

#datatalous #datatalousfoorumi

# Datatalousfoorumi

14.3.2018

Datatalouden mekanismit ja markkinat

**LV** LIIKENNE- JA  
VIESTINTÄMINISTERIÖ

## Ohjelma

- 9.30 **Kahviporinat**
- 10.00 **Suomi datataloudessa**  
Anne Berner, liikenne- ja viestintäministeri, LVM
- 10.20 **Globaali datatalous – uhka vs. mahdollisuus**  
Pekka Neittaanmäki, dekaani, Jyväskylän yliopisto  
Leena Ilmola, Senior Research Scholar, IIASA
- 10.50 **Alustojen datatalouslogiikka vs. skaalautuvat palveluverkostot**  
Antti Järvinen, maajohtaja, Google  
Simo Säynevirta, teknologiajohtaja, ABB
- 11.10 **Data arkipäivässämme vs. omadatani**  
Anni Ronkainen, CDO, Kesko  
Samuel Rinnetmäki, datakansalainen
- 11.30 **Osallistujien puheenvuorot ja palautteet foorumin teemoista**
- 11.45 **Tilaisuuden yhteenveto ja jatkosteipit**

# Datatalousfoorumi

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[screen.io/lvm](https://screen.io/lvm)



JYVÄSKYLÄN YLIOPISTO  
UNIVERSITY OF JYVÄSKYLÄ

# Impacts of the Digital Economy

**Datatalousfoorumi 14.3.2018**

**Pekka Neittaanmäki**

**Chihiro Watanabe**

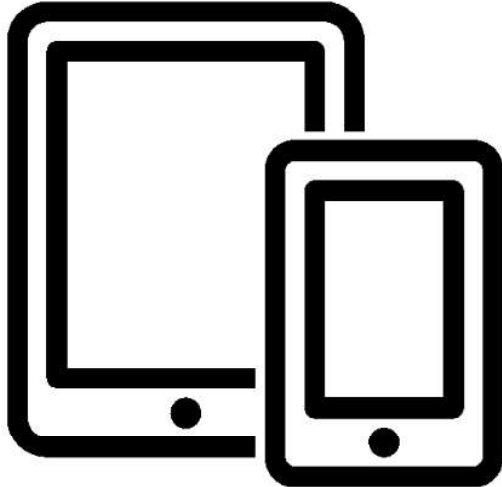
Assisted by Eerik Lehtomäki

Platform Value Now project, Strategic Research Council of Finland

Faculty of Information Technology, University of Jyväskylä



# The Big Picture



TECHNOLOGIES & DEVICES



MONEY AND FINANCE

TOOLS

ENTERTAINMENT

