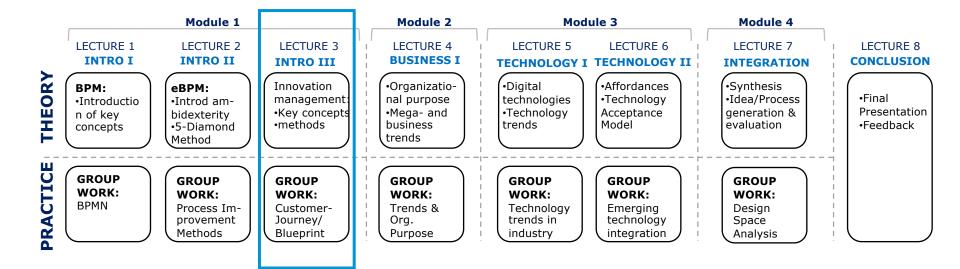


Today: Lecture 3 – Introduction to Innovation Management







Questions to be answered



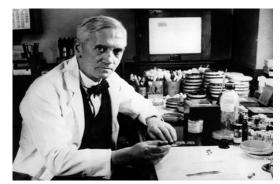
- What is an innovation?
- What is innovation management?
- What drives innovation?

Innovations no matter how they emerge can have a great influence on our society

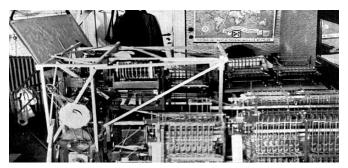




https://www.weisskopf.de/seite/260863/geburtsstunde-der-luftfahrt.html



http://www.deutschlandfunkkultur.de/entdeckung-despenicillins-ein-zufall.932.de.html?dram:article_id=130436



http://dcis.inf.fu-berlin.de/rojas/reconstruction-of-the-z1-computer/

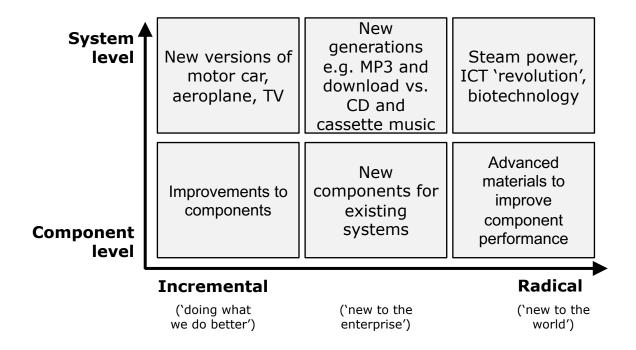


http://www.1989history.eu/geschichte-internet.html



Innovations can emerge at component or (sub-)system level

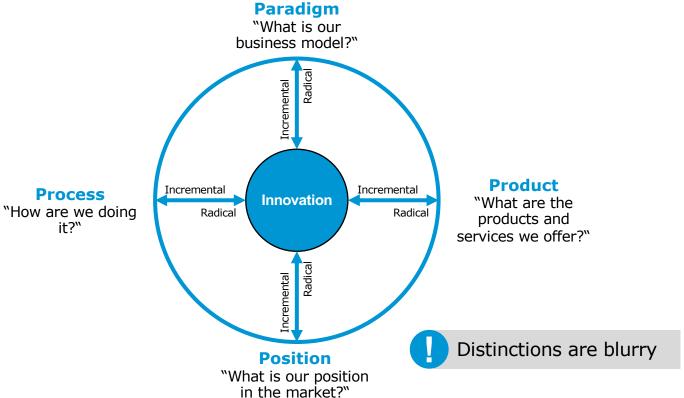




Different dimensions of innovation create an innovation space







What is an innovation?



Definition

Innovation refers to the **development and commercialization** of a new idea that is a key driver for **competitive advantage**. It can be novel with respect to (1) the organization's knowledge base and (2) the general business environment. Besides, innovations can be classified in terms of **products**, **services**, **processes**, **and business model**.

