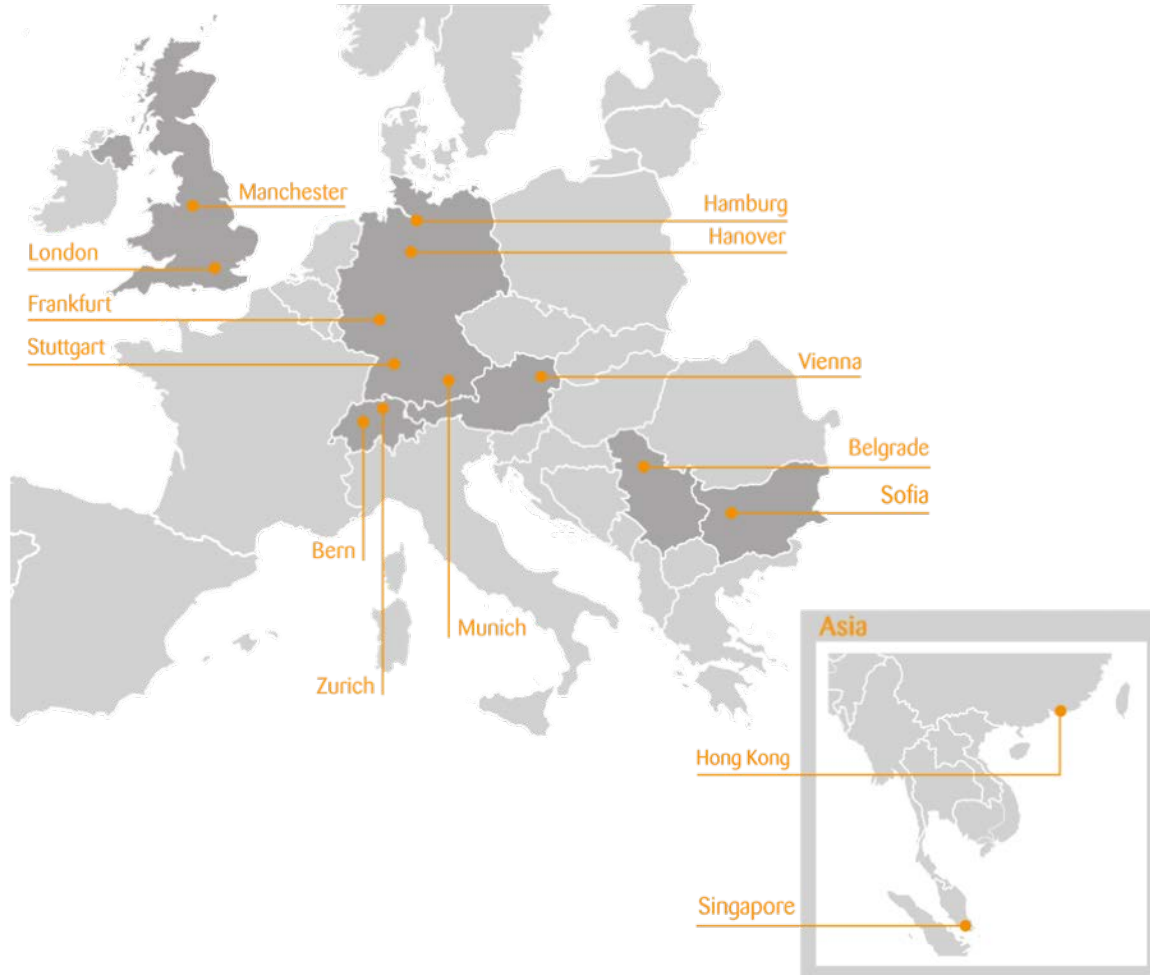




# Optimise your Requirements Engineering with Continuous Product & Service Design

# Facts & Figures

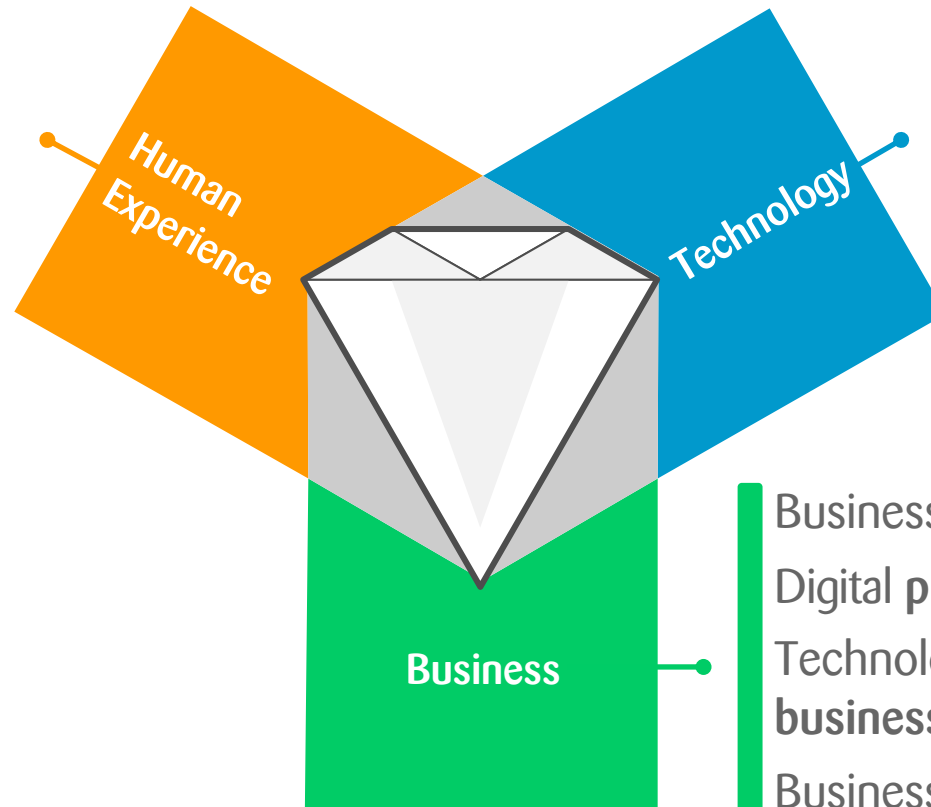
14 offices in 8 countries



- Founded 1968
- Owned by partners
- Teams in Germany, United Kingdom, Austria, Serbia, Bulgaria, Singapore, Hong Kong and Switzerland
- Over 10,000 innovation initiatives
- 1,200 employees
- Certifications:  
ISO 9001 and 13485

# Product & service design needs 3 dimensions in harmony

Excellent **human-centred** design  
Frequent **end-user feedback**  
Experience prototypes  
Usability and patient safety  
User and patient **value centred**  
Value prototypes  
Requirements engineering

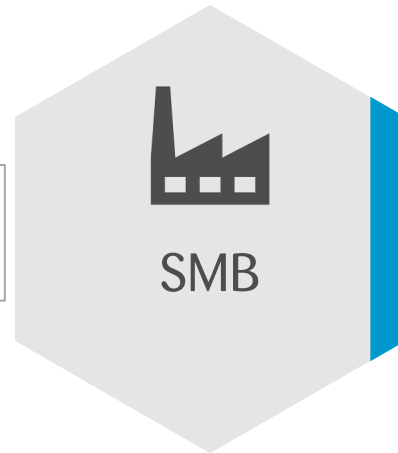


Mechanics, electronics  
Embedded software  
Mobile and PC frontend software  
Cloud backend software  
**Agile system development**  
Continuous system integration  
Quality Assurance

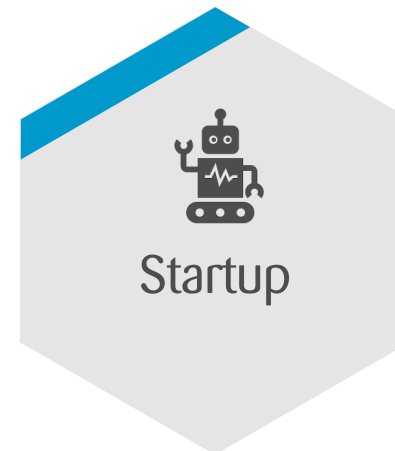
Business Case  
Digital **product roadmap**  
Technology decisions from a  
**business perspective**  
Business model for monetizing

