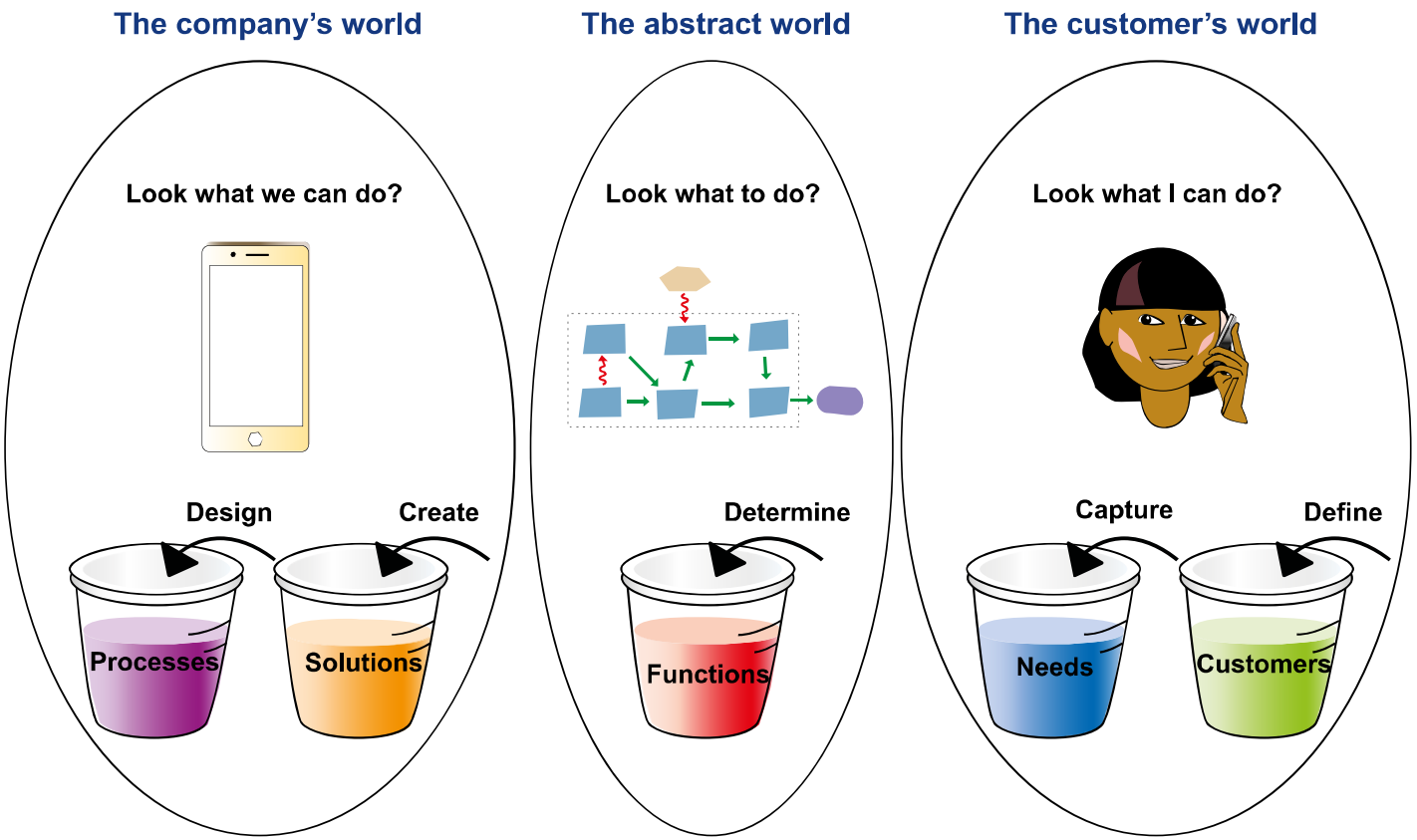
# 3. The five domains of information



# Learning objectives

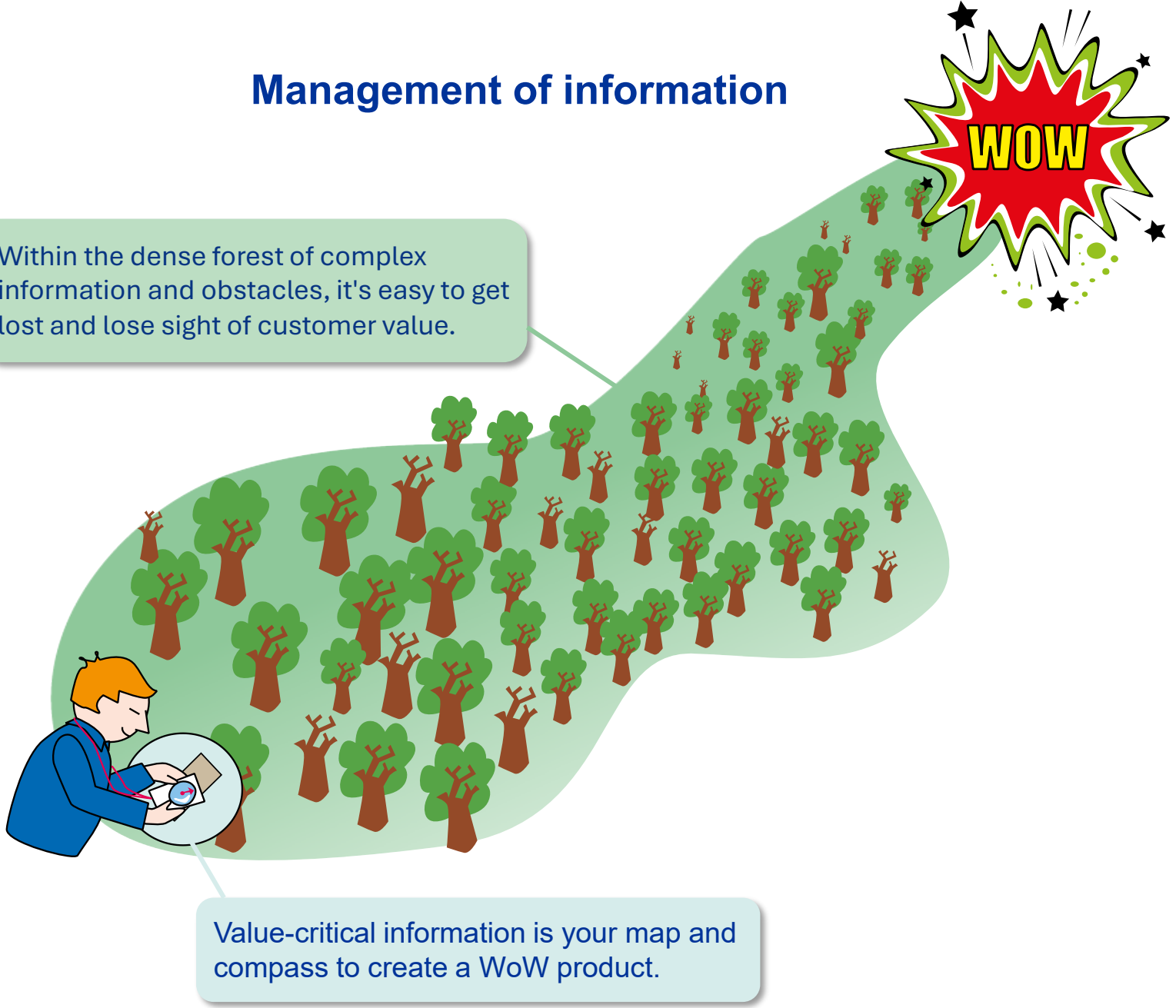
- Introduction to the five Domains of Information
- The Customer's world, Customers and Needs
- The Company's world, Solutions and Process
- The Abstract world, Functions
- Start anywhere, go everywhere
- Information domains in other tools
- Summary

