
MOBILE SOFTWARE ENGINEERING WS 2017/2018

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Timetable – Working Version

Date	Content
28.09.17	Introduction & Digitale Dörfer Project
05.10.17	How to build the right apps - Innovation and Creativity
12.10.17	Shaping the Idea, Business Model and Product Philosophy
19.10.17	Mobile Requirements Engineering
26.10.17	Mobile Experience Design
02.11.17	Mobile Prototyping
09.11.17	Mobile Usability Testing and Product Philosophy Evaluation
16.11.17	Mobile Development Approaches
23.11.17	Mobile Architecture
30.11.17	Mobile Security
07.12.17	Mobile Quality Assurance
14.12.17	Synchronization Concepts
21.12.17	Sell your Product to the customer and 2nd Product Philosophy Evaluation
28.12.17	no lecture
04.01.17	no lecture
11.01.17	Exam Preparation & Real World Project
18.01.17	Final Presentation

Slides

- Lecture slides and information can be downloaded here
- <https://oc.iese.de/index.php/s/SVZGhPW6bkzlUg1>
- <http://tinyurl.com/y837rmcx>
- Passwort: MSO2017

Inhalt

- Olympia Bewerbung
 - Storyboarding
 - Twitter
- Meinungsmacher (Perspektivenwechsel)
- Product Philosophy
- Business Model

INNOVATION AND CREATIVITY

Lernziel

- Wie konvergiert man von breiten Ideen zu einer App
- Kreativitätstechniken am Beispiel erlernen
- Die eigene Idee voranbringen
- Festlegung der konkreten App-Idee



MANNHEIM
2017

WORKSHOP DIGITALES DORF „HS MANNHEIM“
05. OKTOBER, MANNHEIM

Team Blau

Simon

Fabian

Janine

Kathrin

Dominik

Team Orange

Niklas

Hanna

Dennis

Team Grün

Christian

Cem

Cristin

Philipp

Team Lila

Sven

Tobias

Max

Marvin

Marcel



TRENDS & REGELÄNDERUNGEN



DAS DIGITALE DORF 2022





Diving.

nutella



Fencing.

nutella



Archery.

nutella



Basket.