# Different company cultures

**PRAGMATIC APPROACH**  
good “gut feeling” of owner



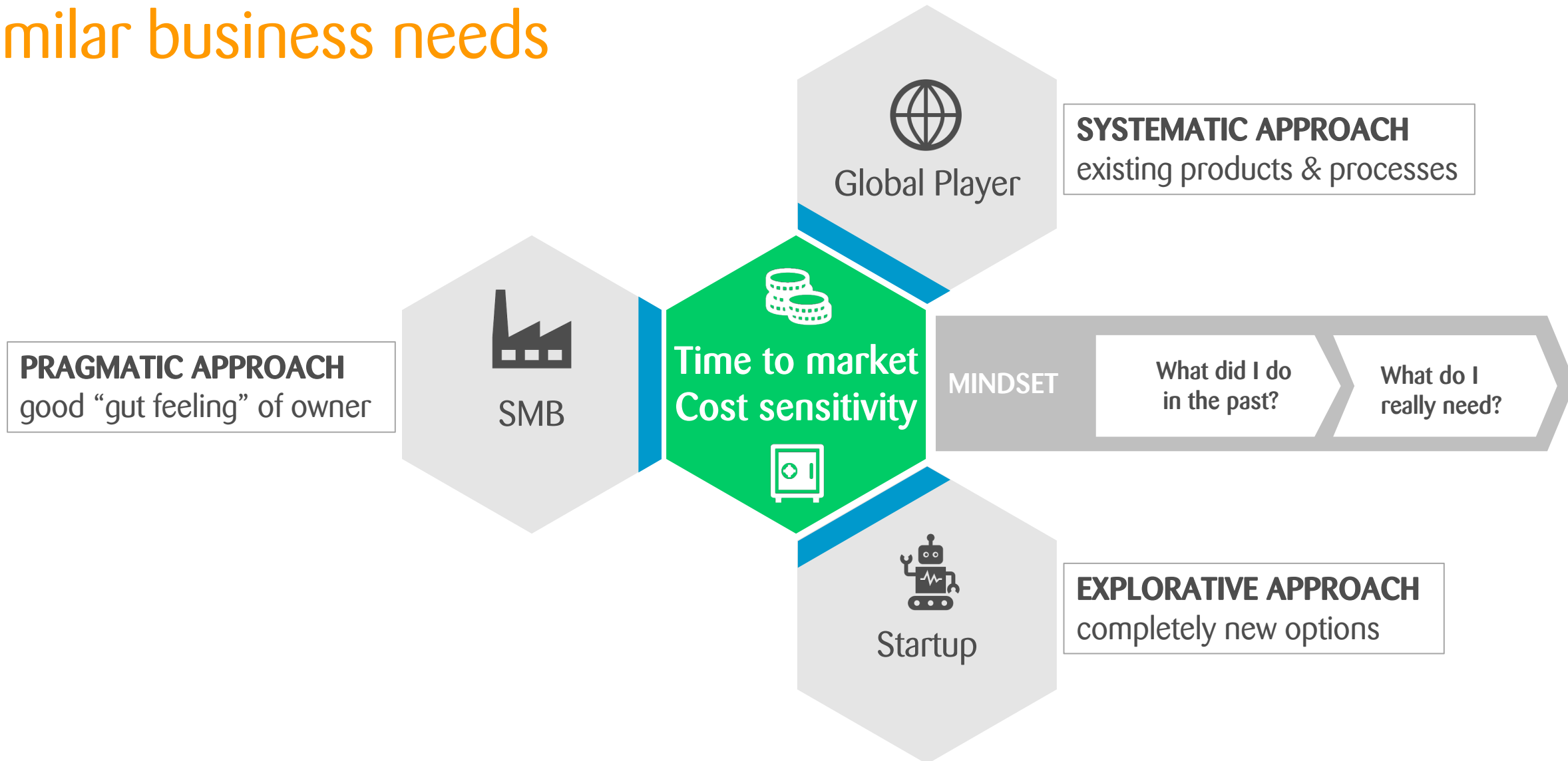
**SYSTEMATIC APPROACH**  
existing products & processes