# Writer's Witty Words

***Managing the information domains is the magic trick that turns the sea of data into a treasure map of insights.***

Per Lindstedt

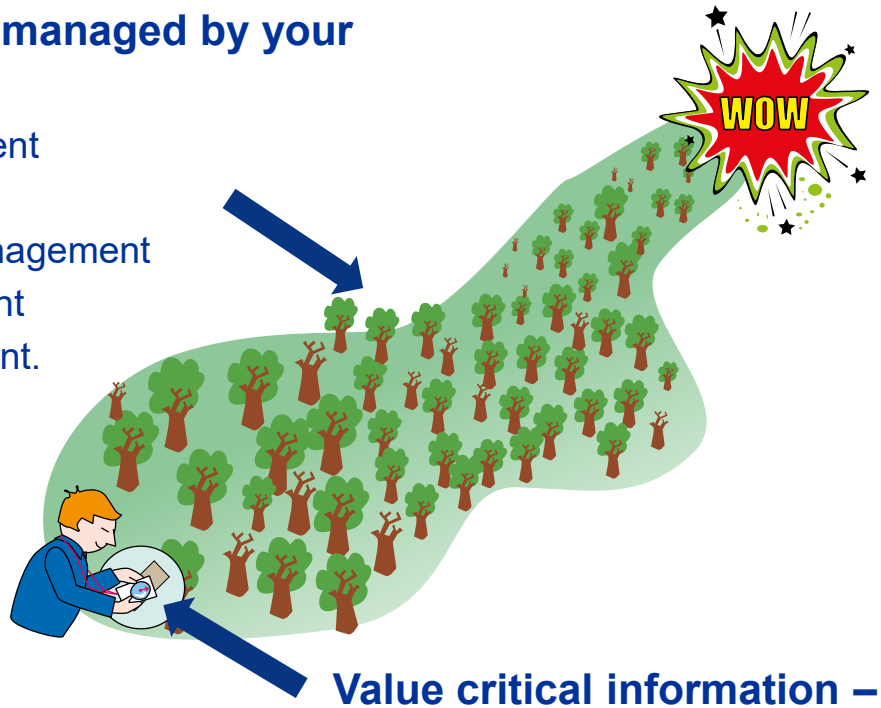
# Management of information



# Two types of information

**Specific information – managed by your software for:**

- Product data management
- Content management
- Product information management
- Master data management
- Digital asset management.



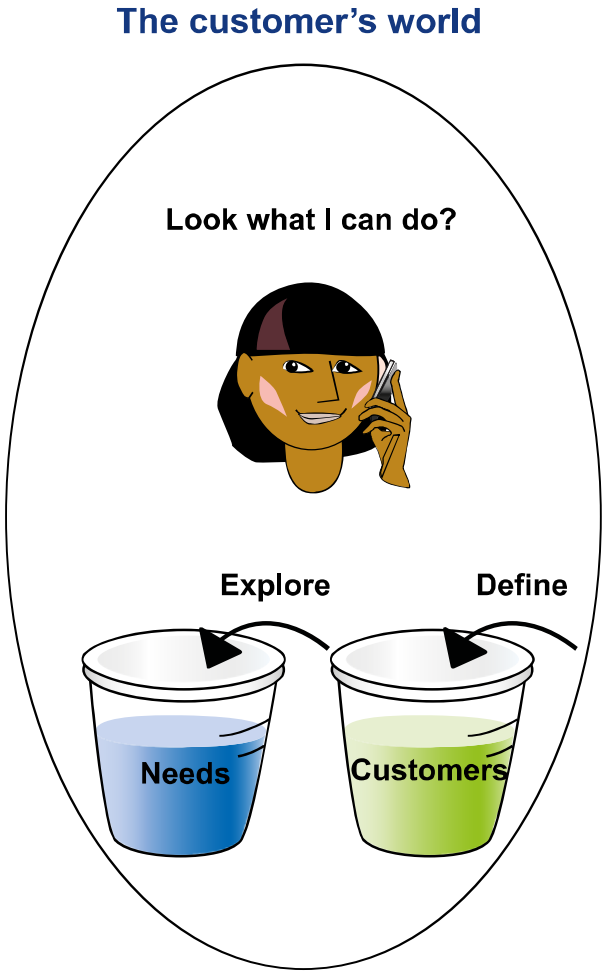

**Value critical information – managed using the five domains of information:**

- Customers
- Needs
- Functions
- Solutions
- Processes.

# The customer's world

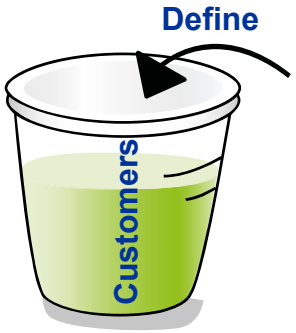
## The customer's world:

- is outside of your company's control.
- is inherently dynamic.
- has its own rules and trends.



