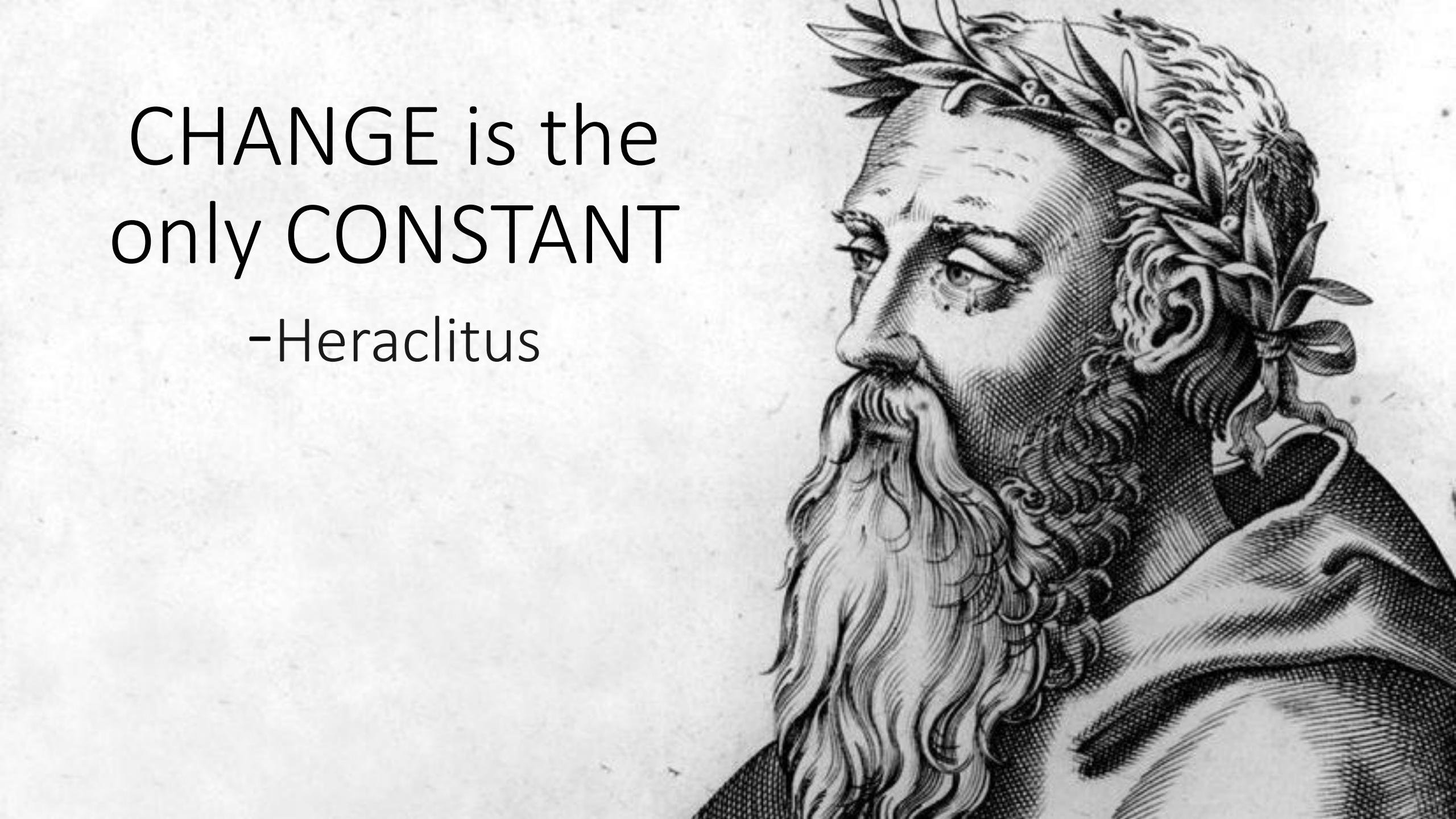
What is the most constant thing in one’s life???