Attributes of innovation definitions can be categorized along six dimensions (Baregheh et al. 2009):

- *Nature of innovation* refers to the form of innovation as in something new or improved.
- **Type of innovation** refers to the kind of innovation as in the type of output or the result of innovation, e.g. product or service.
- **Stages of innovation** refers to all the steps taken during an innovation process which usually start from idea generation and end with commercialization.
- **Social context** refers to any social entity, system or group of people involved in the innovation process or environmental factors affecting it.
- **Means of innovation** refers to the necessary resources (e.g. technical, creative, financial) that need to be in place for innovation.
- Aim of innovation is the overall result that the organizations want to achieve through innovation.

(Baregheh et al. 2009; Chesborough 2010; Damanpour 1996; Fagerberg 2009; vom Brocke & Schmiedel 2015)



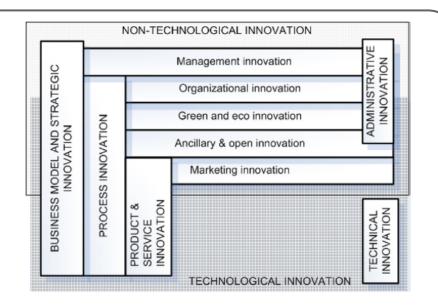
What types of innovation exist?





Outcome perspective

From an outcome perspective different types of innovation are distinguished, mainly differentiating between technological and non-technological innovation.



(inspired by: Černe et al. 2016)



Types of innovation Details on Process innovation





Process innovation comprise the redesign (and efficiency or effectiveness improvement) of existing processes but also the development of new ones by following a structured procedure that aims, for example, at reducing production costs or increasing quality.

Process innovation can be differentiated along five dimensions:

Characteristic	Process innovation		
Type of innovation	technical	organisational	
Degree of Innovation	incremental	radical	
Timing of Innovation	continuous	one-time-only	
Trigger for Innovation	push	pull	
Reason for Innovation	efficiency gains	effectiveness gains	implementation of product innovations

(inspired by: Davenport 1992, Kern et al. 2013)



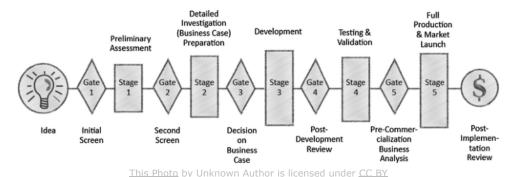
How can innovations be implemented?



Process perspective

The **innovation process** defines a logically and temporarily connected sequence of activities and decisions that are required for the commercialization of a new product or the launch of a new process and has a clearly defined start and end.

Innovation processes are required to define concrete steps for the achievement of an innovation outcome from idea generation to (market) implementation and at the same time provide sufficient flexibility for adaptation in case of suddenly-occurring changes.



(Cooper 2008)



Questions to be answered





What is an innovation?



What is innovation management?



What drives innovation?



What is innovation management?



Definition

Innovation management contains all planning, decision, organizational, and controlling tasks that are necessary for the generation of new ideas and their implementation. Thus, innovation management allows the organization to respond to external or internal opportunities and use its creativity to introduce new ideas.







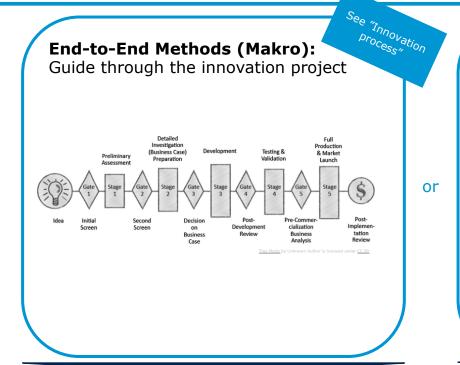
(Kelly and Kranzberg 1978; Tidd and Bessant 2018)

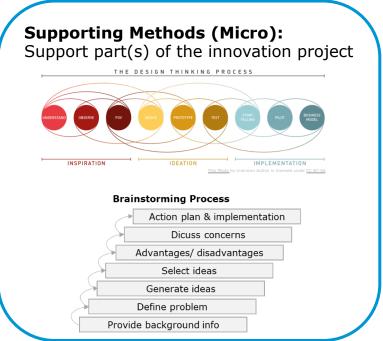


How can methods support innovation management?