# The Customers Domain of Information

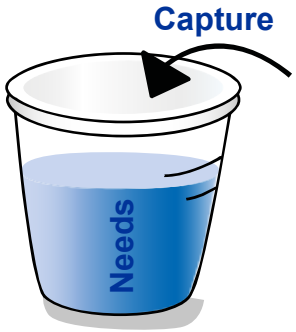
A carefully selected, well-defined, and documented market segment where the new product has the potential to become market-leading. A market segment where your company has unique advantages and opportunities to create a highly lucrative business.




$$\text{Customer value} = \frac{\text{Satisfaction of customer needs}}{\text{Use of customer resources}}$$

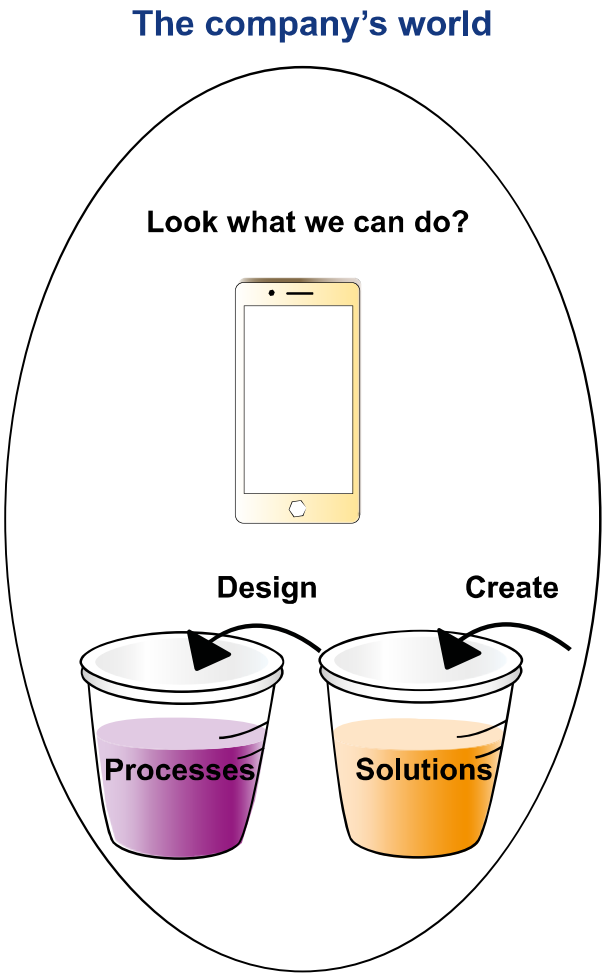
# The Customers Needs Domain of Information

An accurate, authentic, and prioritized documentation of the outcomes or desired results that your new product must achieve to have unrivaled customer value. Documentation made in the customer's own language without bias of internal interpretations.




$$\text{Customer value} = \frac{\text{Satisfaction of customer needs}}{\text{Use of customer resources}}$$

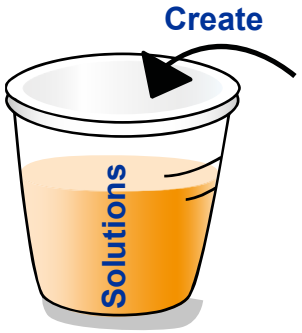
# The company’s world




## The company’s world:

- you have complete control and operational freedom.
- improvements are challenging.
- deep-rooted traditions and comfort in the status quo.

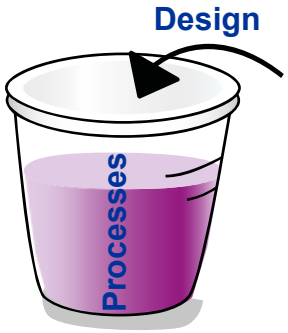
# The Solutions Domain of Information




A clearly defined and structured definition of your new product, including the system architecture and the value-increasing challenges it solves.

$$\text{Customer value} = \frac{\text{Satisfaction of customer needs}}{\text{Use of customer resources}}$$

# The Solutions Domain of Information

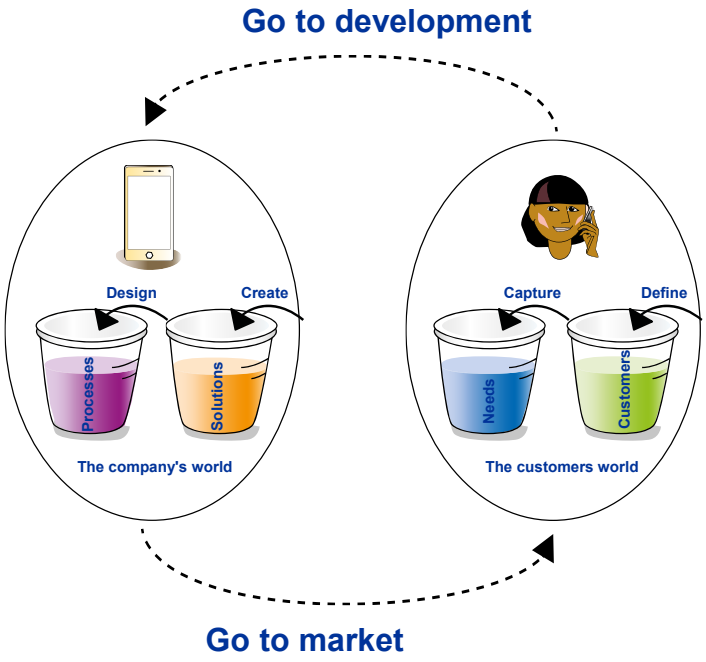



A clear definition of how the new product supports the various touchpoints in the customer journey, making the journey easy, effortless, and enjoyable for the customer.

$$\text{Customer value} = \frac{\text{Satisfaction of customer needs}}{\text{Use of customer resources}}$$

# Common problems

## Nobody has all but everybody some



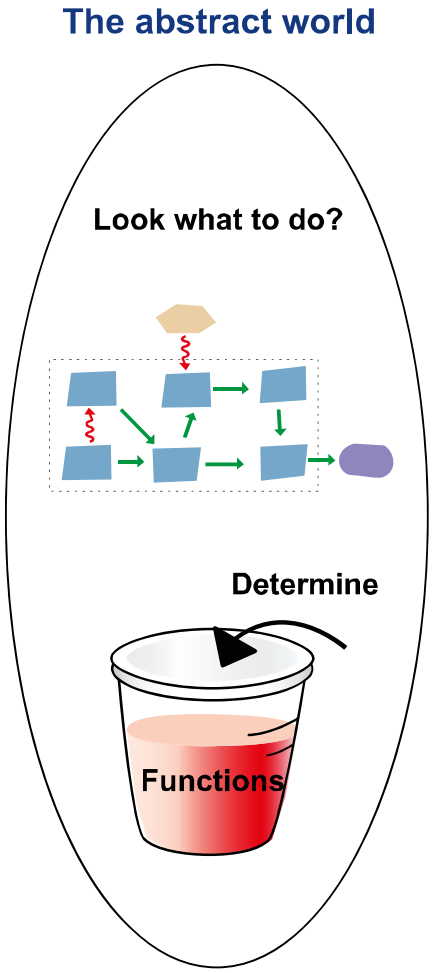

### Problems in connecting the worlds include:

- no clear link between the customer's world and the company's world.
- technical decisions made by the wrong people and too early in the process.
- the marketing message does not support the product's intrinsic values.

