

A woman with blonde hair is pointing at a computer monitor in a workshop setting. The background is slightly blurred, showing other equipment and a man's face in the foreground.

# Additive manufacturing and design

30.10.2018 Merinova, Vaasa  
Johannes Karjalainen

# Etteplan

## –a growth company

Rapidly growing and developing engineering services company

Our customers are global machine and equipment manufacturers

We stand out by the high-level competence and service attitude

Founded 1983 | Nasdaq Helsinki Ltd



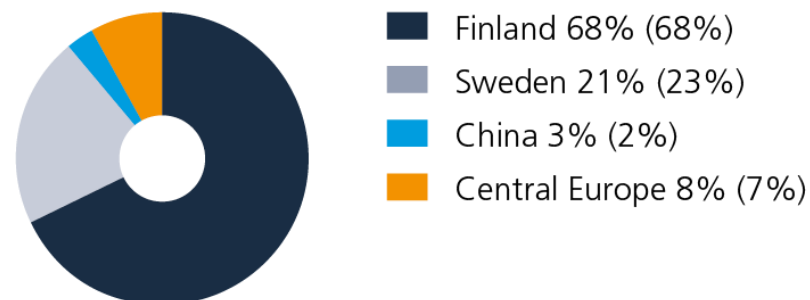
~215

REVENUE, EUR MILLION 2017

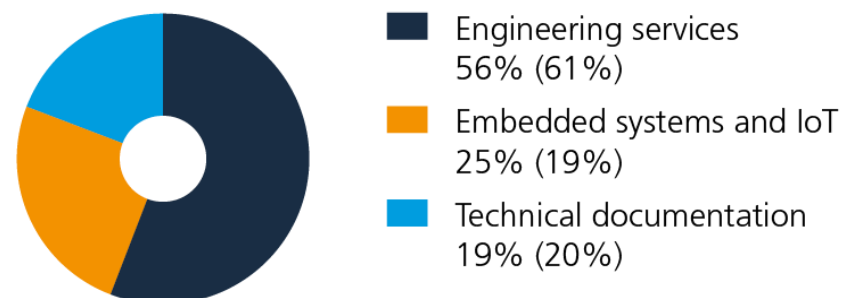
> 3,000

NUMBER OF PERSONNEL

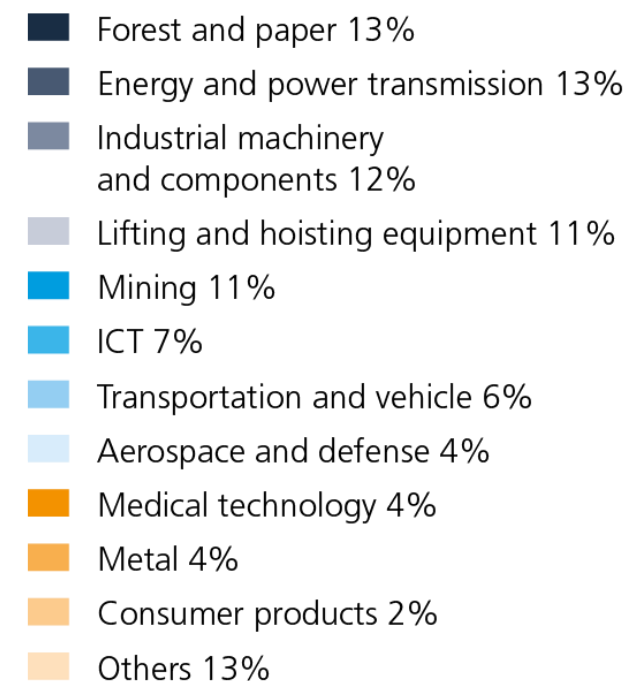
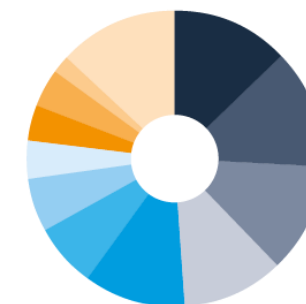
Revenue by geographical area 2017 (2016)



