

# Design & Fabrication

Dr.-Ing. **Florian Wolling** (Lecture), M.Sc. **Ambika Shahu** (Exercises),  
**Thomas Mantschko** (Tutor), Prof. Florian Michahelles

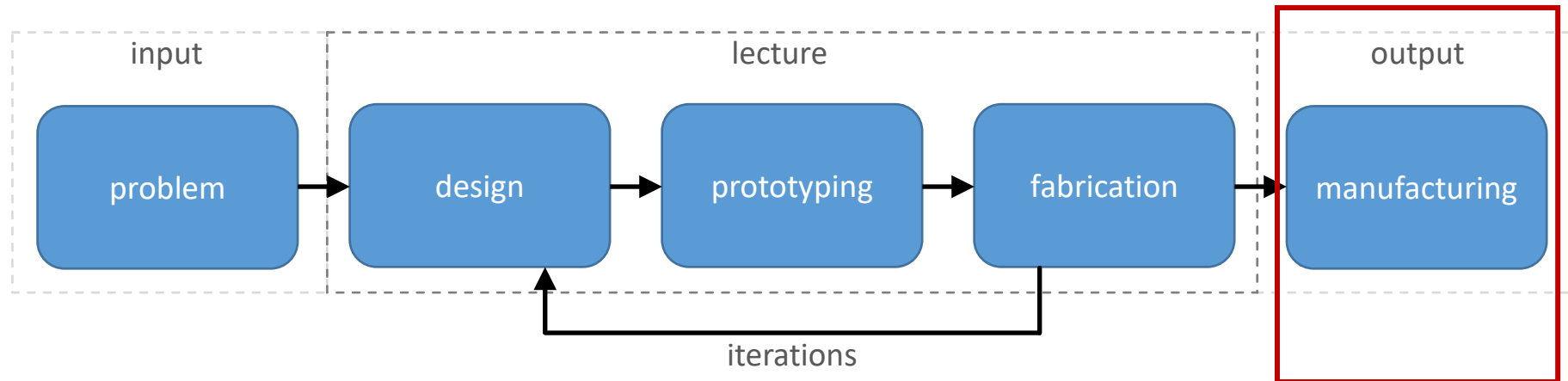
Technische Universität Wien

Artifact-Based Computing & User Research (<http://media.tuwien.ac.at>)  
[florian.wolling@tuwien.ac.at](mailto:florian.wolling@tuwien.ac.at), [ambika.shahu@tuwien.ac.at](mailto:ambika.shahu@tuwien.ac.at)



# From Design to Fabrication

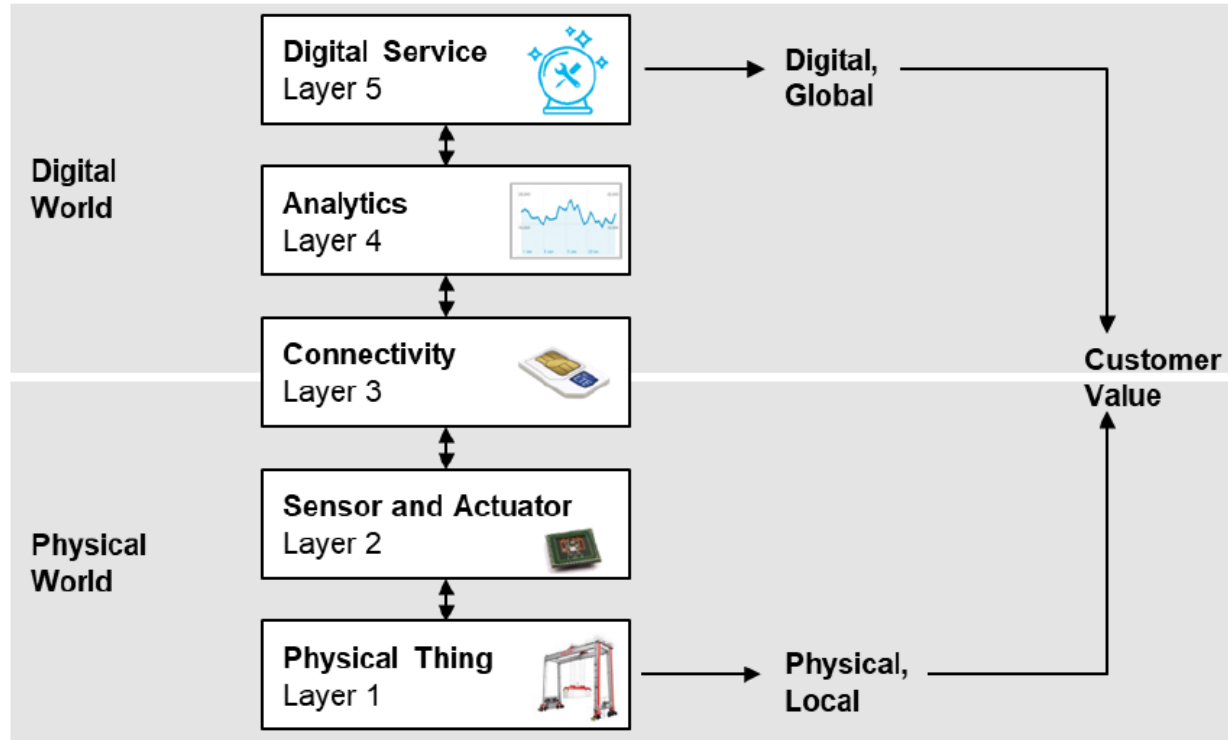
## Recapitulation



# Lecture 10

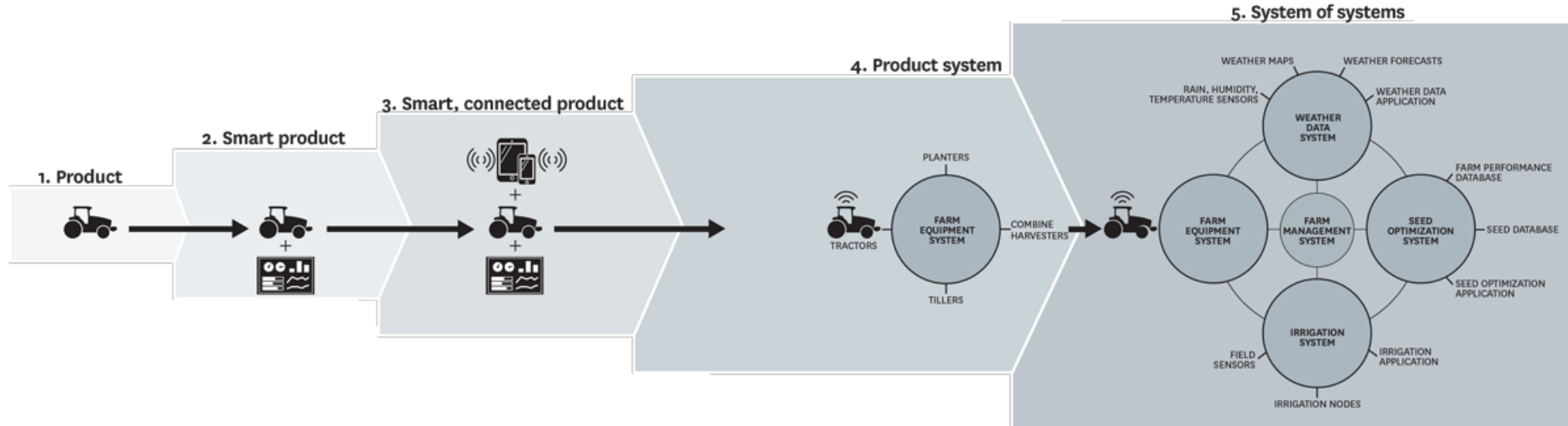
## Business Aspects

# Integrate products with services



[Felix Wortmann, guest lecture, 2022]

# Business impact



Porter, Michael E., and James E. Heppelmann. "How Smart, Connected Products Are Transforming Competition." Harvard Business Review 92, no.