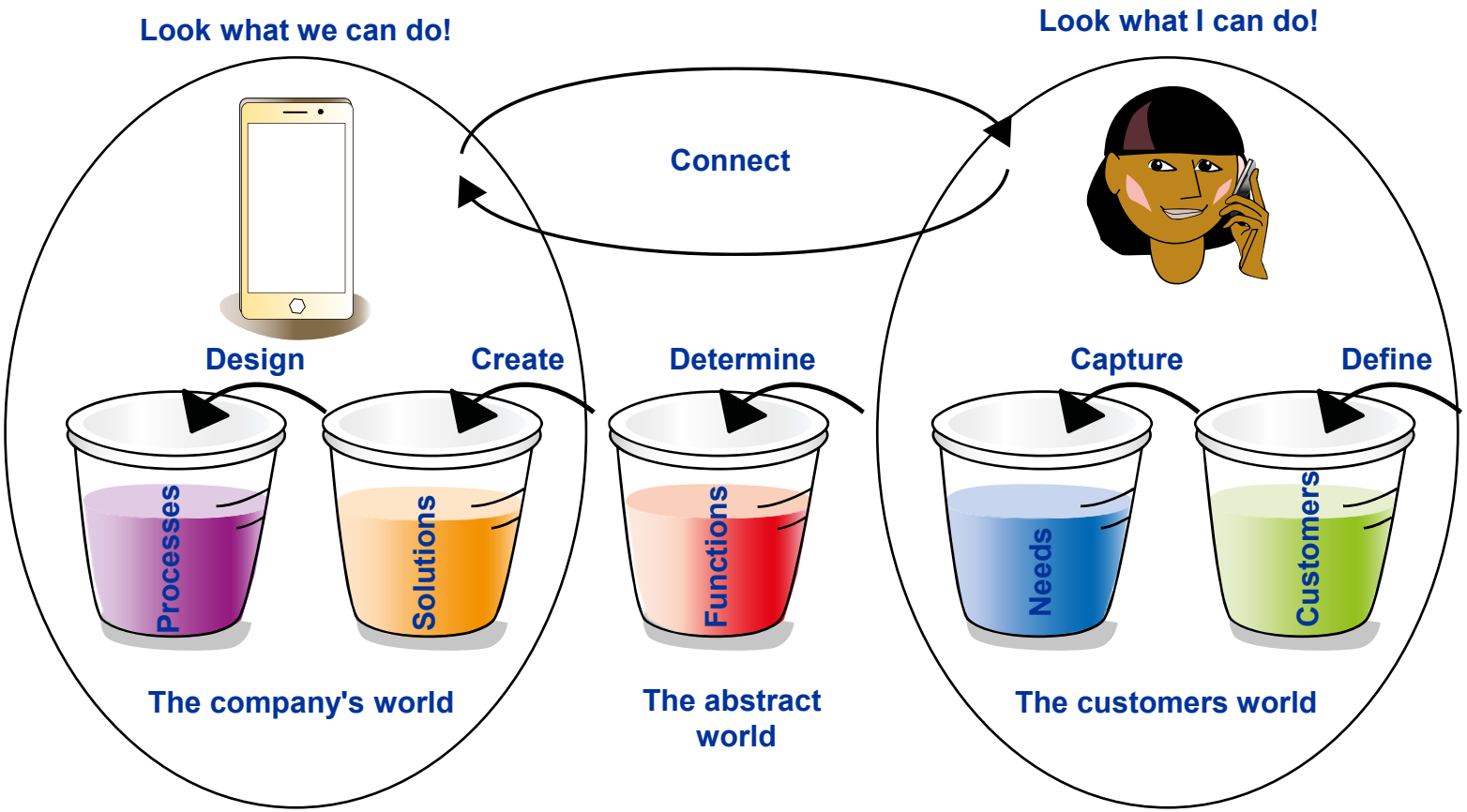
# The Abstract World

## The abstract world:

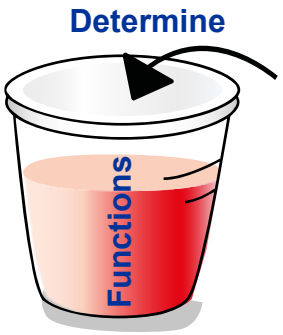
- functional language is solution-neutral and follows strict rules.
- equivalent of algebra in mathematics.
- suitable for measuring customer value, benchmarking, long-term planning, and solving more complex problems.



# The Functions Domain of Information



# The Solutions Domain of Information



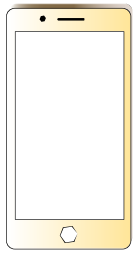

An abstract description in terms of the functionality and performance of the new product illustrating how the new product creates and reduces customer value. In the functional domain, it is possible to estimate value in measurable units.

$$\text{Customer value} = \frac{\text{Satisfaction of customer needs}}{\text{Use of customer resources}}$$

# Information Domains

## The company's world

Look what we can do?



Design

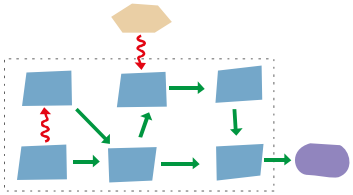
Create

Processes

Solutions

## The abstract world

Look what to do?



Determine

Functions

## The customer's world

Look what I can do?