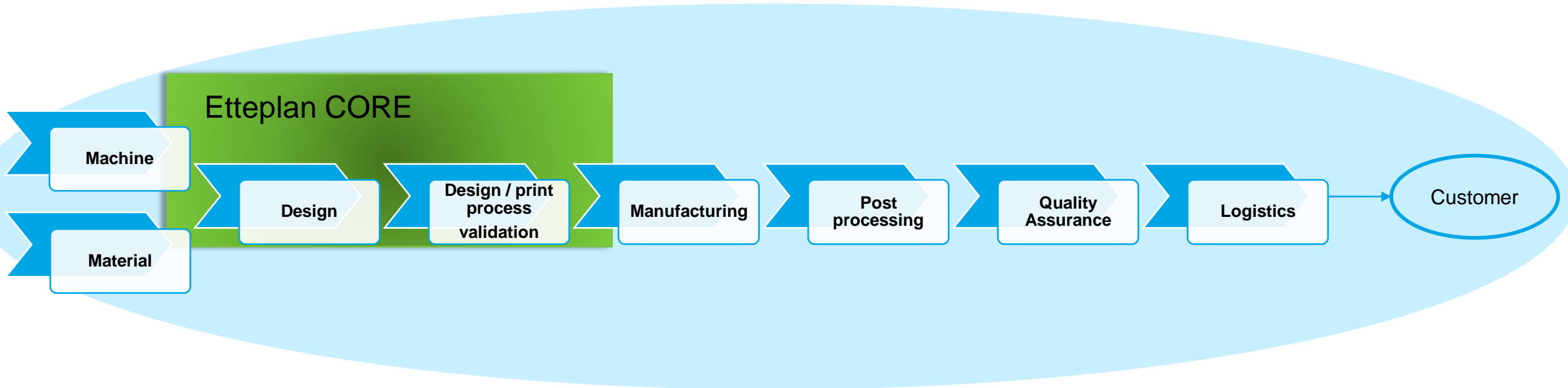
Revenue by service area 2017 (2016)



Revenue by customer segment 2017




# Etteplan in AM





**STARTUP**



A woman with blonde hair is smiling and pointing her right hand towards a computer monitor. In the background, another person's face is partially visible. The scene is set in an office with multiple computer monitors.

# **Etteplan AMO vision:**

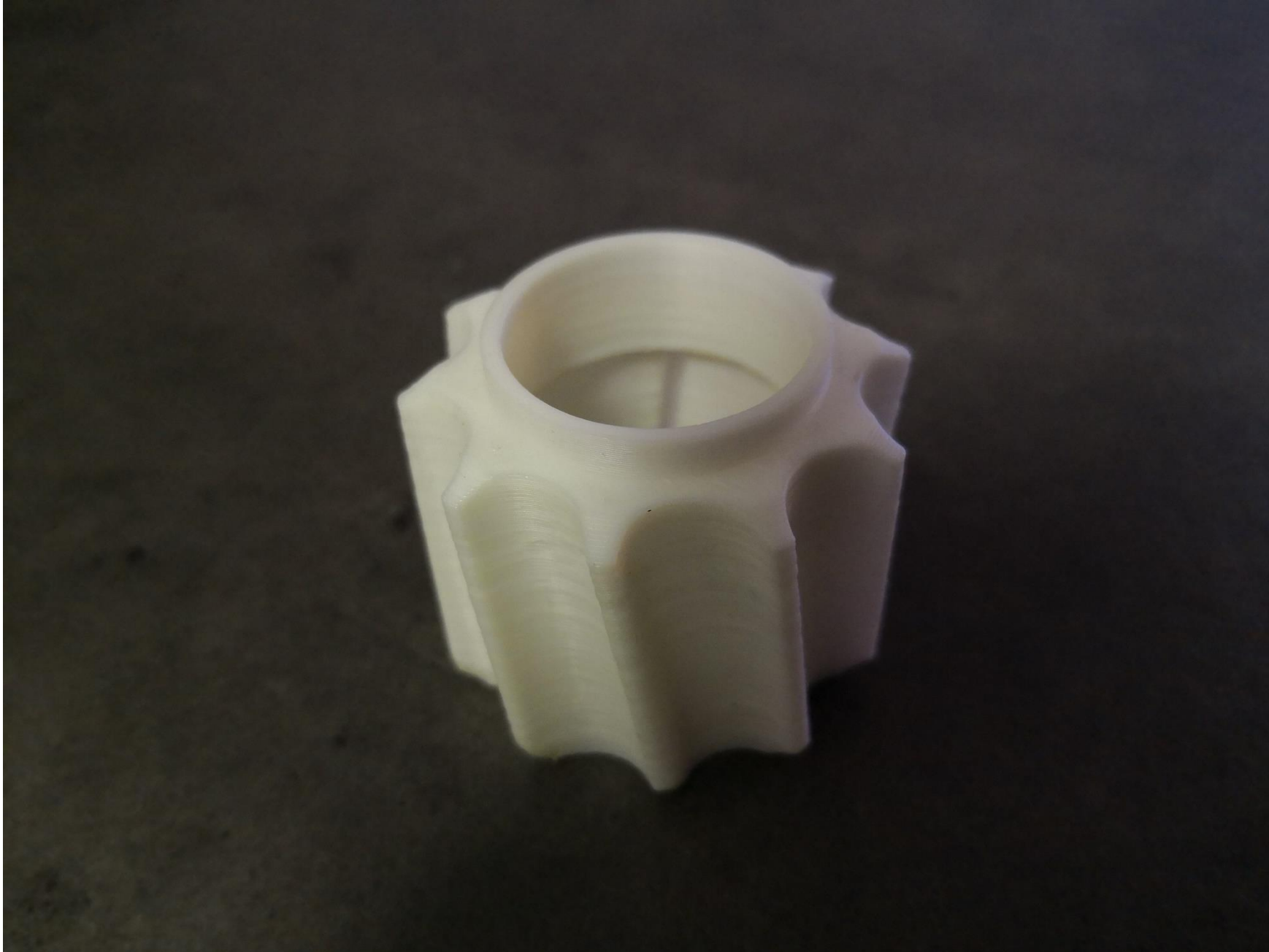
## **Etteplan to become #1 AMO expert in Nordics by 2020**