**Demand?**

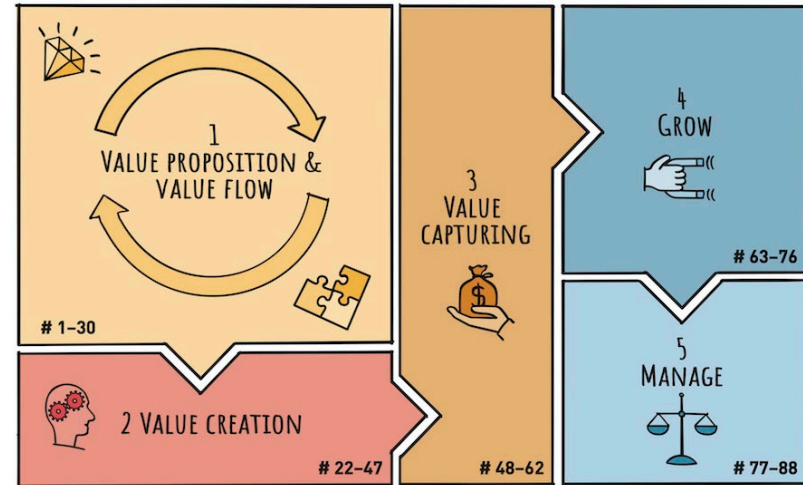
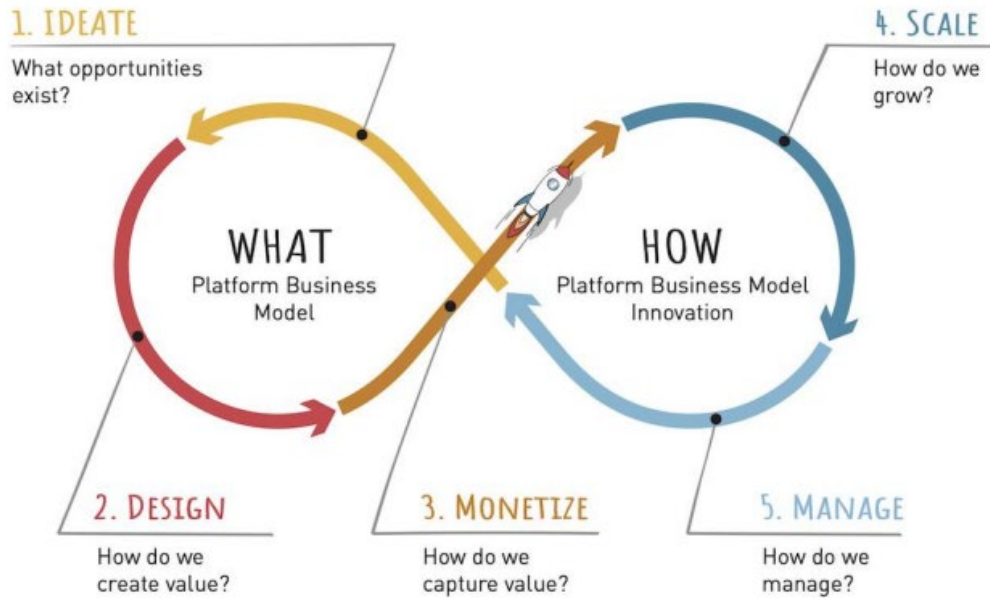


