

# Customer Experience for Industry 4.0

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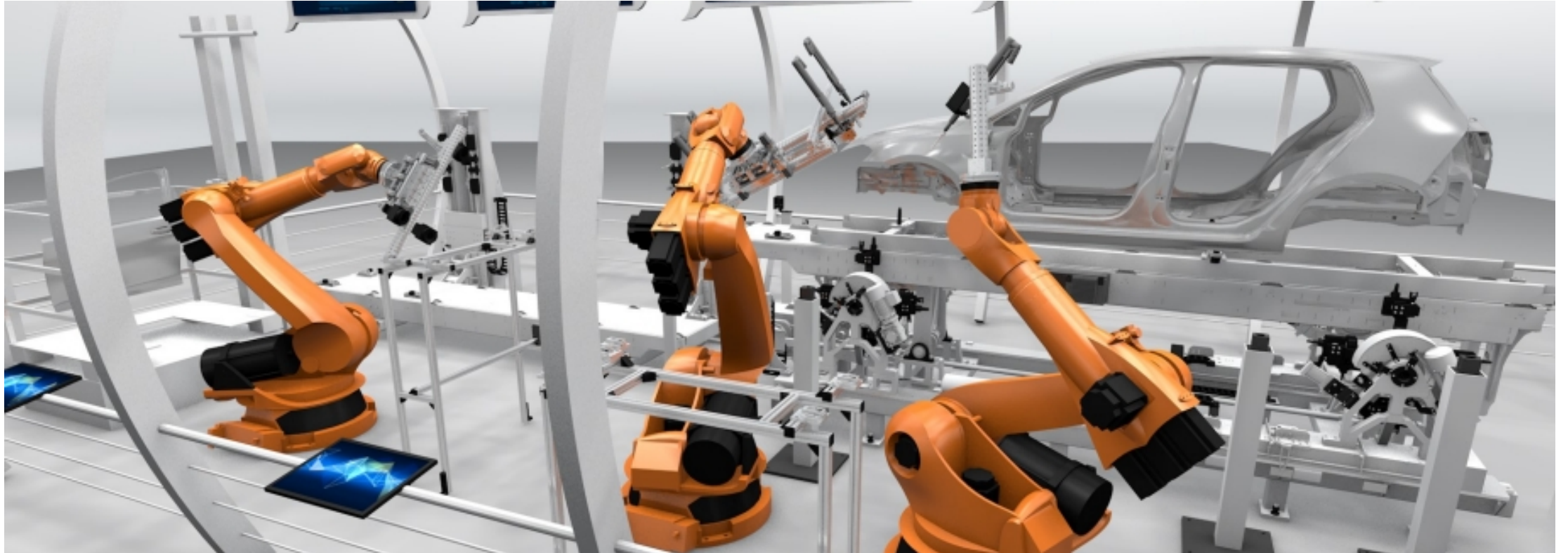
Definitions and use cases

Industry 4.0

Internet of Things

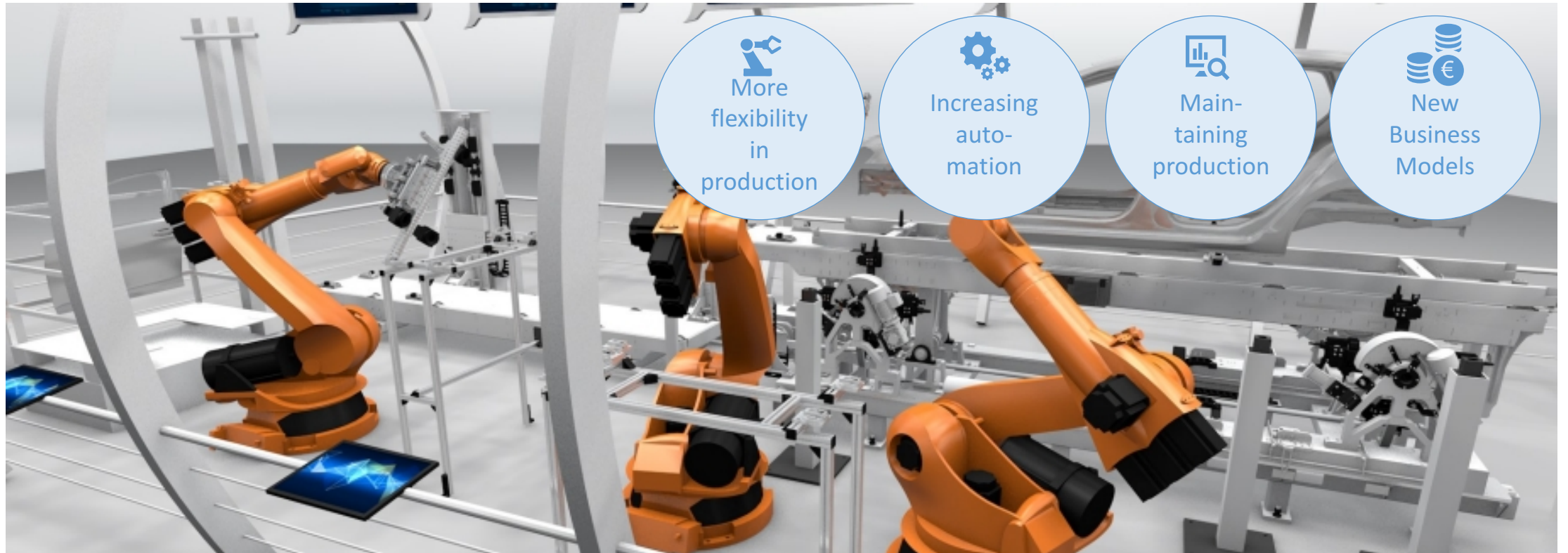
Industrial Internet of  
Things

# Industry 4.0 - Defintion



Industry 4.0 is the current trend of automation and data exchange in manufacturing technologies. It includes the internet of things and cloud computing.

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# Where do we find CX/UX Use Cases in I4.0?