**EXPLORATIVE APPROACH**  
completely new options

# Different company cultures

## Similar business needs



# Different company cultures

## Similar business needs

### Similar approach!



Idea



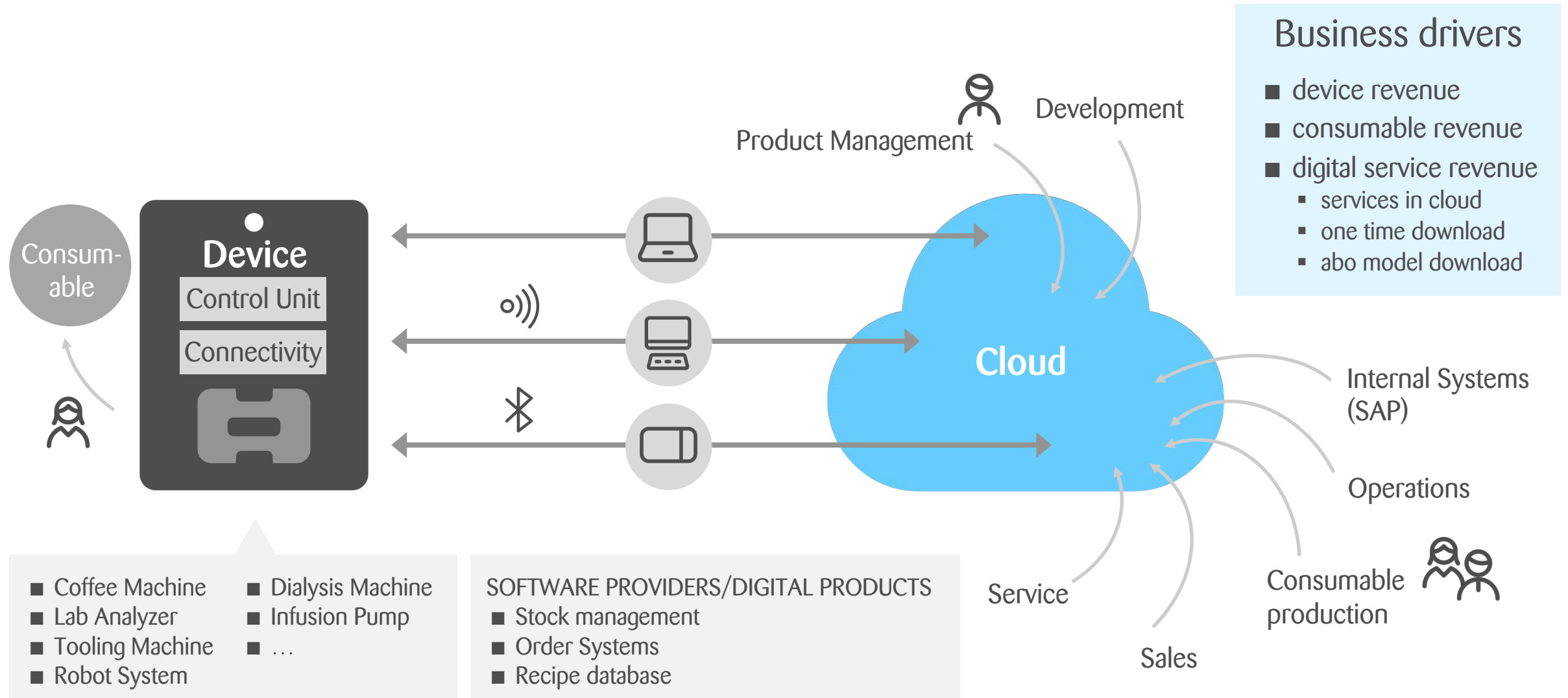
Product & Service  
Design



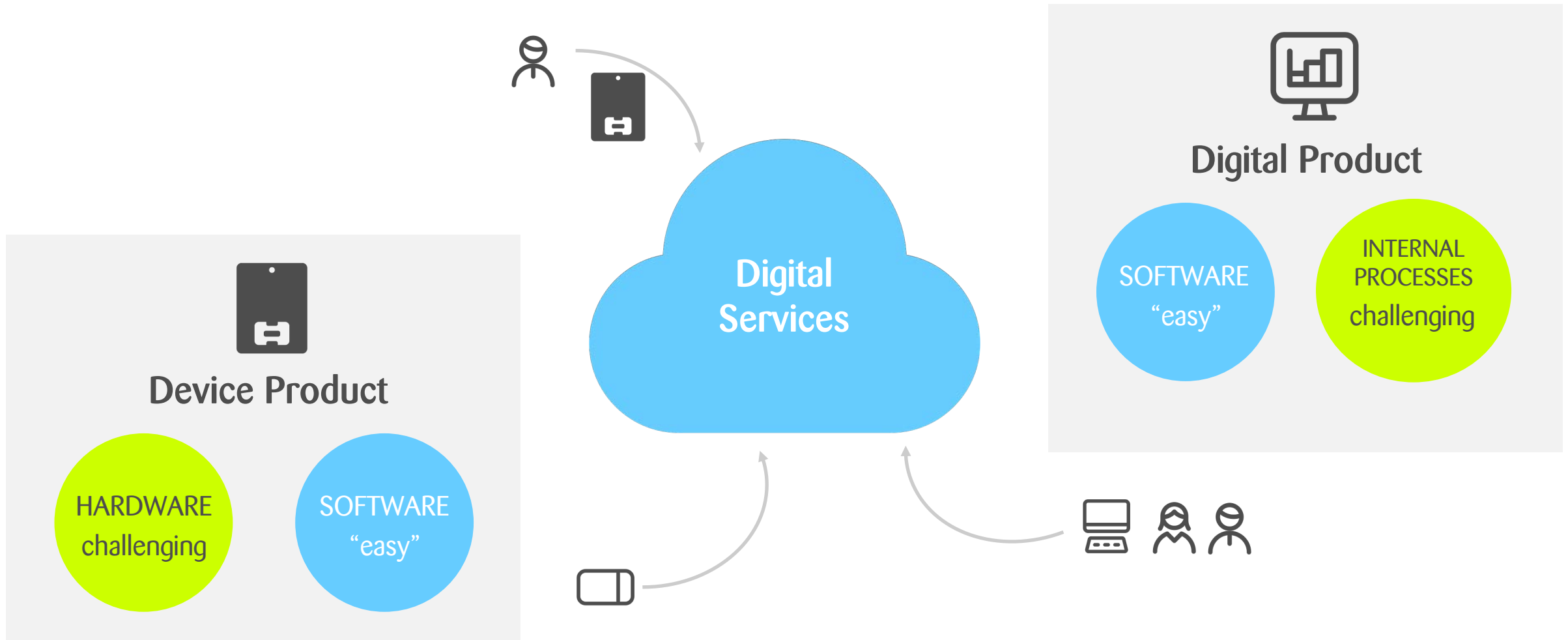
Continuous Product  
& Service Design

Agile Requirements Engineering

# Similar complexity of products and services



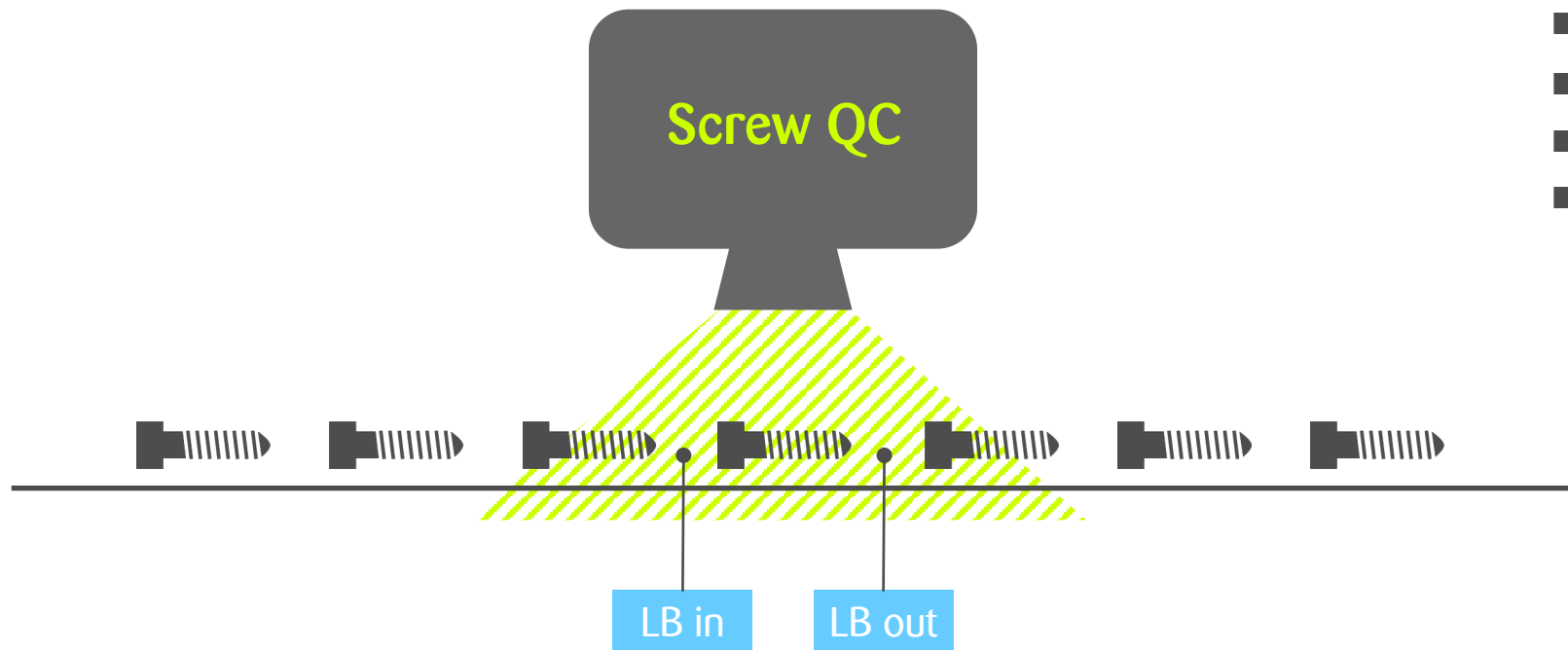
# Different challenges for agile development





# Simplified example – current screw QC device

You Screw It – best in class!



## Features

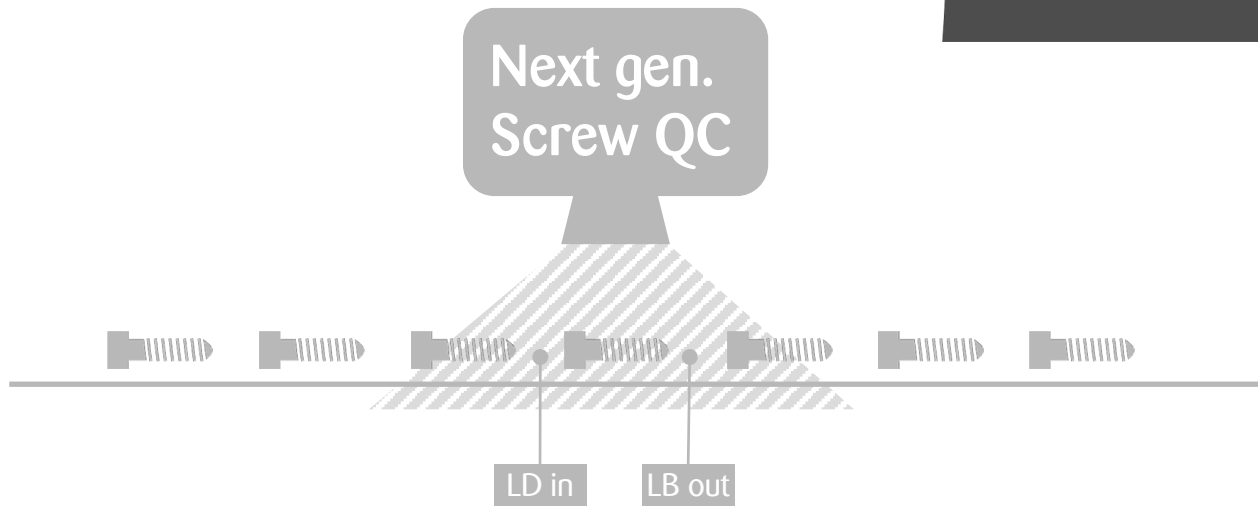
- QC of screws in screw production
- Device operated by display on device
- one or more devices in one production
- Manual configuration for screw types
- Configuration of QC attributes
- Integration in production lines

# Simplified example – next generation screw QC device



AI!  
IoT!  
Remote configuration service  
World wide  
Medical screws  
Multipurpose imagebased QC  
Digital services