**Turned.**

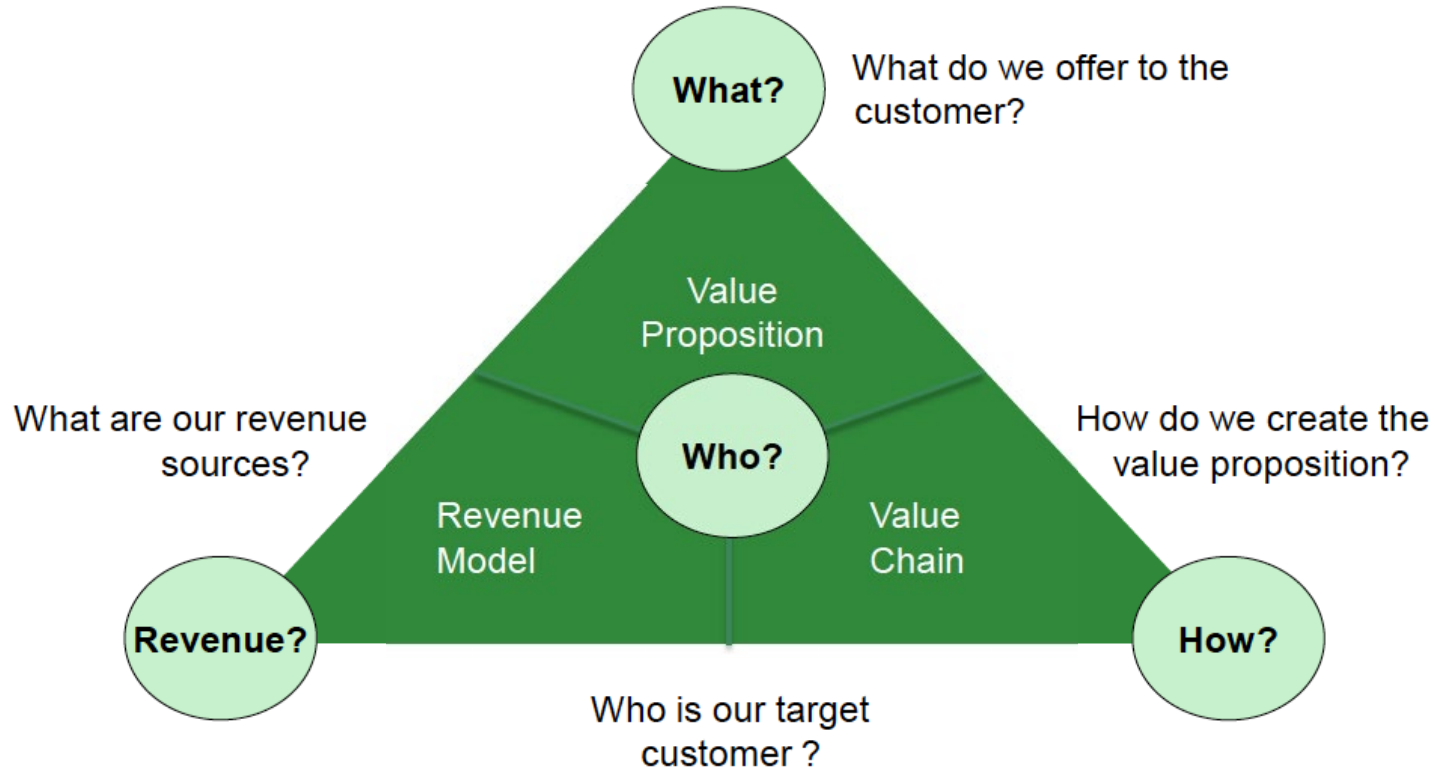


**Ordered!**

# For business there is no receipe...



# Business model 1/2

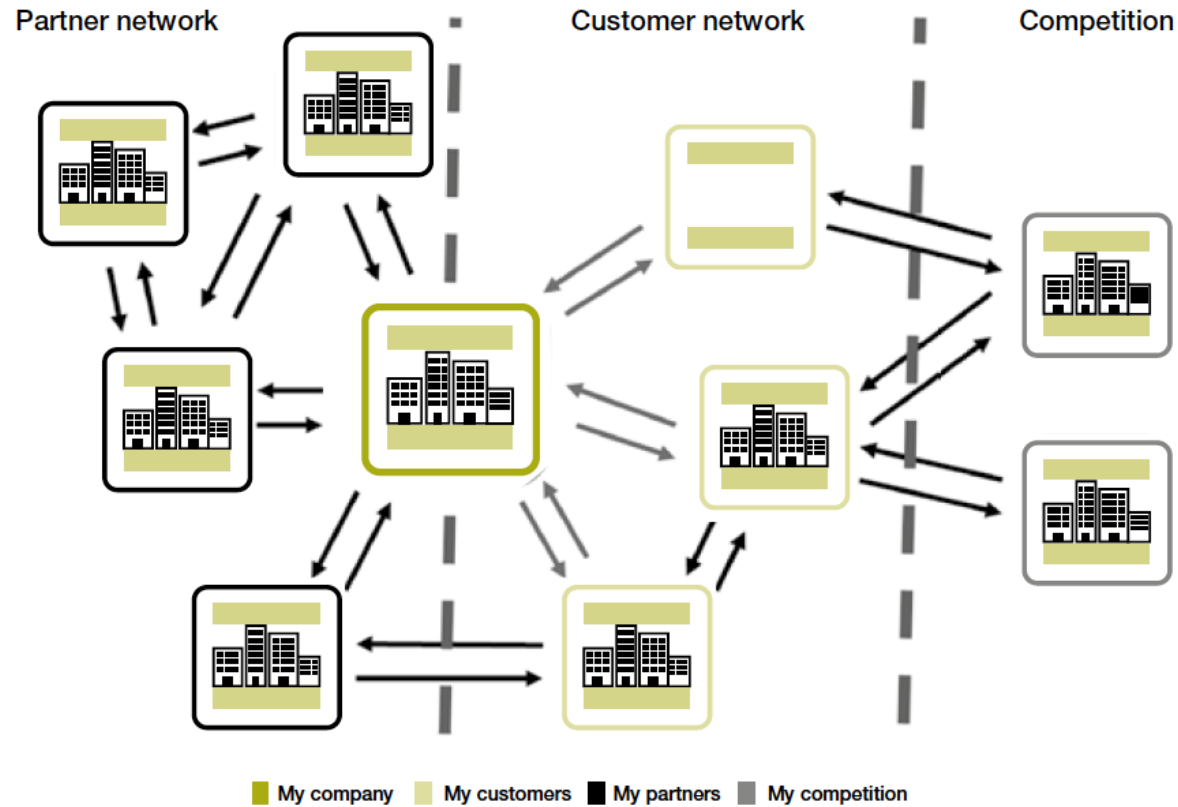


# Business model 1/2

Category	Example Questions
Who?	<ul style="list-style-type: none"><li>• Who are the customers?</li><li>• (How) can customers be segmented?</li><li>• What are the customers' demographics/characteristics?</li></ul>
What?	<ul style="list-style-type: none"><li>• What does the opportunity offer to customers?</li><li>• What is the value proposition / added value to customers?</li><li>• What (bundle of products and services) does the offering consist of?</li></ul>
How?	<ul style="list-style-type: none"><li>• How is the value proposition built, enabled, and distributed?</li><li>• How will the processes and activities required to offer the products roughly look?</li><li>• What resources will be required?</li><li>• What ecosystem stakeholders will be required and how can they be orchestrated? (see stakeholder network diagram)</li></ul>
Revenue	<ul style="list-style-type: none"><li>• Is the opportunity anticipated to be financially viable?</li><li>• How does the cost structure look?</li><li>• What are the applied revenue mechanisms?</li><li>• How can the value proposition be monetized?</li></ul>



# Business network

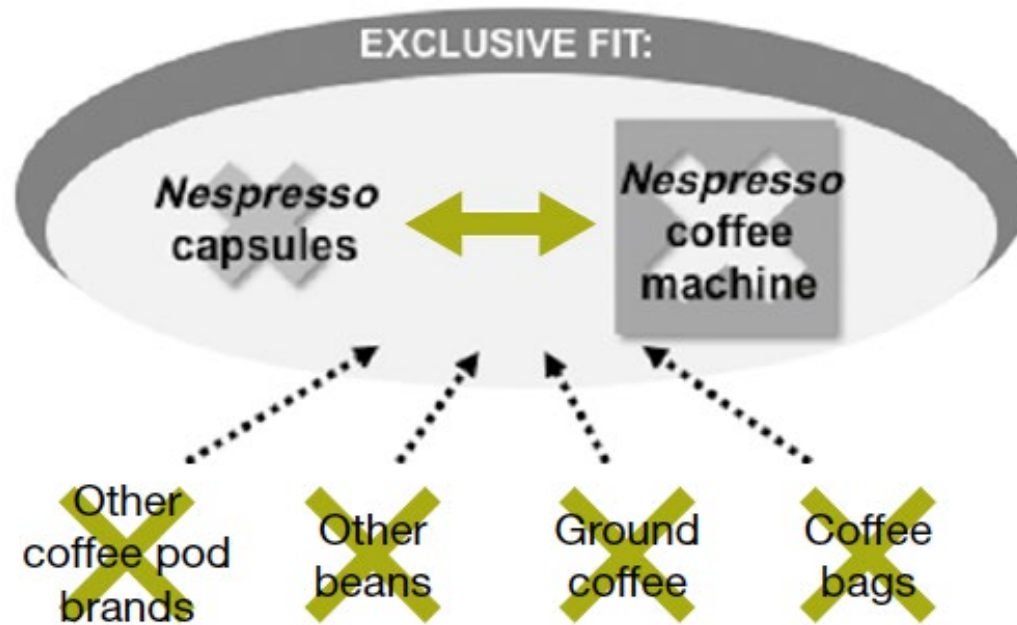


# Business patterns

1. lock-in
2. razor and blade
3. add-on
4. affiliation
5. barter
6. crowdfunding
7. crowdsourcing
8. digitization
9. pay-per-use
10. fractional ownership
11. guaranteed availability
12. user-design