# Who am I?

- AM Specialist
- Working in Etteplan since September 2016
- M.Sc. in mechanical engineering
  - Product development
  - Production technology
  - Hydraulics

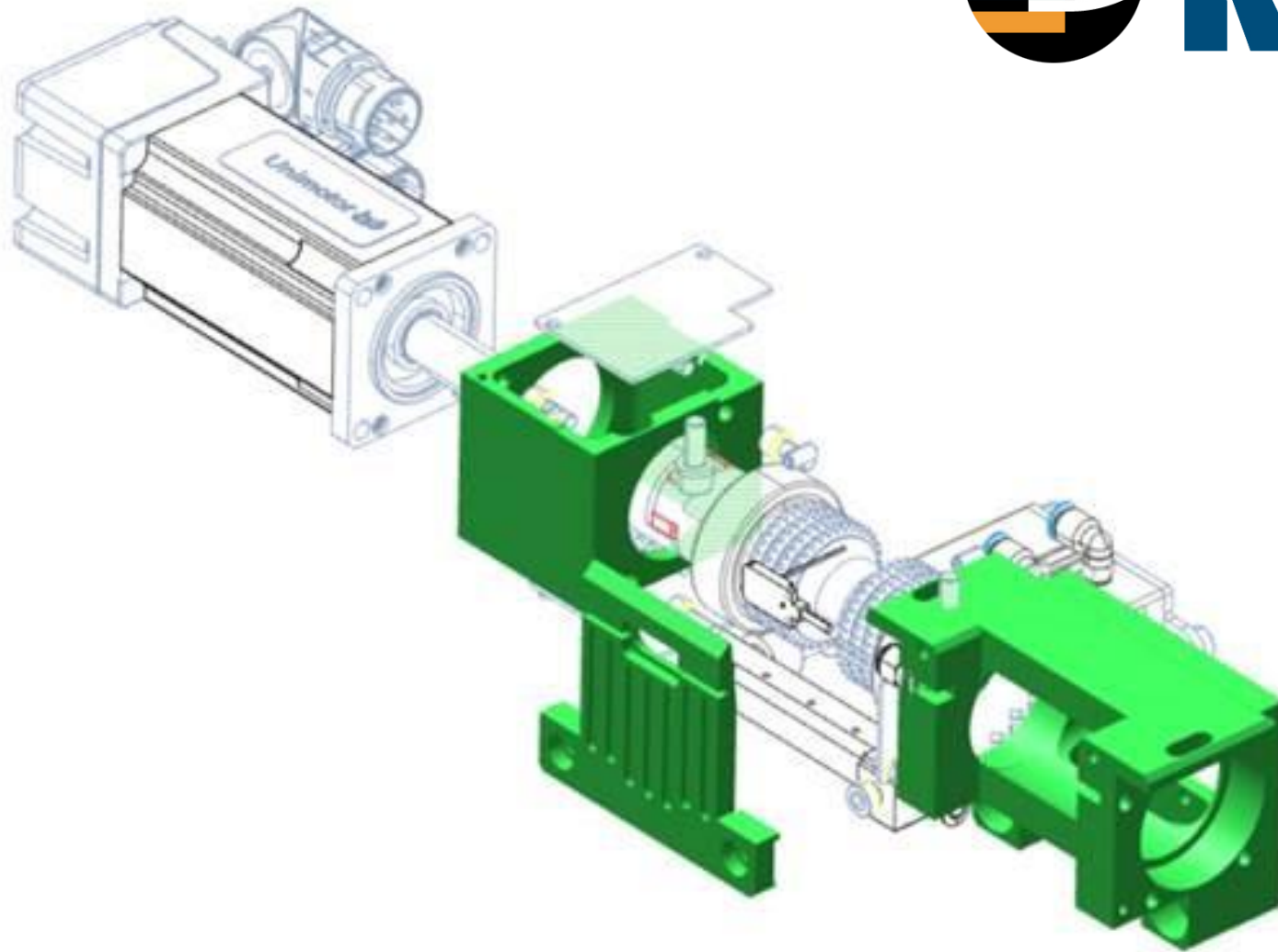




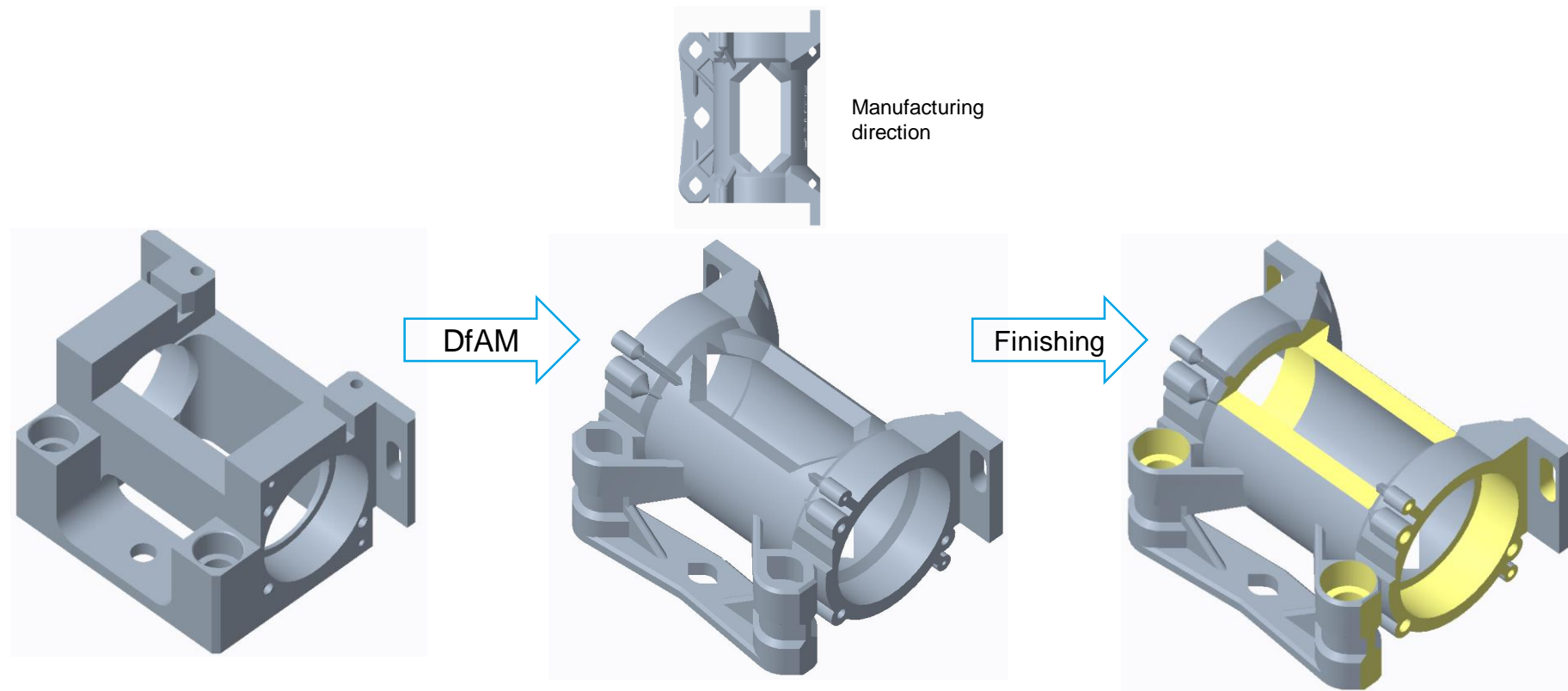