Next gen.  
Screw QC

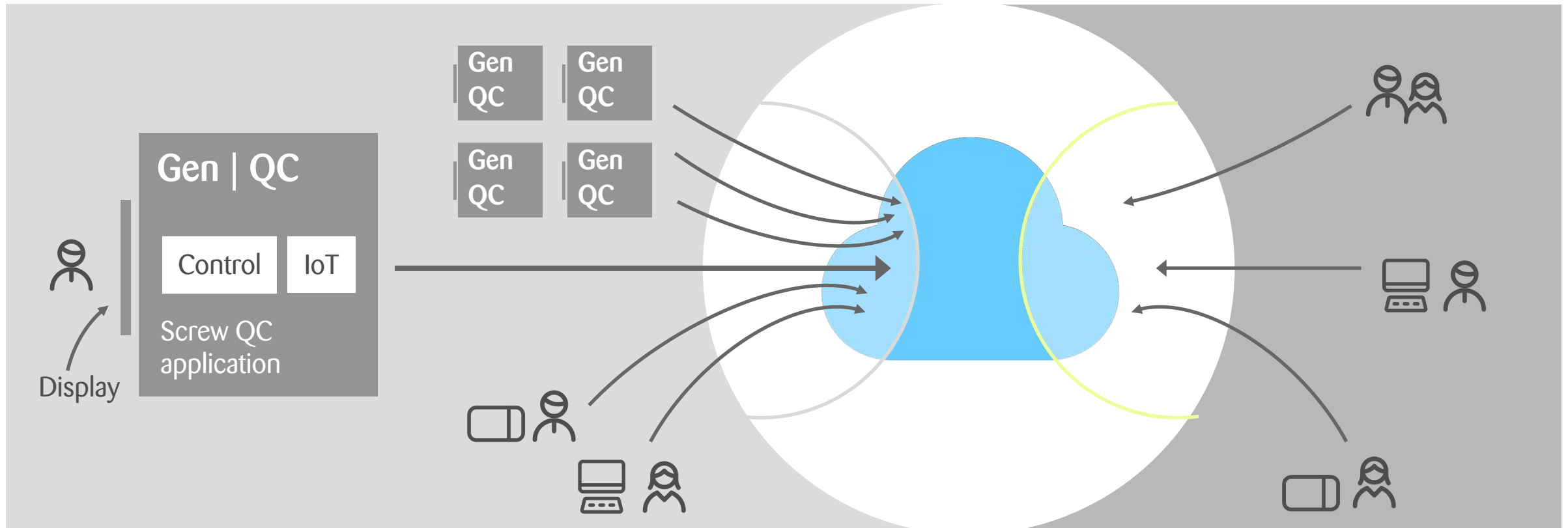


Time to  
market &  
cost



Constant  
revenue with  
sold devices

# Simplified example – product to be defined



Customer

You Screw It

# Different company cultures

## Similar business needs

### Similar approach!



Idea



Product & Service  
Design



Time to market  
Cost sensitivity



Continuous Product  
& Service Design

Agile Requirements Engineering

Different company cultures  
Similar business needs  
Similar approach!