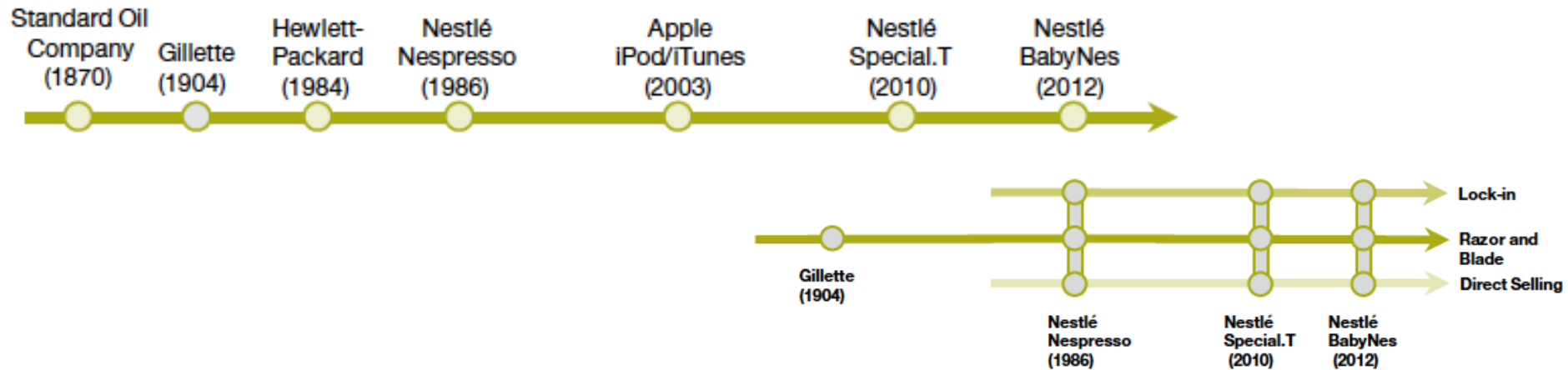


# Lock-in




# “Razor and Blade” model


The basic product is cheap, or given away for free. The consumables that are needed to use or operate it, on the other hand, are expensive and sold at high margins.



Source: Gassmann, Csik and Frankenberger (2012) 'Aus alt mach neu', *Harvard Business Manager*, 2012






# Add-on features

Verified by Ryanair 


 **Price Breakdown**


### Flights

Vienna to Malaga  
Sat 14 Jan • 06:25 - 09:45 • FR 1583


1 x Adult Value Fare	€26.39
1 x Reserved Seat	€13.00 
1 x Fast Track	€9.00 
1 x Priority & 2 Cabin Bags	€14.00 
1 x 20kg check-in bag	€26.49 
1 x Bike Equipment	€60.00 
You do not pay government taxes	


### Products


1 x Insurance Plus (Including IPT)	€18.99 
------------------------------------	--


Passengers 


**Total to pay** €167.87


 Upgrades


 Quick Controls


 Suspension


 Lights


 Driving


 Autopilot


 Vehicle


 Display


 Trips


 Navigation

 Safety & Security

 Service

 Software

 Upgrades




**Premium Connectivity Subscription**  
\$9.99

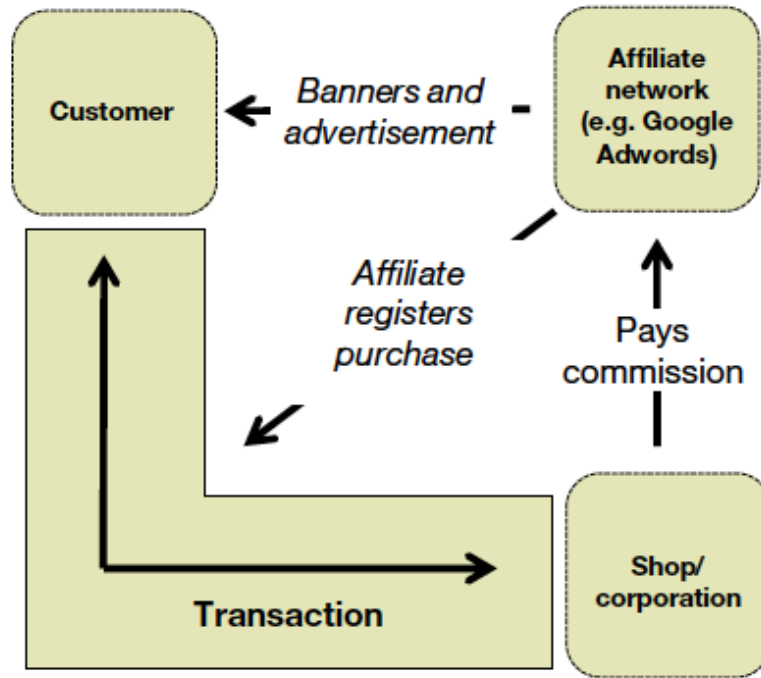
- Navigation
- Live Traffic Visualization
- Satellite-View Maps
- Video Streaming\*
- Caraoke\*
- Music Streaming\*
- Internet Browser\*

\*Available on Wi-Fi only with Standard Connectivity  
Feature availability may vary by hardware configuration

[Terms and Conditions](#) | [Cancellation Policy](#) | [Terms of Use](#) | [Privacy Notice](#)