HEALTH

CONNECTIVITY

INFORMATION

SECURITY

DATA STORAGE & MANAGEMENT

# Health



**Sport trackers**

**Fitness apps**

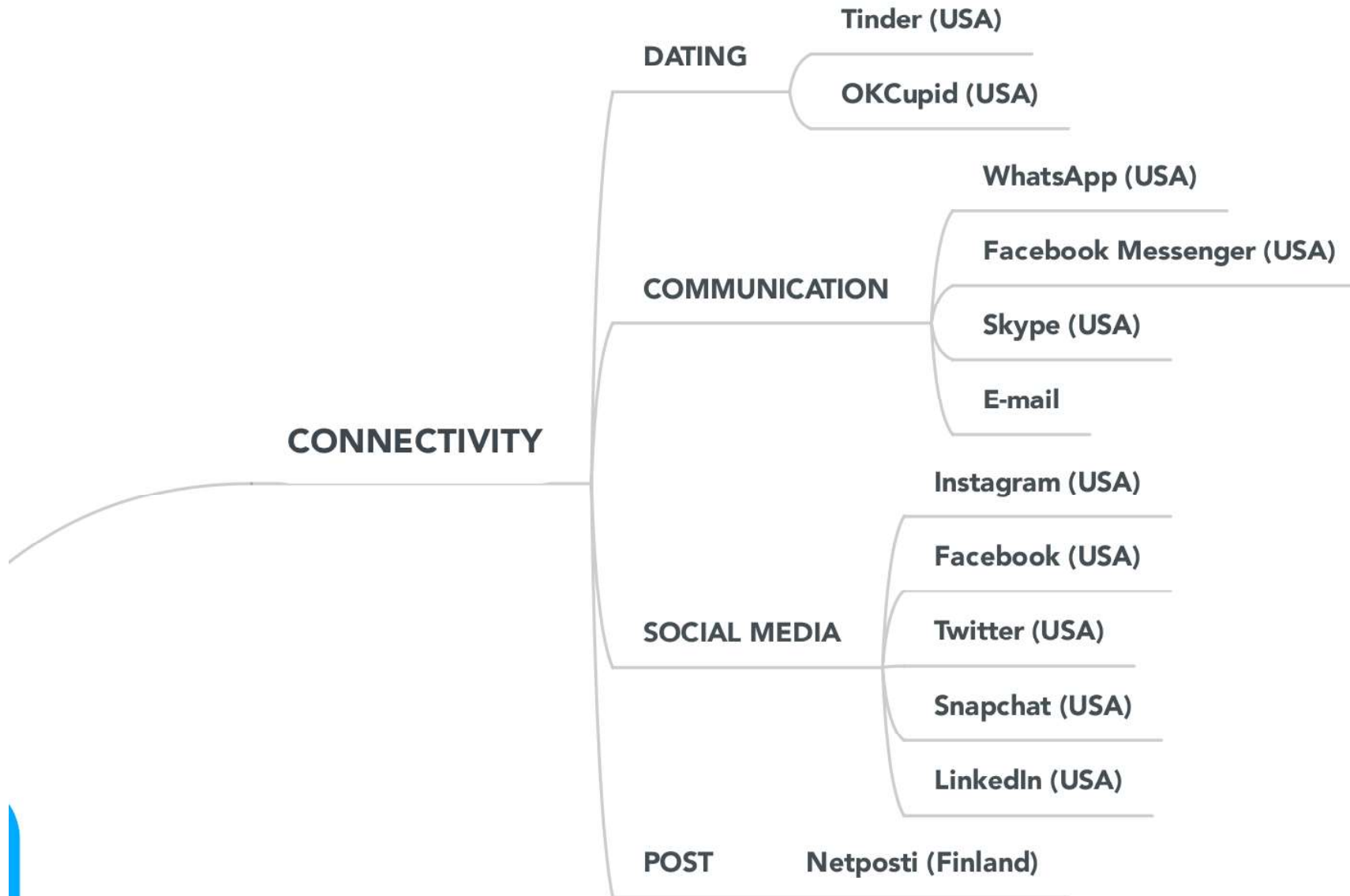
**Medical apps**

**Mental health apps**

**Nutrition apps**

**HEALTH**

# Connectivity





# Information



# Security



**SECURITY**

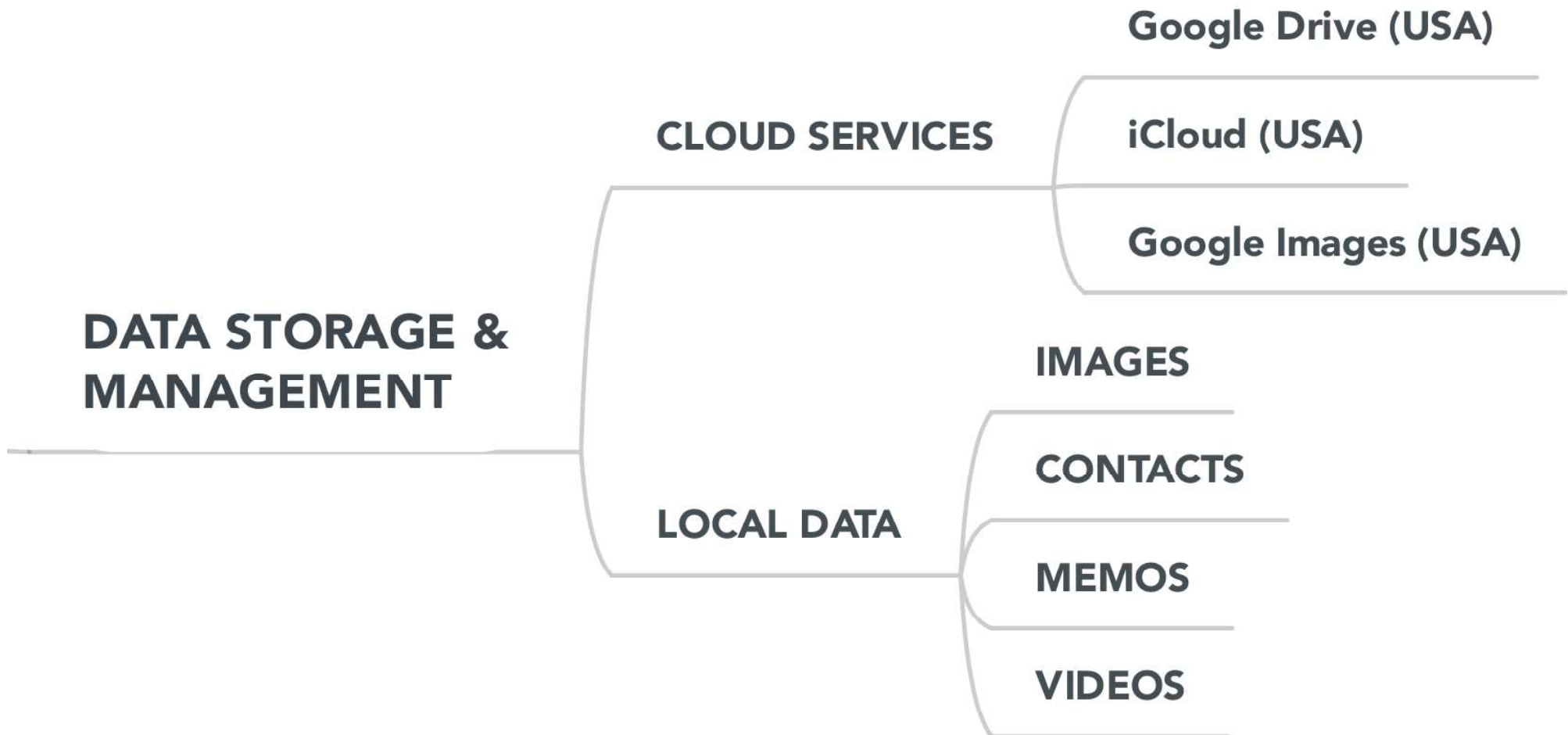
**Authentication**

**Security cameras**

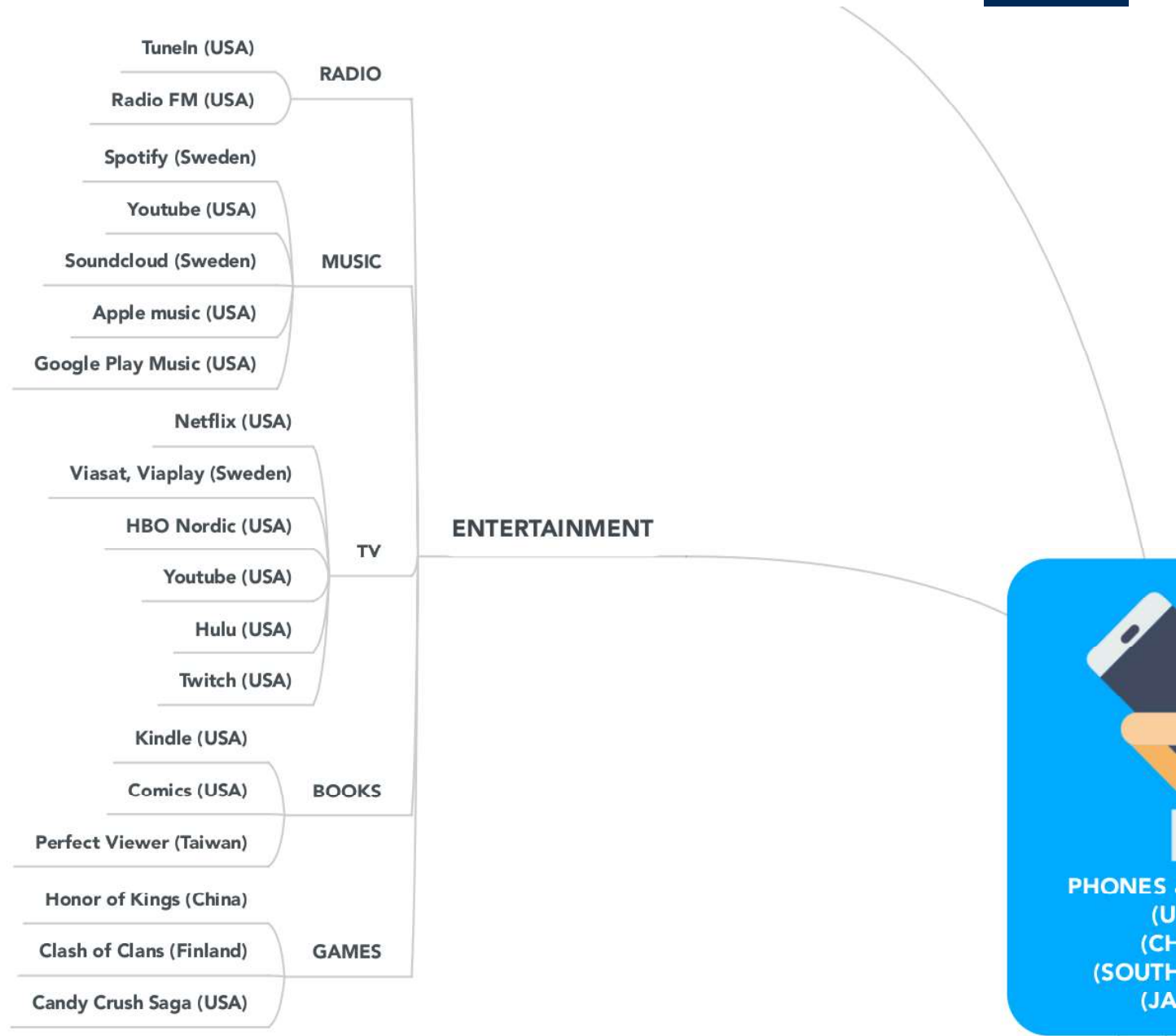
**Health monitoring**



# Data Storage and Management

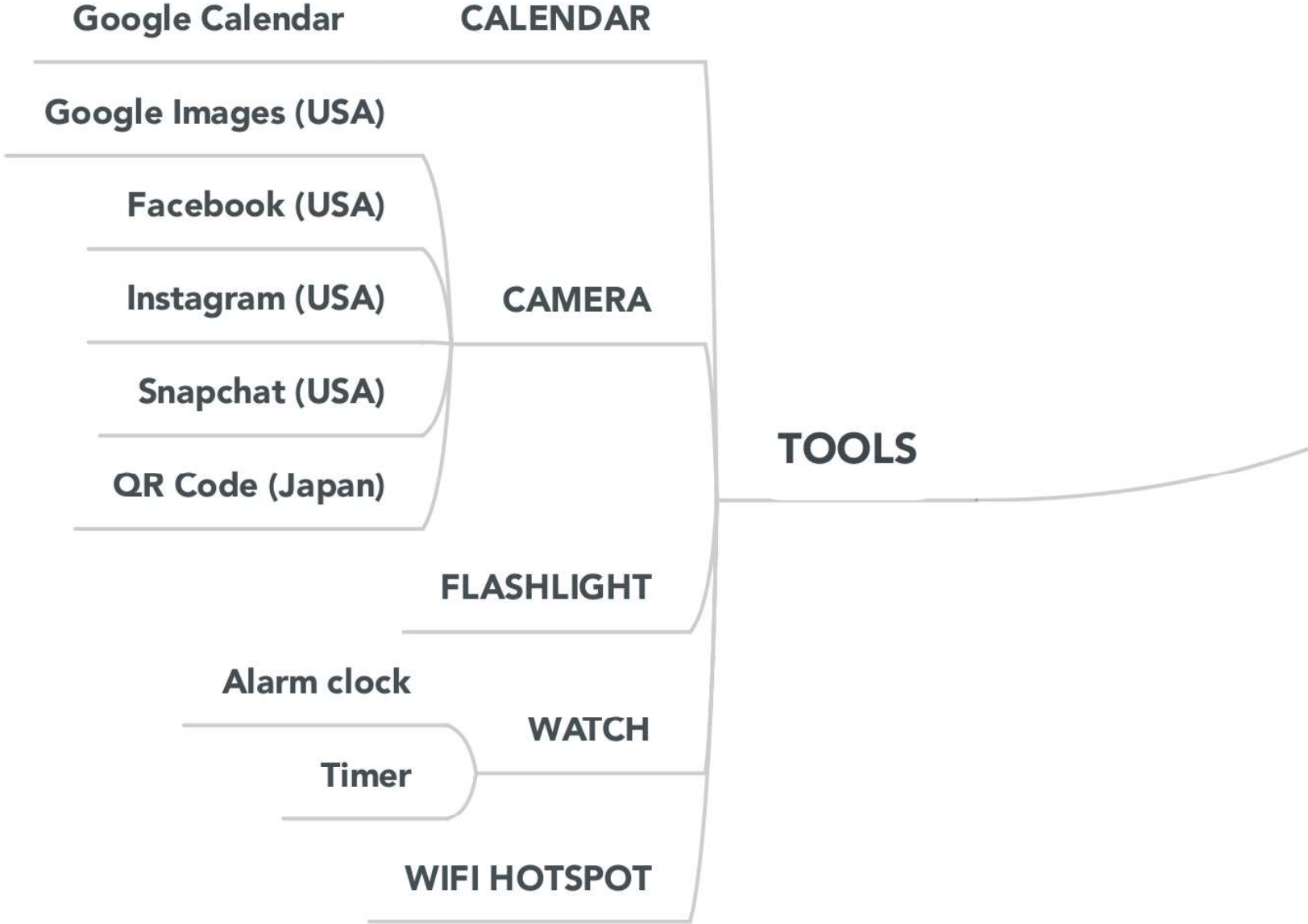


# Entertainment



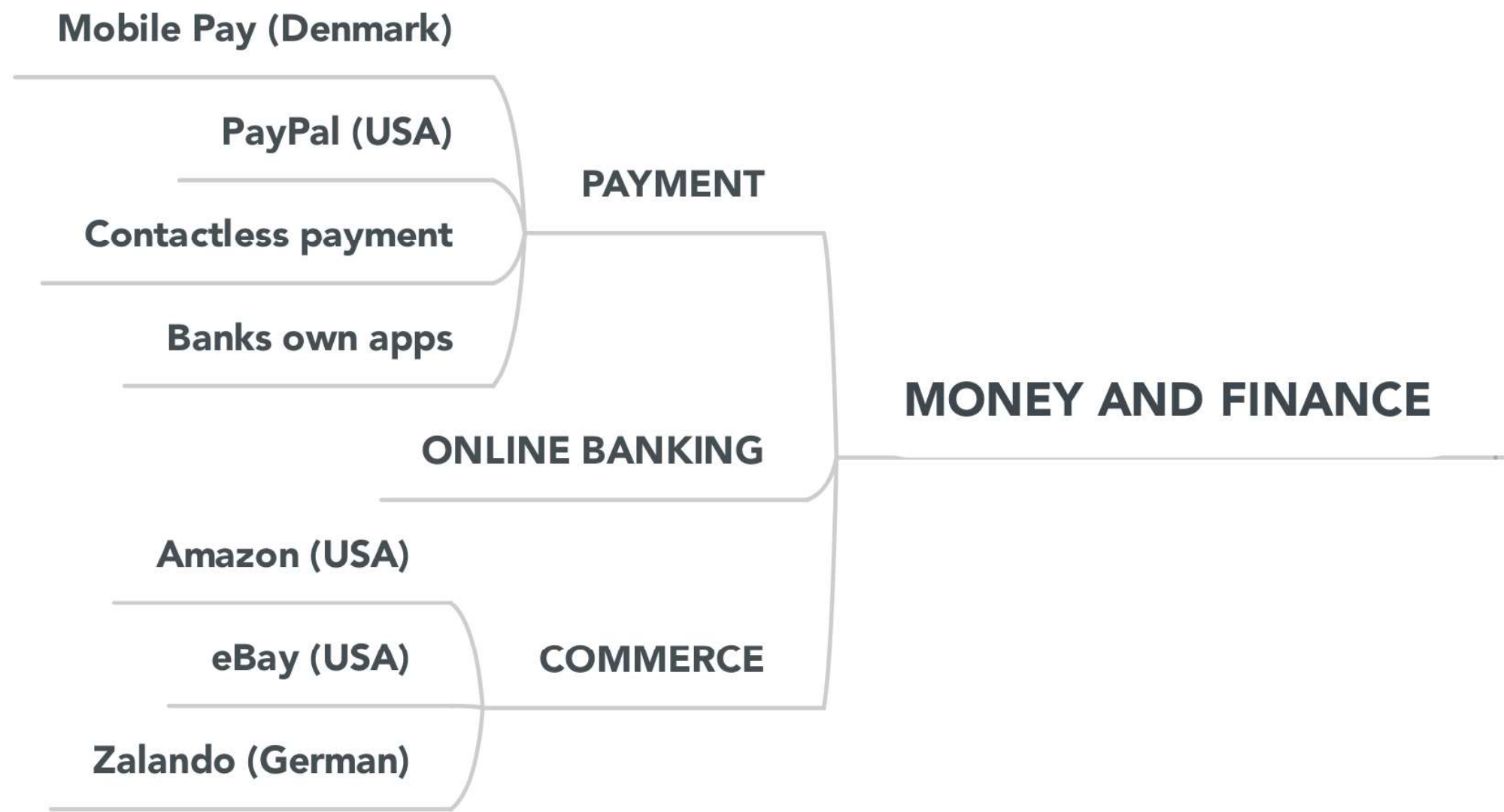


# Tools

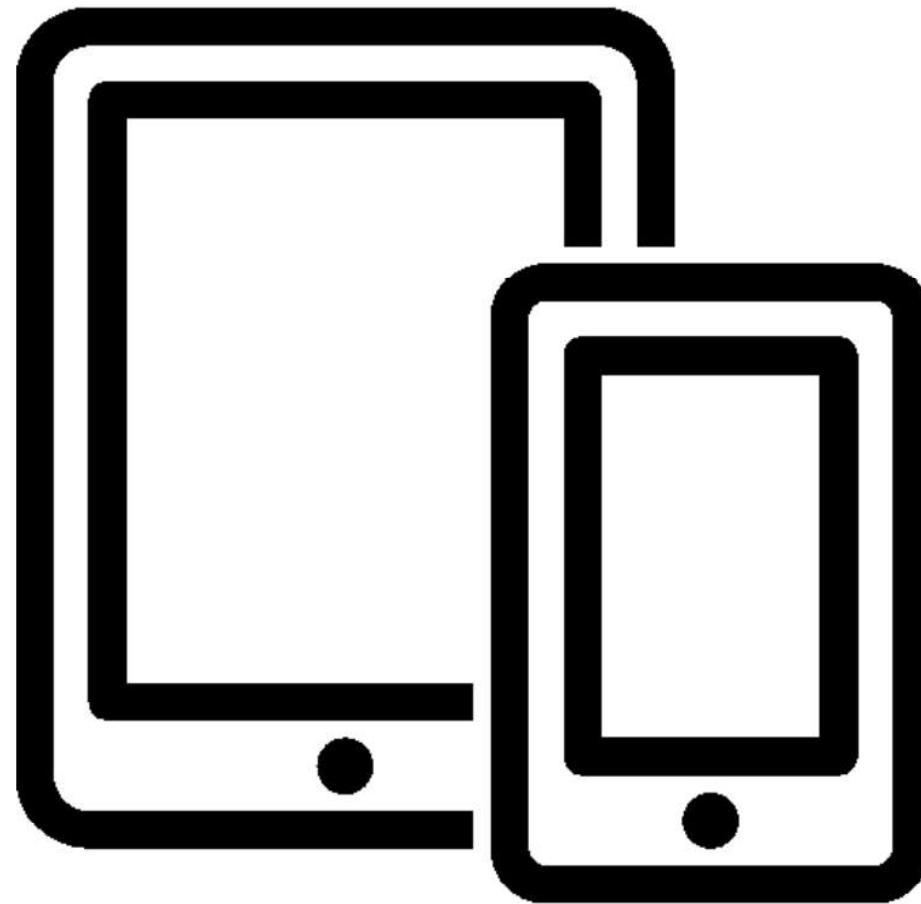




# Money and Finance



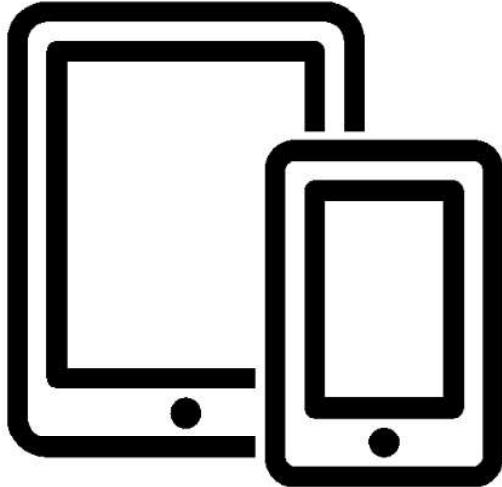
