

NODA



# Miksi Suomi Tarvitsee Digitalisaatiota – Hyödyt ja Riskit

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25-01-2016

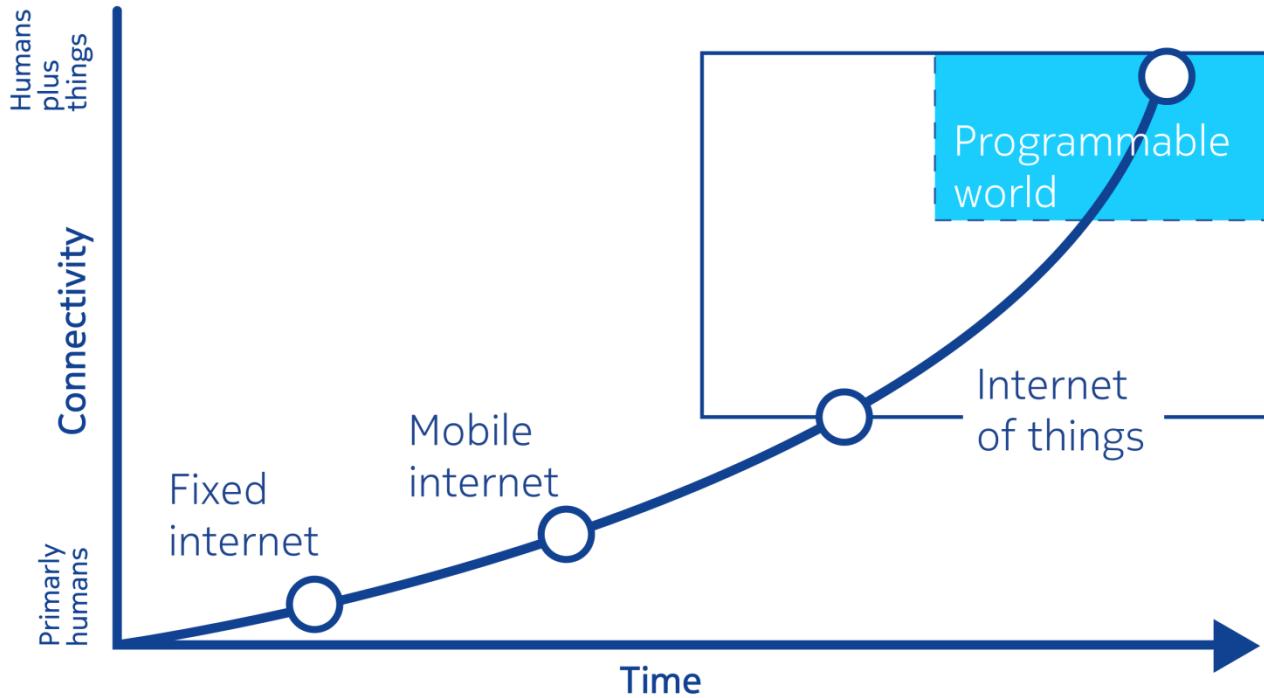