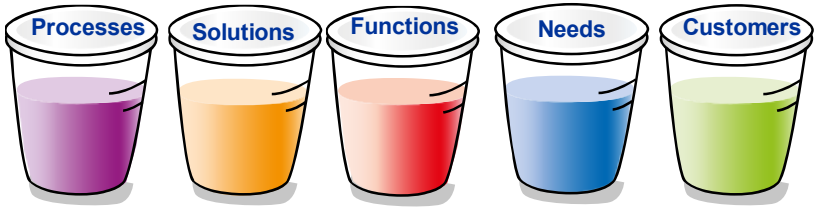
Capture

Define

Needs

Customers

# Stupid example



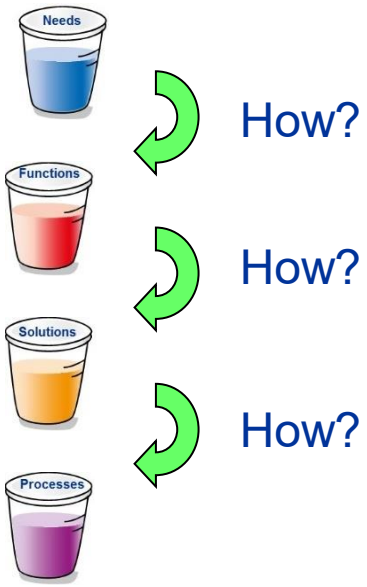

The customer, **me**.


Need – *I urgently need to inform my wife that I am running late.*

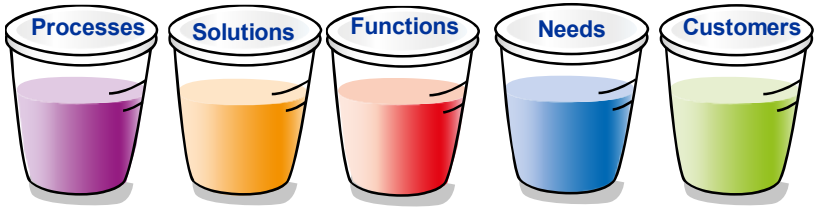
Function – *Send a message.*

Solution – *Use Snapchat on my mobile.*

Process – *Take a picture, type a message and send it off.*



# Stupid example




The customer, **me**.


Why? ?

Need – *I urgently need to inform my wife that I am running late.*


Why?

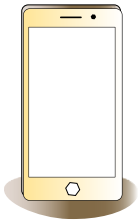
Function – *Send a message.*


Why?

Solution – *Use Snapchat on my mobile.*


Why?

Process – *Take a picture, type a message and send it off.*

# What - How- Why

**The Why question:**

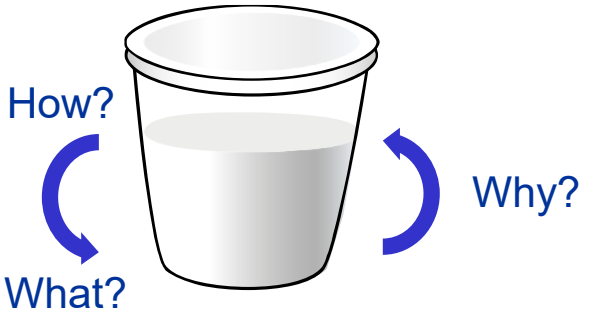
- transforms information from concrete to abstract.

**The How question:**

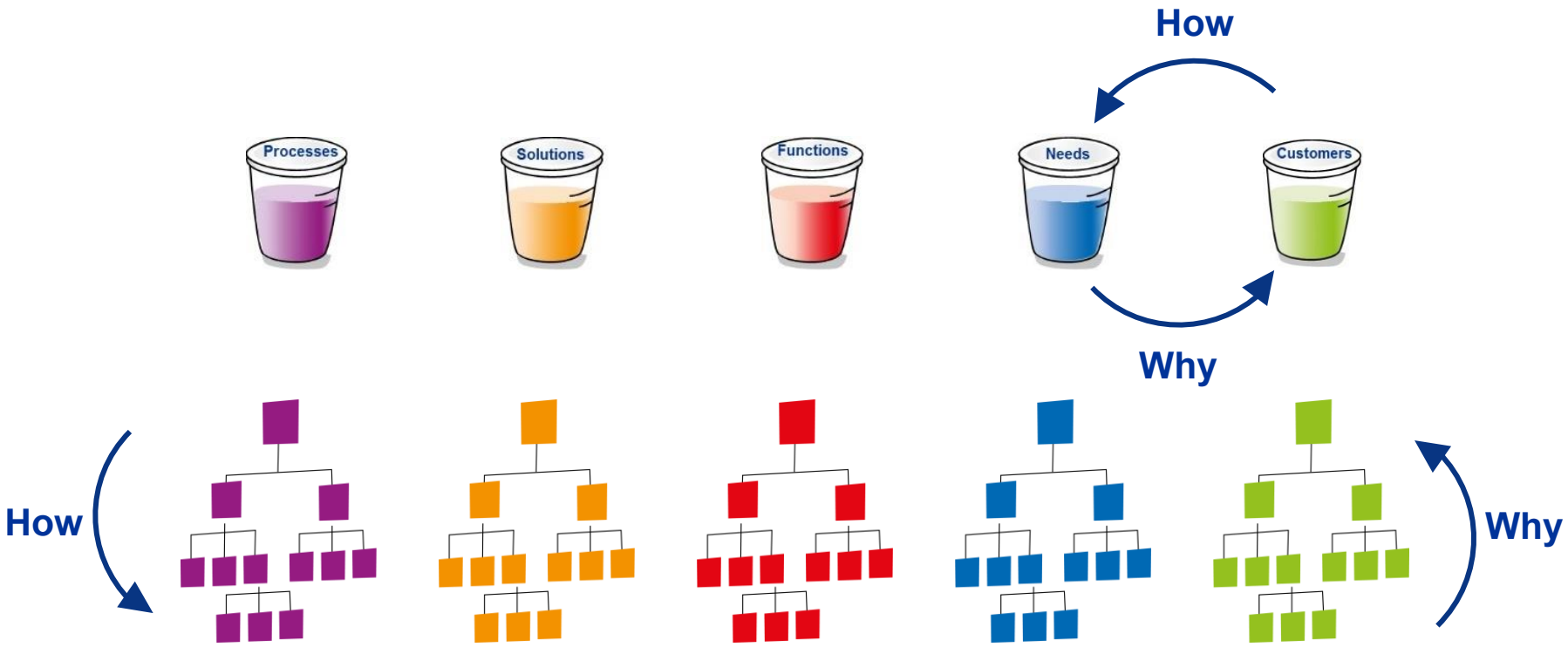
- transforms information from abstract to concrete.

**But not necessarily between two domains:**

- it enables navigation within the hierarchy of the same domain.