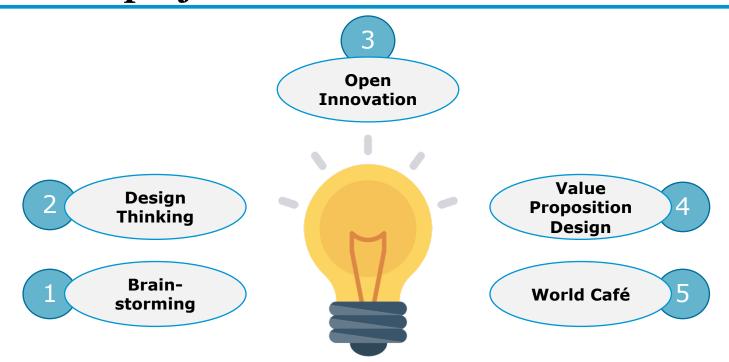
Mainly based on execution of method steps

Mainly based on guiding principles



Exemplary supporting methods of the innovation project









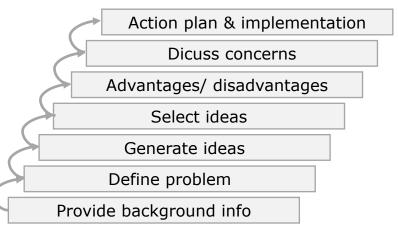
Brainstorming is a widely known method for idea generation







Brainstorming Process



Principles of Brainstorming

- Do not criticize any idea
- Encourage piggybacking
- Keep things moving the faster the better
- Don't forget to keep a record of the ideas expressed
- Add an encouraging word when a shy or withdrawn person offers an idea
- Evaluation comes only after as many ideas as possible are brainstormed

Brainstorming sessions generate many new ideas and proposals in a short time. Advantages are the usability for group processes, provisioning of solutions to a clearly defined task and the high individuality. Disadvantages are that the method is less suitable to large-scale tasks, not suitable for shy participants and difficult when the participants have hierarchically different functions.

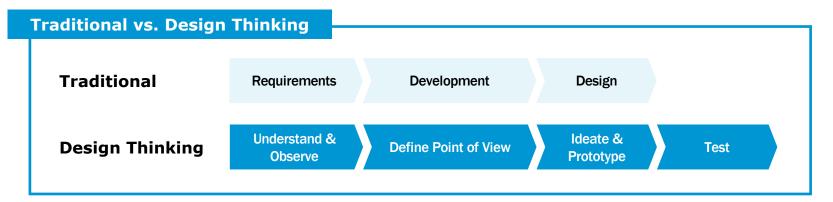
(Weis 2014)



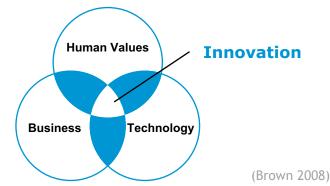
2

Design Thinking to create solutions that are convincing from the user's point of view





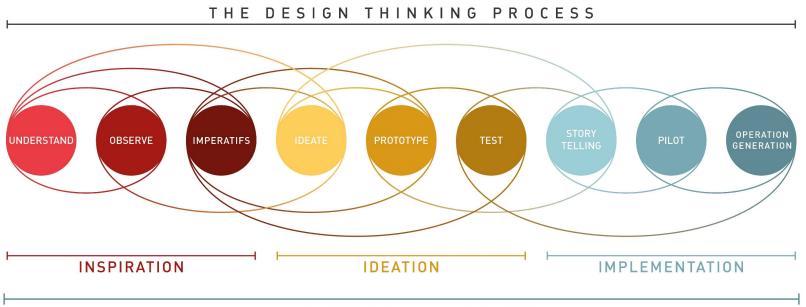
Design Thinking is a process and a mindset