 **Swipe to subscribe**

# Affiliation

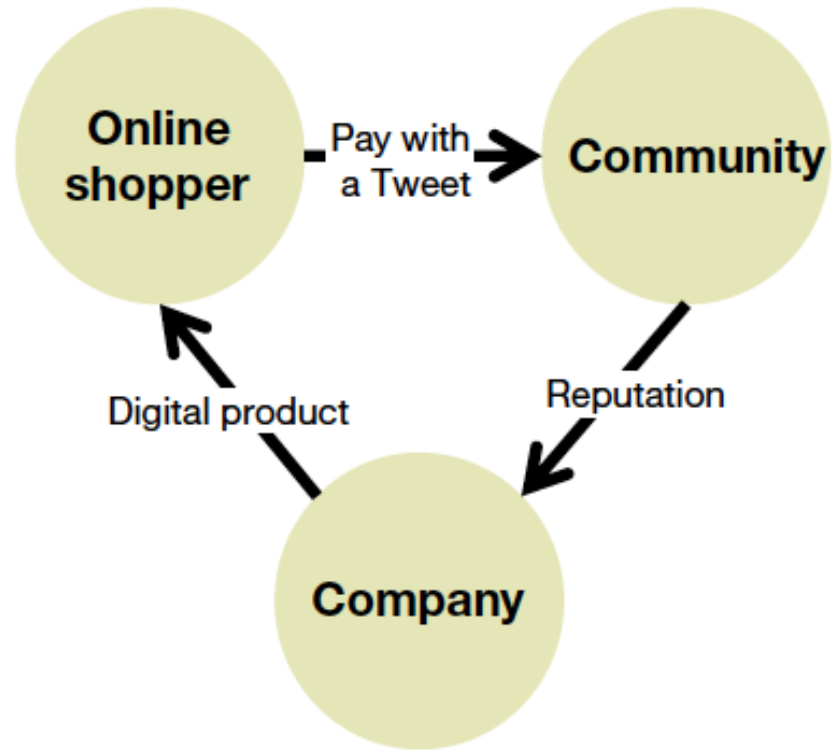


## Selling on Amazon

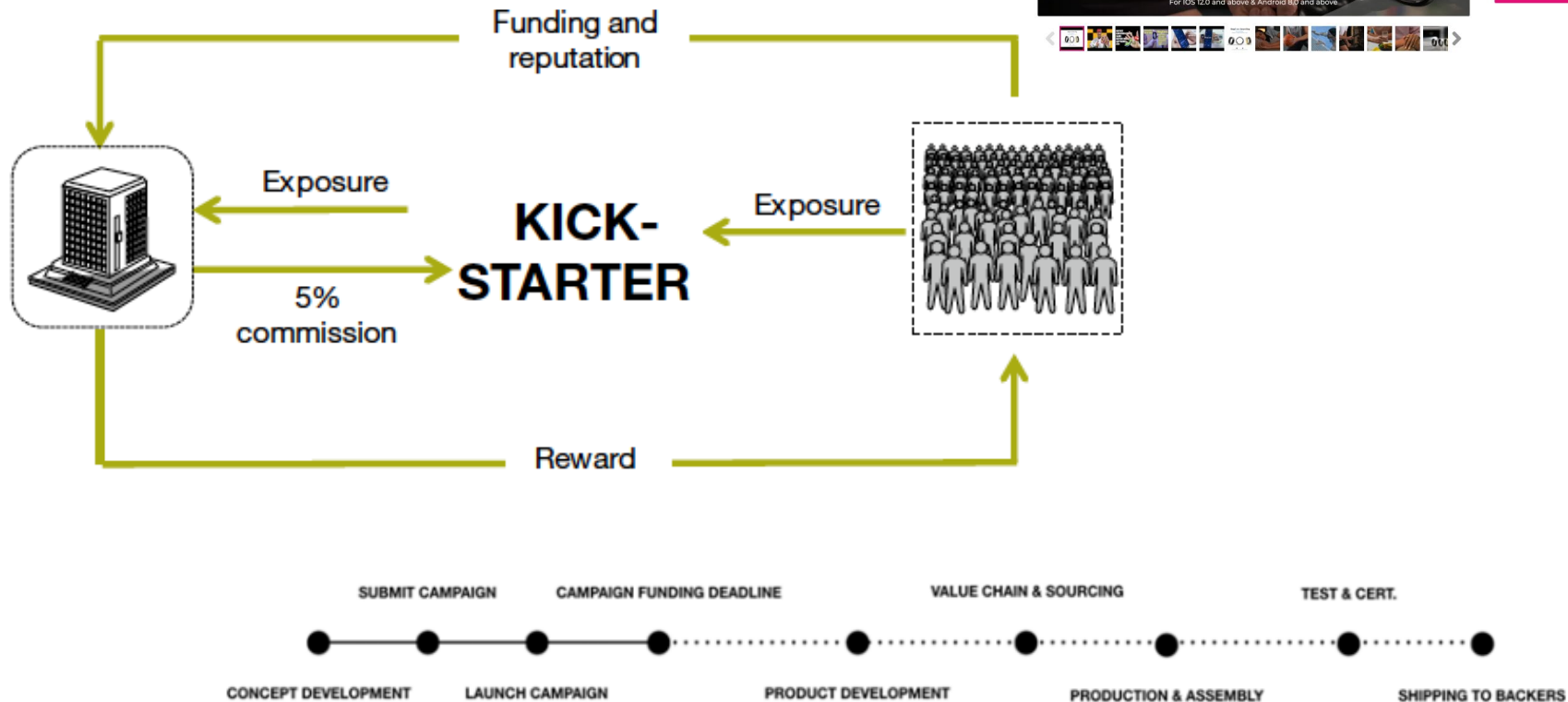
5 main steps for selling in Amazon.com



# Barter



# Crowdfunding





# Crowdsourcing

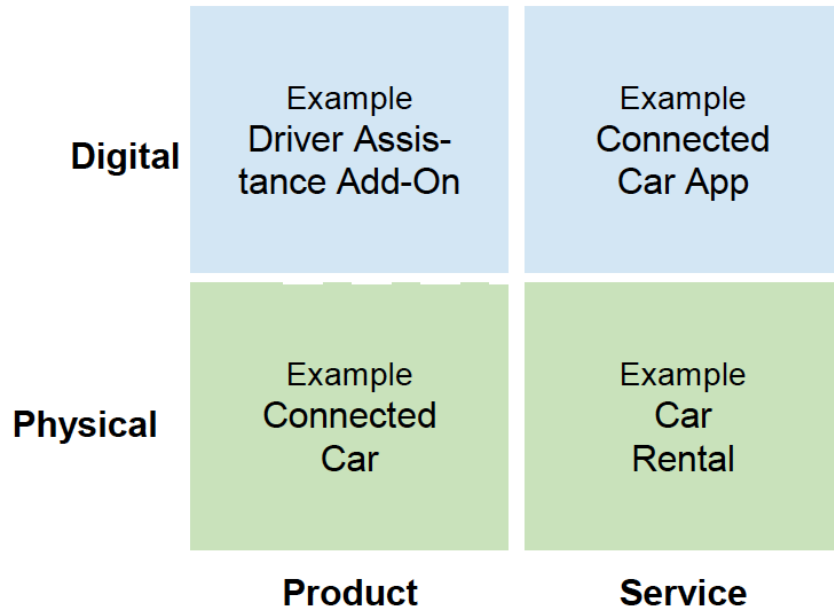


Help Robots  
Live Longer in  