# What - How- Why



# The why-what-how loop

Aha! Avoid short circuits (need).

Why The cables carry information (function).

Why

The cables should be color coded (solution).

What Avoid short circuits (need).

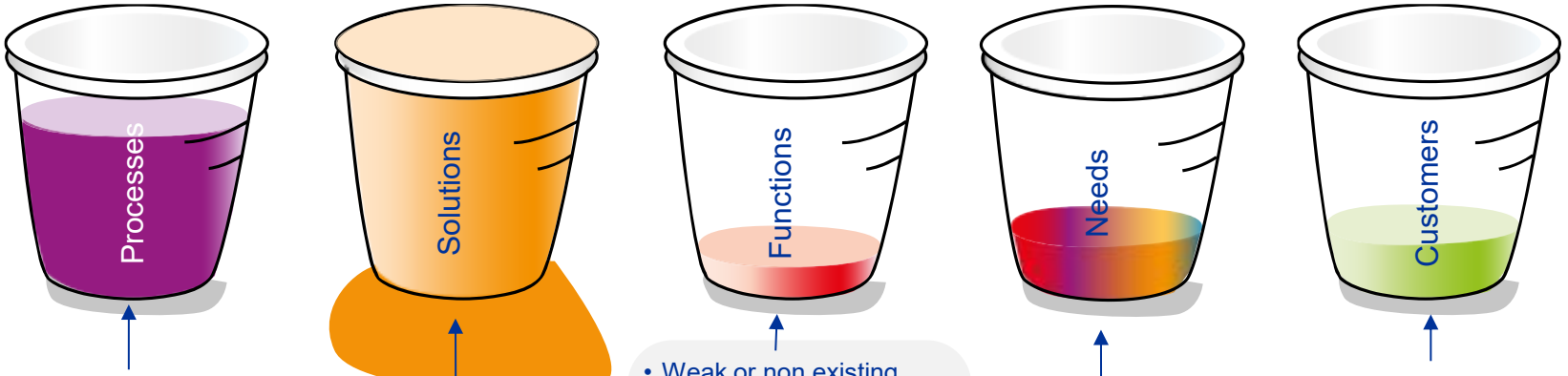
How/What Cables prevent mixing (function).

Cables with pre-mounted poka-yoke connectors (alternative solution).

Wow is not about doing exactly what the customer says, but about addressing what the customer means.

# Common problems

## Nobody has all but everybody some




- Processes are to detailed and in conflict with common sense.
- The product doesn't support the touchpoints in the customer journey.

- Wrong mind set and cluttered with many small tweaks (ideas) with no customer value.
- Weak long term strategic and systematic work to prepare for next S-curve.

- Weak or non existing functional and cost-based thinking.
- Not used as a common platform for specifications, planning, selling etc

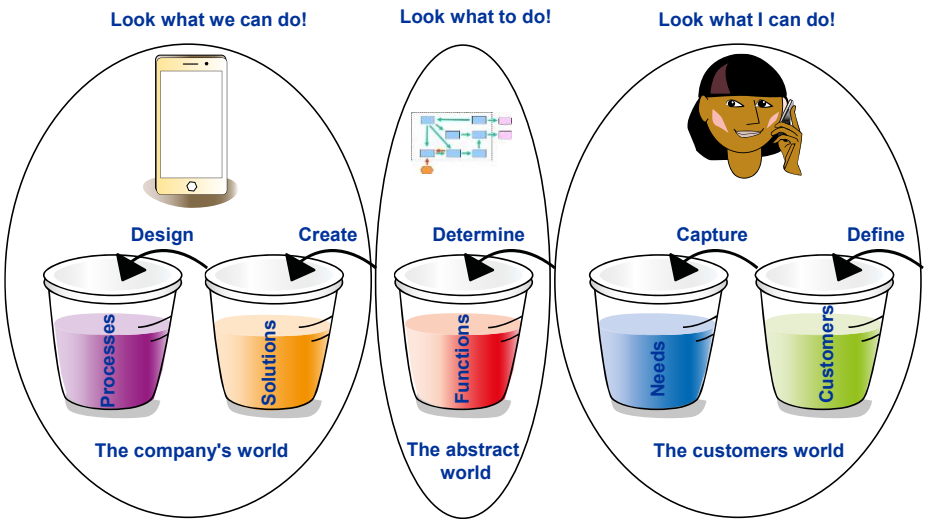
- Needs are anecdotal without data or traceability.
- Confusing technical solutions with needs.

- No clear, unambiguous and unified definition of the customer.
- Market segments are unclear, to broad and inhomogeneous.

# Guess the bucket?

## Information received from customers:

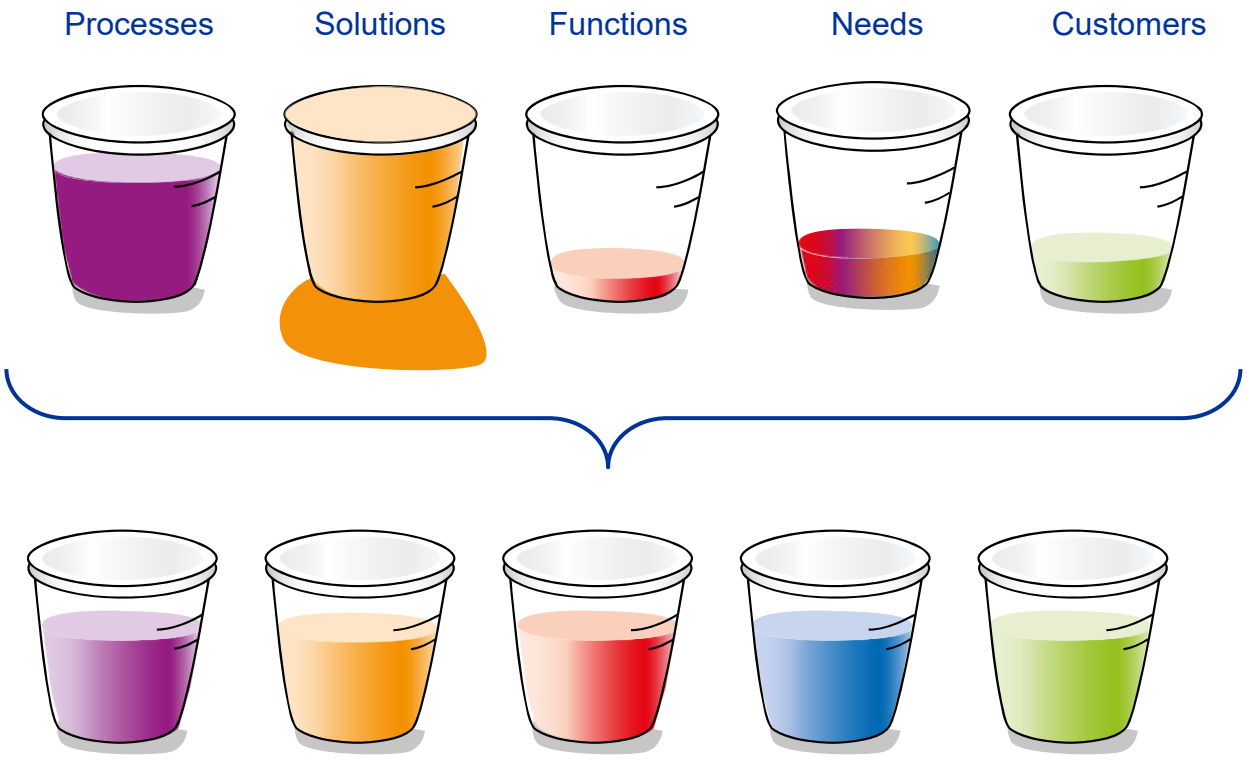
- Gorilla Glass screen
- Excellent coverage
- Made within EU
- I am Eco-conscious
- Network to sends and receives e-mails