CHANGE is the only CONSTANT

-Heraclitus



WINGS OF CHANGE

Members:

TEJASWI KALIMISETTY

TOBIAS EKHOLM

HUSSAINI FAYEZULLA SYED

TONI GRÖNDAHL

SASHANK NEELAMRAJU

JUSTUS MANNER


CHANGE
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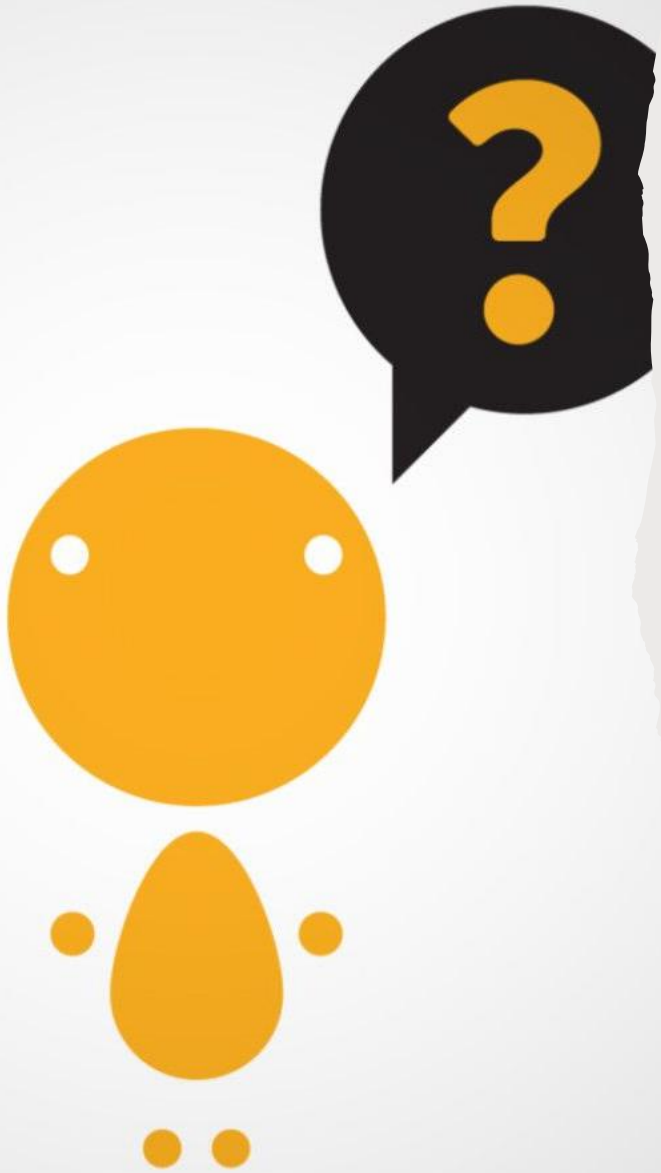


Imagine!

100 years ago everyone owned a horse and only the rich had cars.

Today everyone has cars and only the rich own horses.

My, my, my... how the stables have turned

Why change?

- Changing Consumer
- Increasing Competiton
- Technological Advancement
- New Opportunities (growth & development)
- Risk Diversification
- To increase company & brand reputation
- To utilize excess capacity

Embracing change

The future always has tendency to surprise anyone making predictions & trying to make sense of what is supposed to happen.

For Industry

For Research

For Education

For Environment

Case Study:

NETFLIX

Netflix: Early days (1997-2007)

- **Co-founders Reed Hastings and Marc Randolph wanted to utilize new technology: the Internet**
- **DVD-rental-by-mail firm**
- **Barely sustainable model, became profitable 2003 (1. million active subscribers)**
- **Tight competition with Blockbuster forced Netflix to expand to new business model**

Netflix: Streaming Service (2007-2022)

- **Rapid innovation**
- **Game console which became most used for streaming was the PlayStation3, which pushed blue-ray tech and speeded the end of DVDs**
- **First original series 2013**
- **Service became global 2016**

