kamstrup

Kamstrup HCW solutions and IoT

EG's inspirationsdag / brugergruppemøde for forsyningsbranchen.

Danny Stærk
Commercial Product Manager, HC systems

Agenda

kamstrup

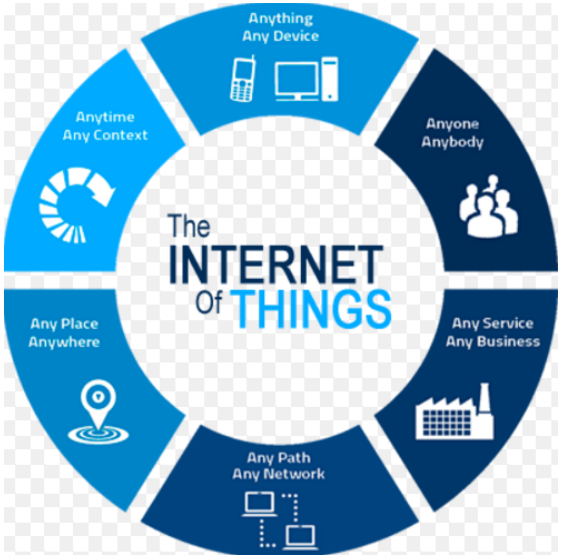
This presentation is divided into four parts:

1. Why IoT, and what is it about?

2. The technologies, giving you the basics (wM-Bus, SIGFOX, NB-IoT, LoRaWAN)

3. Discussion on needs

4. What next?

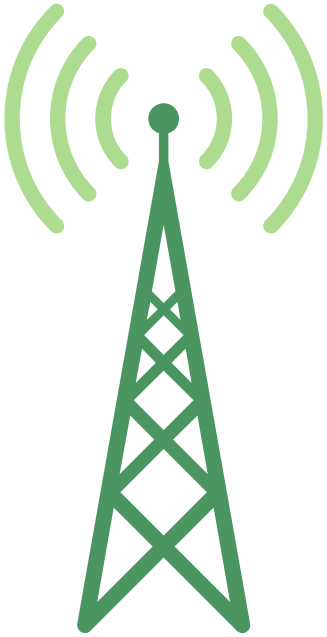


The IoT trend

kamstrup

"The Internet of Things will be huge, with 25 billion connected "things" by 2020", according to Gartner.

"IoT will become a 7 trillion USD business in that same year, predicts research firm IDC."



- IoT technologies move fast, and are currently one of the major buzz words in the industry – with some very interesting aspects
- Every IoT technology has its benefits and consequences, there is not a clear winner
- Kamstrup has relied on wireless M-Bus in the past, but are looking to let emerging IoT technologies supplement our offerings