## Customers B2C/B2B



## Citizen/ Society



## Employees



# Where do we find CX/UX Use Cases in I4.0?

**Customers**  
B2C/B2B



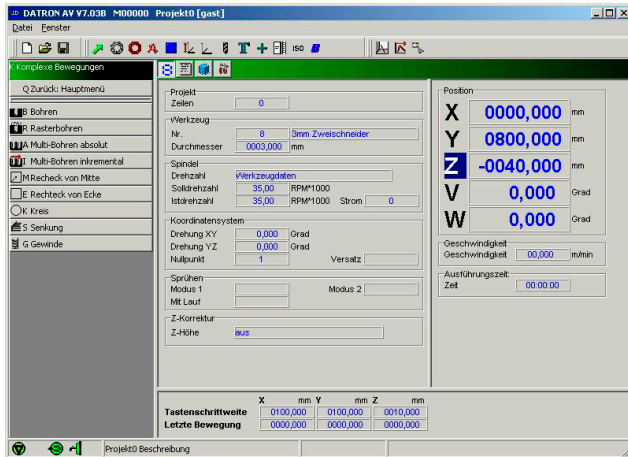
**Citizen/  
Society**



**Employees**



# Consumerization

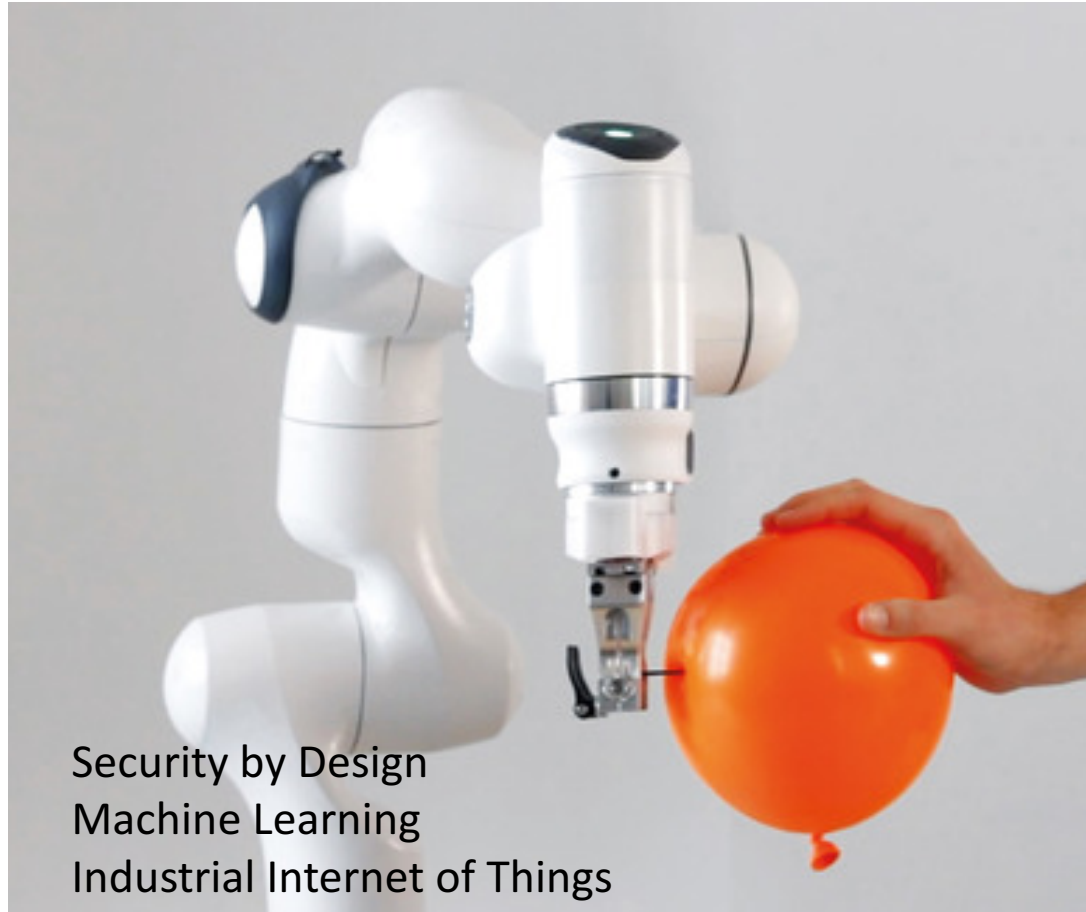


# New Services through Augmented reality





# Human-Robotic-Interfaces



What is good  
user/customer  
experience and why  
does it count?

# Experience is more than Usability



- Anticipation of product usage, without having actually used it

- Effective task fulfillment
- Efficient
- Satisfying

- Mental processing of the experienced use
- Emotional retention (or distance) to the product