Netflix: Streaming entertainment (2022-)

- Growth of the ecosystem: Internet is becoming faster and more reliable
- Options: Consumers want more product choices
  - UHD 4K video, applications, video games
- New products: building foundation for games studios
  - Internal games studio in Helsinki – September 2022
  - Games for hundreds of millions people

Sustainability challenges

and challenges that future product developers will face

Society changes

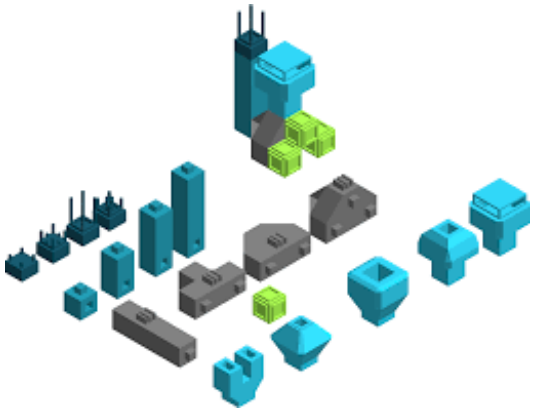
- Post materialism
- Shared ownership
- Breakdown in globalisation
- Resource limited world

Challenges that will occur in the future

- Transport
  - Integrated transport solutions
  - Electrification or autonomous
- Energy
  - Does the energy grid hold the development?
  - Usability of batteries and development in the battery industry
- Product Life cycle
  - Integrated systems with more flexibility and products part of multiple systems
  - Upgradability important in design

Challenges that will occur in the future

- Big data
  - Monitoring of products -> lot of data
  - Data collection as part of product development
- System architecture
  - Modularisation of products
  - Products more tangled to their environment
- Simulation and Modelling
  - Testing of products need to be cheaper and easier
  - Testing of entire systems virtually



Largest and most important trend in the industrial world

- Paris agreement's goal of net-zero CO2 emissions by 2050
- Someone needs to create solutions to reach the goal of keeping global warming below 1.5 degrees

Future of Product Development

What are the products you would like to see Apple develop in the next 20 years?

How can a product bring about **change** in society?


Immortal product
Connected, Interconnected and Shared product
Intangible product
The Products of "Future"