Revenue



Idea



Product & Service  
Design

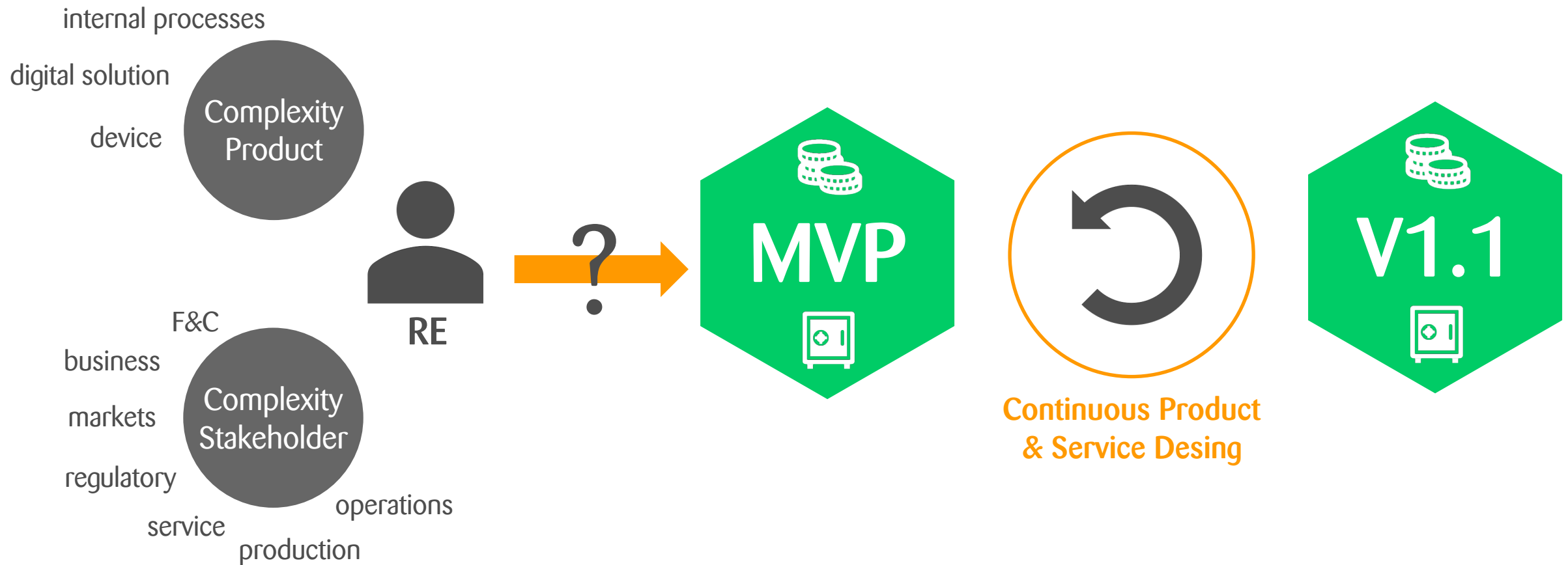


Continuous Product  
& Service Design

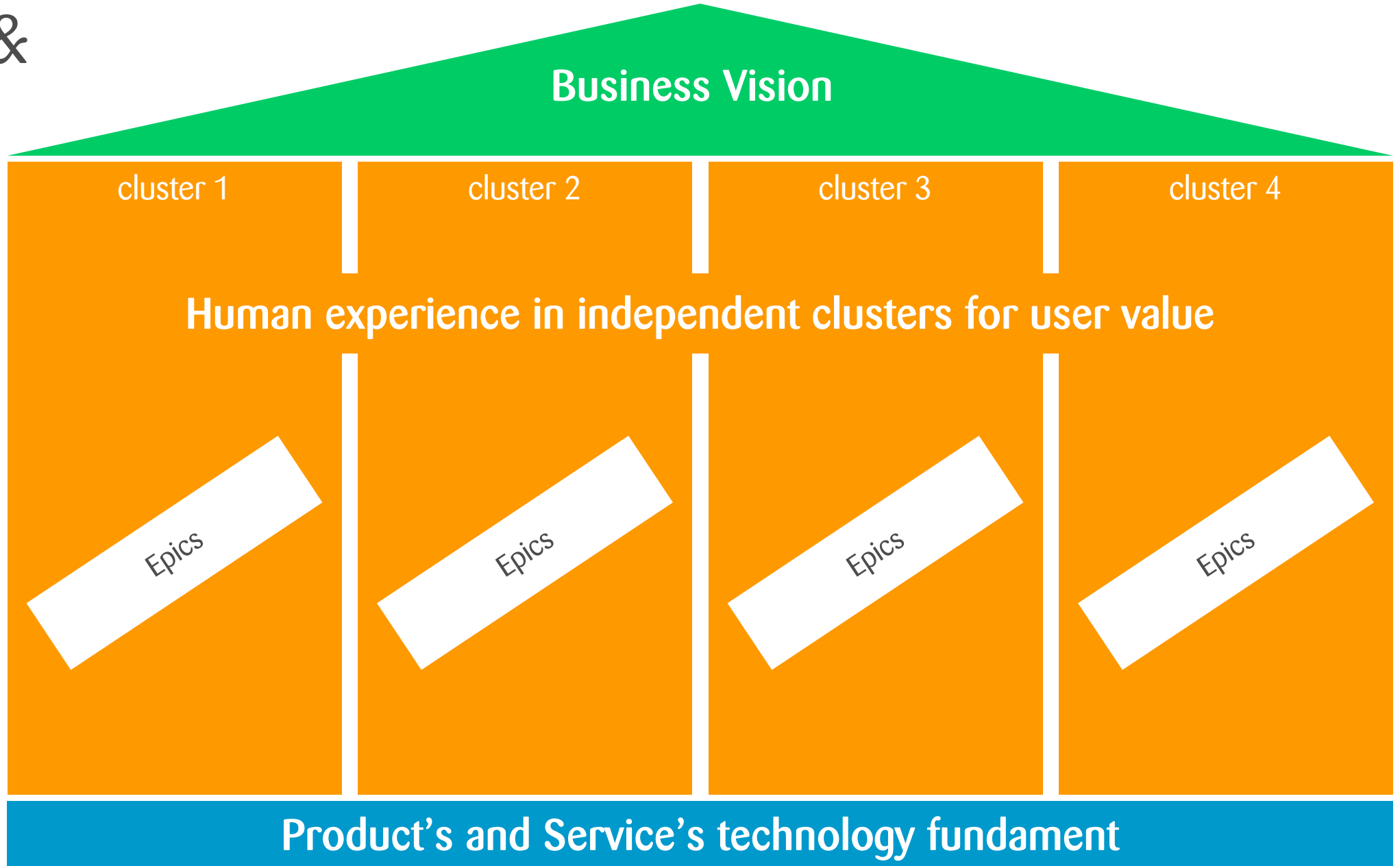


Agile Requirements Engineering

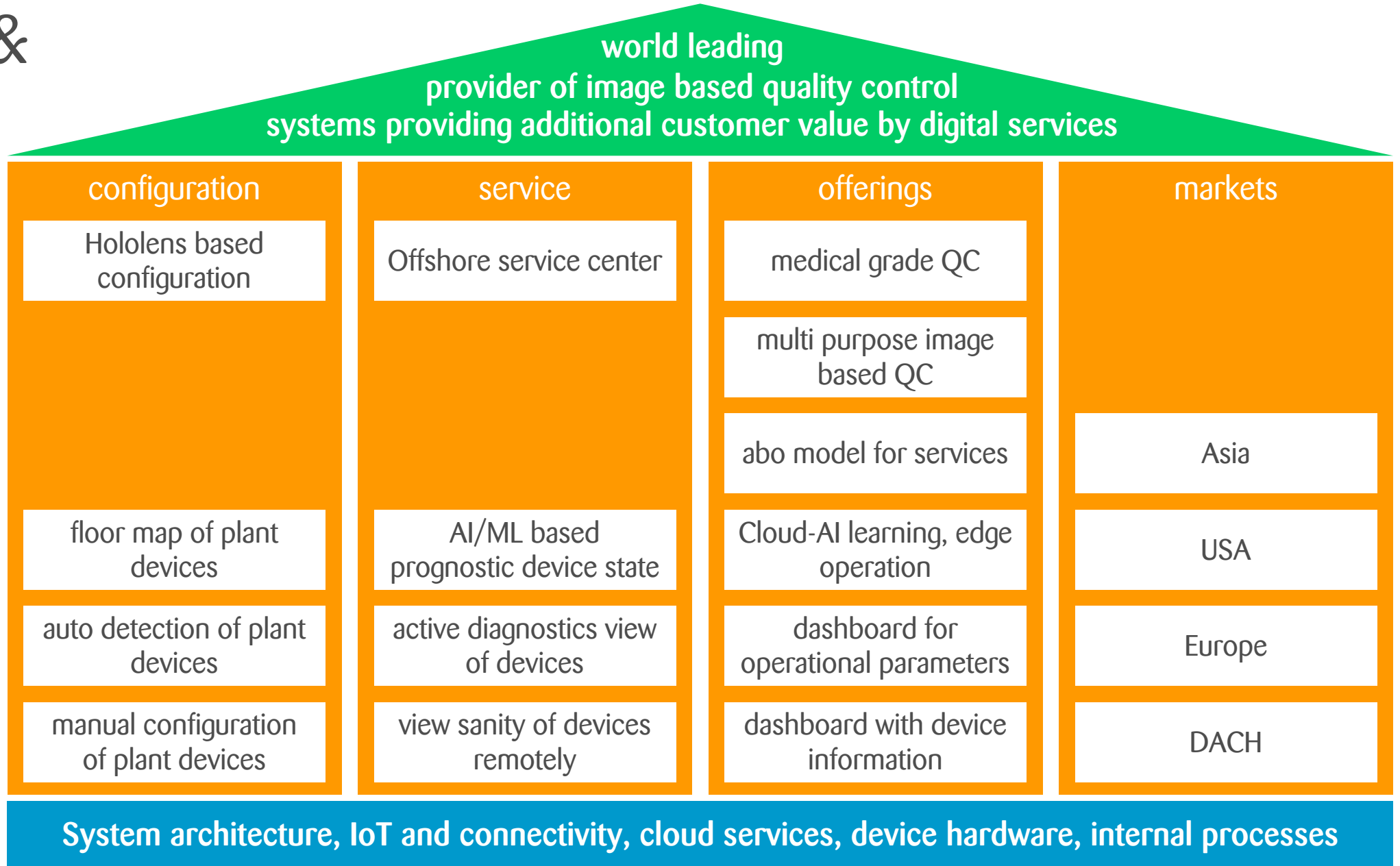
# MVP needs **business driven** requirements engineering