# First level of AM: Prototyping





# DfAM squarebar



Yellow represents machined surfaces

# Plate, S355 & Aluminium



# 3D printed materials

**IN718**

**Yield strength 1010MPa**

**At 649 Celcius degrees**

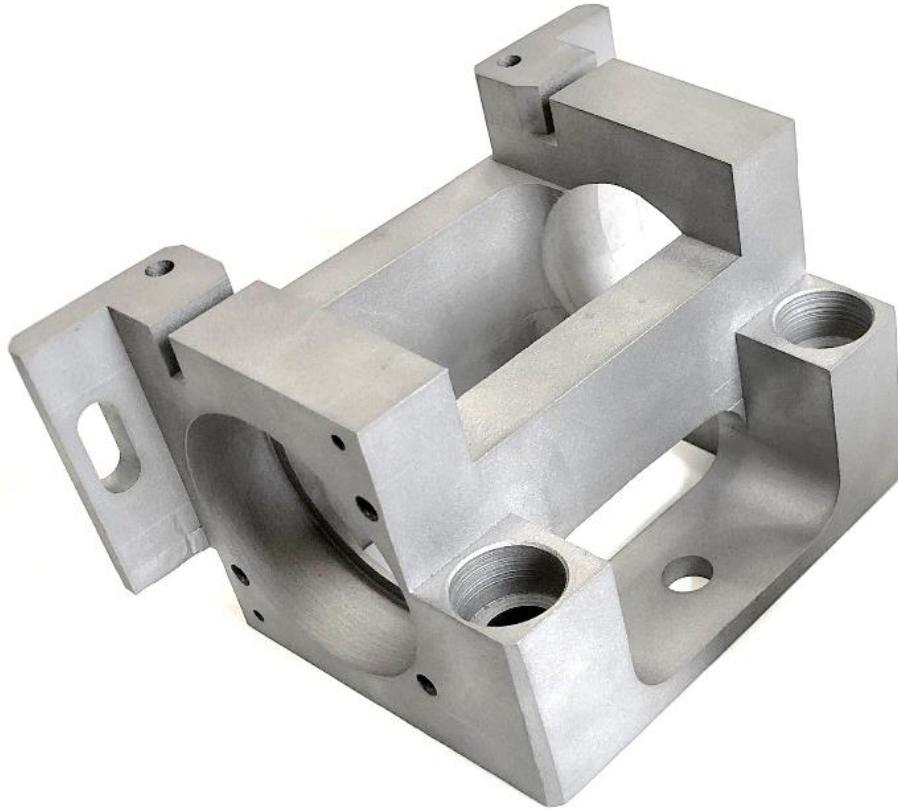
**Titanium**

**Yield strength 1010MPa**

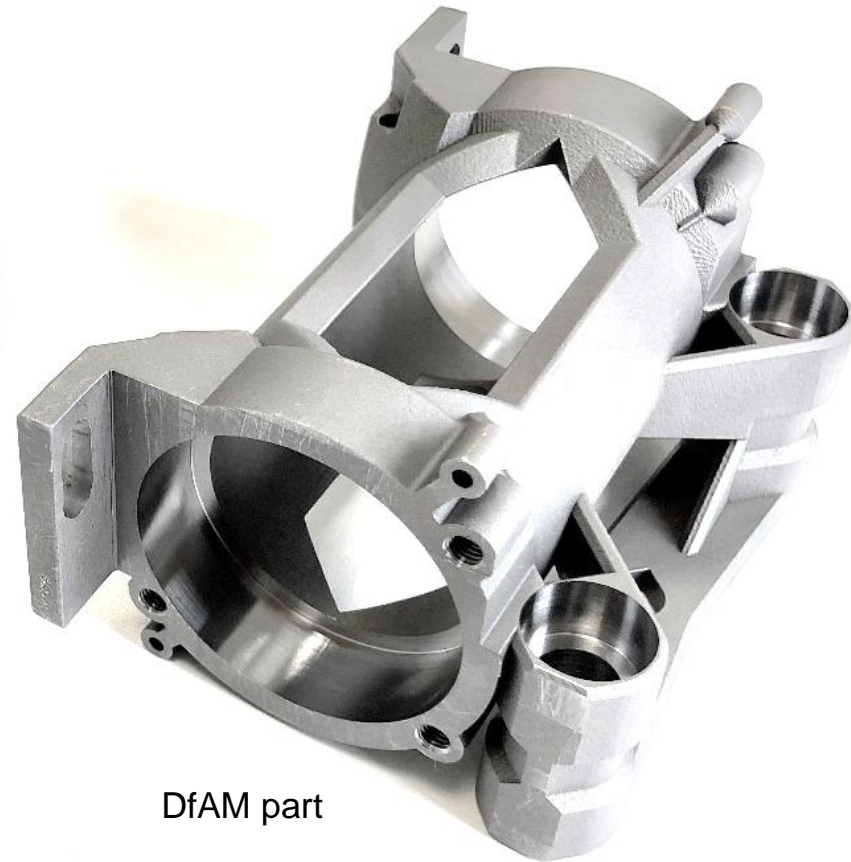