nutella

KREATIVITÄTS-
PAUSE

OLYMPIA BEWERBUNG



ROMA

CANDIDATE CITY
OLYMPIC GAMES 2024



PARIS

Candidate City
Olympic Games 2024



LOS ANGELES

CANDIDATE CITY
OLYMPIC GAMES 2024



BUDAPEST

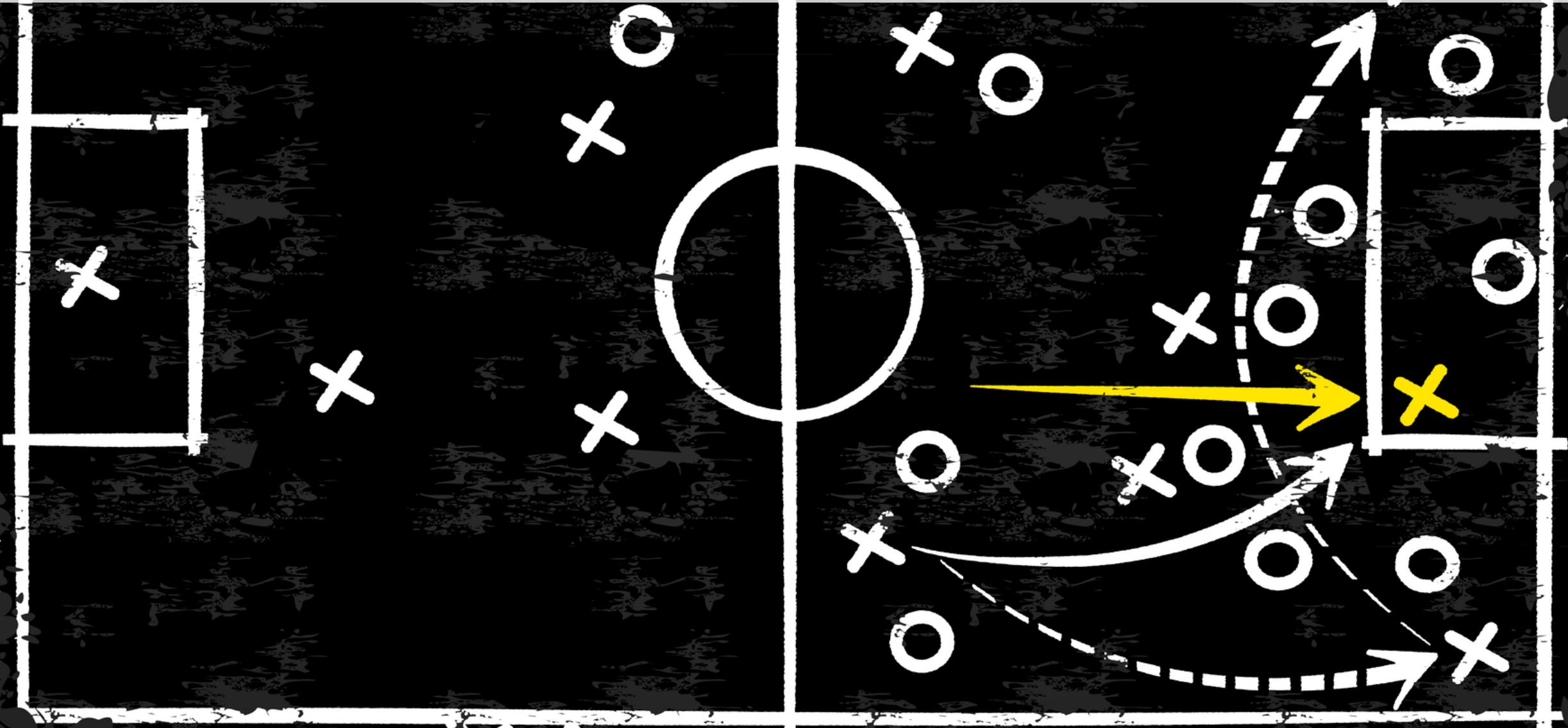
CANDIDATE CITY
OLYMPIC GAMES 2024



Olympia Bewerbung

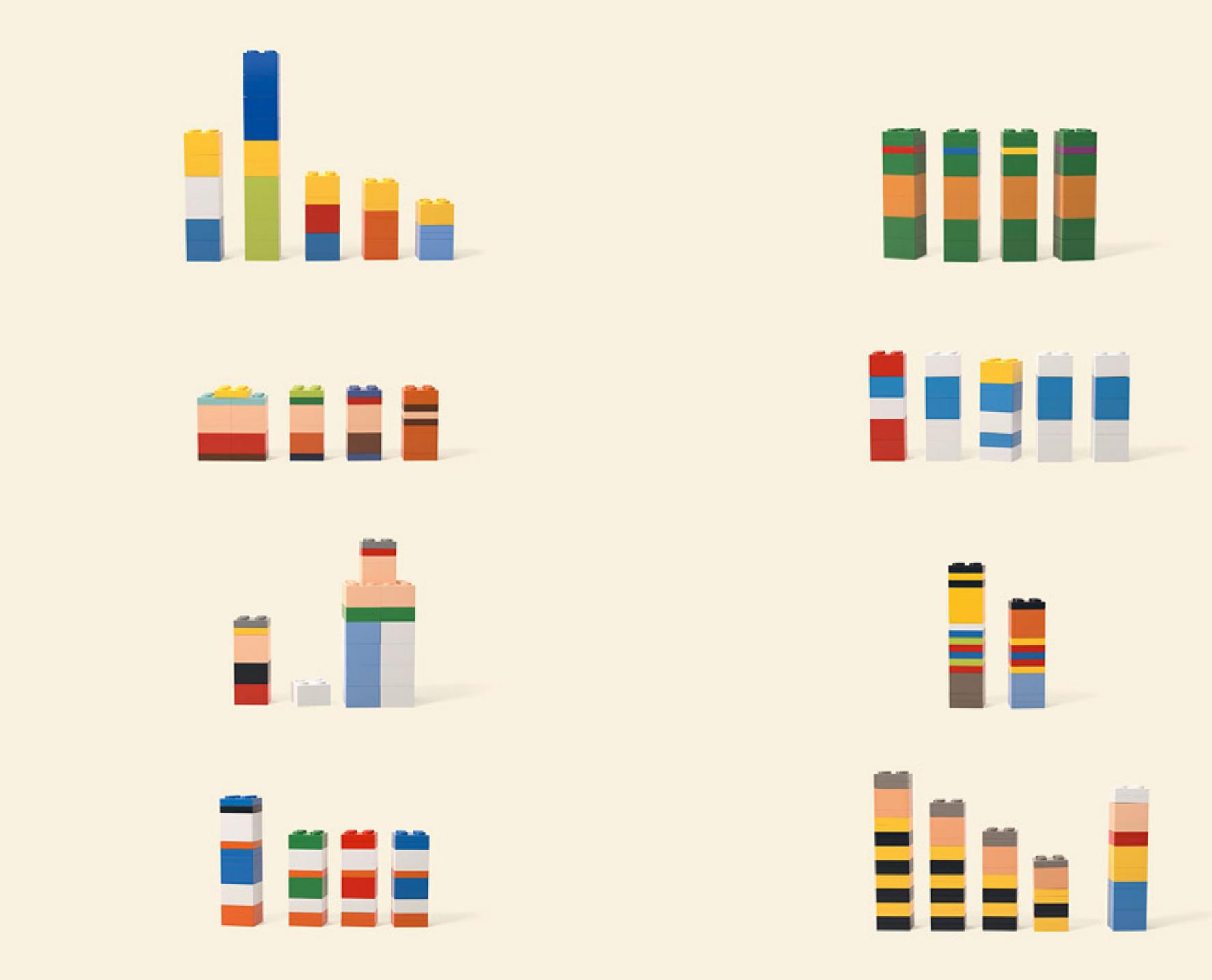
- Im März kommt Gallileo ins digitale Dorf – was geht dann wirklich
- Auf die Teilbereiche des Szenarios konzentrieren, die die eigenen App umfassen
- Galileo-Storyboard ausfüllen
 - Erklärung
 - Bild
 - Was getan werden muss, damit es bis dahin läuft
 - Organisatorisch und technisch, gerne auch schon im Sinne von Features
- Tweet zur App
 - Twitter Template ausfüllen
- 30 Minuten Zeit
- Jede Gruppe stellt 5 Minuten vor

PERSPEKTIVENWECHSEL



The image features the iconic LEGO logo centered against a vibrant red background. The background is composed of a grid of small, circular red dots, resembling the surface of a LEGO brick. The logo itself is rendered in a bold, white, sans-serif font. It is outlined by a thick black border, which is further accented by a bright yellow outline. The letters are slightly rounded and have a three-dimensional, blocky appearance, characteristic of the LEGO brand.