# Product & service design



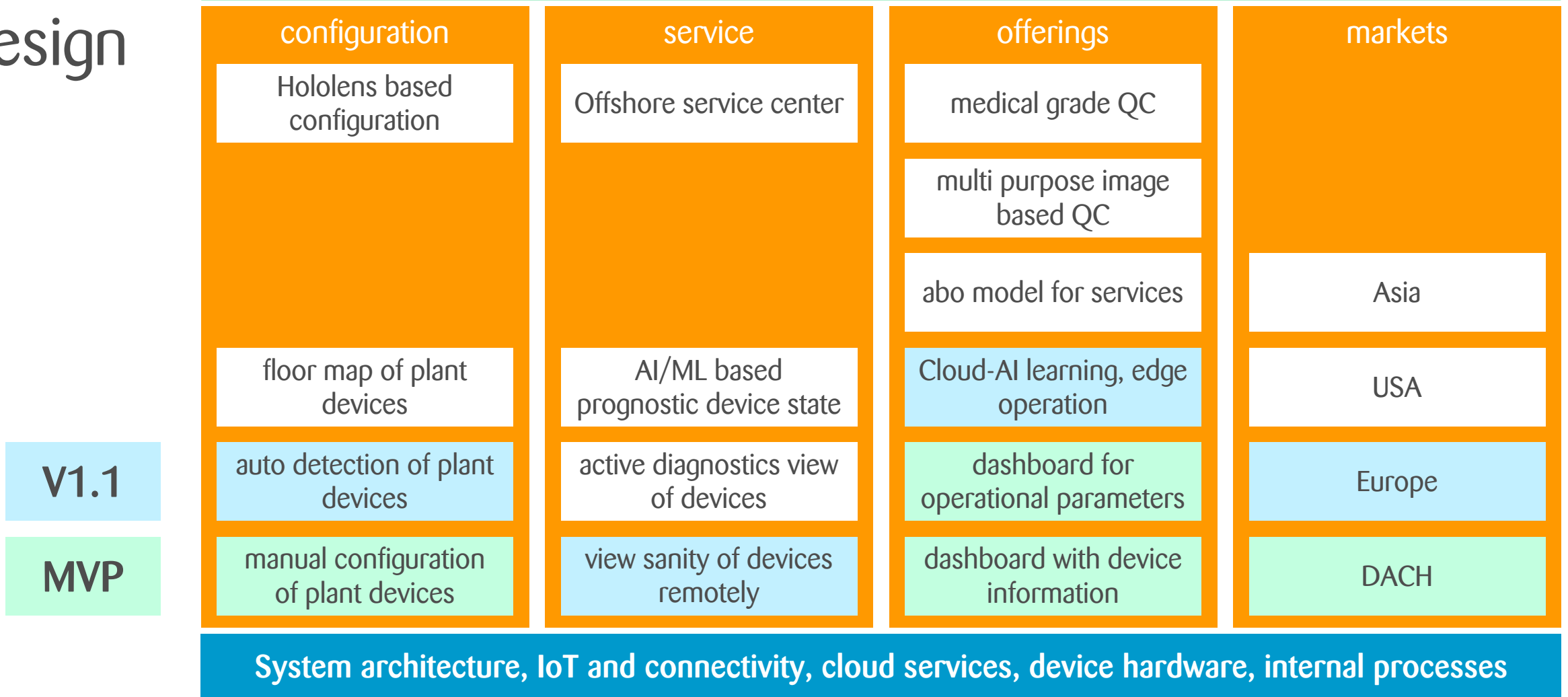
# Product & service design



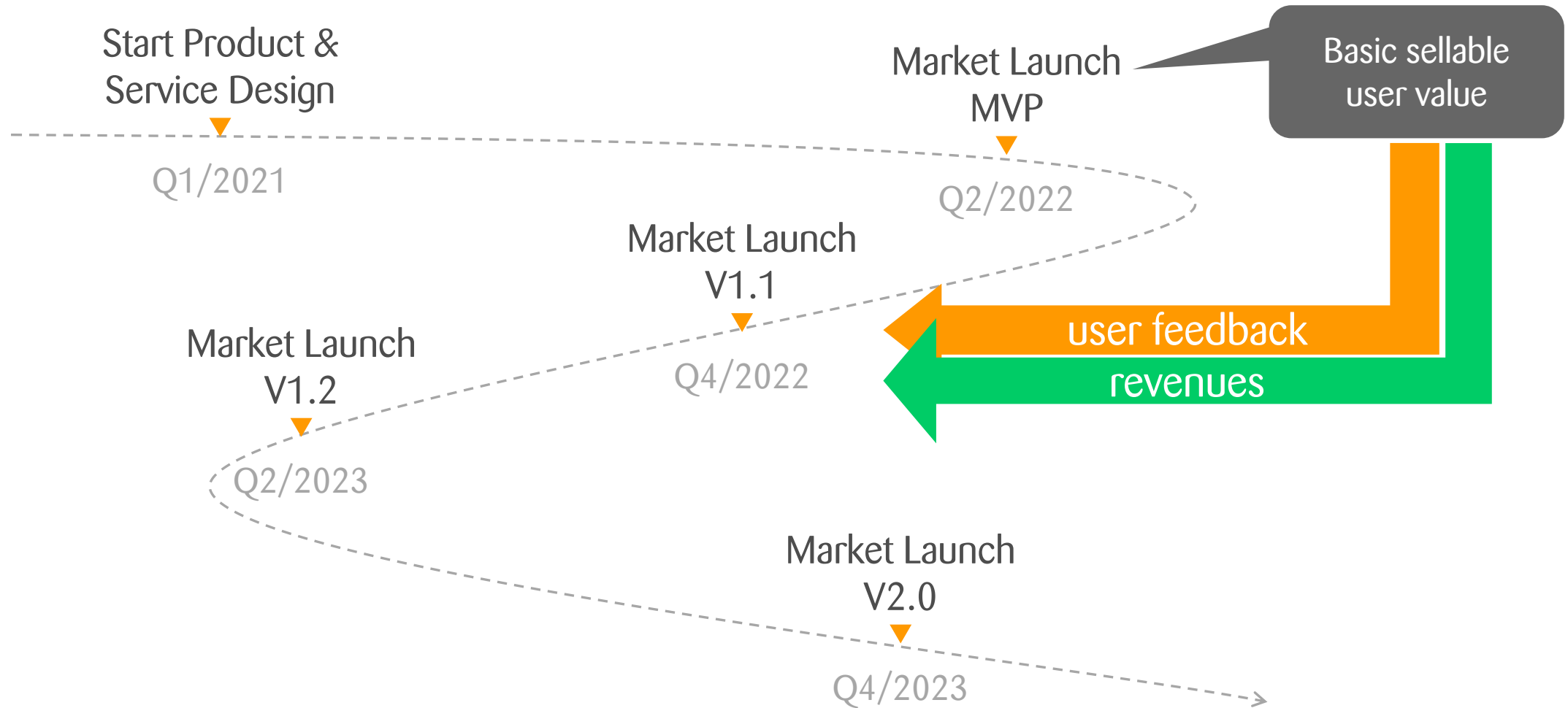


# Product & service design

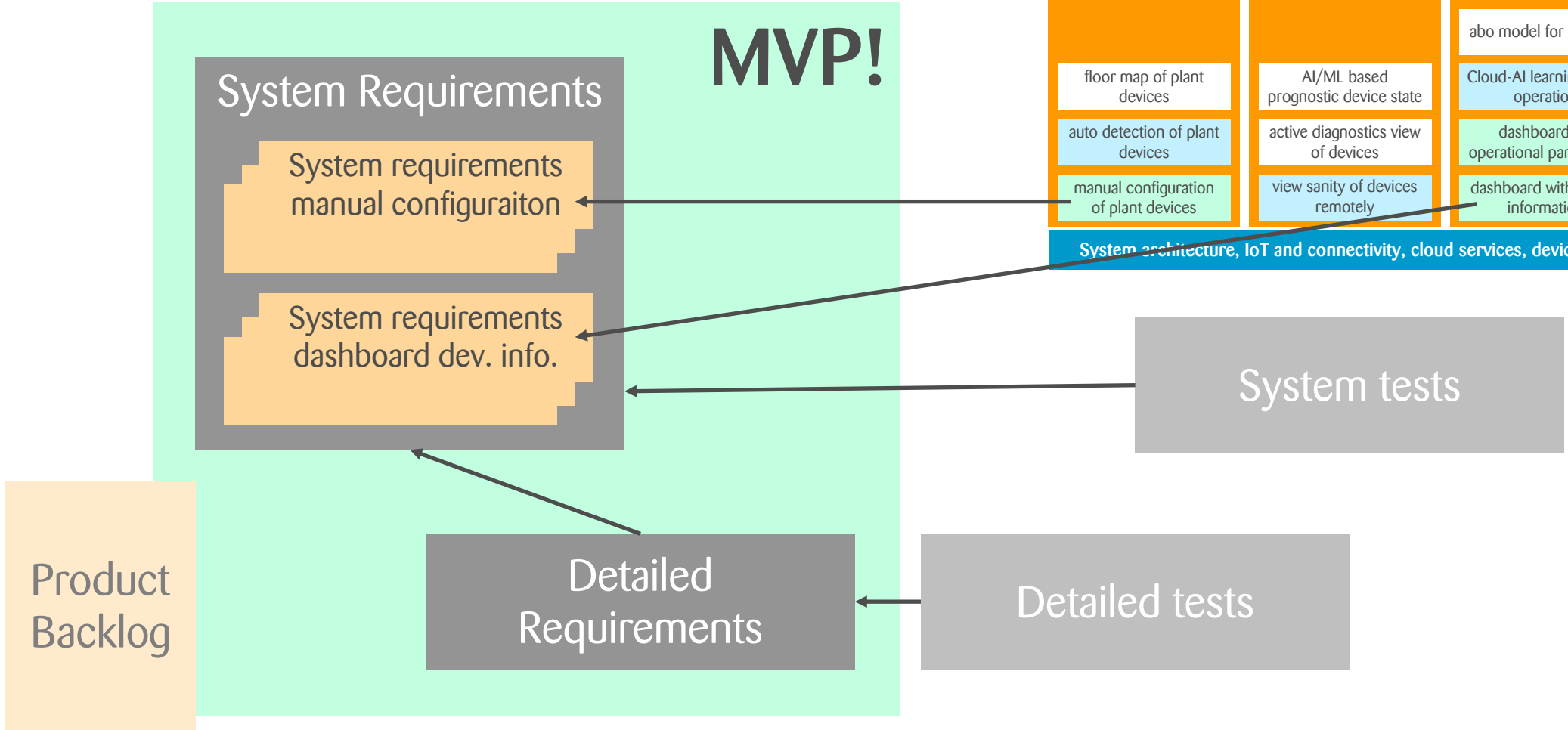
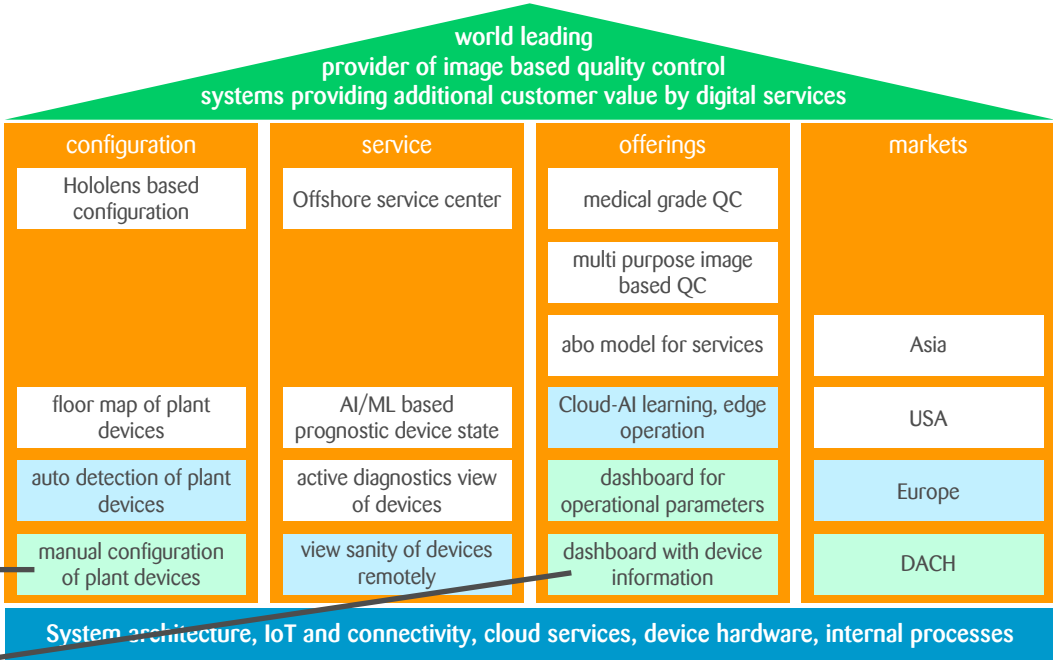
world leading provider of image based quality control systems providing additional customer value by digital services