# Ohjelmoitava maailma

## Esineiden Internet

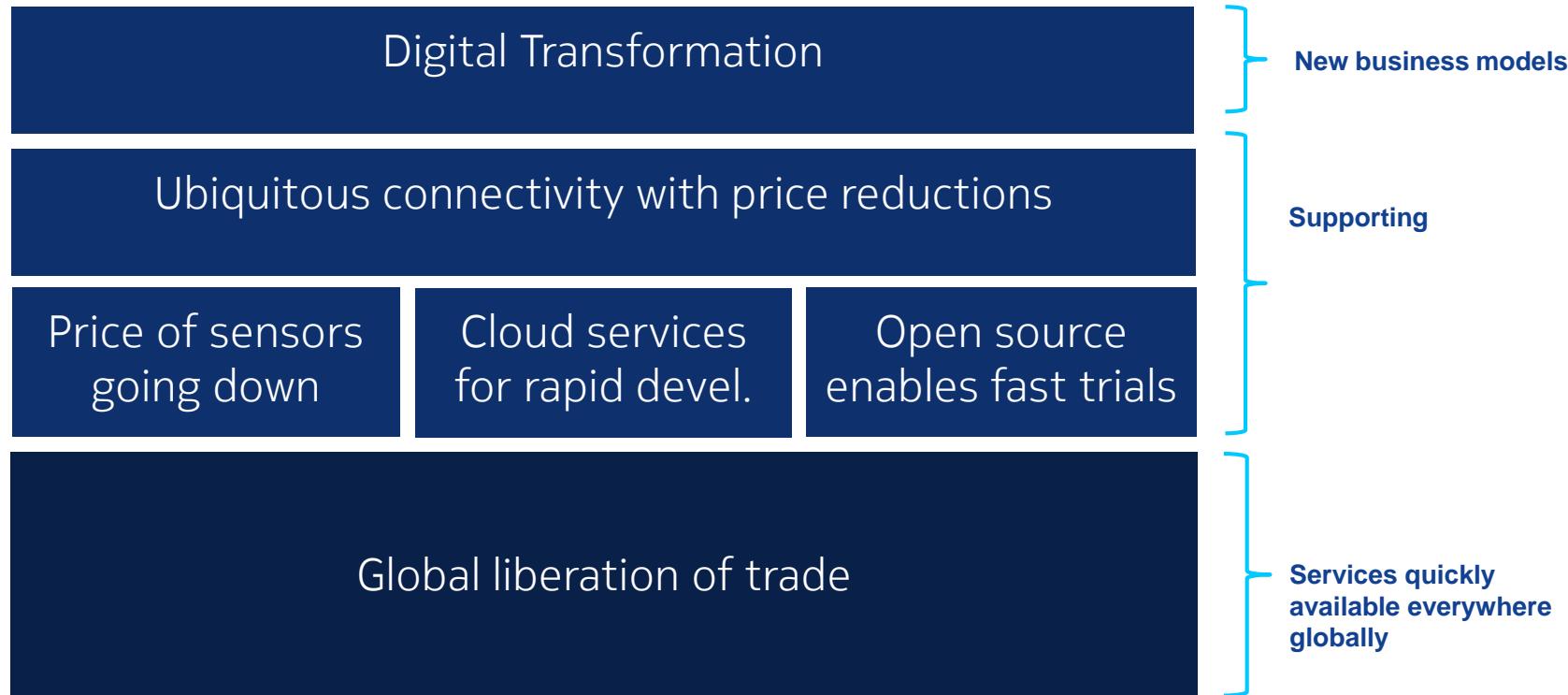
### 5G

- Mistä näissä on kysymys?

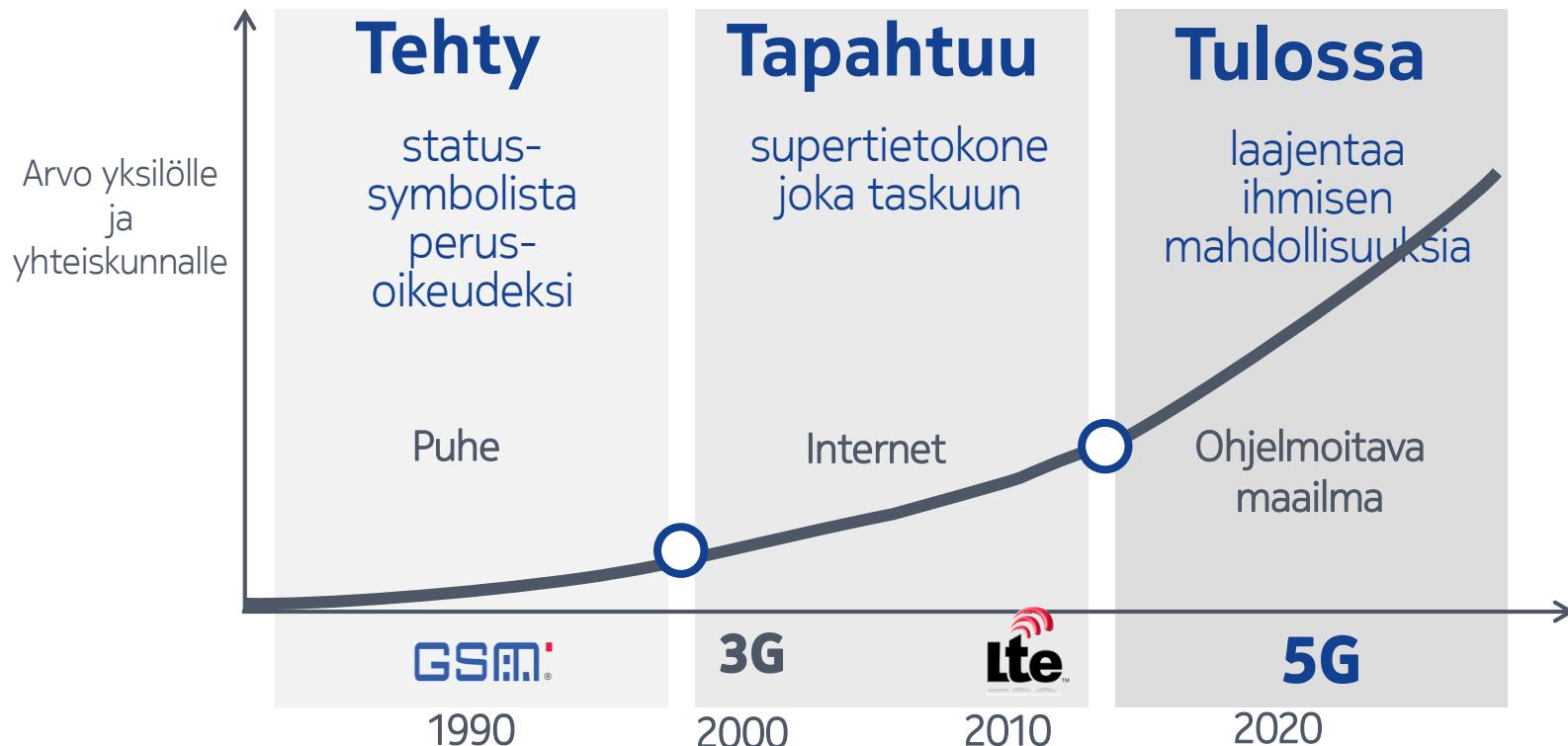
# Muutos Ohjelmoitavaan maailmaan on jo käynnissä