LEGO



Perspektivenwechsel

- Verbesserung der Ideen mittels „Meinungs Macher“ – Kartenspiel
= Perspektivenwechsel

- Produktnname
- Olympia Tourist (Karte)
- Was gefällt der Person an dem Produkt?
- Was gefällt der Person an dem Produkt nicht?
- Wie würde die Person das Produkt umgestalten
(Eigenschaften, Features, Entwicklung, Marketing, Zielgruppe, Werbung, Design)
- Bis zur Pause

MEINUNGSMACHER


PRODUKTNNAME
TOURIST
WAS GEFÄLLT DER PERSON AN DEM PRODUKT?
WAS GEFÄLLT DER PERSON AN DEM PRODUKT NICHT?
WIE WÜRDE DIE PERSON DAS PRODUKT UMGESTALTEN (EIGENSCHAFTEN, FEATURES, ENTWICKLUNG, MARKETING, ZIELGRUPPE, WERBUNG, DESIGN)?

PRODUCT PHILOSOPHY

Product Philosophy

■ Goals

- Ease **communication** between stakeholders
- Get a common **product vision**
- Judge design decisions

■ Motivation / Problem

- Combine different goals of various stakeholders
- Achieve a holistic and joint view on the product
- Trade off between functional and non functional requirements

Product Philosophy Steps

- Discuss philosophy of the Digitale Dörfer ecosystem with the customer (business view)
- Create a UX product philosophy for the app
- Create an architecture product philosophy for the app need for clarification

Software Ecosystem Philosophy Business View

- Definition of global company philosophy. Goal is to get the strategic direction of the company towards digital disruption and their position in the ecosystem. This is done once by judgement of the project team and then discussed with the customer.
- Viewpoint: your customer, i.e. John Deere
- Analyze existing products, competitor products, company strategy
- Come up with initial suggestion and reasons
- Discuss within the workshop with the customer and get rationals for ratings

Characteristic	Definition	Characteristic	Definition
good	Achieving a high quality of the solution is more important than reducing the cost.	cheap	Cost-effectiveness is more important than a high quality of the solution
completeness	The innovation affects all parts of the software. Thus, the process takes longer.	partial and quick	Only parts of the software are changed, thus the innovation is less work and can be done faster
time to market	The time the software needs until it is ready to be used/sold is minimal. Avoid risks while possibly leaving out opportunities as well.	being one step ahead	The amount of available features in the software is high. Attempt to seize opportunities to beat competitors.
Feature richness	The amount of available features in the solution is high.	customer satisfaction	To which degree are customer's expectations fulfilled or exceeded?
sustainable	Creating the solution is more work at the time of its participation in the ecosystem, but pays off in the future	quick wins	Fast and easy solutions are used, e.g. workarounds which might cause higher effort or problems in the future or might be substituted by other solutions
conservative	Relying on traditional development approaches, technologies, etc.	courageous	Exploring new fields, approaches, technologies
agile planning	There is a shorter look ahead in terms of planning.	long-term planning	The planning activities consider a larger amount of the anticipated future.
make	The solution is developed, either in-house buy or by a partner.		The solution is bought externally.
leading	Solutions are innovative and new and might not be related to existing solutions.	transforming	Existing solutions are copied and possibly improved.
preserve employee skills	Rely on skills the employees already have.	change employee skills	Implement solutions that require different employee skill sets than before.

Software Ecosystem Philosophy Business View

	<<	<	>	>>	
Good					Cheap
Completeness					Partial & Quick
Time to market					Being one step ahead
Feature richness					Customer satisfaction
Sustainable					Quick wins
Conservative					Courageous
Agile planning					Long term planning
Make					Buy
Leading					Transforming
Preserve employee skills					Change employee skills

Digitale Dörfer Ecosystem Philosophy Business View



	<<	<	>	>>	
Good					Cheap
Completeness					Partial & Quick
Time to market					Being one step ahead
Feature richness					Customer satisfaction
Sustainable					Quick wins
Conservative					Courageous
Agile planning					Long term planning
Make					Buy
Leading					Transforming
Preserve employee skills					Change employee skills

Product Philosophy User Experience View

- Definition of UX philosophy for your app. Goal is to get the intention of the customer with regard to UX requirements.
- Viewpoint: the user of the app, i.e. the persona
 - Decisions should be discussed giving rationales
- Explain the attributes to the customer, and discuss 3 optional attribute pairs w.r.t. company user experience intention
- Discuss within the workshop with the customer and get rationales for ratings