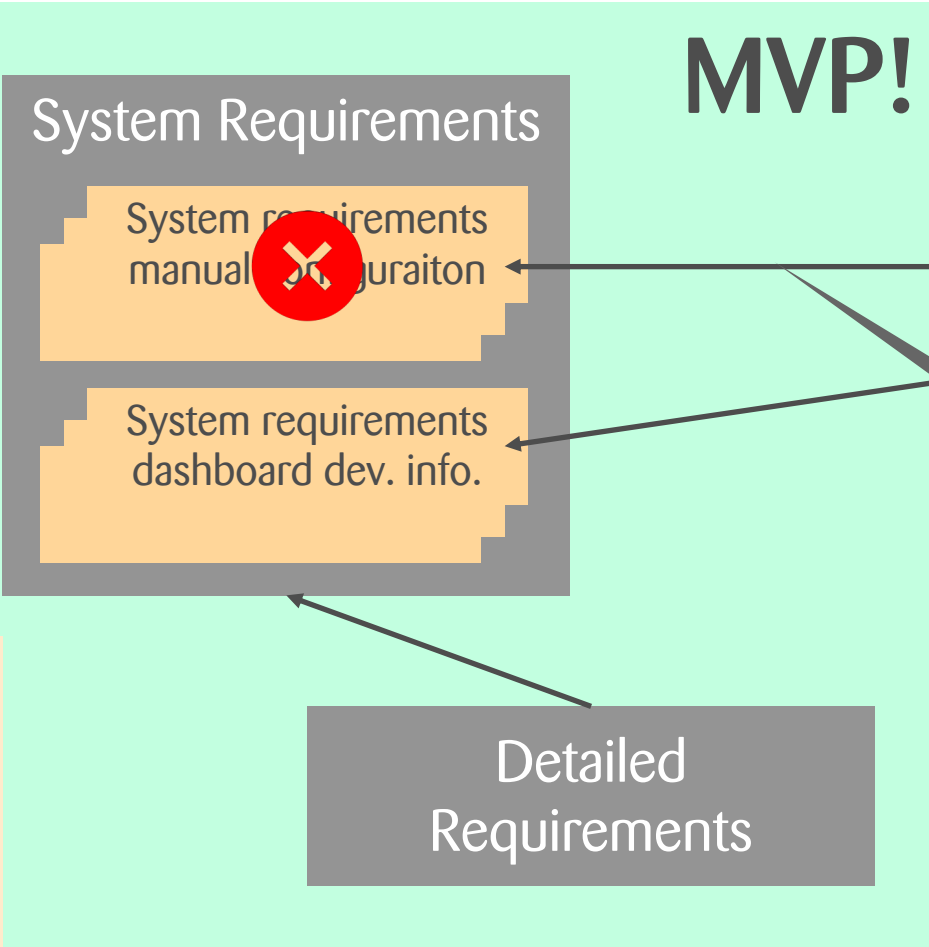
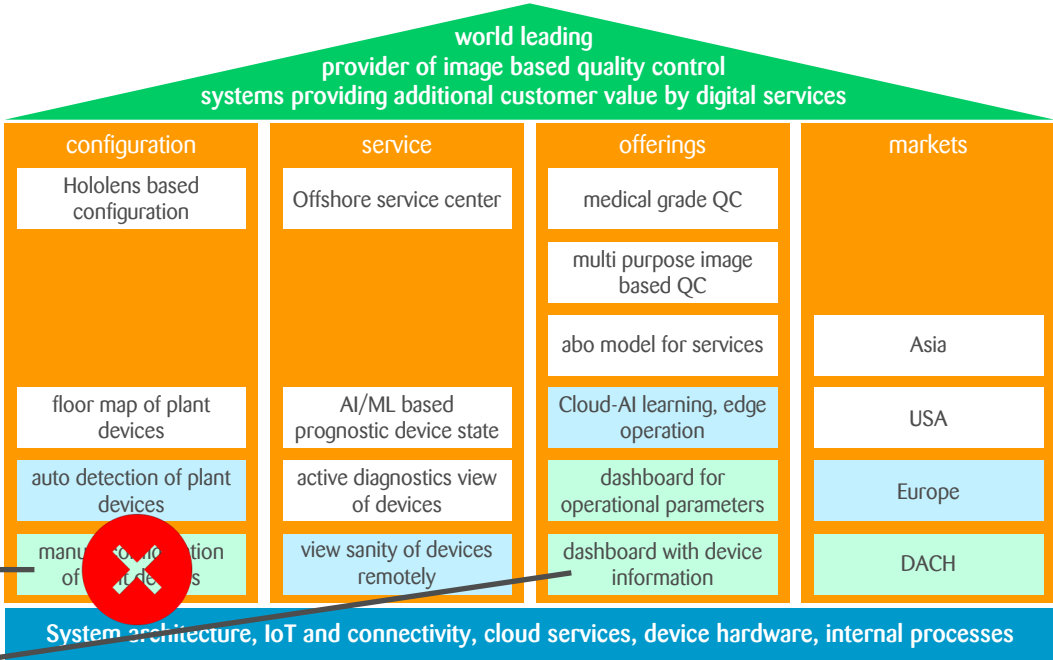
# Product roadmap



# Business driven requirements engineering



# Business driven requirements engineering

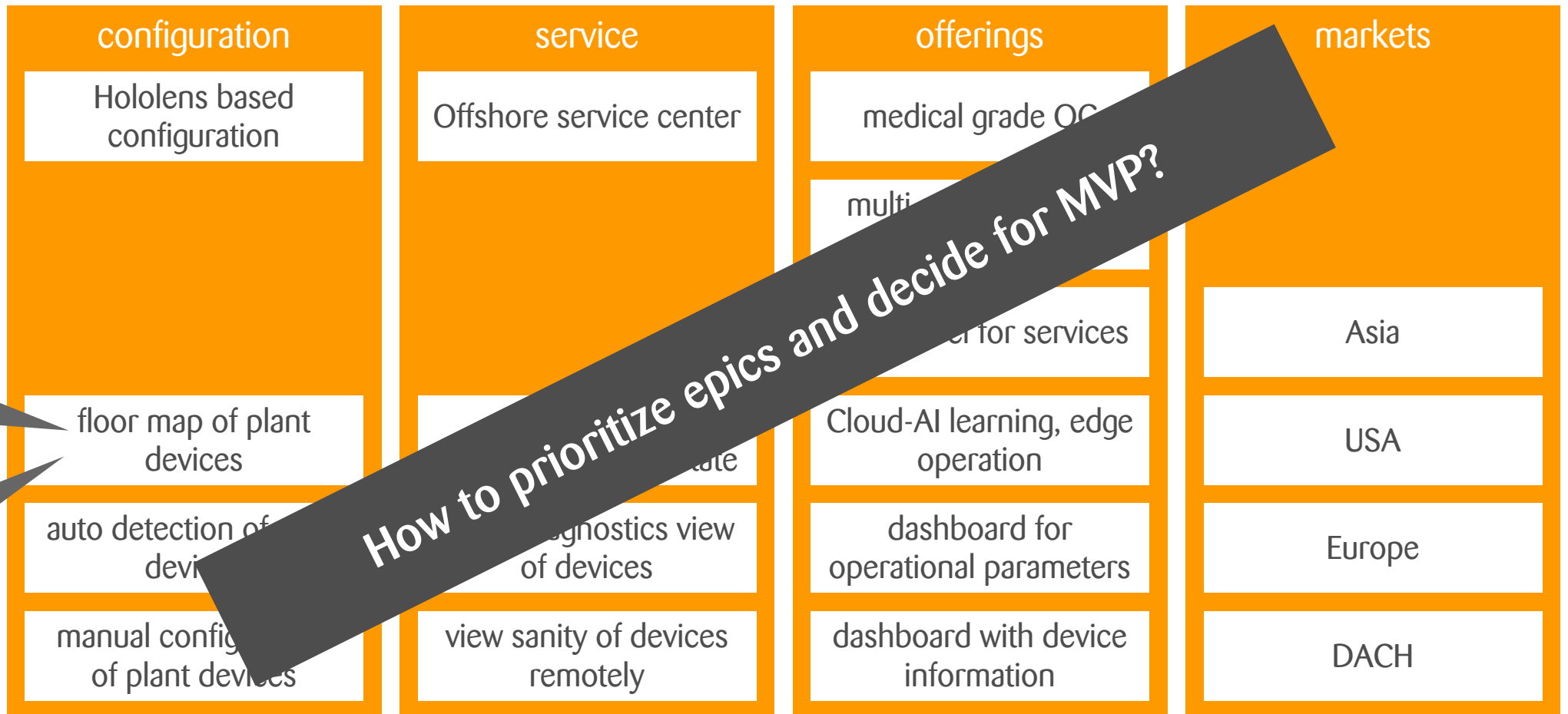


Product Backlog

Systematic scoping

# Product & service design

world leading provider of image based quality control systems providing additional customer value by digital services



**How to prioritize epics and decide for MVP?**

Cost!

Impact!