The Design Thinking Process





DISSEMINATION / D.LEADERSHIP

This Photo by Unknown Author is licensed under CC BY-SA



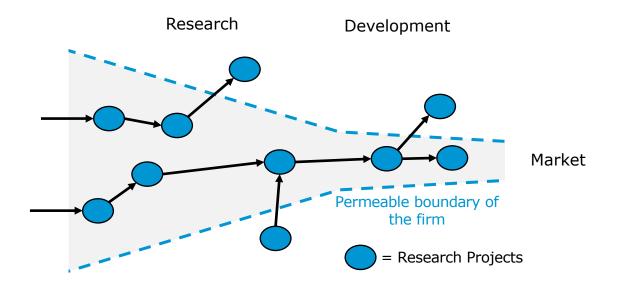
3

Open innovation makes the boundaries of the firm permeable









Open innovation has been defined as "the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively"

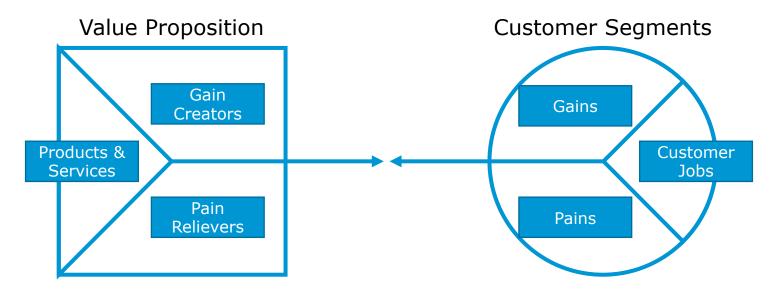
(Chesbrough et al. 2006)





Value Proposition Canvas helps you to create value for your customer





The Value Proposition Canvas as a part of the Business Model Canvas is a tool to structure your thoughts and ideas regarding your customer understanding and points out the fit of the value that is offered to the customers.

(Osterwalder et al. 2014)





World Café is a structured conversational process intended to facilitate discussion





This Photo by Unknown Author is licensed under CC BY-SA-NC

The World Café enables creative work in large groups. In the world café, people can work simultaneously on individual facets of large tasks or several tasks. Advantage of the method is that many participants are stimulated to contribute. None disadvantages are known.

(Weis 2014)



Questions to be answered





What is an innovation?



What is innovation management?



What drives innovation?



Sources of Innovation





Technologies

Technology Push

Innovation

Market Pull

Customer

Market Pull

- Innovations that are triggered by the market or by customers
- Customers express concrete needs for new or improved products

Technology Push

- Innovations where the impetus comes from the companies themselves, i.e. the company provides new ideas for technologies and processes through technical progress, external or internal technology developments
- Customer needs still have to be awakened, a receptive market has to be found and uncertainties have to be eliminated

(Chidamber et al. 1993)



What is the role of organizational culture for innovation?





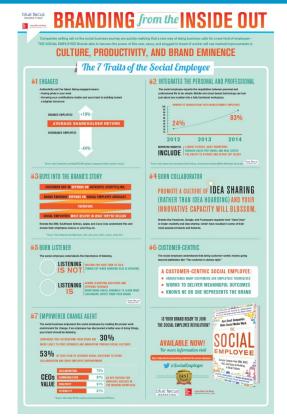




This Photo by Unknown Author is licensed under CC BY-ND



This Photo by Unknown Author is licensed under CC BY-SA



What is organizational culture?





Invisible

Alphabet Investor Relations

Google Code of Conduct

The Google Code of Co around the recognition and should be, measure We set the bar that high highest standards helps Respect for our users, f and are something we r



This Photo by Unknown Author is licensed under CC BY-ND

Basic Assumptions

(e.g., subconscious behavior)

Exposed Values

(e.g., strategies, goals, philosophies)

Artifacts

(e.g., visible organizational structures or processes)

Increasing evidence

(Schein 2010)

Determinants of organizational culture that support creativity and innovation







Strategy

- Vision and mission
- Purposefulness

Structure

- Flexibility
- Freedom
- Cooperative teams and group interaction

Support mechanisms

- Reward and recognition
- Availability of resources (e.g., time, IT, creative people)

Behavior that encourages innovation

- Mistake handling
- Idea generation
- Continuous learning culture
- Risk taking
- Competitiveness
- Support for change
- Conflict handling

(Open) communication

- Trustfulness
- Respectfulness
- Understanding for diversity of opinions
- Short distances
- Public places



Organizational culture can both stimulate and hinder creativity and innovation. Achievements can be recognized by means of extrinsic and intrinsic awards.