**Weight 4,4g / cm<sup>3</sup>**



# DfAM squarebar as printed



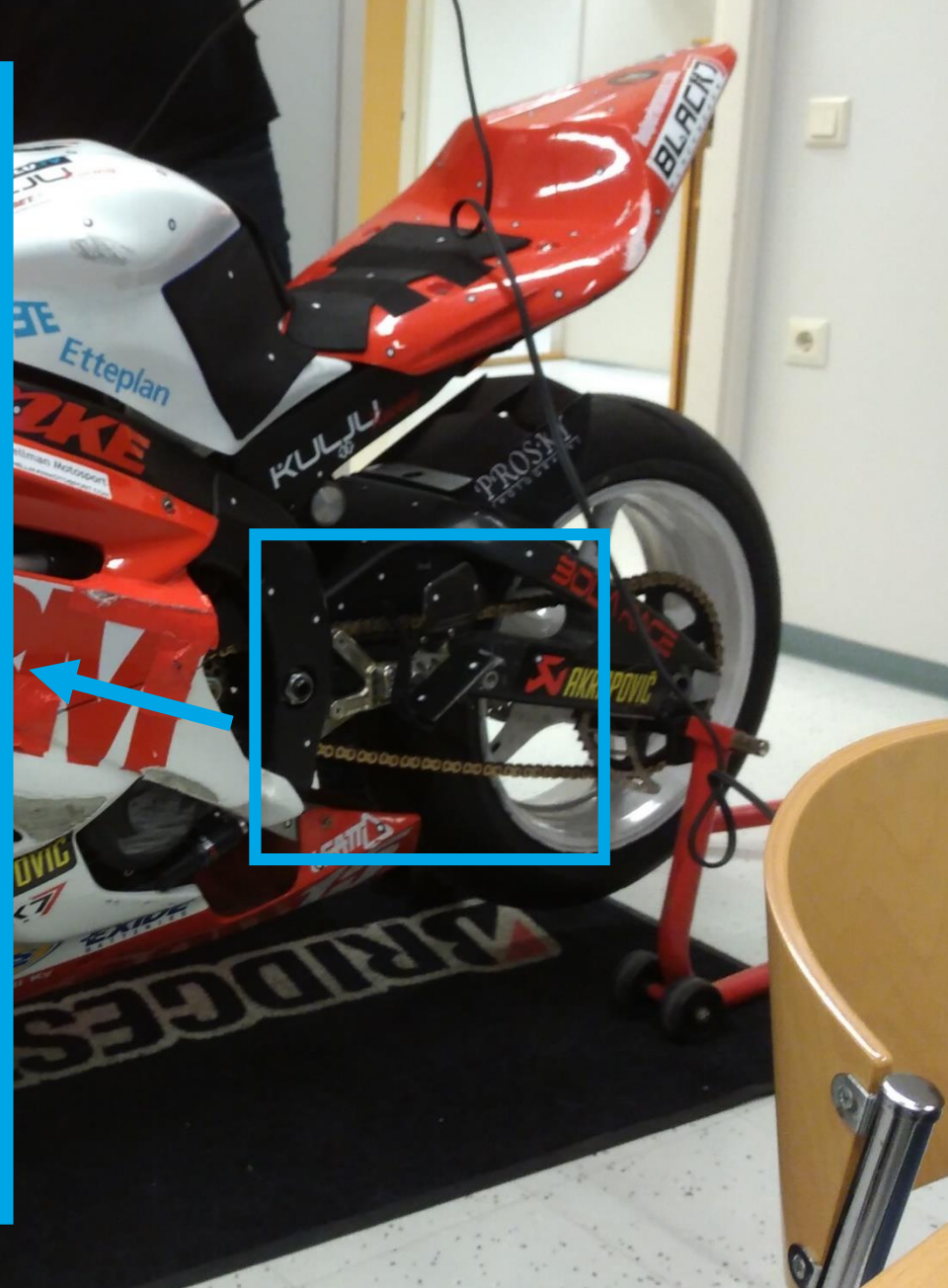
Original part



DfAM part

# Second level of AM: DfAM

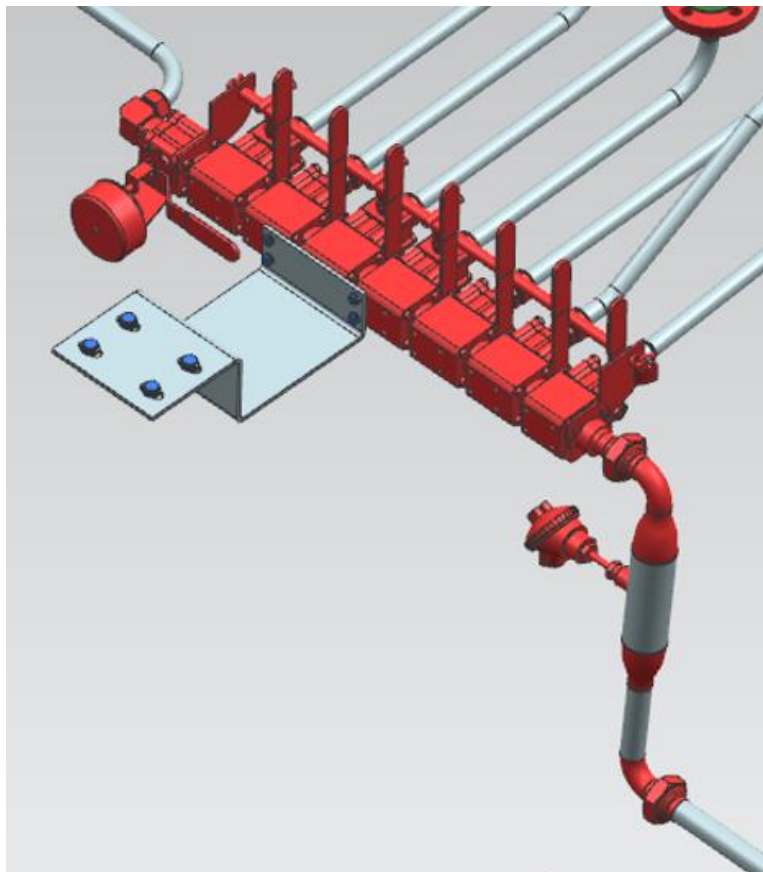






# **Second level of AM: DfAM ver2**





250



5

# Third level of AM: AM NPD

1969