Space

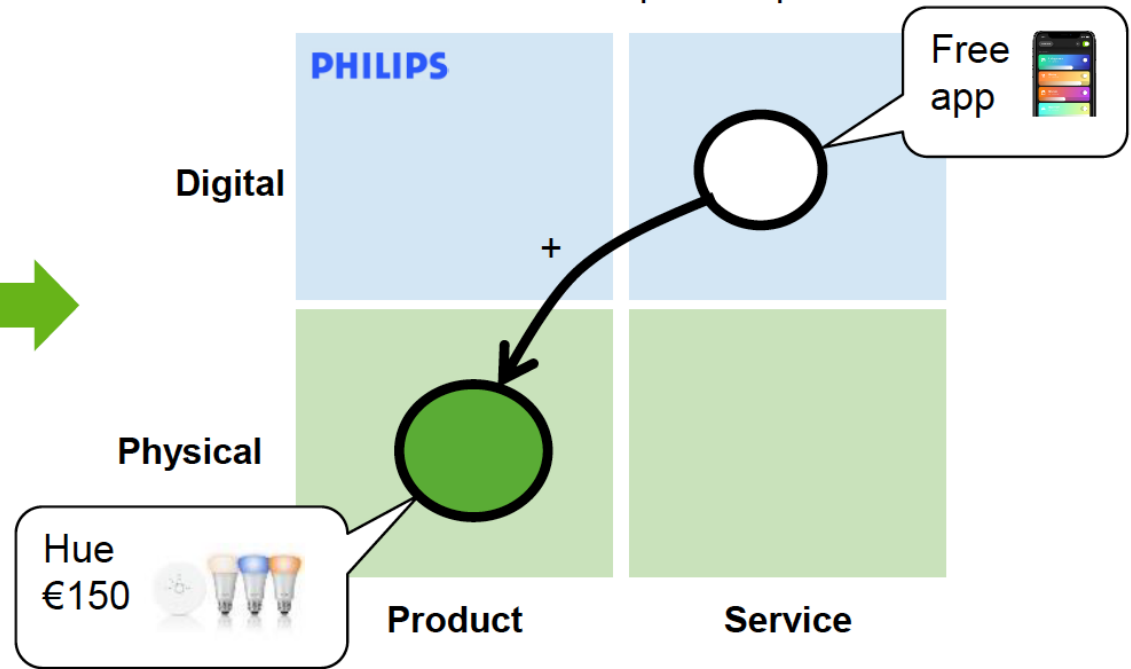


# Digitization

The IoT enables four types of revenue streams

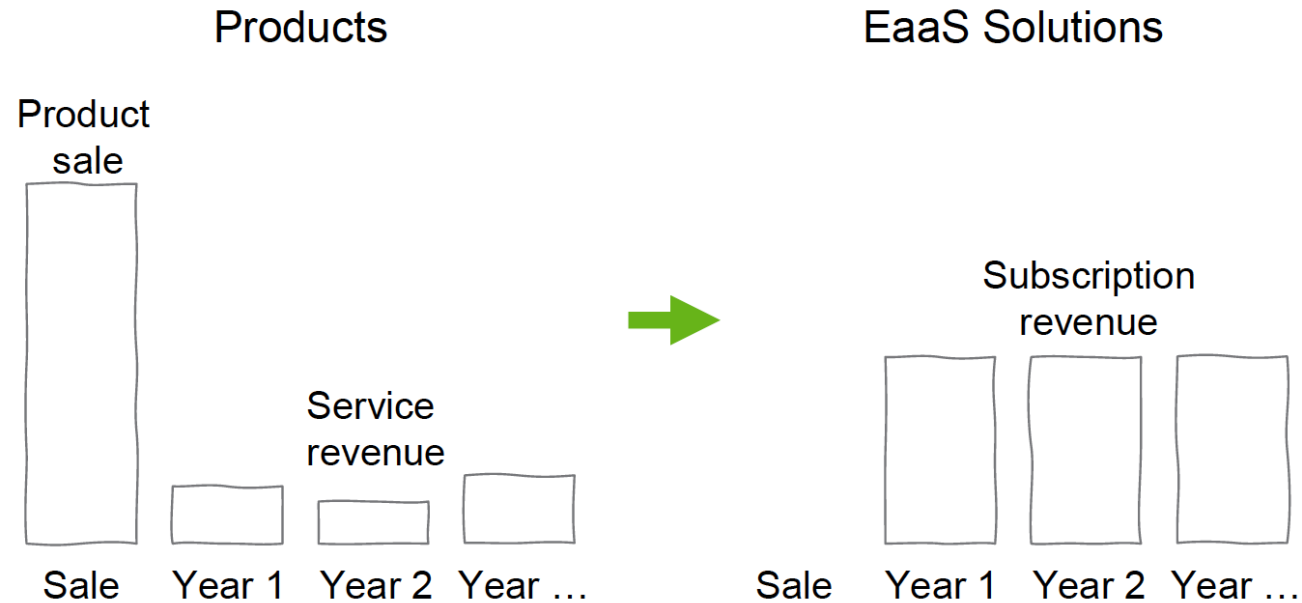


IoT is about maximizing overall revenue – Example Philips Hue



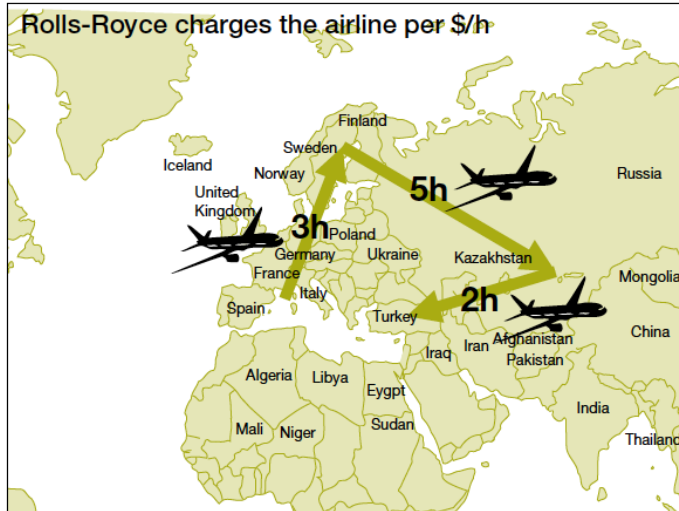
[Felix Wortmann, guest lecture, 2022]