**In most projects you have hundreds:**

- Reliable connectivity
- IP 68 water and dust resistance rating
- Fast charging
- High-quality camera
- Connected in surf zones
- USB-C type charging
- Modern appearance
- Faster than fixed-line broadband
- …

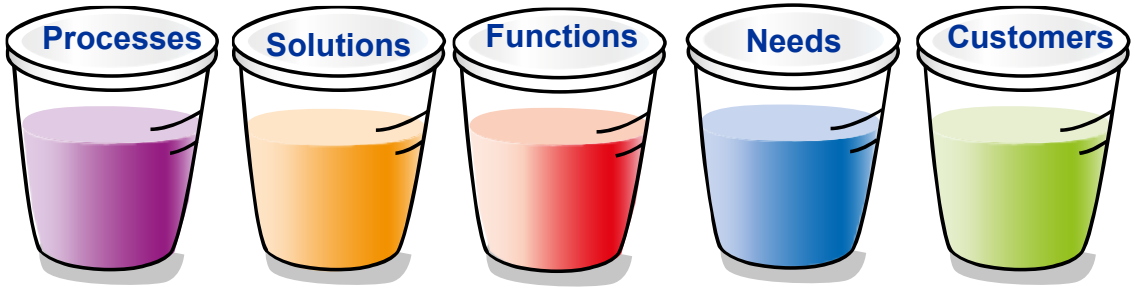
# Start Anywhere ➡ Go everywhere




**You can start anywhere but must fill out all domains with value-critical information.**

## Business model

Produce → Provide → Satisfy → Invoice

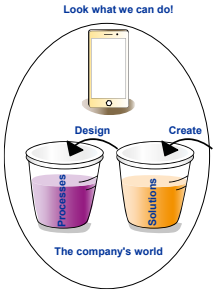


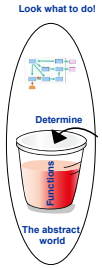

Design ↑ Create ↑ Determine ↑ Capture ↑ Define ↑

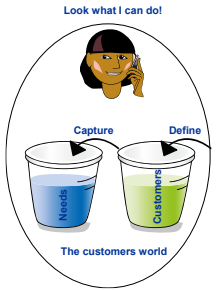
## Development model

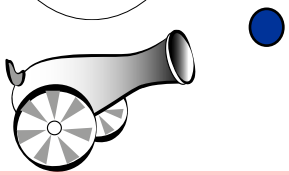
**Start anywhere – go everywhere.**

# The secret to improve



| | | | | | | |
|---|---|---|---|---|---|---|
| Typical | Distribution | 98% | 49,3 FTE (59 MSEK) | 0,2 FTE | 0,5 FTE | **2,37** |
| | Shots/year | | 2,96 | | Hit rate: 1 of 5 | **0,59** |
| Stars | Distribution | 92% | 46 FTE (55,2 MSEK) | 2,0 FTE | 2,0 FTE | **1,66** |
| | Shots/year | | 2,76 | | Hit rate: 2 of 5 | **1,10** |

FTE = Full time equivalent

~ 86 % increase

**Fewer projects but a higher success rate.**

Example:
- company with R&D department of 50 people
- budget of 60 Million SEK
- average cost per developed product (R&D project) 20 million SEK

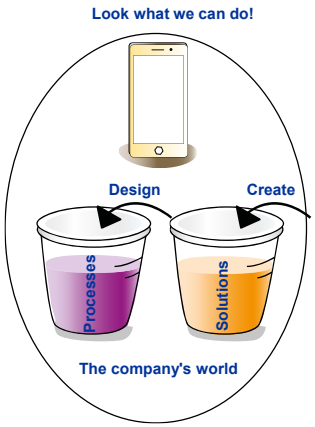
# How will this affect vitality index!

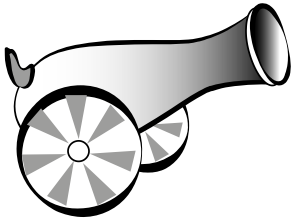
| Typical | Stars | |
|---|---|---|
| 2,37 | 1,66 | Will not affect vitality index |
| 0,59 | 1,10 | Affect vitality index } > 86% increase |

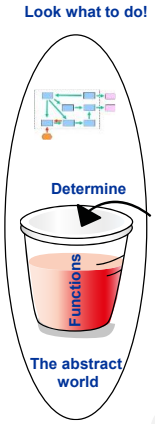
## Stars can triple the vitality index because they:

- generate larger sales volumes per successful product.
- higher customer value enables premium pricing.
- focus resources on more advantageous market segments.