## USABILITY

ISO 9241 – 11

## USER EXPERIENCE

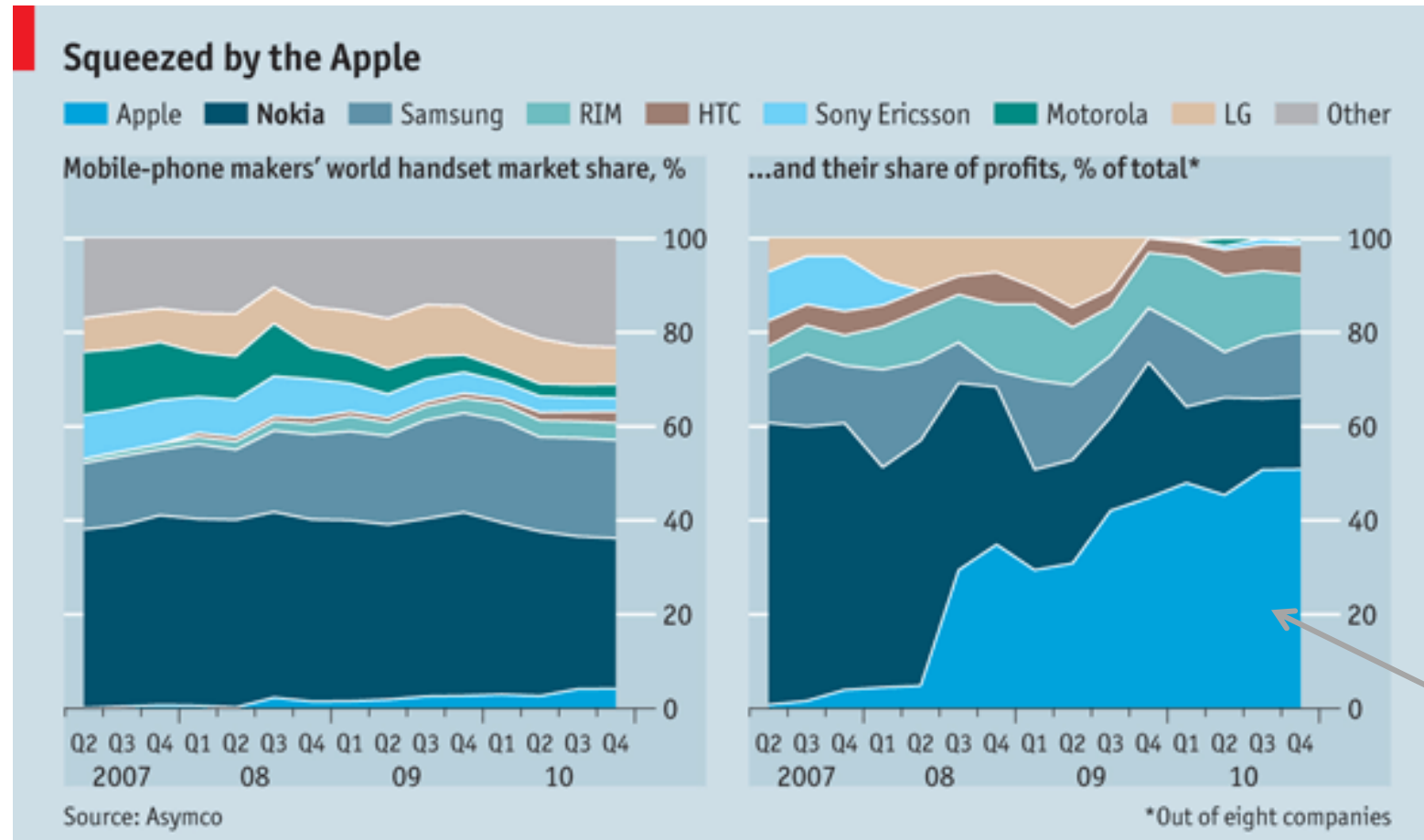
ISO 9241 - 210

# 1. Better acceptance

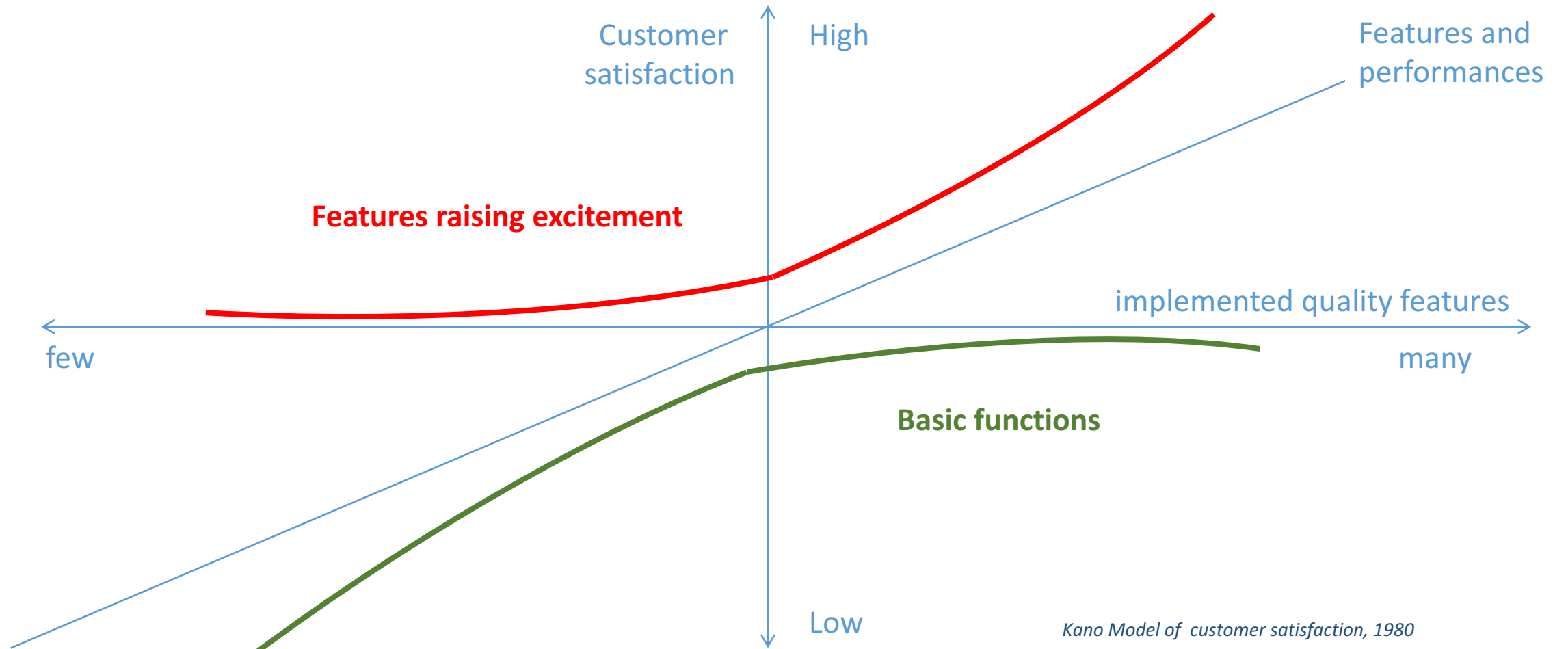
*“70% of IT products that are eventually delivered are unsuccessful because users don’t adopt them”*

*Info-Tech Research Group, 2015*

## 2. Higher revenues



# 3. More customer satisfaction



## 4. Often Emotions decide (also in B2B)

**Rider:** Our conscious, rational brain that tries to rein in the elephant (instinctive desires) but more often simply post-rationalizes emotional impulses

**Elephant:** Our intuitive, emotional mind that often drives decision making, overpowering the rider's efforts



Source: Jonathan Haidt, *The Righteous Mind: Why Good People are Divided by Politics and Religion* (New York: Random House, 2012); FILE: Bombay road elephant.jpg, Wikipedia, 31 January 2006, [http://simple.wikipedia.org/wiki/File:Bombay\\_road\\_elephant.jpg](http://simple.wikipedia.org/wiki/File:Bombay_road_elephant.jpg); CEB analysis.