# Technologies and Devices



**TECHNOLOGIES & DEVICES**



# The Big Picture



TECHNOLOGIES & DEVICES



MONEY AND FINANCE

TOOLS

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INFORMATION

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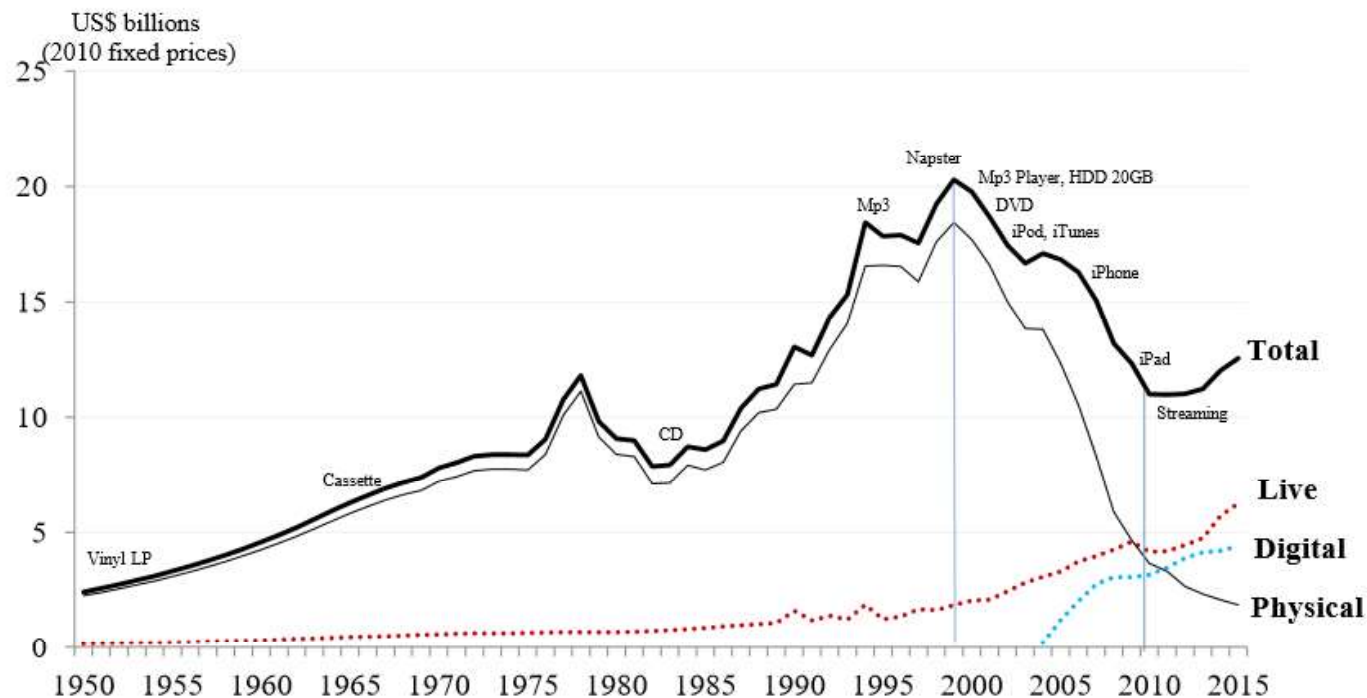
DATA STORAGE & MANAGEMENT



## Co-evolution of Streaming and Live Music

1. Music industry continued to develop and reached **its peak in 1999**.
2. However, **after the expansion of the Internet, changed to a continued decline**.
3. **Digital music** emerged 2004, but it was unable to become the savior of the decline.
4. It was 2010 when resurgence started initiated by live.