# IoT as a driver of “...as-a-service”

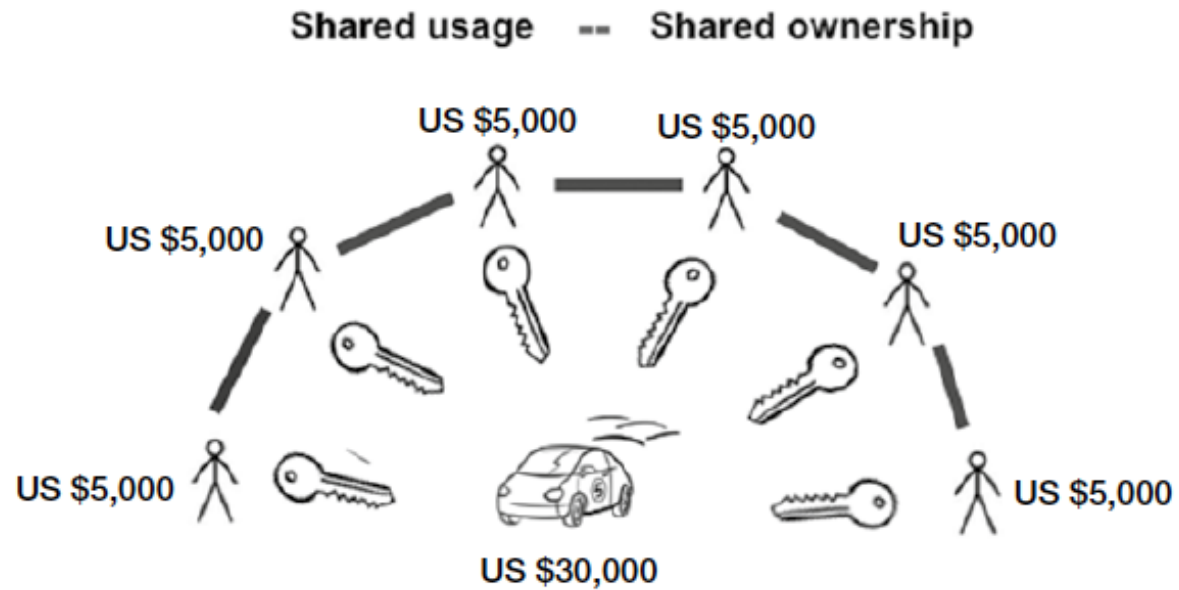


[Felix Wortmann, guest lecture, 2022]

# Pay-per-use



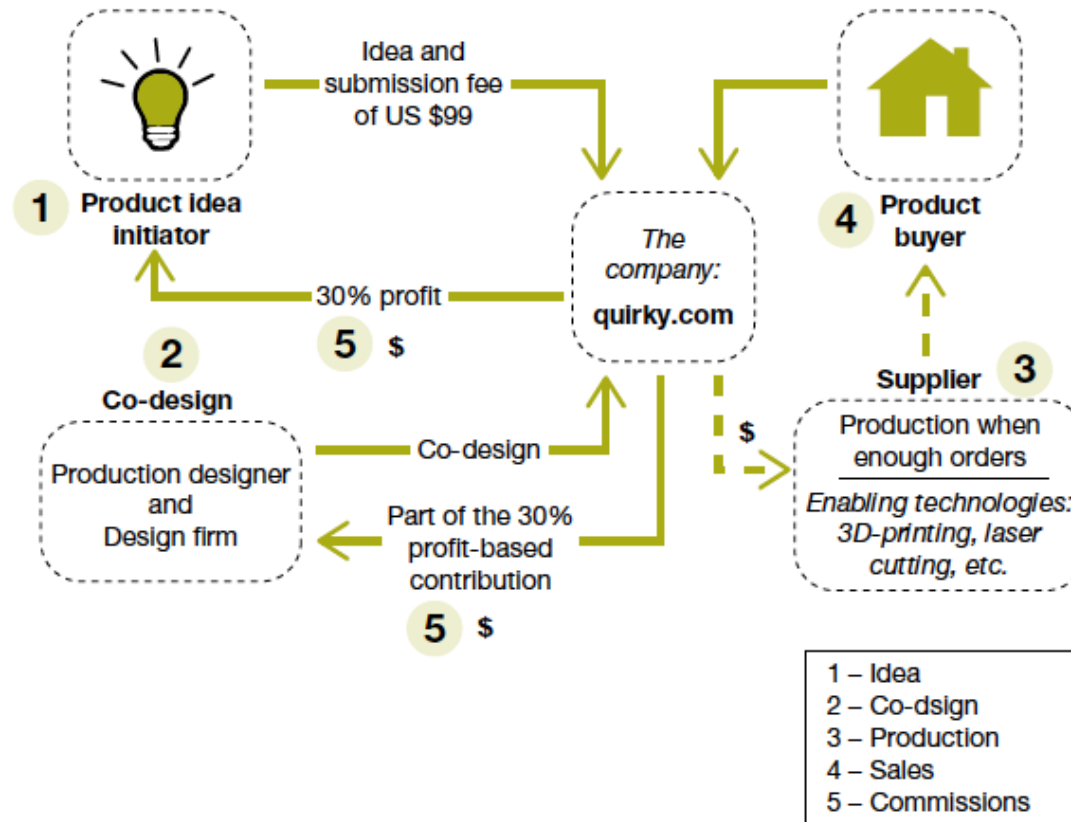
# Fractional ownership



# Guaranteed Availability



# User-design

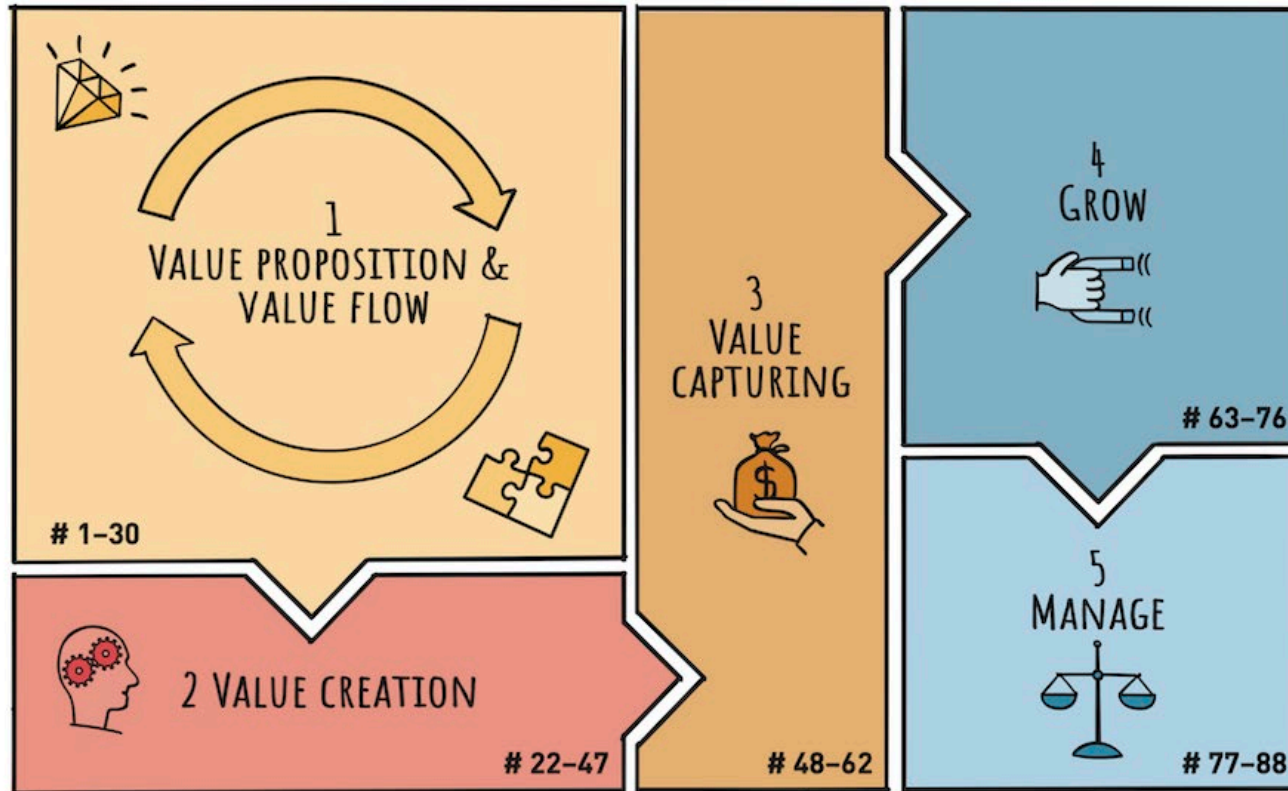


WHAT'S YOUR IDEA?  
QUIRKY CREATES PRODUCTS INVENTED BY REAL PEOPLE  
LIKE YOU!