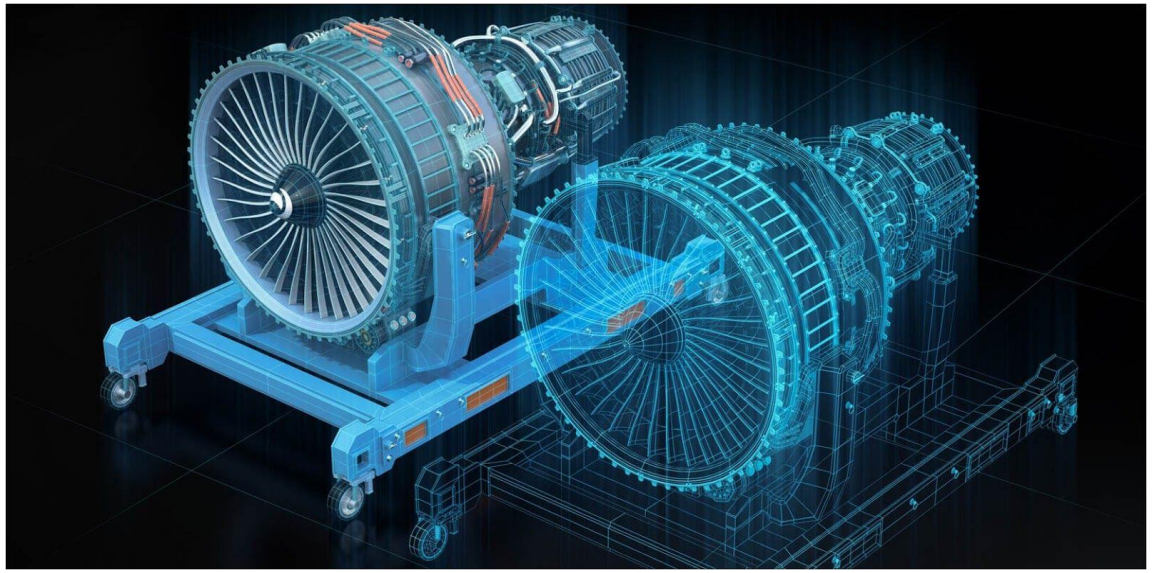
Immortal (Circular) Products

- The products which can be reused by using principles of circularity instead of discarding them and the end of their life cycle
- Circular economy is the process of changing the product design to avoid wastage or disposal at the end of its life.

The connected, the interconnected and shared products

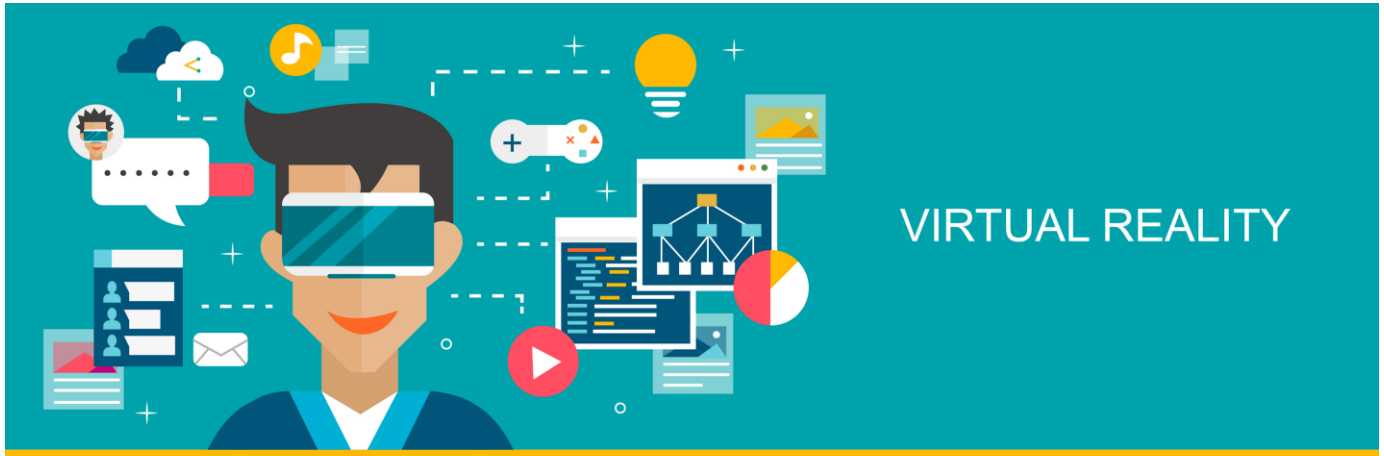
The products monitor themselves and take active steps to be fuelled, supplied and available, supported by Industry 4.0 technology.

Digital twins and automatic failure recognition would play a key role to provide the service for the customer far more reliable and reduced the risk for the manufacturer