(Martins and Terblanche 2003)

Think with Google: The eight pillars of innovation







Have a Mission that Matters

Make work worth more than a job into something you care about. By enforcing a mission statement with purpose, you can inspire all employees to view all ventures with an open eye.

Share Everything

By sharing everything, companies encourage discussion and find new ideas.

Think Big but Start Small

It is necessary to look at all steps, even the minor ones. By taking the smallest initiatives, one can generate great, new ideas.

Spark with Imagination, Fuel with Data

Google allows employees to dedicate 20% of their week to focus on whatever they want. Wojcicki says that "what begins with intuition is fueled by insights."

Strive for Continual Innovation, not Instant Perfection

Iterating allows companies to identify what works early and be able to respond properly.

Be a Platform

Open technologies allow anyone, anywhere to apply their skills to create new products. Thus, everyone is involved in the development.

Look for Ideas Everywhere

It is important to hear ideas from all sources; Wojcicki sparks conversations with all employees with idea boards. Thus, problems are approached from different perspectives.

Never Fail to Fail

Even with failed expenditures, professionals learn from their experiences and apply that knowledge to the development of new product

Skills and organizational capabilities for Innovation





Definition

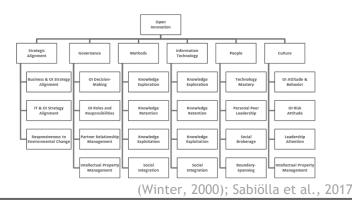
An **organizational capability** is a high-level routine (or collection of routines) that, together with its implementing input flows, confers upon an organization's management a set of decision options for producing significant outputs of a particular type. In this definition the term routine refers to a "repetitive pattern of activity".

Examples

Innovator's DNA

Delivery skills Discovery skills Analyzing Associating Questioning Implementation Self-discipline Discovery skills Associating Questioning Networking Experimenting

Open Innovation Capability Framework



Delivery and discovery skills characterize the **Innovators DNA**

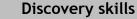






Delivery skills







Associating



Questioning



Observing



Networking



Experimenting

Planning Implementation Self-discipline

The Innovators DNA shows: Creativity s not so much about genetics – but about a skill set and a active endeavor. By understanding - and engaging in - the five discovery skills, you can find ways to more successfully develop the creative spark within yourself and others.

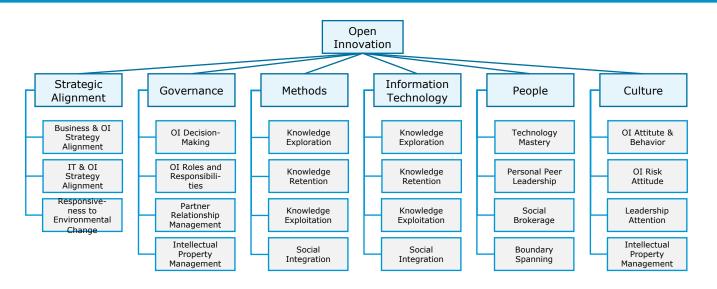
(Dyer et al., 2014)



Systematization of capabilities for Open Innovation







The Open Innovation Capability Framework covers the outside-in and coupled processes of Open Innovation. It comprises 23 capability areas grouped along the factors strategic alignment, governance, methods, information technology, people, and culture. It is usable as a foundation for prioritizing, selecting, and operationalizing capability areas as well as for deriving implementation roadmaps.

(Sabiölla et al., 2017)



Innovation barriers can arise in many places





Doubts about technical viability

 Concerns about the timing of innovation

Doubts about suitability

Economic arguments

- Doubts about market success and profitability
- Objections to excessive risk

Ecological arguments

 Risks to the environment unknown

Lack of knowledge

Innovation

barriers

- Innovation may require intensive training/integration/adaptation
- Resistance of individuals who are unwilling or unable to face the learning demands of innovation

Lack of willingness

- Worry about losing power and influence, risk aversion
- Individual aversion can increase in groups

Administrative hurdles

- Nobody feels responsible
- Coordination difficulties



(Garcia et al., 2007)

Answered Questions





What is an innovation?