CX for Industry 4.0

Why designing for  
Industry 4.0 is  
different



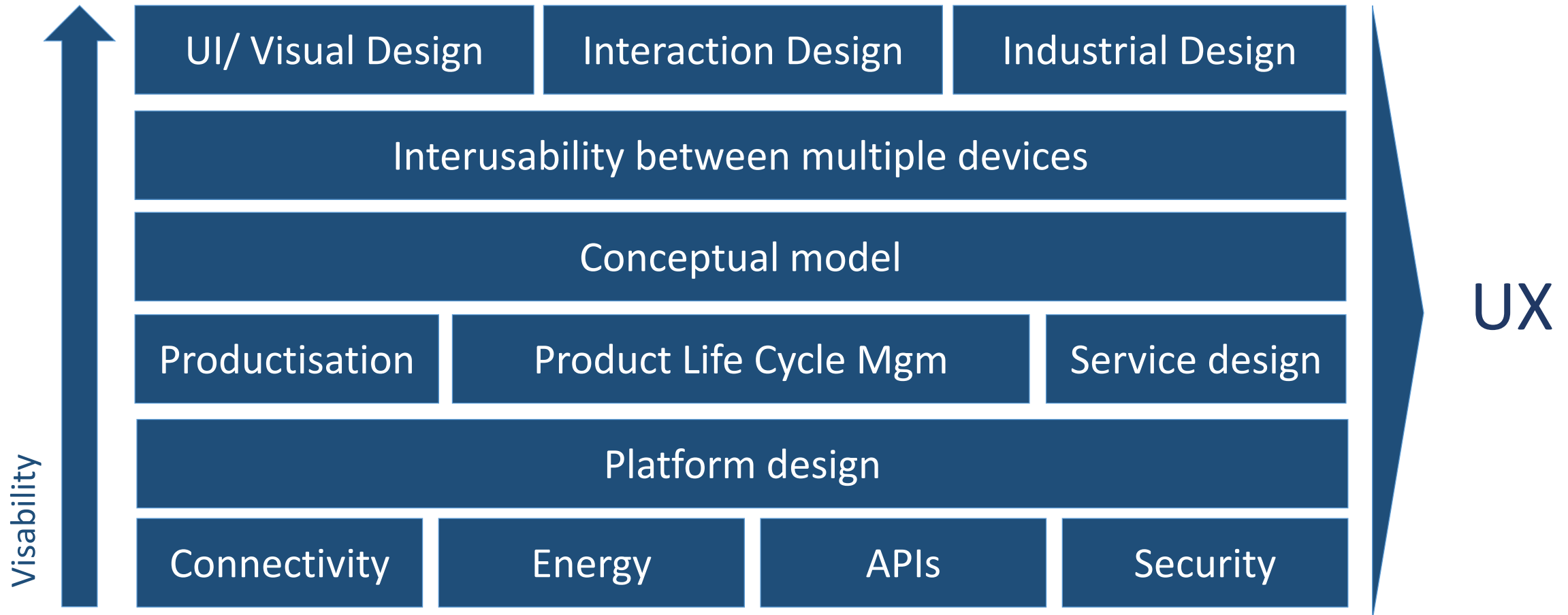
# When we talk about Experience Design...



VISUAL DESIGN  
INDUSTRIAL DESIGN  
INTERACTION DESIGN



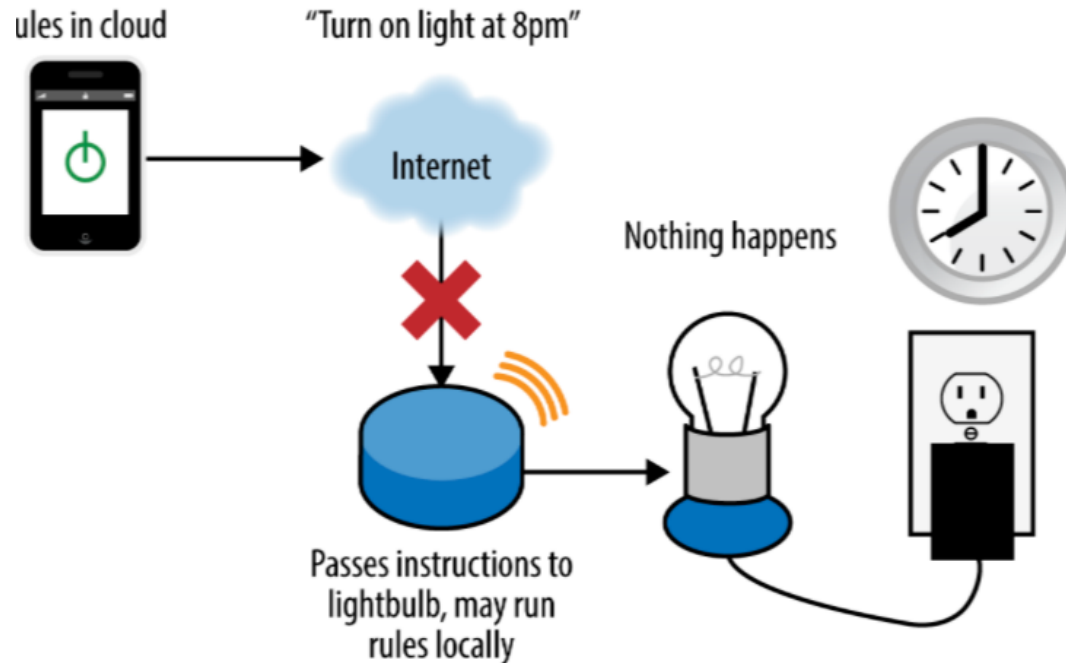
# Experience Design for I4.0 is multilayered



