

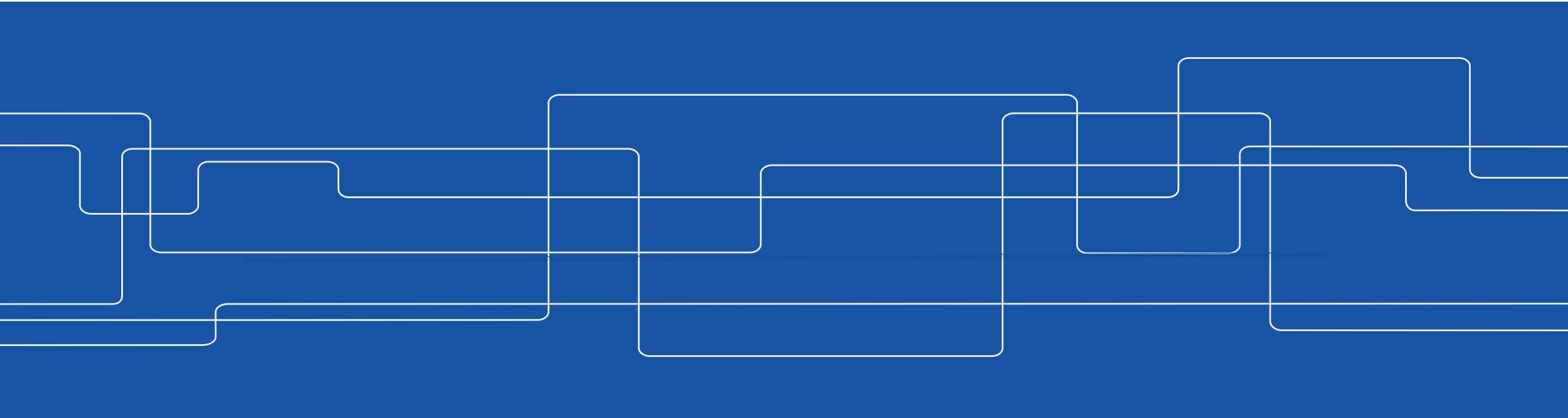


The Future Digitized Society

- a research perspective

Jens Zander

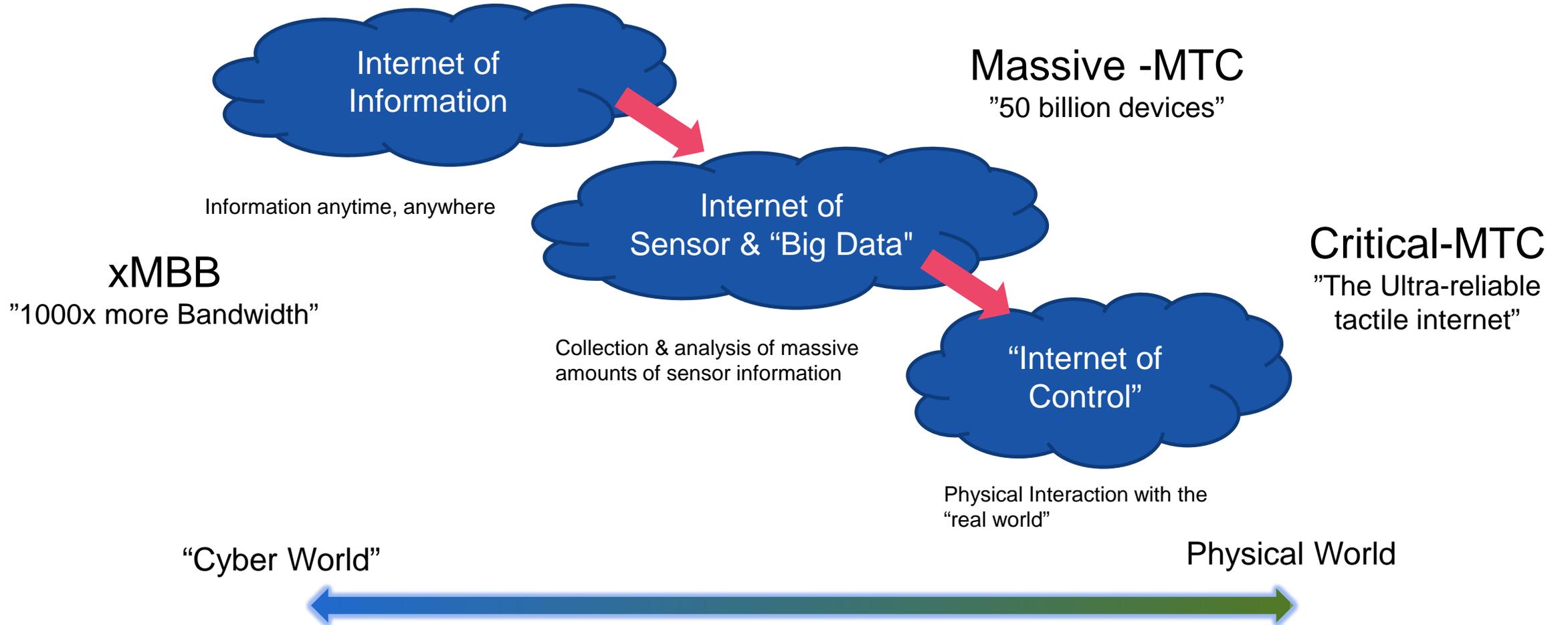
KTH, Electrical Engineering & Computer Science (EECS)





