the product/service, product policy choices, price strategy and tactics, channel policy choices and the planned steps in marketing communication.
- ▶ **In the development of each point of the marketing plan, possible ways of involving consumers should be indicated.**
- ▶ The outline marketing plan will also be presented to the groups, each with a short (5 slides) presentation.

Task 7: Brand name, logo, slogan

- ▶ In a really creative exercise, the groups propose a brand name, logo and slogan for the product in question. Integrity and consistency are very important in this exercise, as the brand name, logo and slogan should all reinforce the personality traits of the brand, so it is a good idea to start the design with this, i.e. by defining the brand personality.
- ▶ **The question is, how can these be designed to involve prospective customers and potential customers?**
- ▶ The presentation of the finished creations concludes the seventh part of the exercise.

Task 8: Test the product

- ▶ Before a product or service can be widely introduced to the market, it is very important to carry out appropriate tests.
- ▶ **In this process, consumer involvement is essential.**
- ▶ The teams are responsible for planning the testing of the product they are developing.
 - ▶ How and by what methods would they test the product they have envisioned during a large-scale market launch?
 - ▶ The sub-task concludes with the usual short presentations.





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