Characteristic	Definition	Characteristic	Definition
Simple	The user interface is simple. This can usually only be achieved if some functionality is omitted.	Detailed	The user interface provides more details. Thus, it is usually more complex.
Innovative	The app provides innovative interactions that are modern and possibly new to the users.	Traditional	The app provides common and well known interaction, i.e. having a design that consists of elements that have been seen over time. The UI looks classic
Social connecting	The app is connecting users with each others. In addition it might also connect users with systems.	Capsuled	The mobile app provides a service that is capsuled to the task or use case of the individual user.
Focussed	The app is focussing on fulfilling the current task of the user - especially in the current situation.	Playful	The app provides joyful features and interactions that are not directly related to fulfilling the task. It is intended that the user experiences a higher joy of use because of those joyful elements.
Responsive	The UI is responsive, that is, user gets feedback to his actions.	Static	The UI is static, meaning it doesn't change with state. E.g. all elements are visible at all times.
Adorable	The software is pleasurable, so that the users want to use it. This can be based on a specific functionality but has to rely on other factors such as design and user experience as well.	Maintainable	The maintainer can change the system in an effective and efficient way.
Informing	All inputs or actions of the user are displayed immediately. Implementation might be more effort.	Engaging	Input or actions of the user are not necessarily displayed immediately.
Plattform look and feel	The app provides a platform look & feel. Following platform standards is prioritized over individual solutions.	Individual look and feel	The app provides an individual look & feel. This means focussing on a consistent company look & feel over platform standards
Opt1a		Opt1b	
Opt2a		Opt2b	

Product Philosophy UX View

	<<	<	>	>>	
Simple					Detailed
Innovative					Traditional
Social connecting					Capsuled
Focussed					Playful
Responsive					Static
Adorable					Maintainable
Informing					Engaging
Plattform look and feel					Individual look and feel

Exercise

■ Product Philosophy

- Use UX template and add up to 2 attribute pairs reasonably
- Define UX philosophy of your app (10 minutes)

- Discuss with others and the customer (3 minutes each group)

Later Work with Product Philosophy UX View

- Link decisions and user stories to product philosophy elements
- Make it transparent to which attribute a UX relevant story is contributing
- At each internal iteration (minimum viable product) perform Product Philosophy self evaluation
- At each iteration with the customer – let the customer rate your solution on a blank matrix
- -> Discuss differences to your own rating with the customer and get a better understanding on the requirements
- Possibly do also evaluations with the user

Product Philosophy Architecture View

- Definition of architecture philosophy for your app. Goal is to get the intention of the customer with regard to architectural requirements.
- Make conflicts between UX philosophy and architecture philosophy visible
- Viewpoint: customer and persona
 - Decisions should be discussed giving rationales
- Explain the attributes to the customer and define ratings
- Discuss within the workshop with the customer and get rationales for ratings

Characteristic	Definition	Characteristic	Definition
simplicity	The architecture is simple. Thus it is likely to be understood and changed easily.	personalization	Use it where it's possible. Personalization is undeniably loved by everyone. Flexible settings, fonts, colors and sizes are a winner, when it simply comes to picking an app among similar ones. Let your users make the app look and work the way they want to. Positive emotions can easily tip the scales in your favor.
innovative	The architecture is using innovative concepts. The risk of using these new concepts is higher compared to traditional concepts, but also their power can be higher.	proven	The architecture uses concepts that have been applied several times in previous systems
attractive technologies	Technologies are used that are popular and people like to work with.	traditional technologies	Technologies are applied that have been in use for a longer time.
efficiency	Pay special attention to optimize the usage and power consumption w.r.t efficiency	accuracy	Pay special attention to optimize the usage w.r.t. accuracy
long-living	The renovated software is planned to be in use for at least another 5 years.	short-living	The renovated software is planned to be in use for another 2 years maximum.
fast-responding (high performance) (Simple & Fast)	The performance of the system is high, e.g. results are displayed fast.	Secure solution development	The solution is developed having security paradigms in the focus. A secure system is more important than simplicity and performance
plattform specific	The solution should be technically optimized for a specific plattform	plattform independent	The solution should be optimized to run on different plattforms
Availability - Offline Work	Availability: There will be variable network connectivity with no connectivity at times – cache aggressively and make appropriate use of local storage.	Scalability - Online Work	Degree to which the software can adapt to higher usage.

Characteristic	Definition	Characteristic	Definition
Generic Operability	The system can be easily kept in a safe and reliable functioning condition, according to pre-defined operational requirements.	Regular Updates, specific interfaces that adopt to client needs	To provide a mobile app with lasting popularity, it needs ongoing development and updates. Maintain the server. Ensure that your content is made up of up-to-date, relevant information. Update the app with fixes and new features. Only regularly updated apps thrive.
Observability	<p>It is possible to easily analyze the system's state (e.g. the current data and control flows) at runtime in order to detect potential errors.</p> <p>Wie observable ist der Zustand des Backends –</p> <p>External development suitable API</p>	Human based API	Especially usable for in house development. There is no need for having a management api that can be used by external developers.
standards	The software solution is compliant with standards (ISO, reference architectures, etc.)	individuality	The solution is created explicitly for this particular project.

Product Philosophy Architecture

	<<	<	>	>>	
Simplicity					Personalization
Innovative					Proven
Attractive technologies					Traditional technologies
Efficiency					Accuracy
Long-living					Short living
Fast responding					Secure solution development
Platform specific					Platform independent
Availability – offline work					Scalability – online work
Generic operability					Regular updates – specific interfaces
Observeability					Human based API
Standards					Individuality

Exercise

■ Product Philosophy

- Define architecture philosophy of your app (10 minutes)
- Discuss with others and the customer (3 minutes each group)

Later Work with Product Philosophy Architecture View

- Link decisions and user stories to product philosophy elements
- At each internal iteration (minimum viable product) perform Product Philosophy self evaluation
- At each iteration with the customer – let the customer rate your solution on a blank matrix
- -> Discuss differences to your own rating with the customer and get a better understanding on the requirements
- Possibly do also evaluations with architecture experts

BUSINESS MODEL

Kaffee? Ist für den Preis nicht so wichtig

Wie entsteht der Preis von 35 Cent für die günstigste Kapsel? Nespresso schweigt dazu. Doch die Kosten für Rohkaffee, Verpackung und Steuern sind bekannt, alles andere hat der stern mithilfe von Marktexperten geschätzt



BUSINESS MODEL

Orange Hills™ GmbH | www.orangehills.de | Follow us on Twitter: @orangehillsgmbh



Team

Iteration 1 2 3

Date

Use the "Hypotheses & Experiments" canvas to challenge your business model by revealing critical assumptions and defining simple ways to test them.