### Revenues

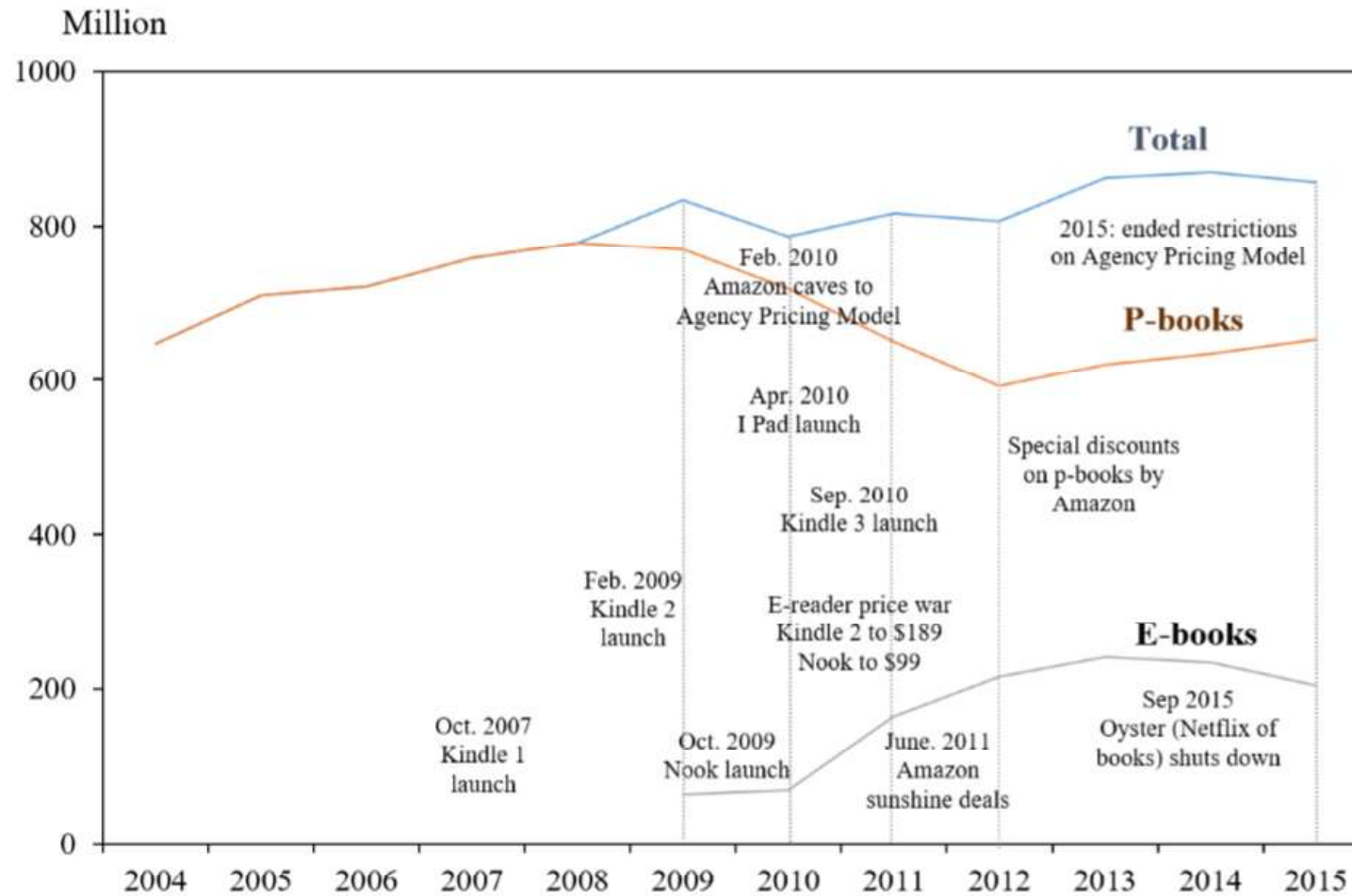


**Fig. 4. Development Trajectory of the US Music Industry by Revenues (1950-2015).**

Sources: RIAA (Recording Industry Association of America), Pollstar (Trade publication for the concert tour industry).



# E-books



**Fig. 8. Trends in Print-Book and Electronic-Book Volume in the US (2004 – 2015).**

Source: Nielsen BookScan US/PubTrack Digital US.





International Institute for  
Applied Systems Analysis  
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science for global insight

# PLATFORM ECONOMY VALUE GENERATION: AN EXAMPLE

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Leena Ilmola

Chihiro Watanabe

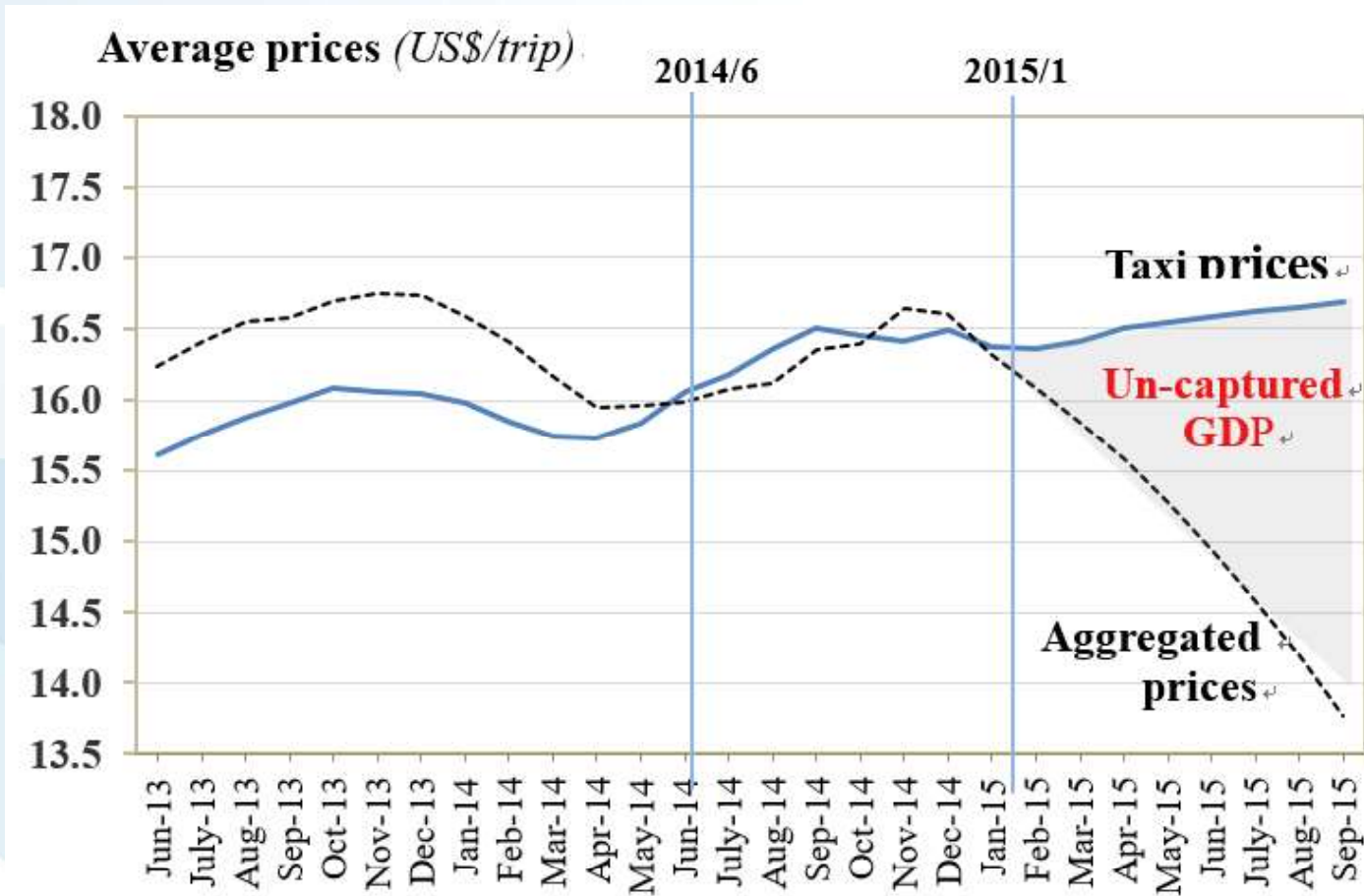
Platform Value Now, funded by the Strategic Research Council of  
Finland