- → Innovations mean change to organizations
- → Can be viewed from an outcome and/or a process perspective



What is innovation management?

- → The structured approach for generating and monitoring innovations
- → Many methods and techniques for developing ideas and innovations can be used



What are influences on the ability to innovate?

- → The firm's culture has significant influence on the innovativeness
- → Barriers to innovation have to be kept in mind



References





- Baregheh, A.; Rowley, J.; Sambrook, S. (2009) Towards a multidisciplinary definition of innovation, Management Decision, Vol. 47 No. 8, pp. 1323-1339
- Černe, M., Kaše, R., & Škerlavaj, M. (2016). Non-technological innovation research: Evaluating the intellectual structure and prospects of an emerging field. Scandinavian Journal of Management, 32(2), 69–85. https://doi.org/10.1016/j.scaman.2016.02.001
 Chesbrough, H. W., & Garman, A. R. (2009). How open innovation can help you cope in lean times. Harvard business review, 87(12), 68-76.
- Chidamber, S. R., & Kon, H. B. (1993). A research retrospective of innovation inception and success: the technology-push demand-pull question.
- Cooper, R.G. (2008) Perspective: The Stage-Gates Idea-to-Launch Process—Update, What's New, and NexGen Systems, Product Innovation Management
- Damanpour, F. (1996), "Organizational complexity and innovation; developing and testing multiple contingency models", Management Science, Vol. 42 No. 5, pp. 693-
- Davenport, T. H. 1992. "Process Innovation: Reengineering Work through Information Technology," MA: Harvard Business School Press, Bosten, Massachusetts: Harvard Business School Press.

 Dyer, J., Gregersen, H., Christensen, C. M. (2014). The Innovator's DNA: Mastering the Five Skills of Disruptive Innovators, Harvard Business Review Press

 Dyer, J., Gregersen, H., Christensen, C. M. (2014). The Innovator's DNA: Mastering the Phonomenon Pad Management 39(4) 311-316
- Eńkel, E., Gassmann, O., & Chesbrough, H. (2009). Open R&D and open innovation: exploring the phenomenon. R&d Management, 39(4), 311-316.

- Fagerberg, J., & Verspagen, B. (2009). Innovation studies—The emerging structure of a new scientific field. Research policy, 38(2), 218-233.

 Garcia, R., Bardhi, F., & Friedrich, C. (2007). Overcoming consumer resistance to innovation. MIT Sloan management review, 48(4), 82.

 Hosseini, S., Kees, A., Manderscheid, J., Röglinger, M., & Rosemann, M. (2017). What does it take to implement open innovation? Towards an integrated capability framework, Business Process Management Journal.
- Kelly, P.; Kranzburg M. (1978). Technological Innovation: A Critical Review of Current Knowledge. San Francisco: San Francisco Press.
- Kern, E.-M., Röser, T., and Ulrich, S. 2013. "Prozessmanagement: Trigger Und Befähiger Für Prozessinnovation?," in Prozessinnovation Und Prozessmanagement. Zwei Managementfelder Zur Stärkung Der Prozessleistung in Unternehmen, C. Mieke (ed.), Berlin: Logos, pp. 1–26.
- Lopez-Vega, H., Tell, F., & Vanhaverbeke, W. (2016). Where and how to search? Search paths in open innovation. Research Policy, 45(1), 125-136.
- Madiar, N., Greenberg, E., & Chen, Z. (2011). Factors for radical creativity, incremental creativity, and routine, noncreative performance. Journal of applied psychology, 96(4), 730.
- Martins, E. C., & Terblanche, F. (2003). Building organisational culture that stimulates creativity and innovation. European journal of innovation management.
- Norman, D. A., & Verganti, R. (2014). Incremental and radical innovation: Design research vs. technology and meaning change. Design issues, 30(1), 78-96.
- Osterwalder, A., Pigneur, Y., Bernarda, G., & Smith, A. (2014). Value proposition design: How to create products and services customers want. John Wiley & Sons. Sandberg, B., & Aarikka-Stenroos, L. (2014). What makes it so difficult? A systematic review on barriers to radical innovation. Industrial Marketing Management, 43(8),
- 1293-1305.
- Schein, E. H. (2010). Organizational culture and leadership (Vol. 2). John Wiley & Sons. Stinchcombe, A. L. (1965). Social structure and organizations. Handbook of organizations, 7, 142-193.
- Tidd, J.; Bessant JR (2018) Managing innovation: integrating technological, market and organizational change, Wiley, 6th edition Von Hippel, E., & Von Krogh, G. (2015). Crossroads—Identifying viable "need-solution pairs": Problem solving without problem formulation. Organization Science,
- 27(1), 207-221.