25 years

1995



3 years

1998

Google  
NETFLIX

10 years

2007





1969



1995



1998

Google  
NETFLIX

2007

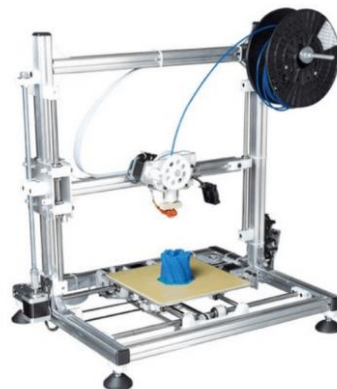


25 years



1985

3 years



2009

10 years

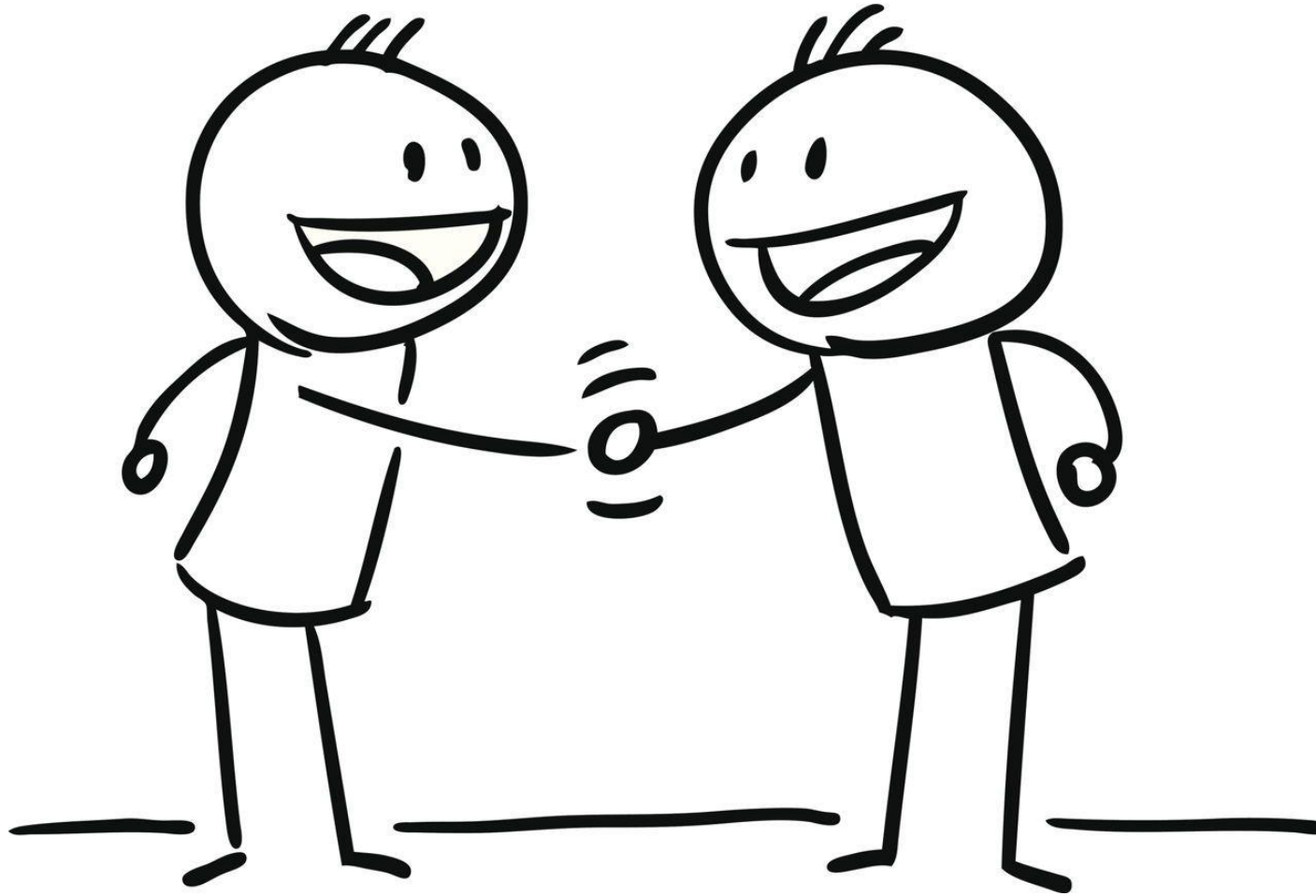
GE  
SIEMENS

2010s