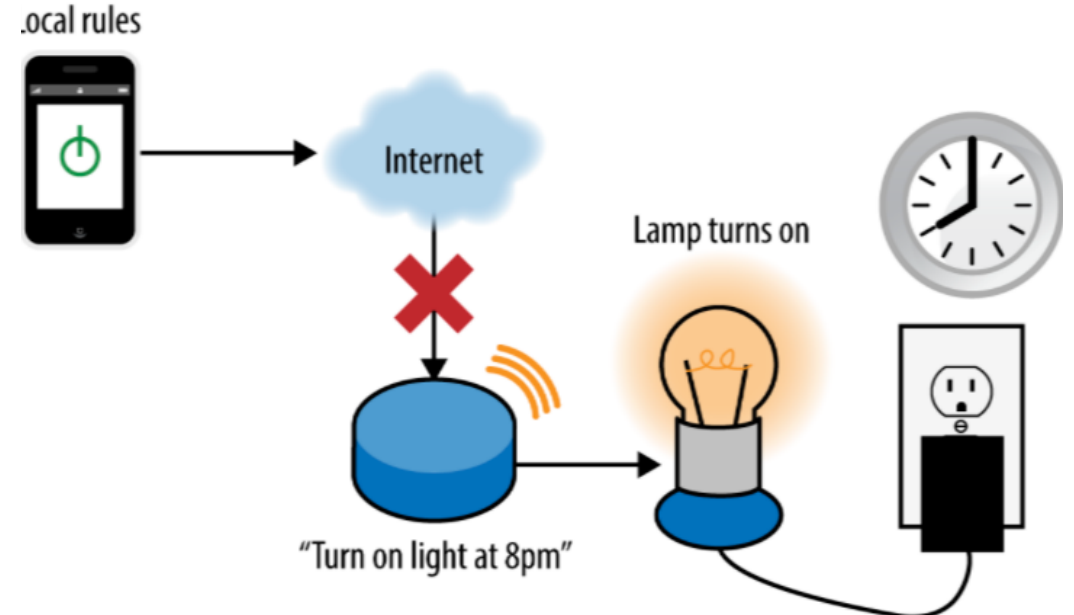
Source: Designing Connected Products, 2015 by Claire Rowland, Elizabeth Goodman, Martin Charlier, Ann Light, Alfred Lui

# The Functionality of hidden parts can shape the experience

## Rules in the cloud



## Local Rules



Source: Designing Connected Products, 2015 by Claire Rowland, Elizabeth Goodman, Martin Charlier, Ann Light, Alfred Lui

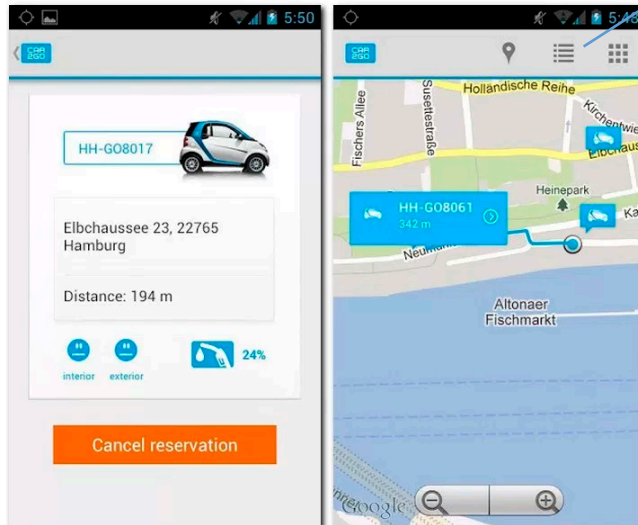
# In IoT you often deal with Ecosystem...

Which piece does what?



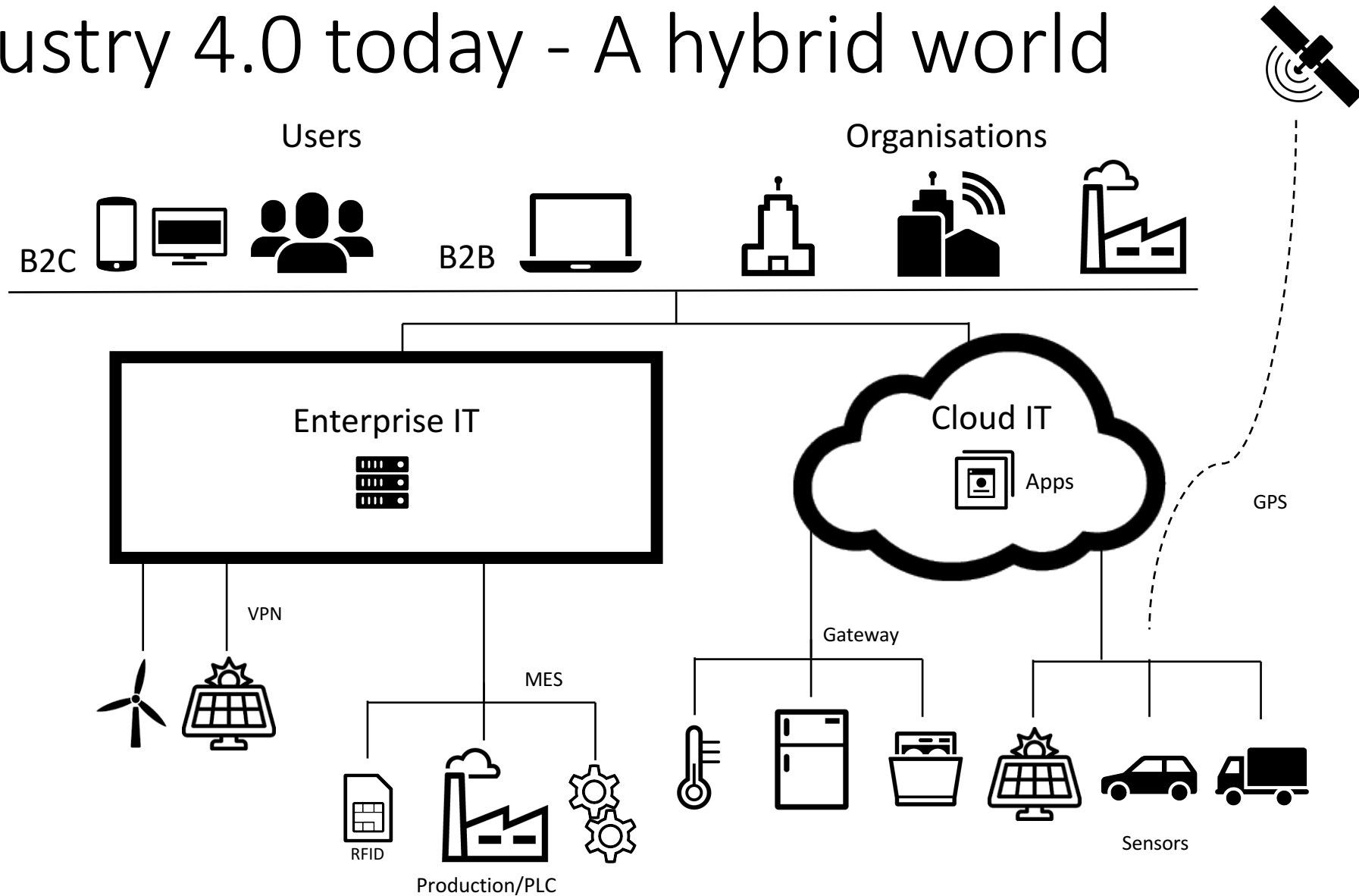
Source: Designing Connected Products, 2015 by Claire Rowland, Elizabeth Goodman, Martin Charlier, Ann Light, Alfred Lui