Fill out our idea submission form for a chance to turn your idea into a real product!

SUBMIT AN IDEA →

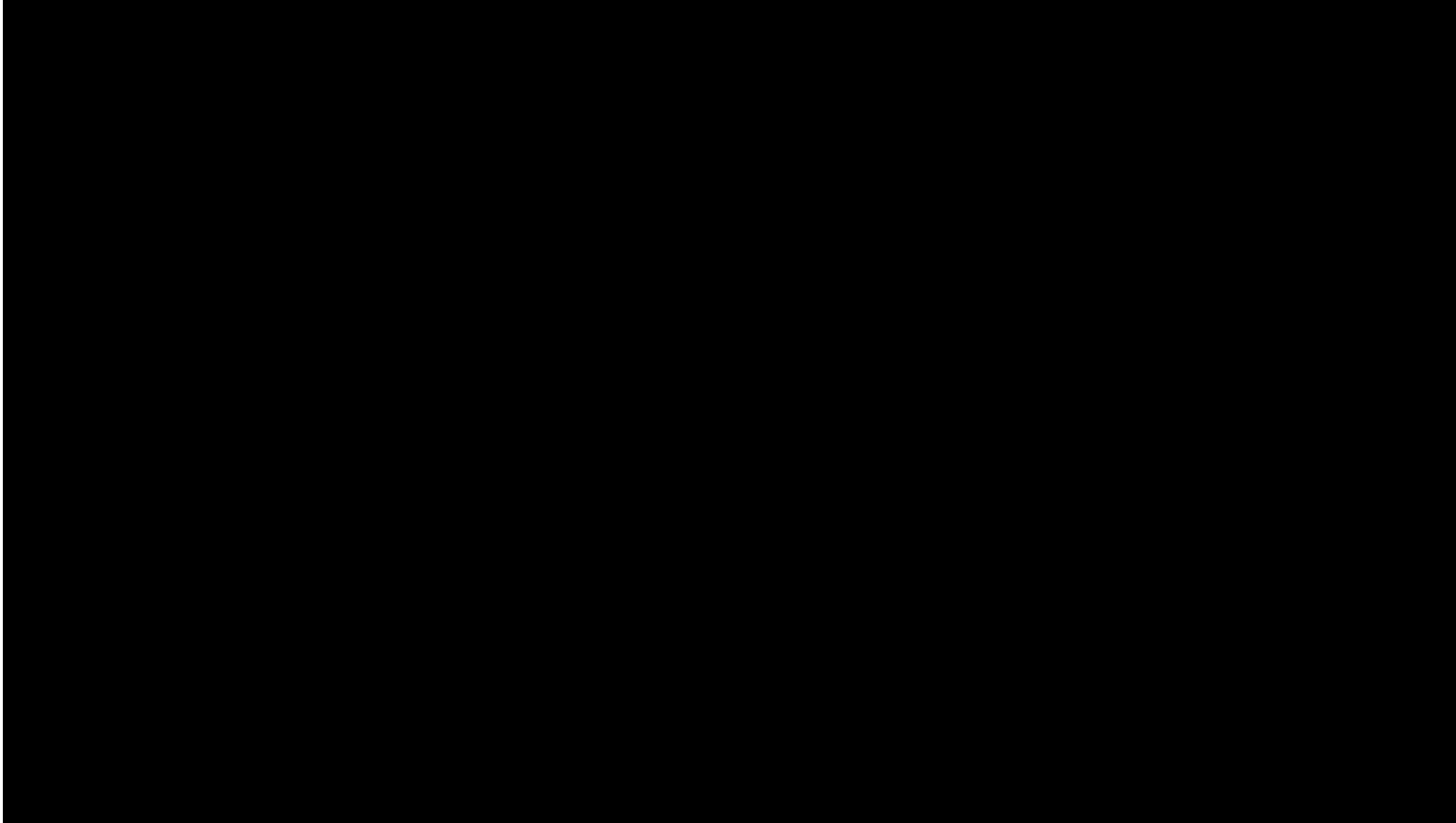
# What's your model?





## The Pitch

It's about the opportunity



# Final Presentations: The Pitch Structure

How does your product make the lives of your audience better?

## Problem/Opportunity

- › articulate the key problem or opportunity your project tackles

## Target group

- › target user group for your smart prop and explain why this group is important

## Value proposition

- › unique value your smart product provides in solving the problem

## Illustrate

- › Visually represent key concepts, processes, or components of your project

## Showcase smart prop

- › Integrate a demo into the presentation

## *Envisioned* Business model

- › model or strategy, focusing on how it will generate revenue and can be sustainable



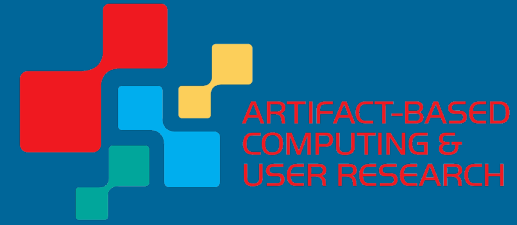
# Business Aspects

## Questions?



What are your questions?





# Project

## Final Presentations

# Final Presentations: Organization

- › Submission of the slides beforehand
  - › January 21, 2025, until 23:59 h
  - › No changes allowed afterward!
- › Final Presentations are given in class
- › There will be two presentation days
  - › January 22, 2025, from 11:00 h (c.t.) to 13:00 h
  - › January 29, 2025, from 11:00 h (c.t.) to 13:00 h
  - › Random assignment of presentation slots – *be prepared and ready!*
  - › Participation is mandatory!



# Design & Fabrication

Dr.-Ing. **Florian Wolling** (Lecture), M.Sc. **Ambika Shahu** (Exercises),  
**Thomas Mantschko** (Tutor), Prof. Florian Michahelles

Technische Universität Wien

Artifact-Based Computing & User Research (<http://media.tuwien.ac.at>)  
[florian.wolling@tuwien.ac.at](mailto:florian.wolling@tuwien.ac.at), [ambika.shahu@tuwien.ac.at](mailto:ambika.shahu@tuwien.ac.at)