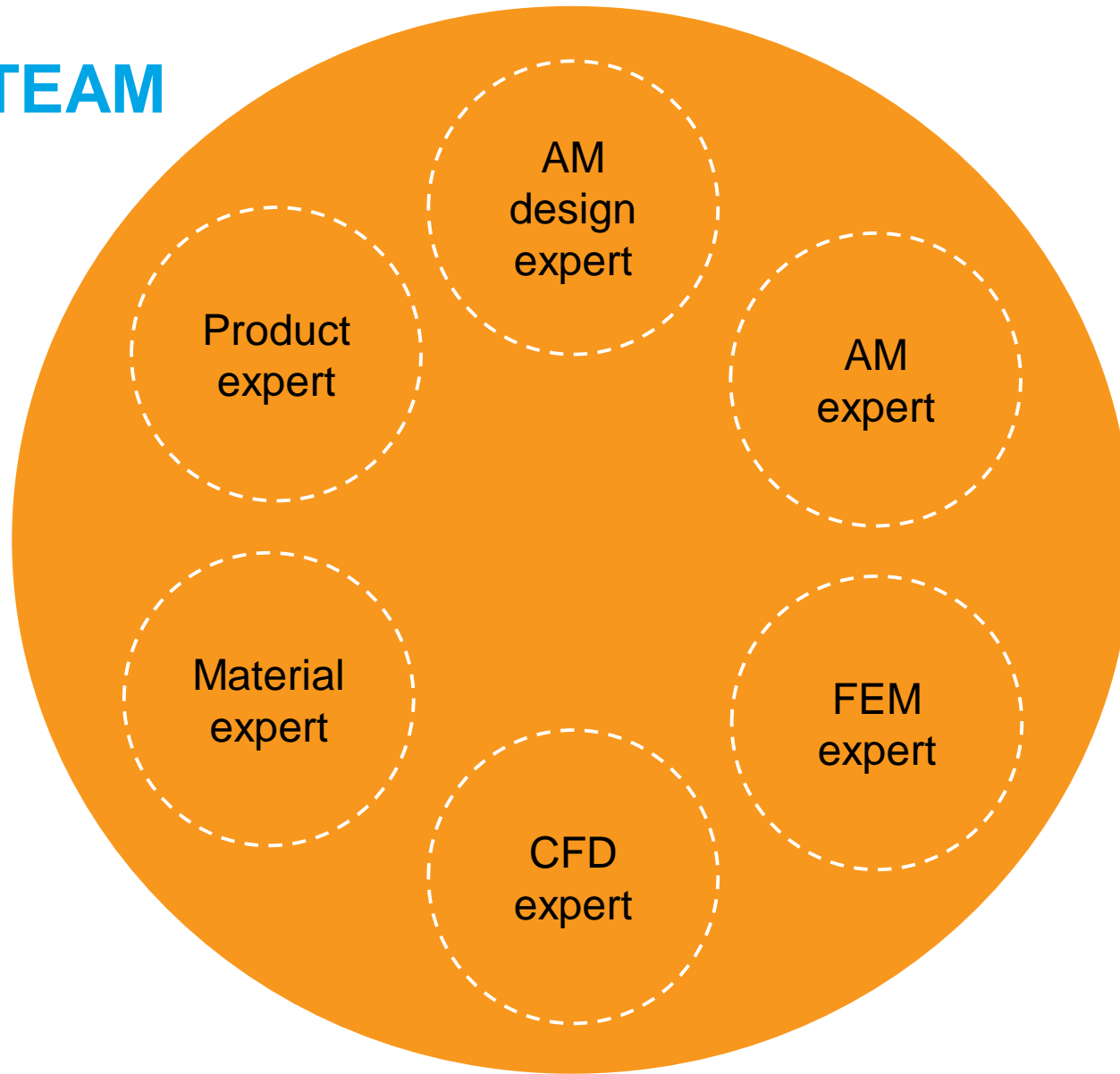


2020

# TEAMWORK NEEDED!



## AM TEAM

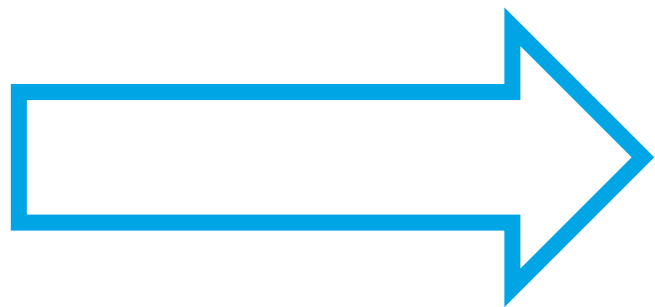


A close-up photograph showing a person's hand holding a small, rectangular white piece of paper. The paper has the words "I can't do it" written on it in a bold, black, handwritten-style font. A pair of blue-handled scissors is positioned to cut the paper diagonally, separating the word "can't" from "do it". The background is a soft, out-of-focus light beige color.

I can't  
do it







**Futu**



**usiness**



**Engineering  
with a difference**

**Thank you!**