# Connectivity matters



You can let the user wait....  
or explain, what is happening and offer help

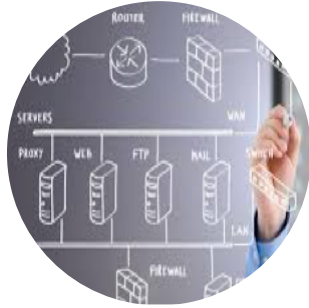
# Industry 4.0 today - A hybrid world



# Industry 4.0 is an interdisciplinary challenge



**Mechatronic  
Engineering**



**System  
Engineering**



**Smart  
Engineering**



**Virtual  
Engineering**

Development processes, methods and tools are not aligned yet

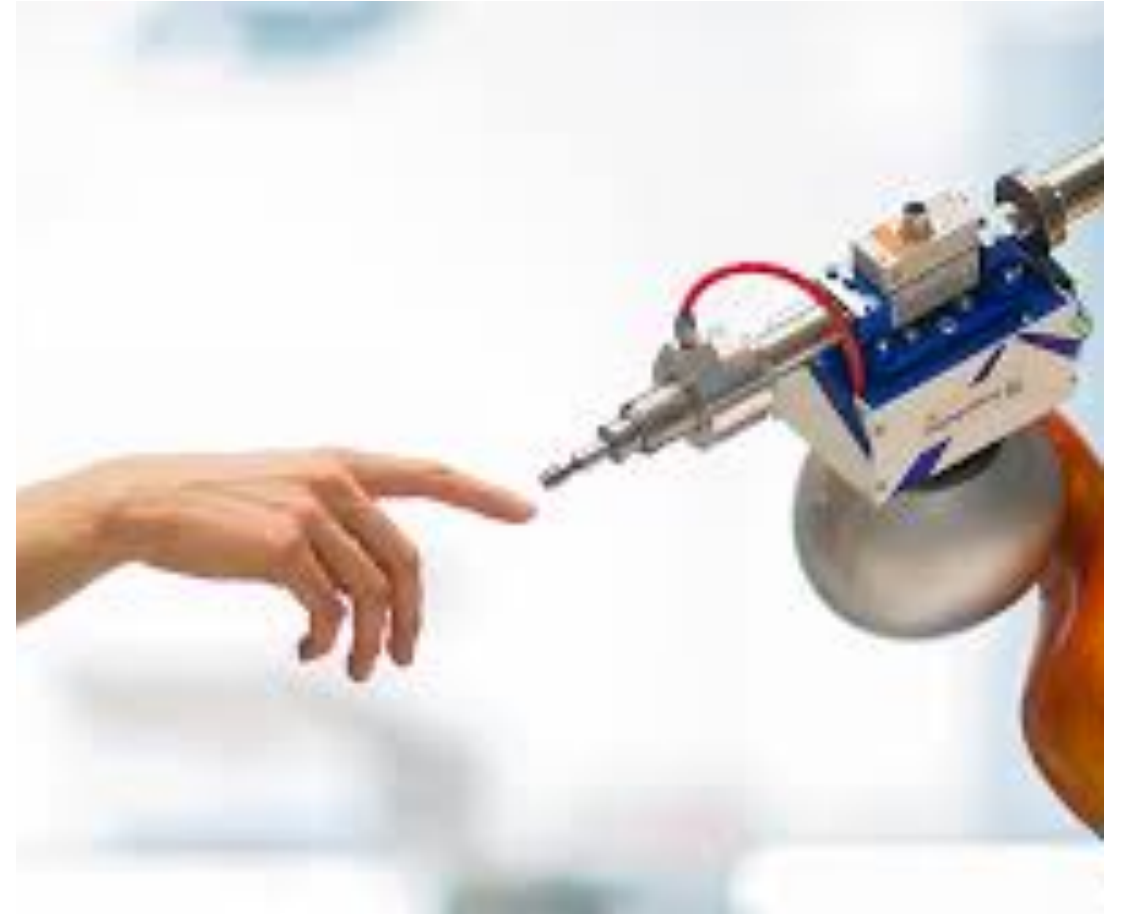
# Industry 4.0 can not rely on standards yet