Intangible Products

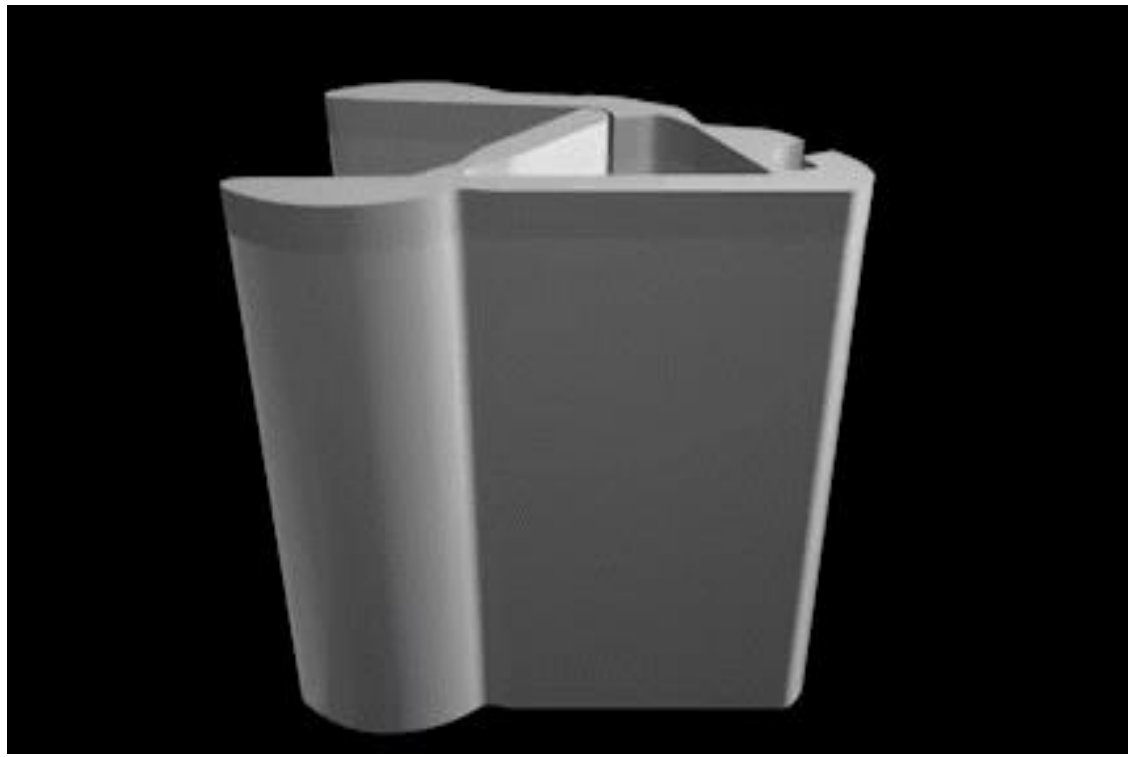
Augmented Reality and Virtual Reality are rapidly growing, and this technology would have far more applications in every field. These are intangible but would take us into a world we could not have imagined