Target groups

Who are our sales targets and who will be using our offerings?

Customers | Users

Primary
What is our primary customer and user segment that unlocks the most value in our business and is easily accessible?

Job(s) to get done
What job(s) are our primary customer and user segment trying to get done?

DNA ➡

Pains

Gains

Relationships

Channels

Use the "Target Groups" canvas to segment customers and users based on behavioural attributes.

Brand & messages

How do we want our brand to be perceived and what is our story to sell the offerings?

Offerings

What bundle of products and services do we offer to our customers and users?

Core value
What value do customers and users get back after experiencing our offerings to get their job(s) done?

Use the "Lean Offerings" canvas and "Offering Canvas" to first products and services to the market and excite customers and users.

Resources

What [internal] key resources do we need to create and deliver the offerings?

Processes
What [internal] key processes do we need to create and deliver the offerings?

Partners

Who are our [external] key partners to create and deliver the offerings?

Delivery | R&D

Profit formula

Pattern
How, when and how often do we charge our customers?

Revenue streams & pricing
What are our revenue streams and how much do our customers pay (per unit)?

Costs
What are the most important costs of creating and delivering the offerings?

Investments
How much money do we need to spend before we earn?

Use the "Financial Sanity Check" canvas to crunch the numbers and estimate future profits.

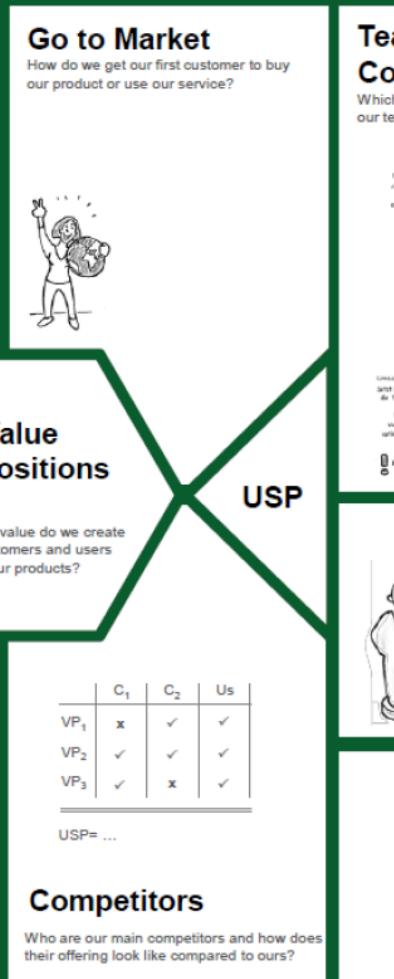
St.Galler Venture Navigator

Business Model

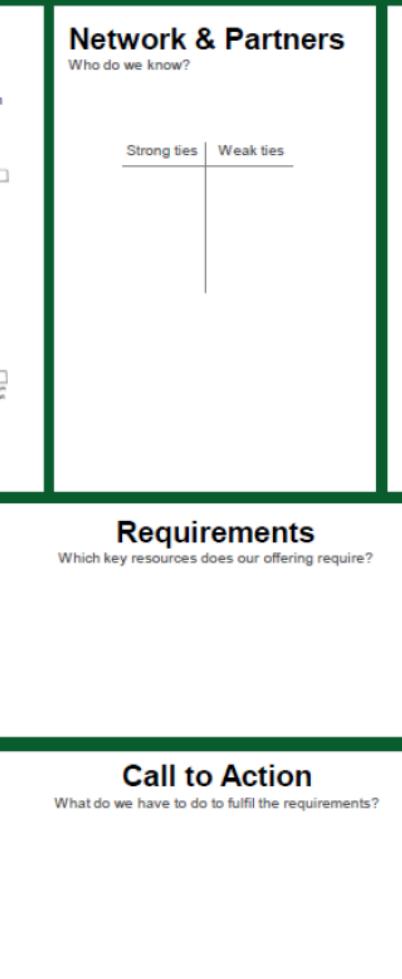
Customer Discovery & Validation



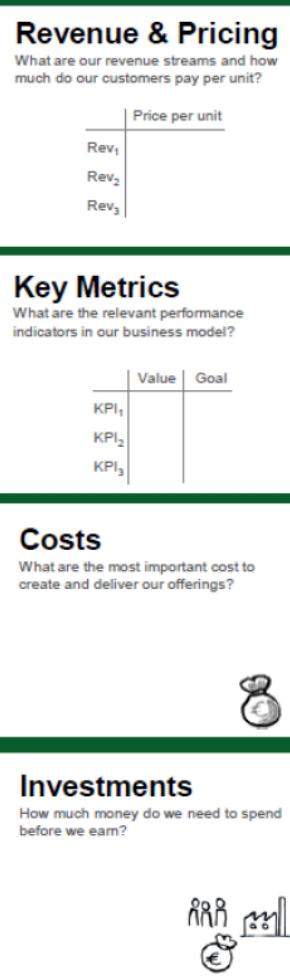
VP Design + USP



Resource Orientation



Profit Formula



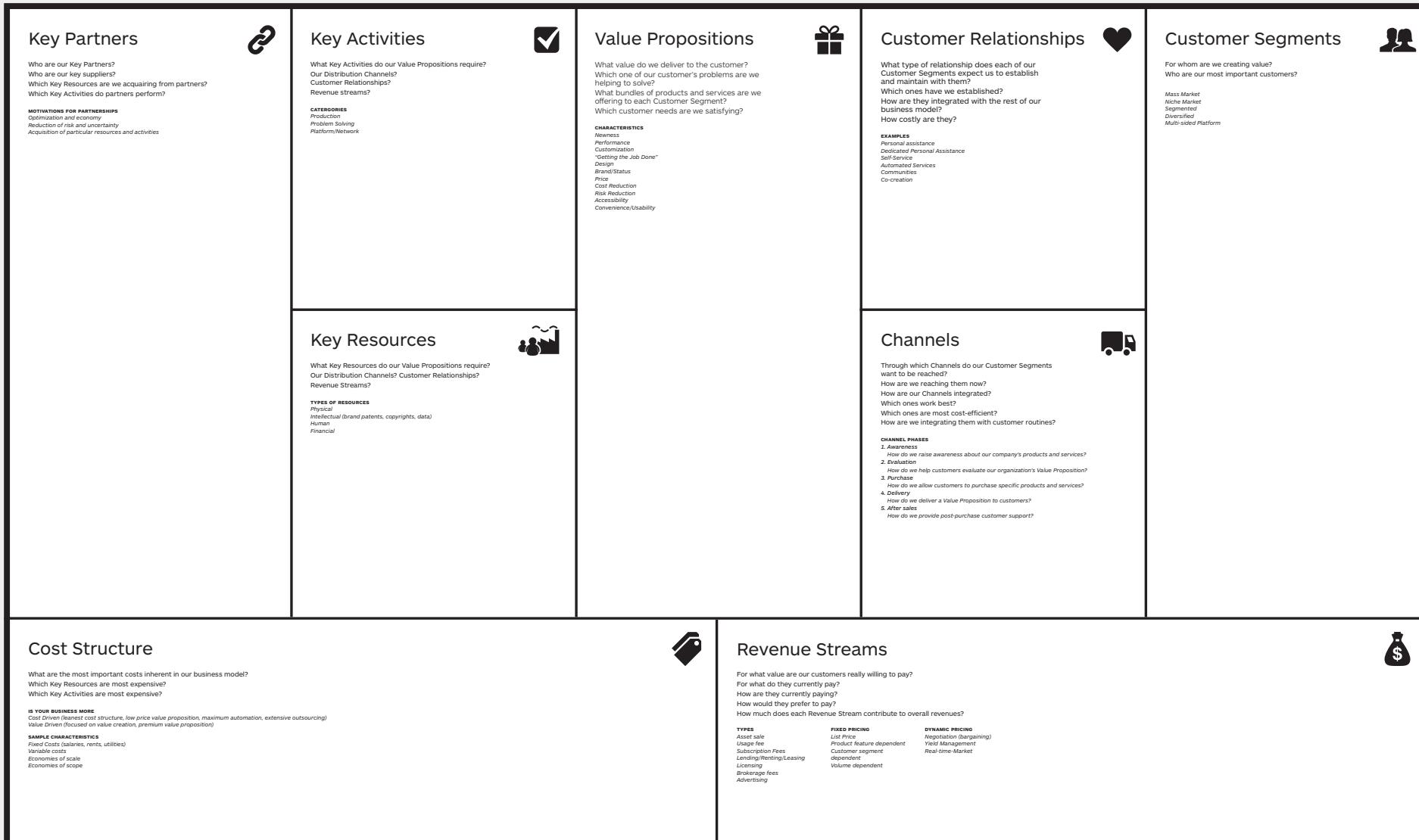
The Business Model Canvas

Designed for:

Designed by:

Date:

Version:



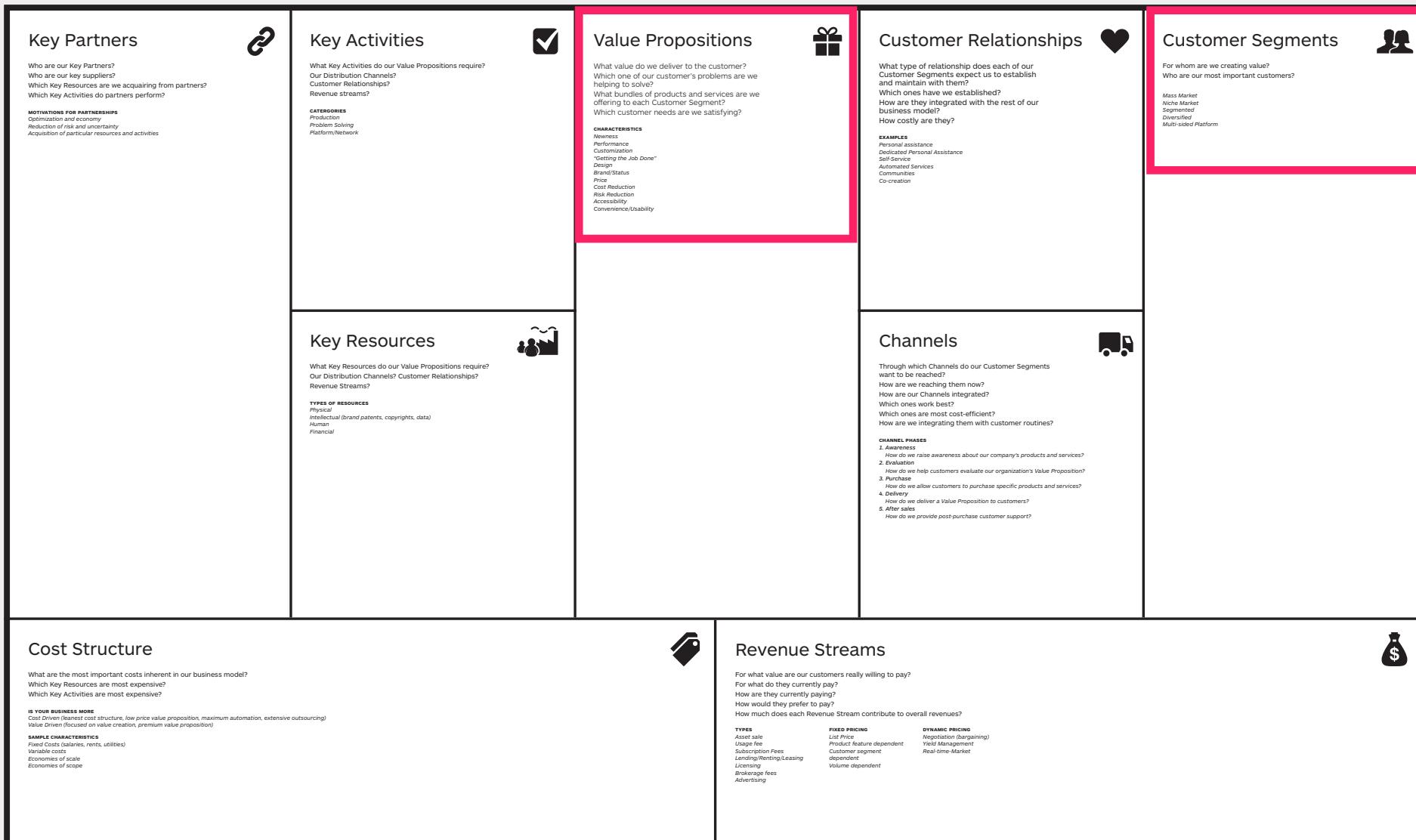
The Business Model Canvas

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Date:

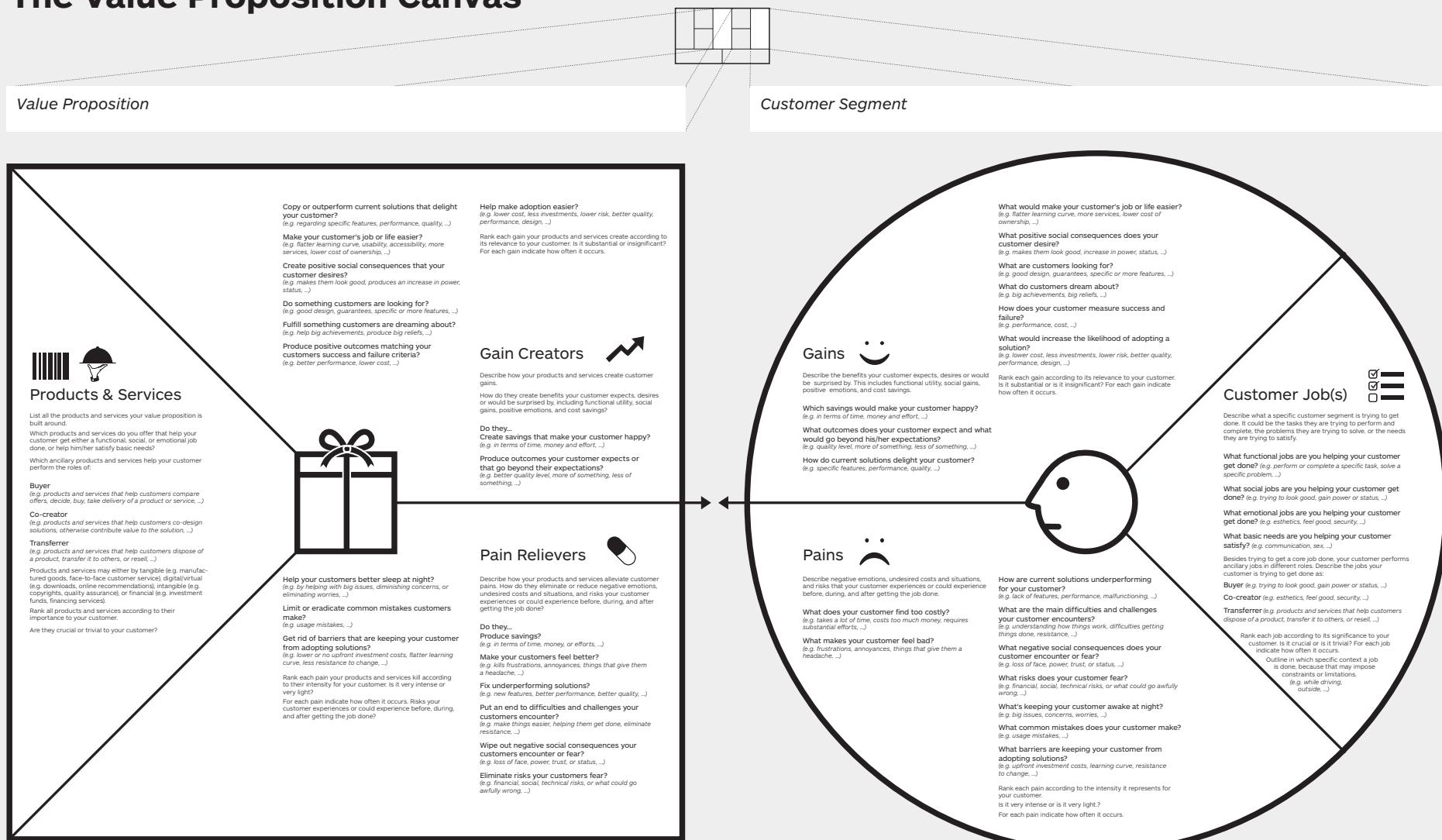
Version:



Action

- 15 Minutes
- Sketch
 - Value Propositions
 - Customer Segments

The Value Proposition Canvas



Unfair Advantage



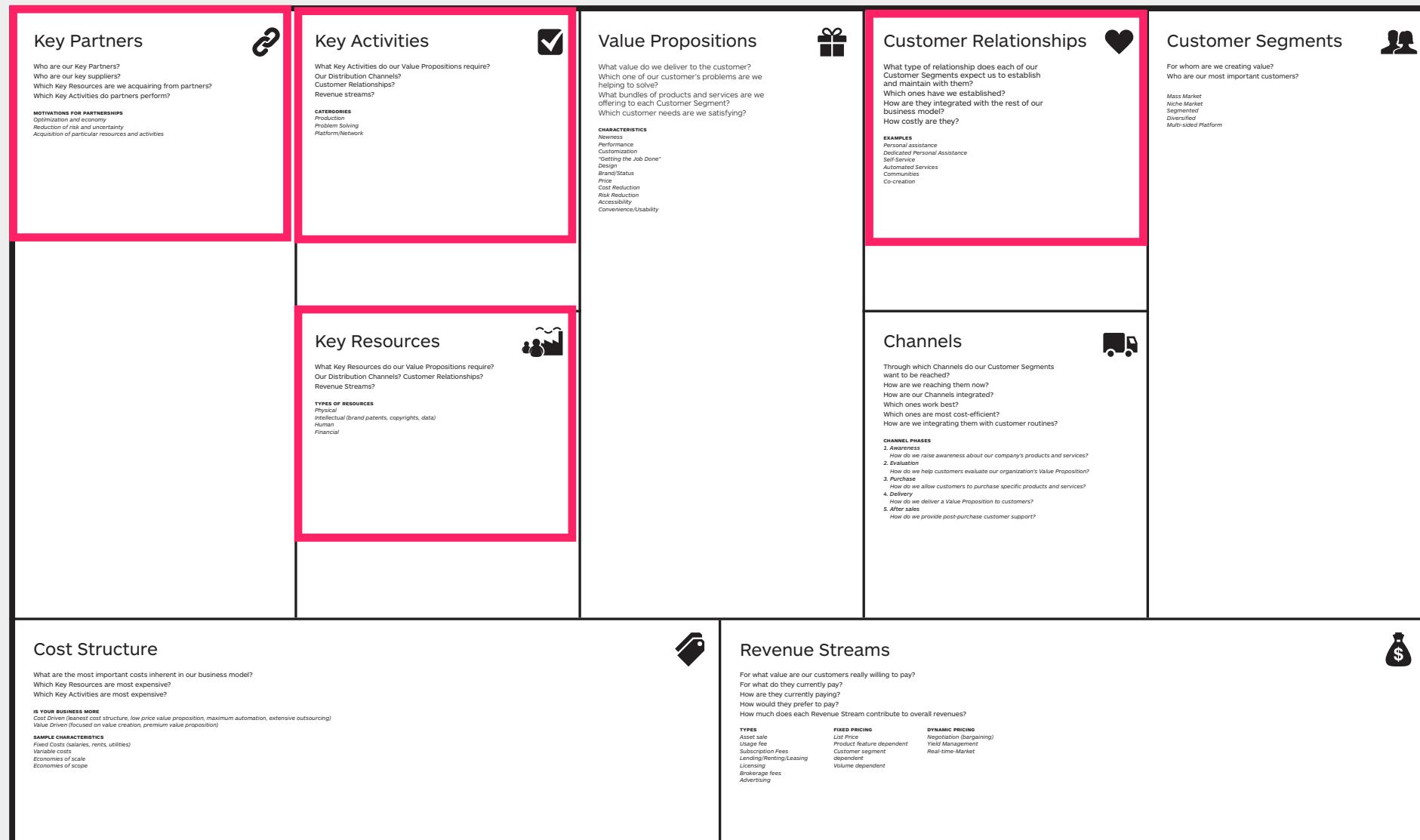
The Business Model Canvas

Designed for:

Designed by:

Date:

Version:



Action

- 15 Minutes
- Sketch
 - Key Partners
 - Key Activities
 - Key Resources
 - Customer Relationship
 - Add a Post-it with unfair advantage

Next Lecture

19.10.2017



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