IIASA, International Institute for Applied Systems Analysis

# Uber's Ridesharing Revolution

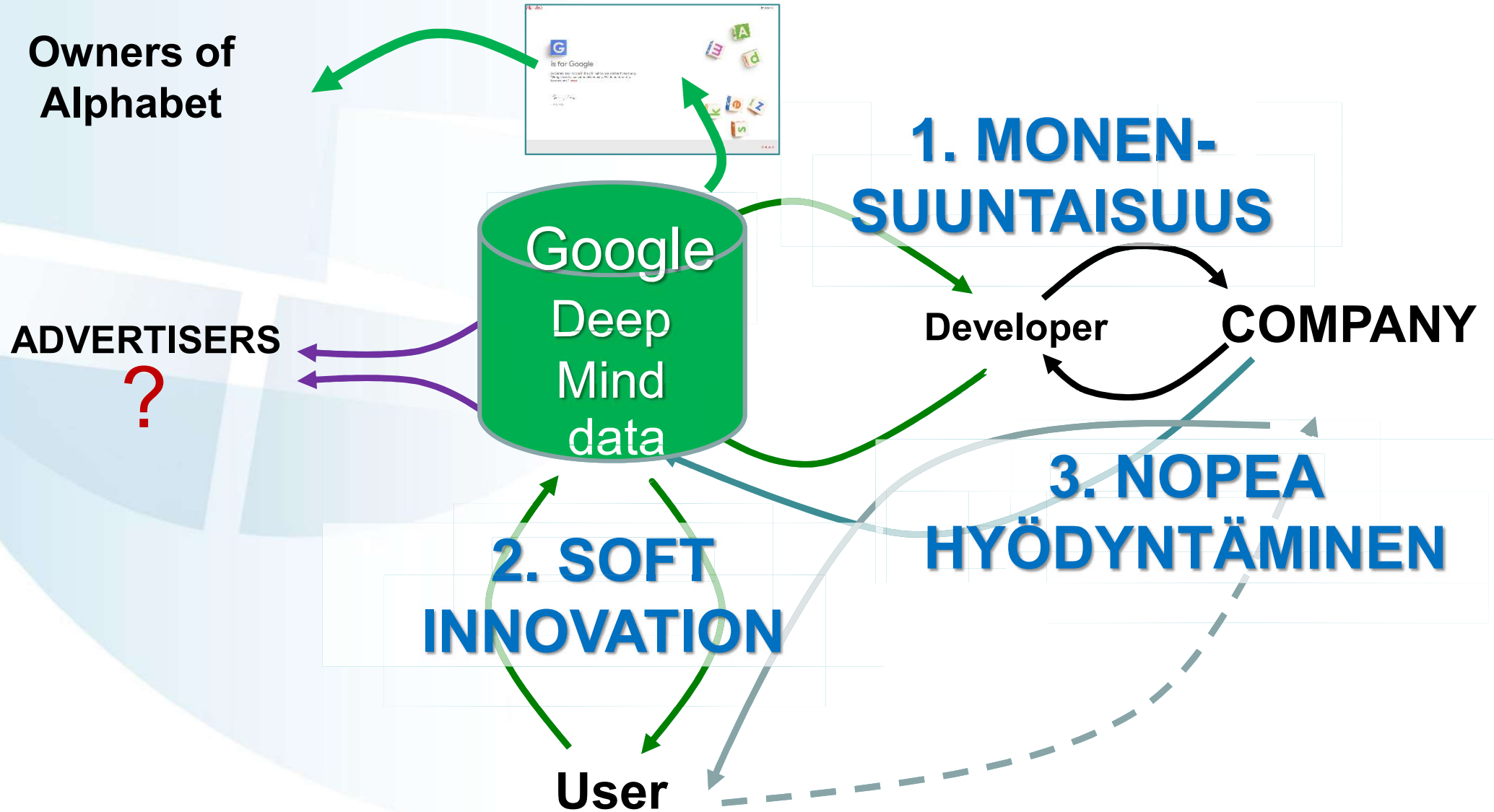
## Ride Sharing Service: Uber



**Un-captured GDP Emerged by Uber (US\$/trip, NYC).**

Source : Uber's Ride-sharing Revolution (Watanabe et al., 2016).

# Value generation loops



Ilmola@iiasa.ac.at

**KYSYMYKSIÄ?**



SIMO SÄYNEVIRTA, COUNTRY DIGITAL LEAD – ABB OY

# Role of Digitalization in Energy and Industrial Revolutions?

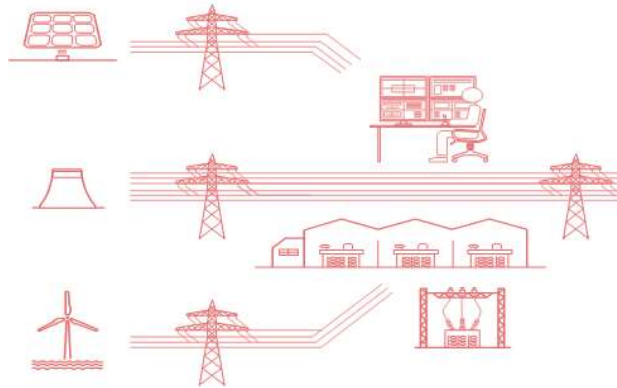


# Energy and Industrial Revolutions

World as we know it is being disrupted – at unprecedented rate of change

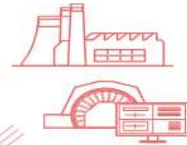
## Utilities

Renewable electrification  
Smart distribution



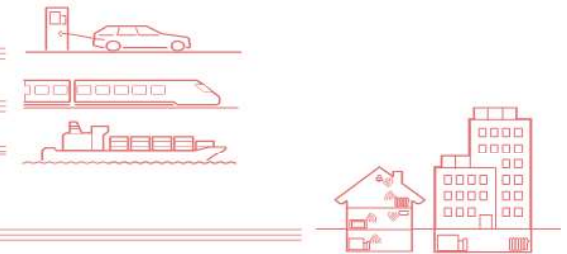
## Industry

Industry 4.0  
Collaborative, Flexible Manufacturing  
Real-time energy optimization



## Transport & Infrastructure

Smart Cities  
E-Mobility  
Mobility-as-a-Service  
Data centers



# Renewables and energy storage driving unprecedented change

Consider these developments

## Renewables growth



**+27%**

Already over 27% of all energy generation in Europe comes from renewables, while in the US 15%

## Energy storage price reductions



**\$36/Month**

Average American consumes 903 kWh/month → ~30kWh/day  
By 2020 it will cost \$36.8/month (\$1.2/day) for a full day of electricity storage

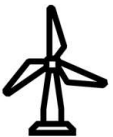
## New regulations & incentives



**8-10%**

Global renewables capacity has increased by 8-10% y-o-y since 2010 and the trend is to continue, with over 150GW added annually (2/3 of all capacity addition)

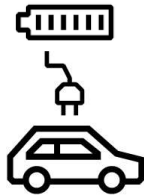
## Renewables penetration



**85%**

At certain times of year in Germany the Max hourly variable renewable generation rate already above 85% of hourly demand. Result: **NEGATIVE ENERGY PRICES**

## Disruption through new business models

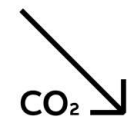


**\$0**

SV Startup Volta offering FREE EV charging in exchange for media rights at prime high-value properties.