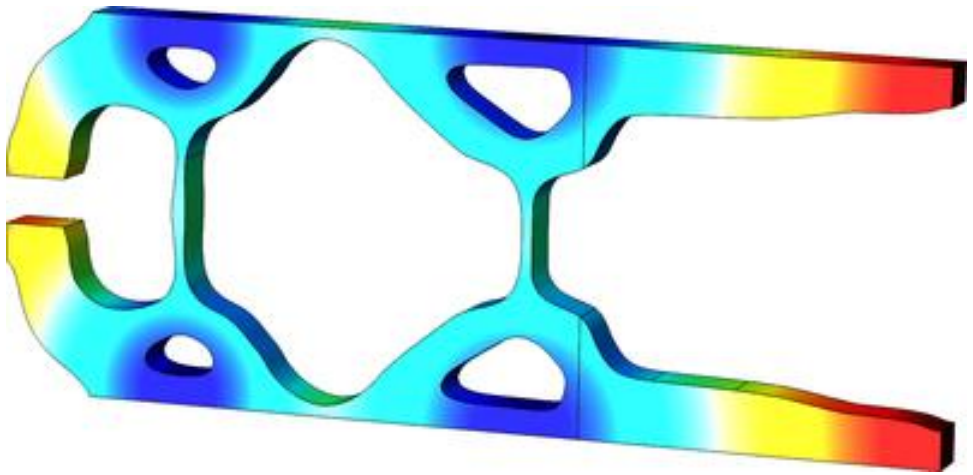


Project ***STARLINE*** by Google

What could be the different ways to improve the products shown below

Compliant Grippers

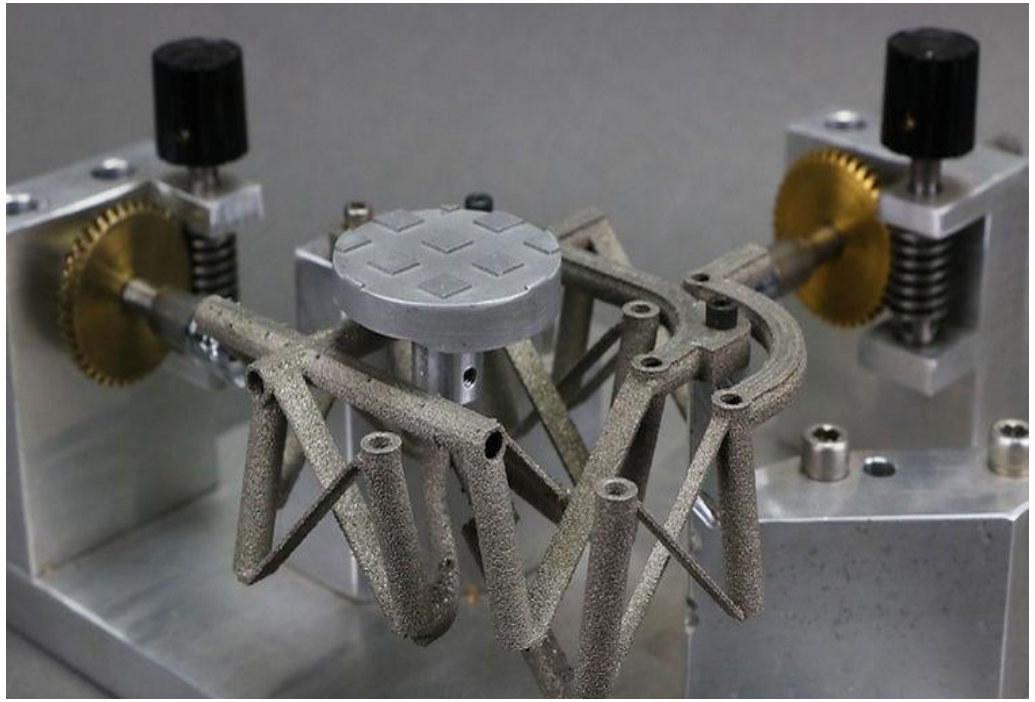


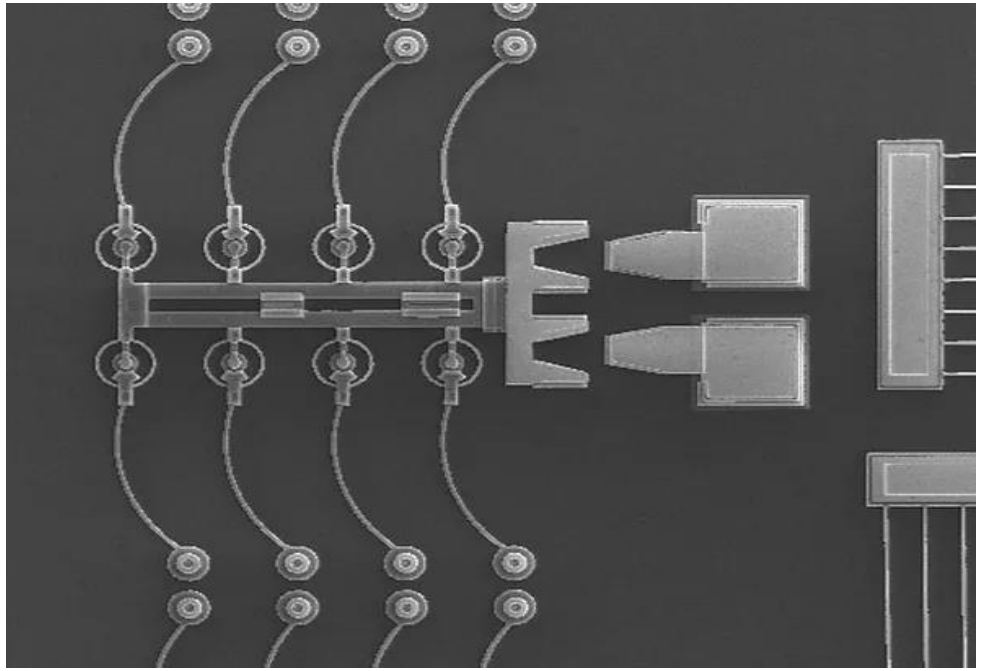


Advantages of the Compliant Mechanism

1. Part Count
2. Production Process
3. Price
4. Precise Motion
5. Performance
6. Proportions
7. Portability
8. Predictability