System architecture, IoT and connectivity, cloud services, device hardware, internal processes

# Impact-cost-analysis supports priority decisions

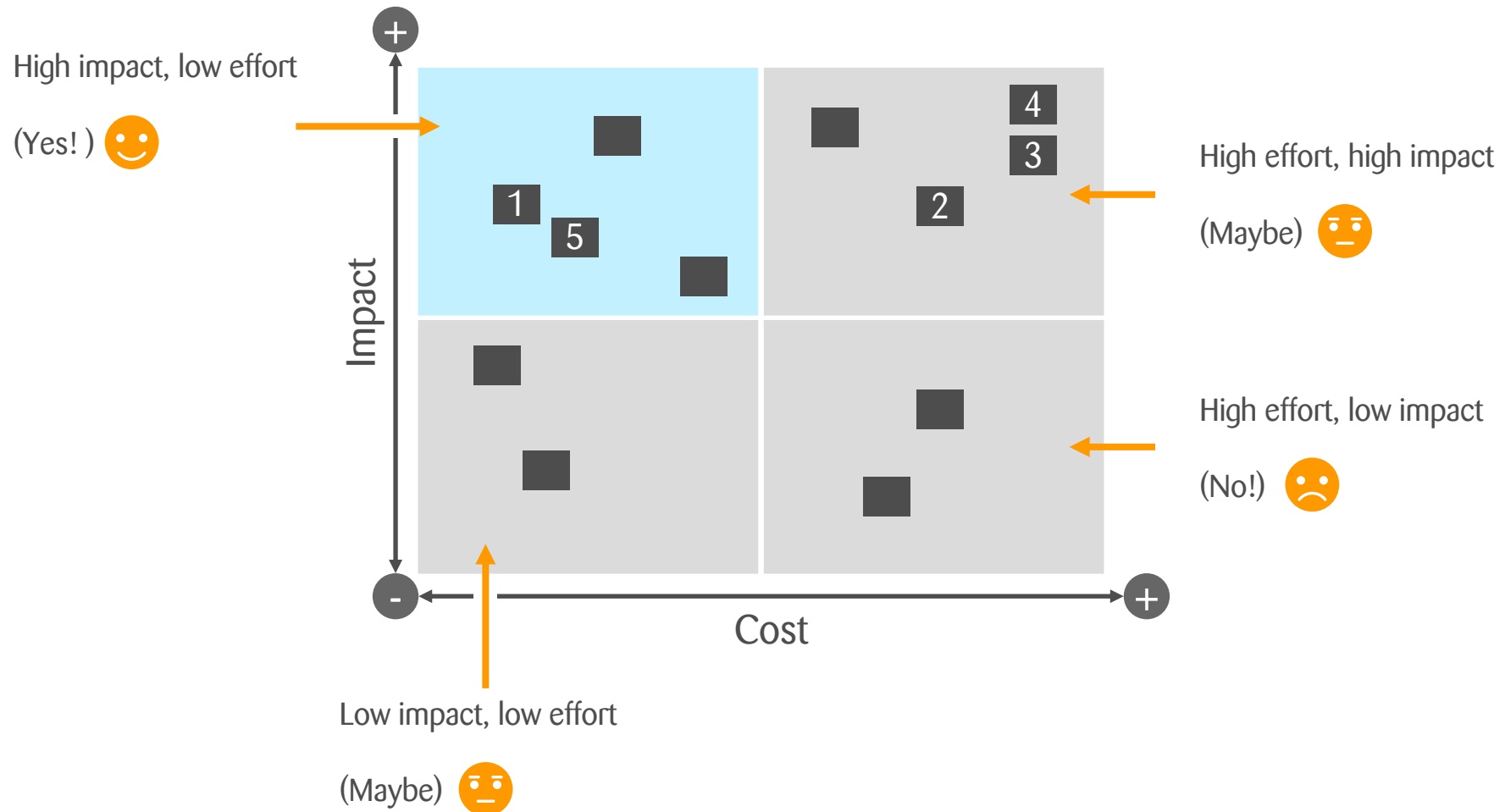
weighted results of individual impacts

weighted results of individual costs

Epic	Impact 1	Impact 2	Impact 3	Cost 1	Cost 2	IMPACT	COST
manual configuration of plant devices <b>1</b>	high	low	medium	low	low	70	20
auto detection of plant devices <b>2</b>	high	high	low	low	high	75	70
floor map of plant devices <b>3</b>	high	high	low	high	high	100	90
Hololens based configuration <b>4</b>	high	high	high	high	high	90	100
view sanity of devices remotely <b>5</b>	low	high	medium	low	medium	70	30
...	...	...	...	...	...	...	...

start qualitative, don't wait for exact numbers

# Impact-cost-matrix serves as a sound basis for discussion



# Iterative approach in **different timescales**

## Product Vision

### Update very consciously

- check every year
- then update if applicable

### Unstable vision

- business case not valid

## Product Roadmap

### Update systematically

- check 4 to 12 times p.a.
- then update if applicable

### Changes too often

- chaotic development  
("startup symptom")

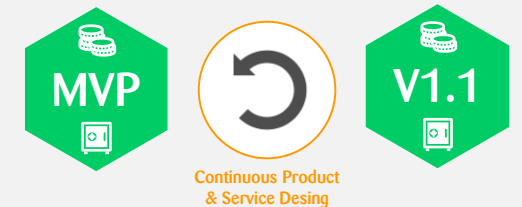
### Changes too seldom

- missed opportunities  
("global player symptom")

## Product Realization

### Implement roadmap

- agile development
- feedback of time and cost to roadmap





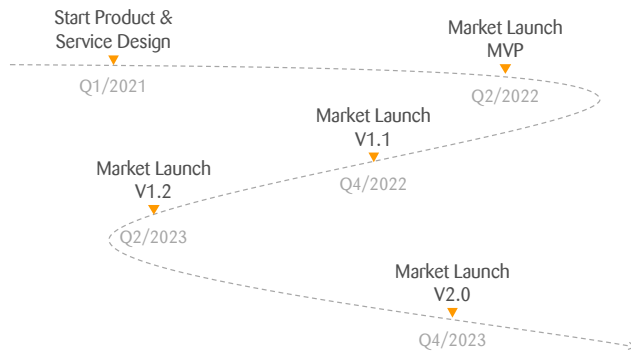
# Vision and roadmap transparent for all stakeholders

world leading provider of image based quality control systems providing additional customer value by digital services

configuration	service	offerings	markets
Hololens based configuration	Offshore service center	medical grade QC	Asia
		multi purpose image based QC	
		abo model for services	
		Cloud-AI learning, edge operation	
floor map of plant devices	AI/ML based prognostic device state	dashboard for operational parameters	USA
auto detection of plant devices	active diagnostics view of devices	dashboard with device information	Europe
manual configuration of plant devices	view sanity of devices remotely		DACH

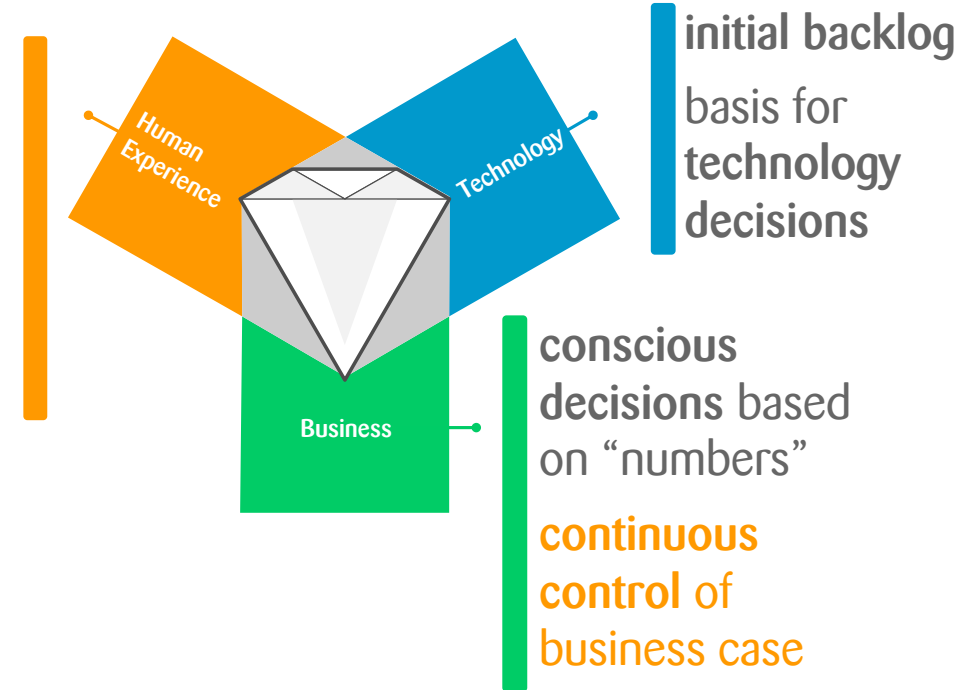
System architecture, IoT and connectivity, cloud services, device hardware, internal processes

continuous product & service design



clear structure as basis for detailed and focussed RE

continuous product & service design



# Key takeaways for continuous product & service design

- 1 Have a big vision and work on your roadmap iteratively, while keeping your epics on a high level
- 2 Define independent clusters and independent epics
- 3 Better start with qualitative evaluation of impact and cost instead of waiting for numbers
- 4 For every epic you want to add to your MVP ask, whether the product could still be sold without that epic.
- 5 Cover your internal processes as well as the product itself.

„We are looking forward to take the responsibility for driving the successful creation of your (mobile) (health) solutions!“



**Erik Steiner**  
**Business Solution Manager**

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Erik.Steiner@zuehlke.com