If this business model succeeds, the EV **MARGINAL COST** of energy will be **ZERO**

## The Green agenda

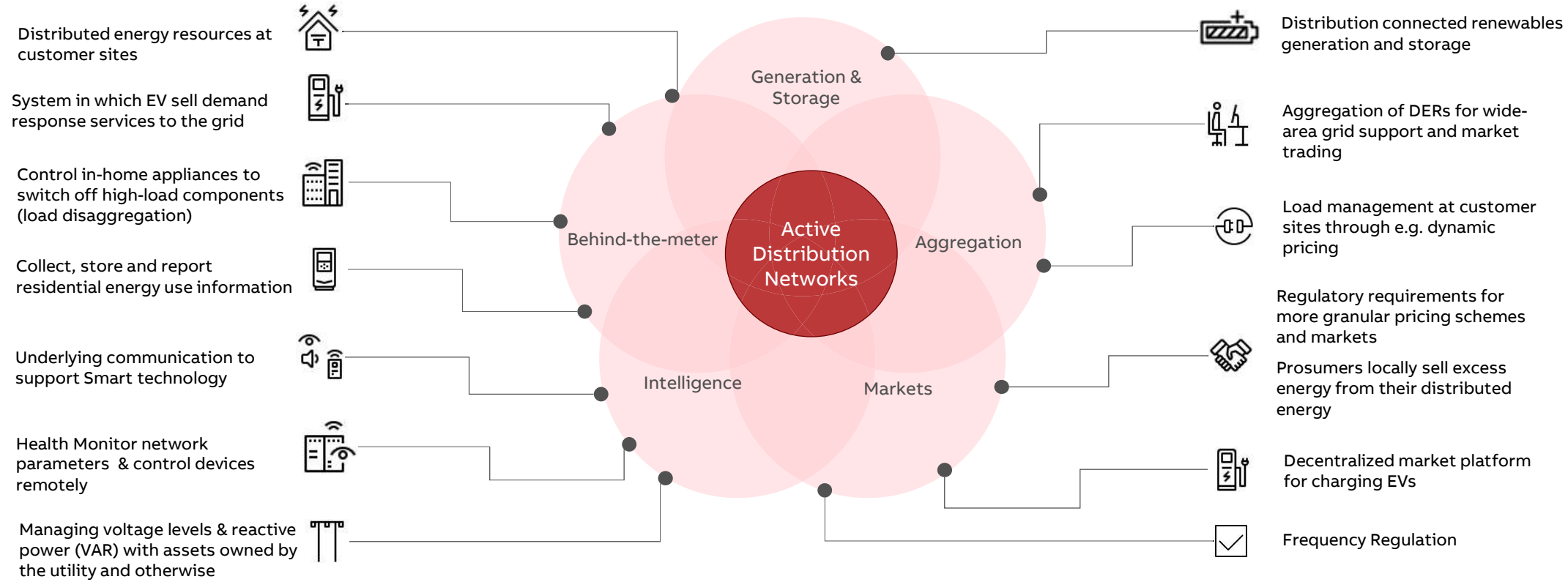


**\$350 billion**

China recently said it would shut 85 coal plants and instead invest \$350 billion in renewable sources of energy

# Resulting in increasing complexity in Energy System

New challenges for traditional paradigms for control and commerce





# Smart Manufacturing offers tremendous business potential

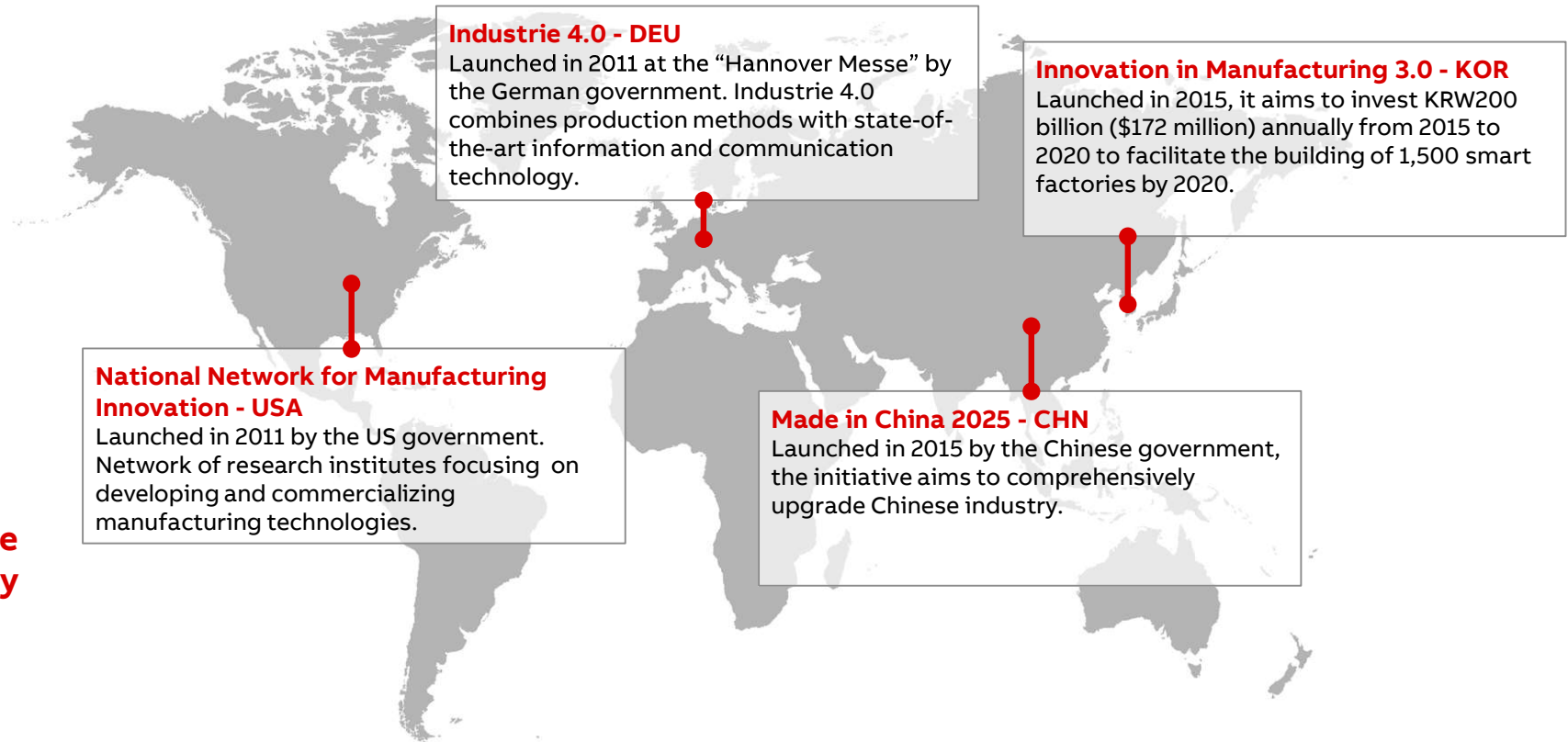
Tapping into benefits requires much greater agility than typical today

**“Smart factories have the potential to add \$500 - \$1,500 billion annually to the global economy in the next five years.”**