 Vom Brocke, J., & Schmiedel, T. (Eds.). (2015). BPM-driving innovation in a digital world. Heidelberg: Springer.

 Weis, B. X. (2014). From Idea to Innovation: A Handbook for Inventors, Decision Makers and Organizations. Springer.
- Winter, S. G. (2003), Understanding Dynamic Capabilities, Strategic Management Journal (24:10), pp. 991–995.

What to prepare for the session (Checklist)



- Prepare Presentation
- Create posters as PDFs
- Post-Its, Eddings, Sticky dots, Scissors, Crepe Tape, Time Timer, Whiteboard Pens
- Name Tags (Create name list, create name tags)
- Prepare Room (Query conditions of the room, planning room concept, Request: Flipcharts, Eddings, Boardmarker, Whiteboard, Beamer)



Now it's your turn...



30 MINUTES





Create a Customer Profile

1 Start with customer jobs

- What is the customer trying to achieve?
- What problems is he trying to solve?
- How important are these jobs for the customer?

Best-practice



Think beyond functional tasks

Include social and emotional jobs, for example: Being perceived as "competent".

2 Describe Customer Pains

- What annoys the customer during the job?
- What obstacles does he face?
- Are there any risks related to the jobs?



Make it specific

Instead of "long waiting"-> "wait over 10 minutes to..."

3 Describe Customer Gains

- What inspires the customer during his job?
- What benefits does the customer expect?
- Are there unexpected advantages?



Make the customer successful

Focus on the features that would really help the user to be successful



Now it's your turn...



30 MINUTES





Create a value map

Best-practice

- 1 Start with the services
 - What currently helps to do the customer jobs?
 - Which products and services are already offered?
 - Which services are essential, which Nice-To-Have?



Which products and services can your customer currently use?

- 2 Identify Pain Relievers
 - How does the current product and service portfolio respond to the customer's pain?
 - Which Pains will be alleviated the most?

Pay attention:

 There does not have to be a Pain Reliever for every Pain no value proposition can do that. The same applies to Gain Creators and Gains.

- 3 Identify Gain Creators
 - Which Gains are already addressed?
 - What contributes to the customer's success?



Try to distinguish

 Sometimes a supposed Gain Creator is 'only' a Pain Reliever



Now it's your turn...



30 MINUTES





Check the fit and finds innovative ideas

Assigns Pains and Gains to Creators and Relievers

- Which Gain Creators create a real benefit?
- Which 'Pain Relievers' alleviate a real user pain?
- Which gains are achieved through Gain Creators?
- Which Pains are alleviated by 'Pain Relievers'?

Finds innovative ideas and fill out the templates

Ouestion 1: Which Jobs, Pains and Gains are not yet considered by current products and services?

• Ouestion 2: What new products or services can meet them?

Choose 3 ideas that you want to present

Best-practice

Uses check marks and crosses



Addressed **X**



Not addressed

Be pragmatic

Don't spend too much time on details.

Be the user

 What are innovative ideas that help the customer to do their jobs (better), alleviate their pain and achieve gains?

1 Template = 1 Idea

Do not try to combine several ideas in one template

Idea Template
Our Padact or Service
helps
who want to
(B) Analysis as her durine
by have fey reducing mentions of customer pair
and



Let's listen to your innovative ideas...



Presentation Mode

For each team:

- 6 minutes to present top 3 ideas
 (= 2 minutes per idea)
- 5 minutes discussion with whole group



Order of Groups

- 1. Team GREEN XXX
- 2. Team ORANGE XXX
- 3. Team **BLUE** XXX
- 4. Team **RED** XXX

Basic rule

Constructive instead of *destructive* feedback