“The Networked Society”

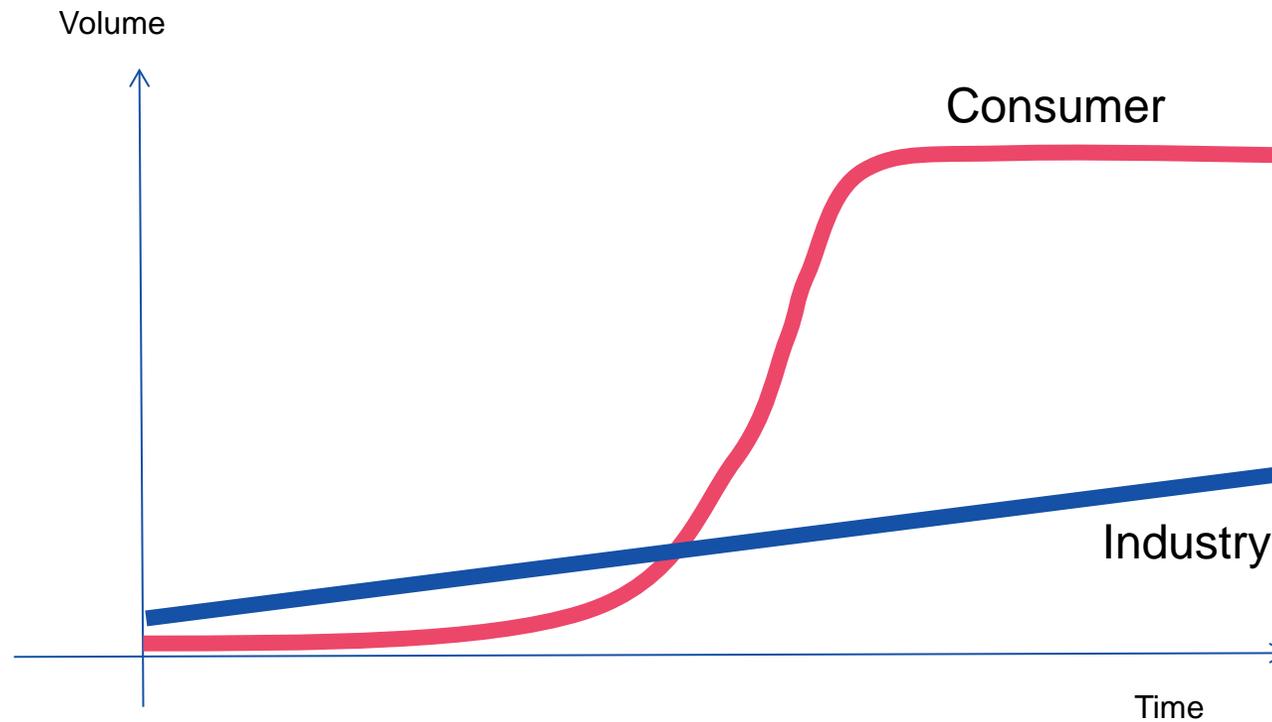
a.k.a Digitalization, Industry Transformation...





Digital Transformation –

it's the **"transformation"** that is the hard part



Scalability - why is it important?



- Large benefits from Digitalization
- Millions of dollars at stake
- Low volumes
- Tailor-made (“hand-crafted”) solutions

- Small benefits from Digitalization
- 10s of dollars at stake
- Multiple solutions require own infrastructure
- Massive volumes
- **Standardized solutions required**



The power of common computing platforms



- Dominant design for services in smartphones
- All Android & Apple phone look the same - millions of potential users for each "app" on the app store
- Apps connected to the cloud using IP access over WiFi (or 3G/4G connections)
- English – the "lingua franca"

Massive cost reductions !

Do the key factors for success of internet & smartphone services apply to IoT and cyber-physical systems ?

- Dominant design in computing and communication platforms ("Cyber World") 
- "Free" internet access 
- Affordable equipment 
- Common standardized platforms for the "Physical world" 

Grand Research Challenge

How do we make cyber-physical systems **reliable, secure, capable and affordable** at a **societal scale** ?

Research gap: Current methods and tools are **not able to handle the complexity** of software, data, interactions and decision-making