*Source: Capgemini 2017*

**“Smart factories are revolutionizing manufacturing by enabling a 7x increase in overall productivity by 2022.”**

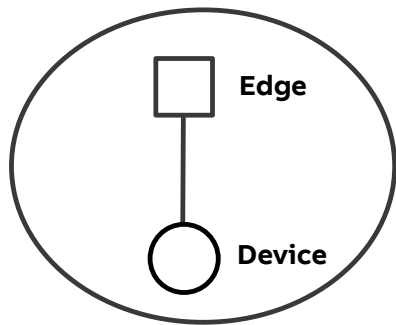
*Source: Capgemini 2017*



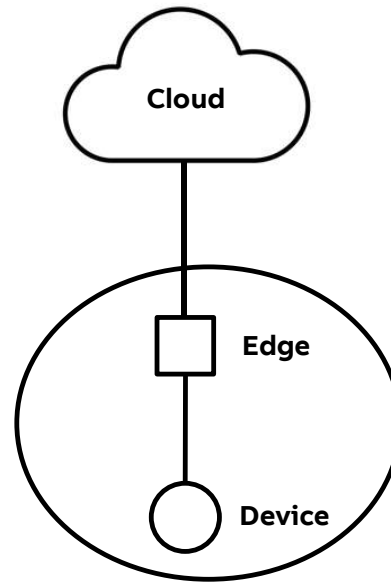
# Ecosystems start blending together - Intercloud

Single dominating data platform not foreseen in the industrial context

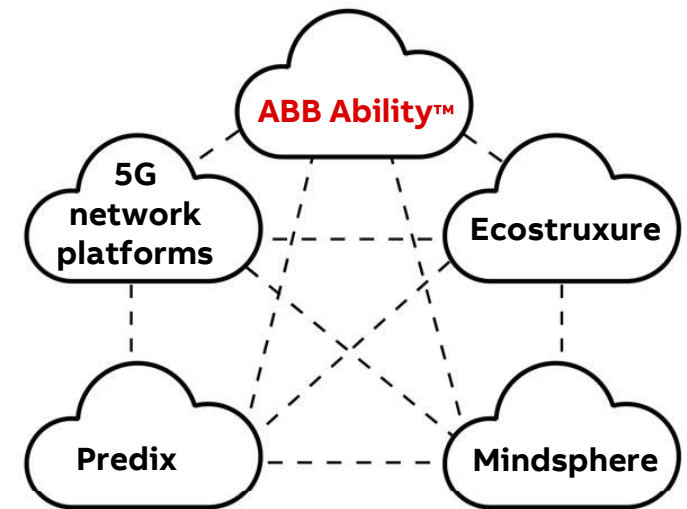
## Fog



## Cloud

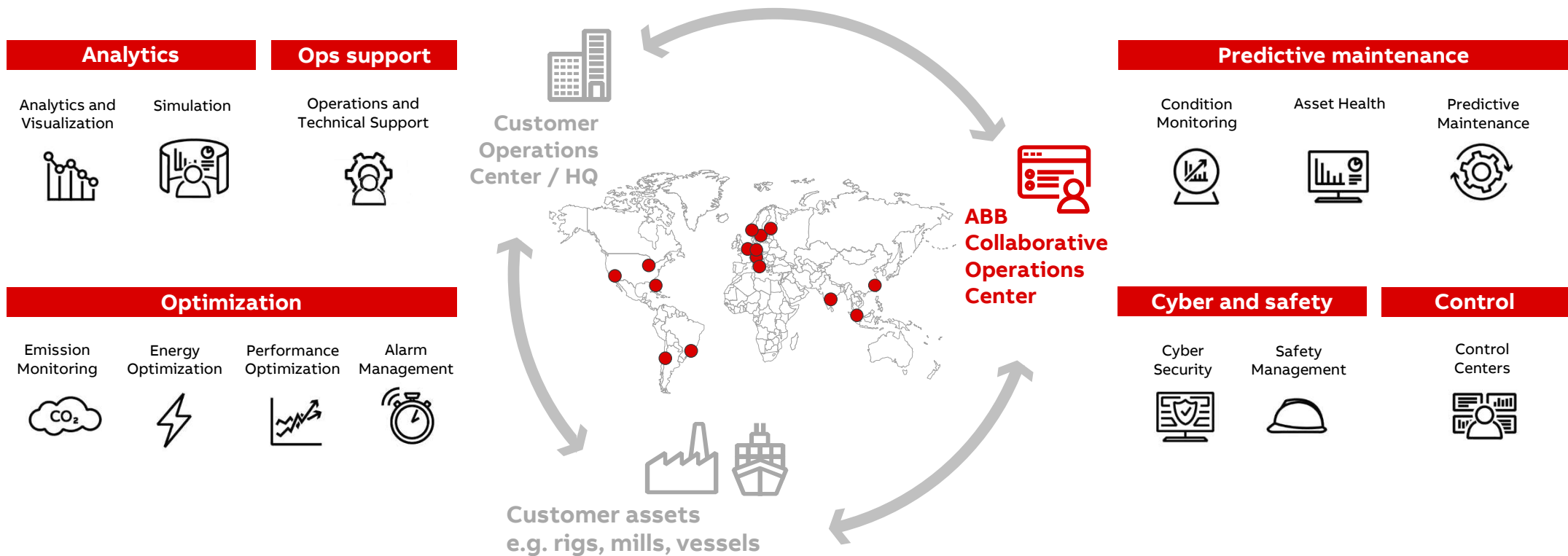


## Intercloud



# Resulting in new way of working: Collaborative Operations

Collaborative Operations links ecosystem players together for value



**ABB**

# Datakansalaisen näkökulma

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Samuel Rinnetmäki

Mihin kaikkeen  
käytän rahani?

Mihin kaikkeen  
käytän aikani?

Kenen kanssa  
vietän aikaa?

**Mikä saa minut  
onnelliseksi?**

# Voisiko datan avulla selvittää...

Mitkä kodin laitteet  
kuluttavat eniten  
sähköä?

Vaikuttaako liikunta  
hyvinvointiini?

Säästänkö luontoa  
ajamalla hiljempaa?

Mikä on paras  
makuuhuoneen  
lämpötila?

Parantaako  
meditointi  
palautumista?

# Tarvitaanko tuohon kaikkeen dataa?

- Mitattu tieto täydentää intuitiota
  - Pienten osien summa
  - Pitkän aikavälin trendien seuraaminen
- Data mahdollistaa analyysin
  - Vertailu tilastoihin ja muuhun avoimeen dataan
  - Korrelaatio eri tietolähteiden välillä
- Saat sitä mitä mittaat
  - Helpompi asettaa tavoitteita ja seurata niiden toteutumista
  - Kävelyn minimoinnista askelten tavoitteluun
- Dataa voi hyödyntää muillakin tavoilla
  - Sitä voi jakaa muille (sosiaalisessa mediassa, puolisolle, valmentajalle, lääkärille, ...)

# Saatavilla tänään

- **Urheilu, kuntoilu, hyvinvointi**
  - Suhteellisen toimiva ekosysteemi, tieto vaihtuu laitevalmistajien, mobiilisovellusten ja verkkopalvelujen välillä
  - Useimmat rajapinnat avoimia ja ilmaisia
  - Askeleet, kalorit, sijaintitieto, nopeus, syke, paino, BMI, ryhti, ...
- **Palautuminen, unen laatu, stressin hallinta**
  - Laitevalmistajilla omat API:t ja omat algoritmit
  - HRV, syke, unen määrä, unijaksot, aktiivisuus, hengitystiheys
- **Terveystiedot**
  - Verensokeri, verenpaine, verikokeet, potilasasiakirjat, kuvantamistulokset, sairauskertomukset, ...
  - Data ei juurikaan liiku kansalaisen ja terveydenhuollon ammattilaisen välillä (asiakirjat kyllä)
- **Älykoti, kodin laitteet, autot, IOT**
  - Energian kulutus, päälle/pois, auki/kiinni, läsnä/poissa, ODB2, ...
- **Melkein kaikilla startupeilla on API**
  - Oman liiketoiminnan ydin ohjelmointirajapinnan kautta, usein *read/write*



Mikä on mahdollista huomenna?