# What do you get for the money?

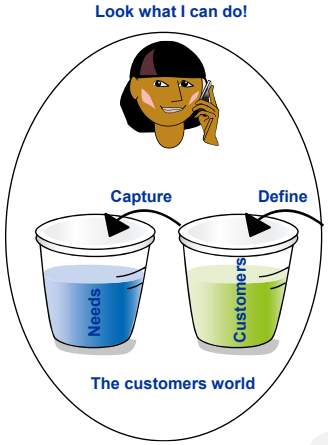





0,2 FTE

2,0 FTE




0,5 FTE

2,0 FTE

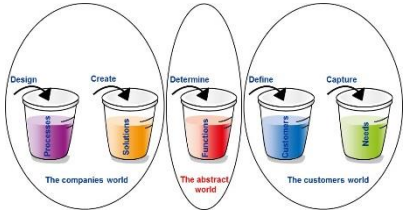
**Internal efficiency**
- smart use of powerful tools
- focused innovation efforts
- product supports customer journey.

**Creates the right focus**
- functional and cost-based thinking
- measured value
- use of functional models and formulated value-increasing strategies.

**Identifies the best opportunities**
- smart customer segmentation
- professional and communicated Personas
- world-class "*Voice of the customer*"
- cross functional and systematic work.

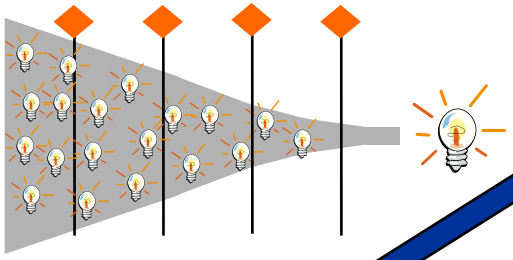
# Success rate

## Value focus




## Process focus


## Product focus



≈ 2 of 5

The mind set of the future!

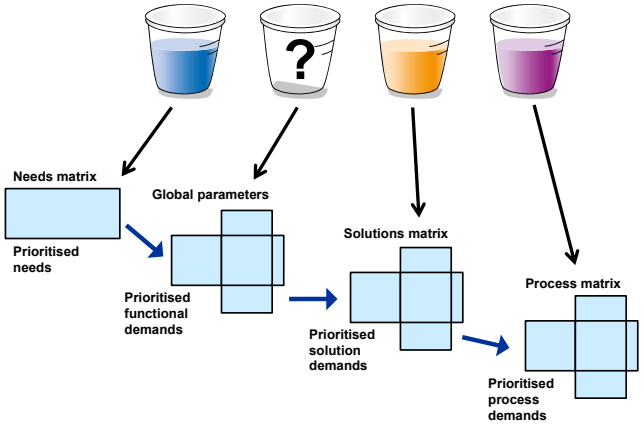
≈ 1,5 of 5

All pieces in place but low overall efficiency!

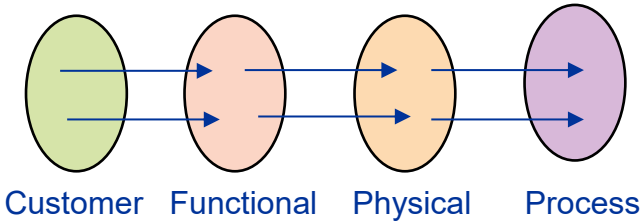
≈ 1 of 5 Technically great products but not what the customer want!

# Information domains in other tools

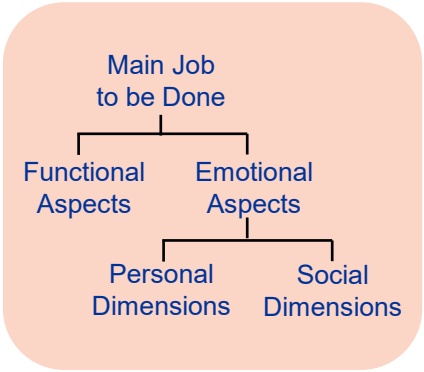
**Quality function deployment**
- clear thread through the development process.
- time consuming to make the matrixes.
- weak link between needs and solutions.

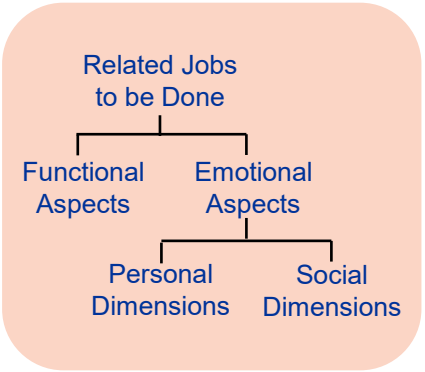



**Axiomatic design**
- axioms provide functional guidelines.
- no guidance of how to move between domains – *mapping by engineer.*




**Jobs-To-Be-Done (JTBD):**
- is not using multiple information domains.
- compresses insights into the functional domain.
- the functional domain is complex and convoluted.
- employs a strong functional syntax for clarity.

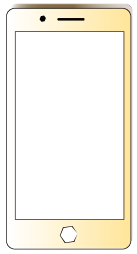


# Information Domains

## The company's world

Look what we can do?



Design

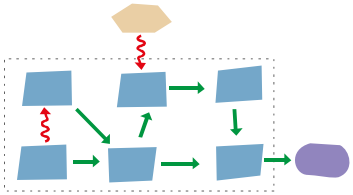
Create

Processes

Solutions

## The abstract world

Look what to do?



Determine

Functions

## The customer's world

Look what I can do?

Capture

Define

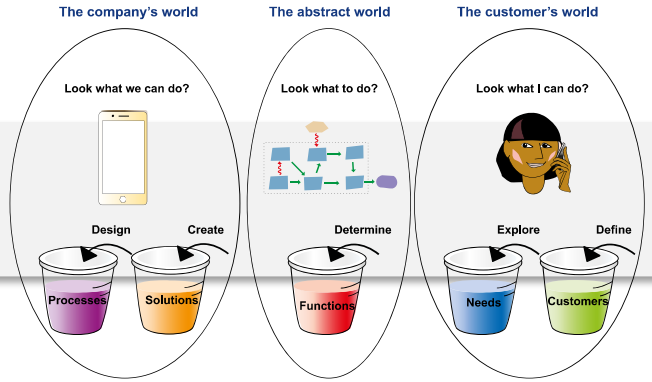
Needs

Customers

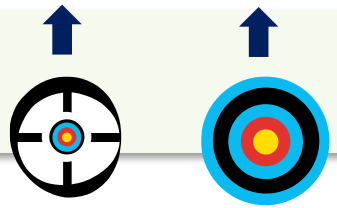
# Summary

Most inefficiencies and problems in R&D are due to poor management of information.

Effective management of value-critical information is the key to improving product development.




Moving resources from the Solution Domain to the Customers, Needs and Functions Domain doubles or triples the output.



To learn more read the chapter and see the video!