IPv6 Forum Logo is considered to be included in Release 3.0 of IoT landscape



# Human acceptance and well-being with new technologies is not experienced yet



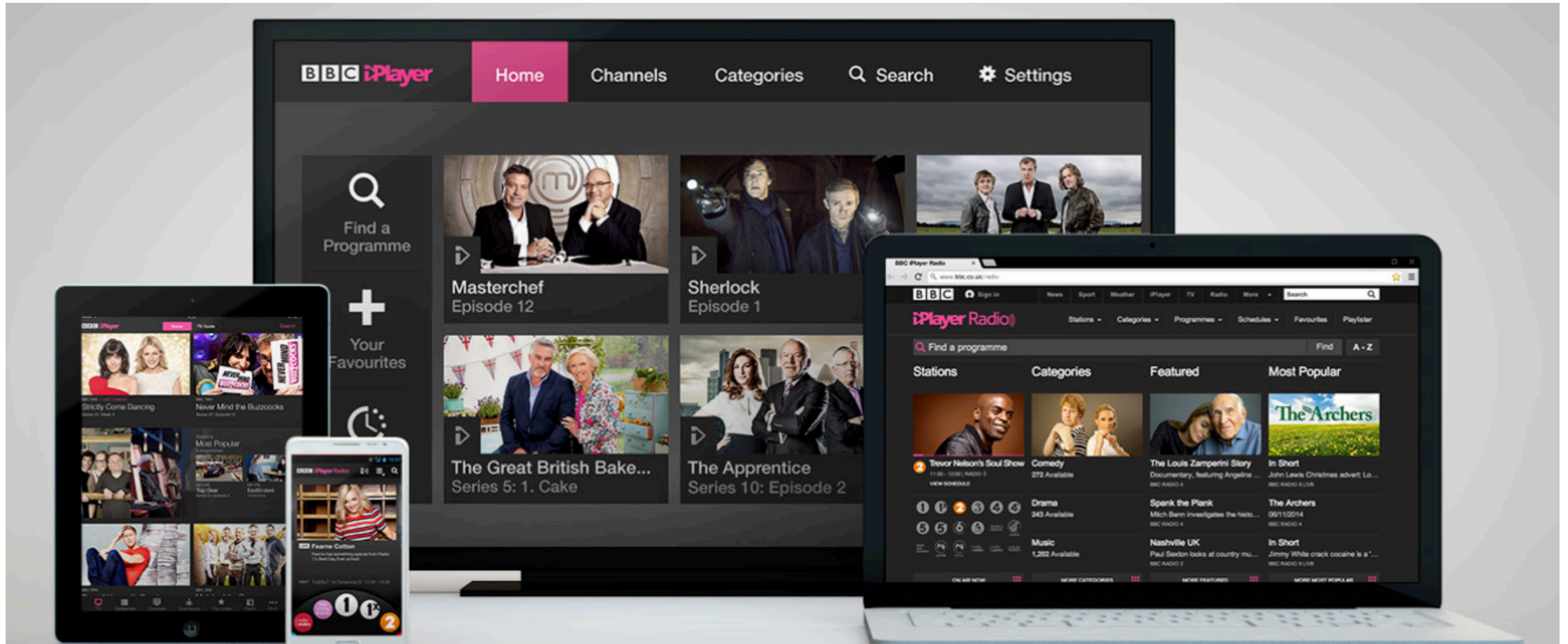
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CX for Industry 4.0

# Recommendations

# Think in ecosystems rather than interfaces



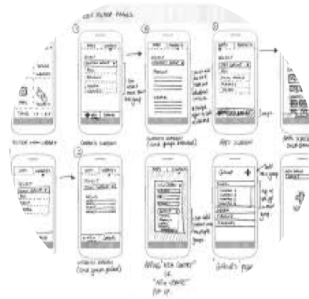
# Think of innovation in customer experience

	Innovation Methods (e.g. Design Thinking)	+	User experience methods
User	Put the User in the center		
Process	Iterative design process		
Methods	Similar methods from the UX toolbox		
Goals	Innovations		Good usability, UX
Scope	Solutions, broad field of applications		Screen, Webs, Apps, Ergonomics
Team	Interdisciplinary		Usability Experts, IA, Industrial D.

# Work in interdisciplinary teams



Marketing  
Experts



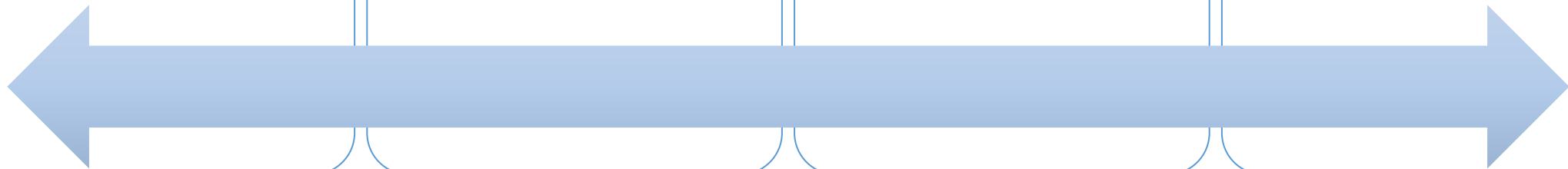
Experience  
Designers



Hardware  
Engineers



Software  
Engineers



# Focus on value creation for the customer

Ask Why and Who...

before What and How!

Study Customer Insights:

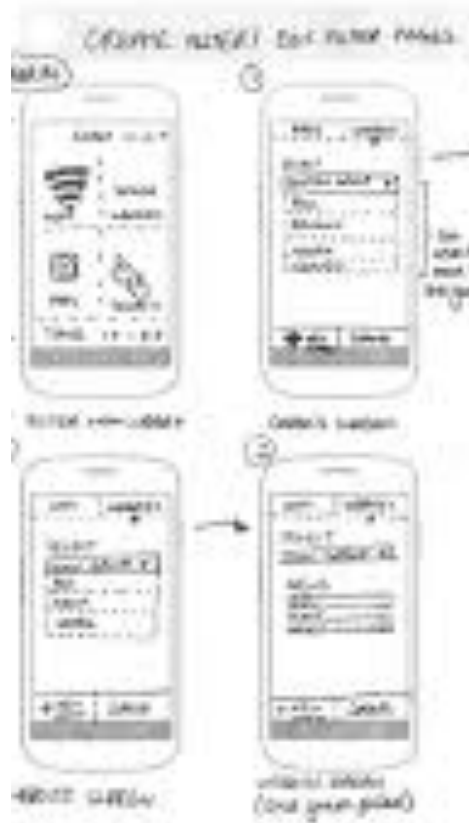
Learn about emotions,  
Behavioral patterns and  
the context of use  
Customer Journeys



See Microsoft example: [link](#)

# Use rapid prototyping early and iterate often

In practical agile development it's always a mixture of methods composed to the special situation at hand.