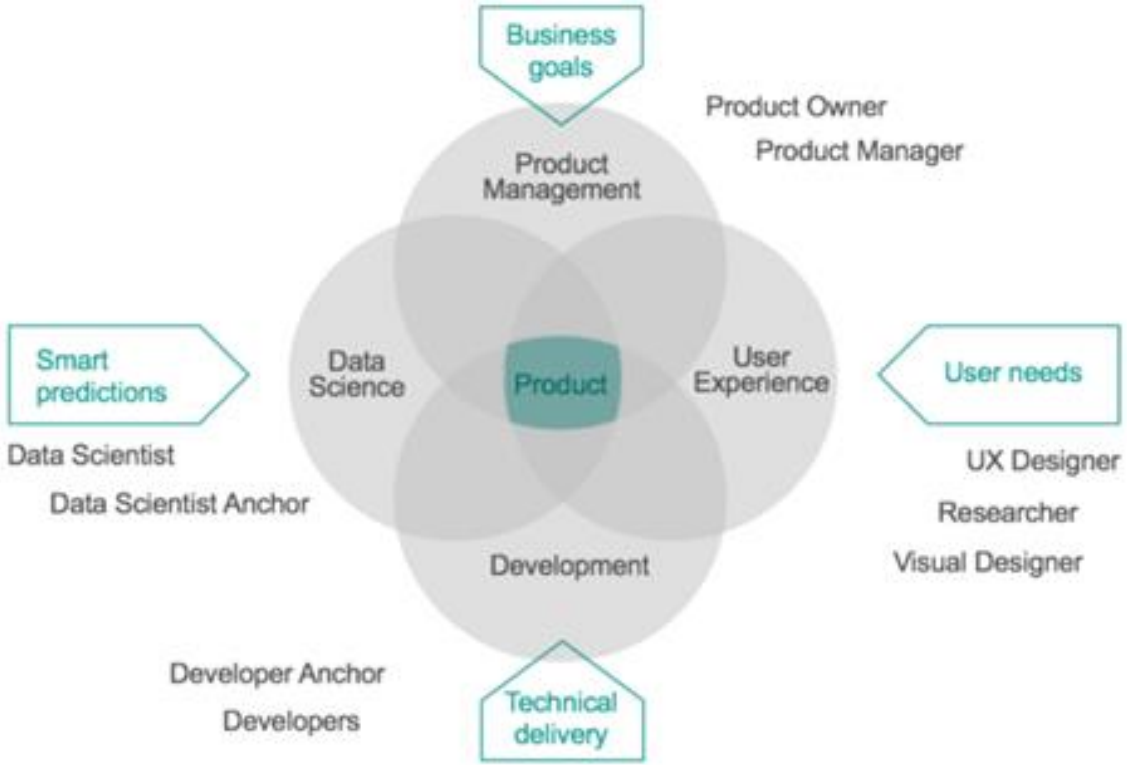
Applications





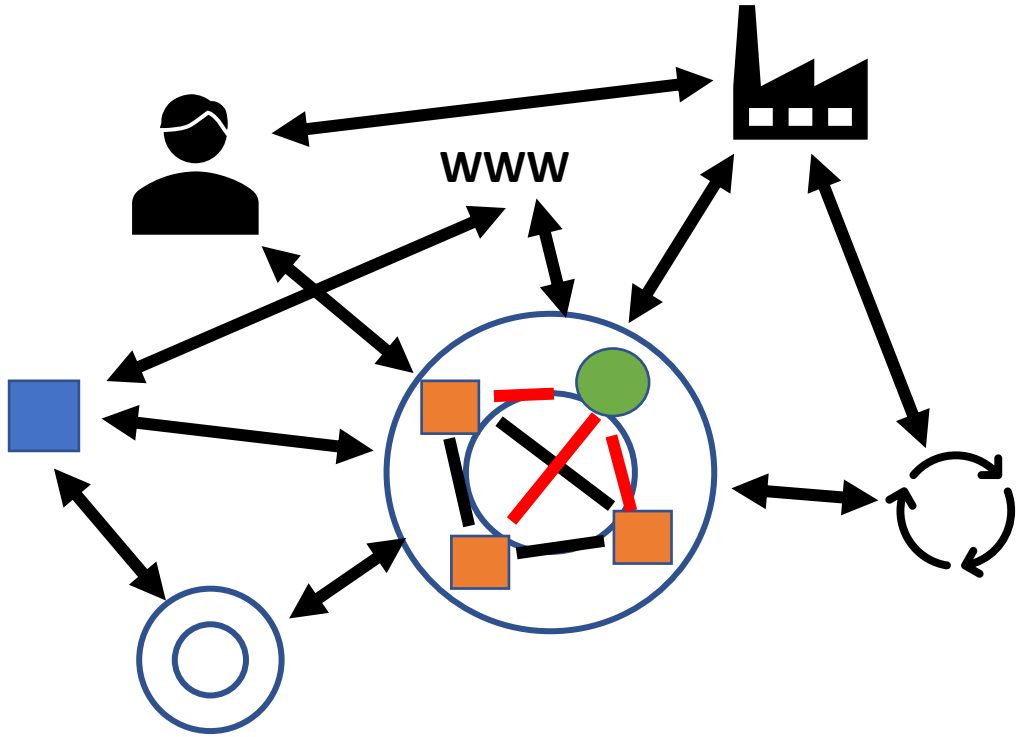
Multi-disciplinary knowledge

- Different components need different specialists
- Perspectives, tools, methods and models from different disciplines.
- Multi-disciplinary procedures



System thinking

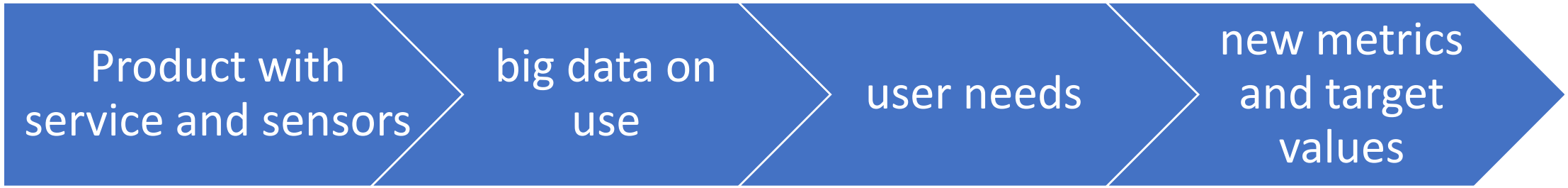
- Future products form complex systems
- Parts of systems have numerous connections that need to be taken into account in product development



Data skills, simulating

- Big data brings needs for related skills on different levels
- Data helps in modelling and simulating but physical tests will still be needed in future

Example



- Another: simulation of long use of all different module combinations

Key takeaways

The people being trained and educated today will be the active generation of product developers for future endeavors, and the perspective is not that far off. There are many possible recommendations and conclusions that can be drawn from this topic.

Thank You

"Rather than waiting for what the future will require, we as designers should take a proactive role in shaping the future we desire".

References

- Isaksson, O. and Eckert, C. (2020), Product Development 2040: Technologies are just as good as the designer's ability to integrate them, Design Society Report DS107, https://doi.org/10.35199/report.pd2040
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