# Miksi Teollinen Internet ja Esineiden Internet tapahtuvat juuri nyt?



# Mitä verkkoteknologia tuo, 2G - 5G?



# 5G yhdistämään ihmisiä ja laitteita kaikkiin tarkoituksiin

## Expanding the human possibilities of connectivity



# Erilaisia tapoja hyödyntää digitaalisuutta

# Big Data – uusien tuotesukupolvien luominen kenttätiedon perusteella

- How well the user interface works
  - Cultural differences
  - User group differences
  - What is most common use case, what causes problems
- Environment
  - Temperature
  - Humidity
  - Other like vibrations, quality of water etc.
- Failures
  - What fails in each environment



# Big Data - Ennakoiva ylläpito

- Usually unnoticed faults over time make the issue more severe and increase costs
- Target is to detect that failure is about to start and fix it before the whole factory needs to be shut down or the device is permanently damaged
- Example: In magnetic resonance imaging sooner or later one superconductive magnet fails and starts heating up. This leads to other magnets to heating and failing also. Finally flow of cooling liquid disturbs and helium escapes in a spectacular cloud  
=> damages into millions
- Ex2: shutting down and up a factory takes days. Most expensive are unplanned shutdowns (loss of customers, extra cost of emergency maintenance,...). Target to follow devices and through machine learning identify when failing is starting. This can be compared to already planned yearly maintenance windows and possibly slow down production to prevent extra shutdowns



# Kuluttajalla jo olevan tuotteen kehittäminen paremmaksi

## Tesla Model S is getting even quicker through a software update

by Jon Fingas | @jonfingas | January 29th 2015 at 6:55 pm



Mashable

1.8K  
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IMAGE: LI XIAOFEI/ASSOCIATED PRESS



BY PETE PACHAL

3 DAYS AGO

Tesla drivers won't need to worry much about the range of their electric cars anymore.

With an over-the-air software update, the [Tesla Model S](#) sedan will be able to better predict and warn the driver when it gets close to its range limit. It will also better incorporate Tesla's network of charging stations into trip planning, CEO Elon Musk announced Thursday on a conference call with reporters.

**SEE ALSO:** [Tesla 'Insane' button gives unsuspecting passengers a wild ride](#)

"The Model S, by virtue of software updates, actually gets better, smarter and faster over time," Musk said. "I think most people who own a Model S don't actually have range anxiety, but for

# Tavarasta palveluksi

Instead of garbage bins and sensors; selling optimization service – 50% savings



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# Älykäs kaupunki

- Real-time data on crowd and people movement
- Transportation app Waze, and pedestrian app Moovit.
- Crowd-sourced data overlaid with government data
- Better emergency response times, smoother transport



# Teknologia ja terveydenhuolto

- Remote surveillance study of 260,000 people with a pacemaker
- High, low and no remote monitoring tracked
- Use of remote monitoring in itself improves survival outcomes
- Highest remote monitoring – best survival rates



# Vesi

- Large water systems lose 20% in leaks
- Beijing uses 3,600 billion liters a year
- $20\% = 720 \text{ billion liters}$
- $720 \text{ billion liters} =$  water used by population of Finland in two years



# Älyliikenne

- 1.3 million people killed in road accidents every year
- 90% of all car crashes are down to driver error



# Uudet businessmallit

In 2015 Uber, the world's largest taxi company owns no vehicles, Facebook the world's most popular media owner creates no content, Alibaba, the most valuable retailer has no inventory and Airbnb the world's largest accommodation provider owns no real estate.

# Opportunities

Economic Growth

- Working hours
- Productivity
- Risk taking

Equal opportunity

Health

Safety

Environment

# Risks

Winner takes it all business models

Digital devide

Privacy

Security

A blurred background image showing the lower halves of many people walking across a crosswalk. The people are dressed in various winter clothing, including jackets, jeans, and boots. The scene is set outdoors on a paved surface with visible white crosswalk lines.

NOKIA