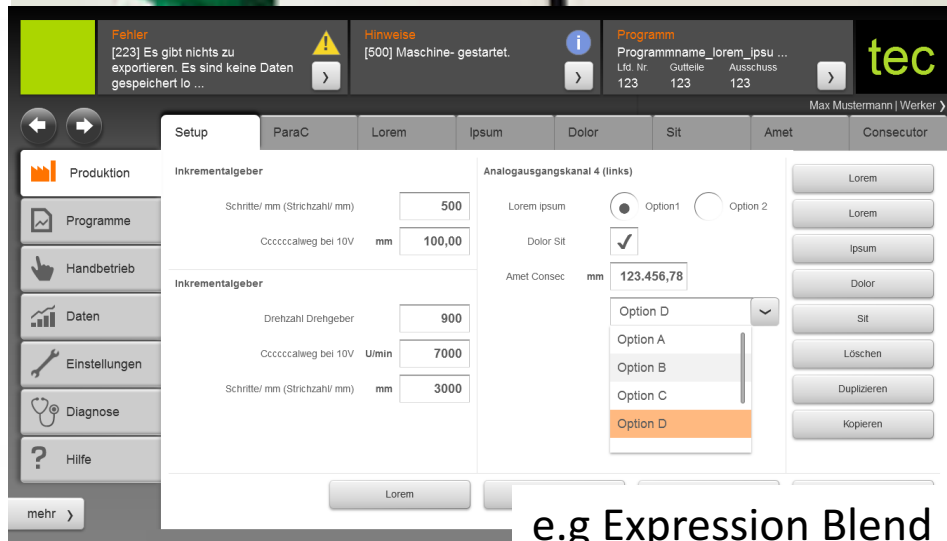
e.g. Balsamiq, Marvel Paper prototyping...



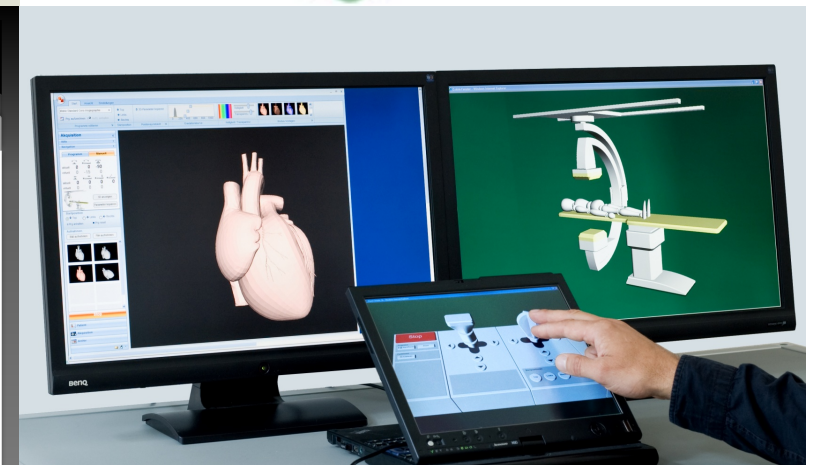
e.g. Lego



e.g. Rasper PI



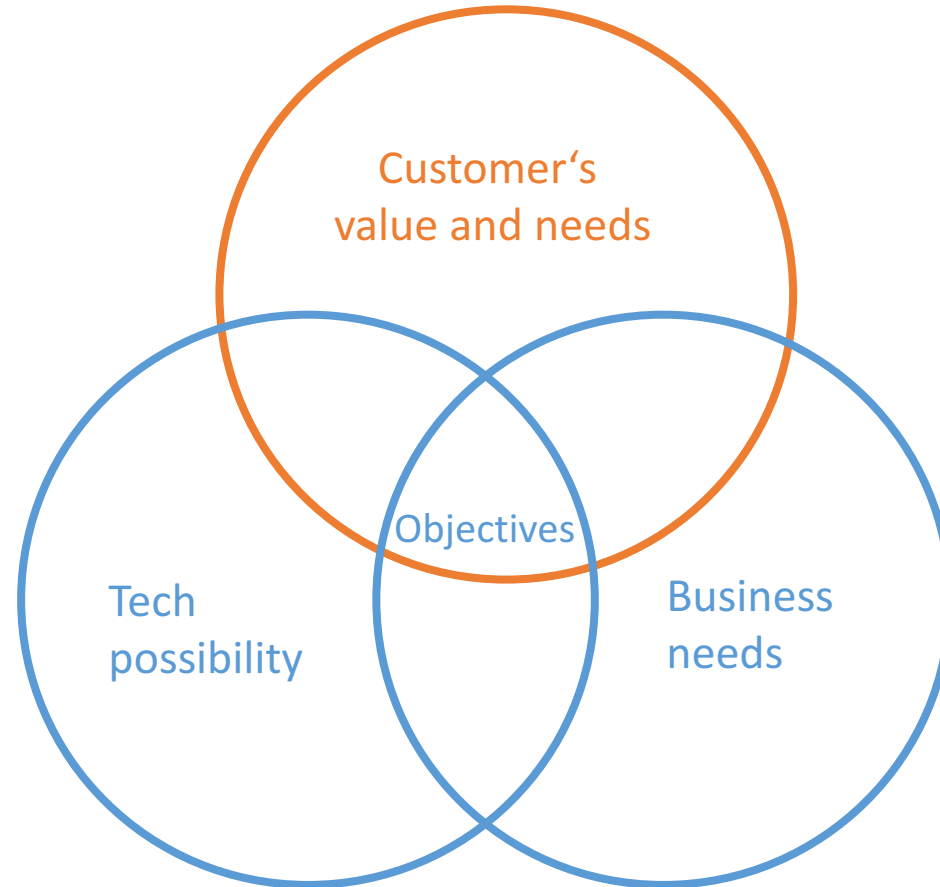
e.g Expression Blend



e.g. Arduino and Visual Studio



# Be the customers advocate in every step



# Recommendations

1. Think in ecosystems rather than interfaces
2. Think of innovation in customer experience
3. Work in interdisciplinary teams
4. Think of value creation for the customer
5. Use rapid prototyping early and iterate often
6. Be the customers advocate in every step

Key take away

# Experience is about Emotions



**BASQUE**  
**INDUSTRY 4.0**

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