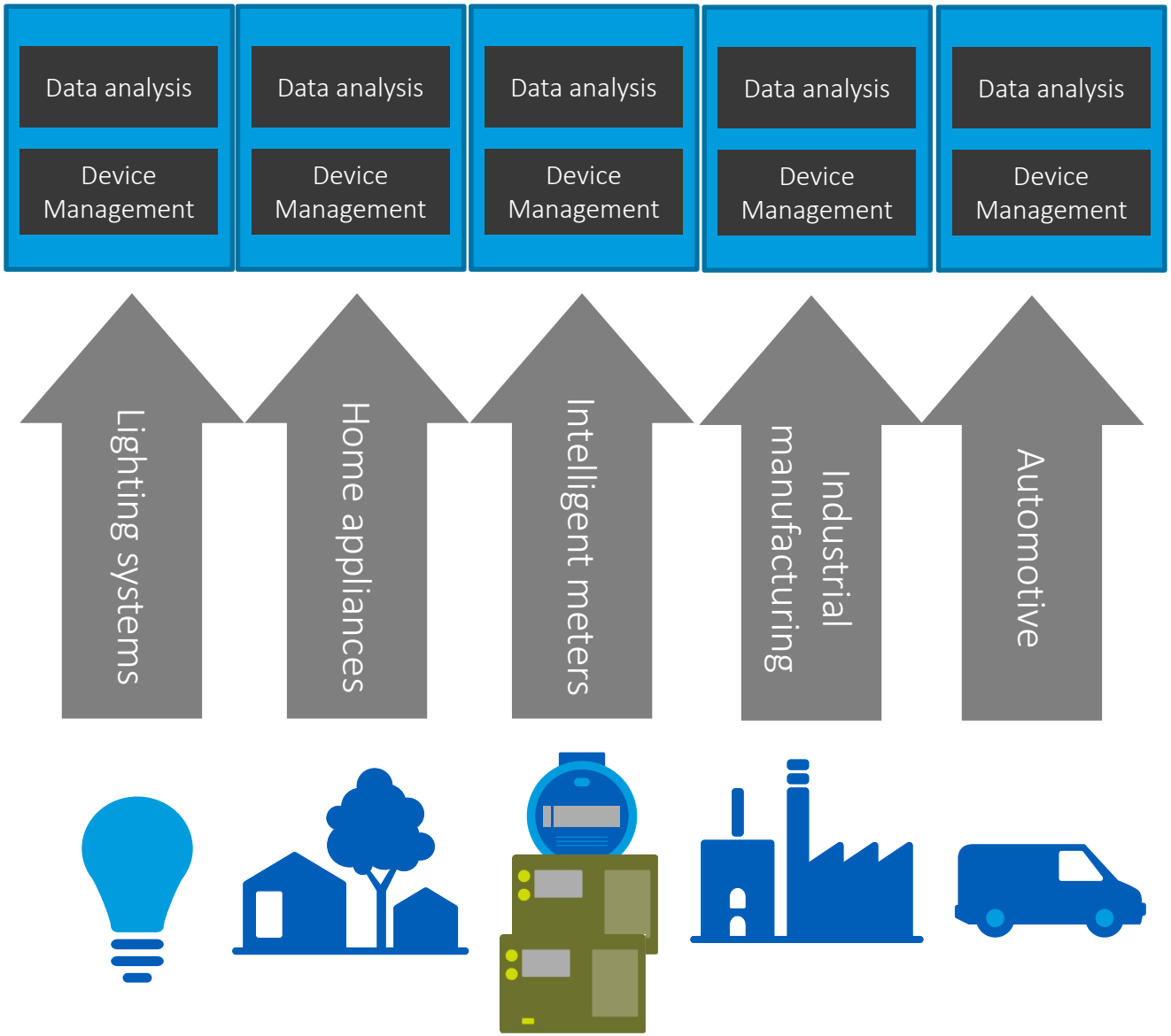
Vertical infrastructures up until now

kamstrup

Management systems

Vertical communication infrastructures

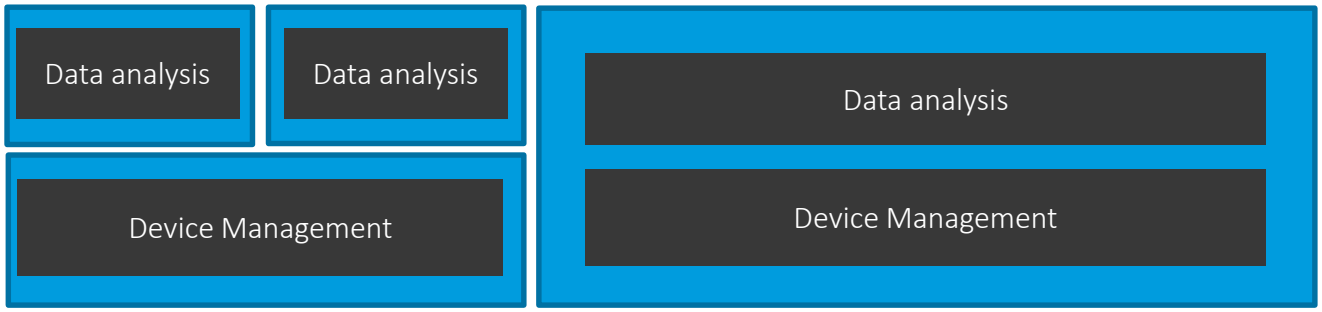
Devices



New entrants, horizontal infrastructure

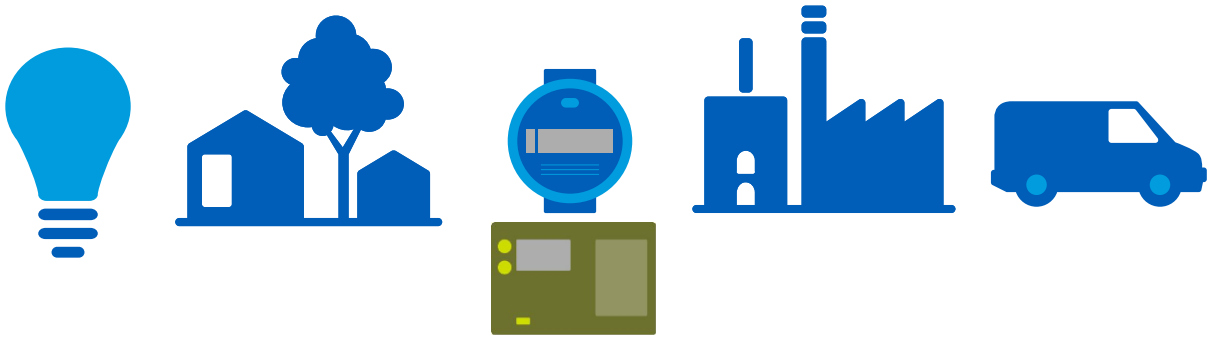
kamstrup

Management systems



Horizontal communication infrastructures

Devices



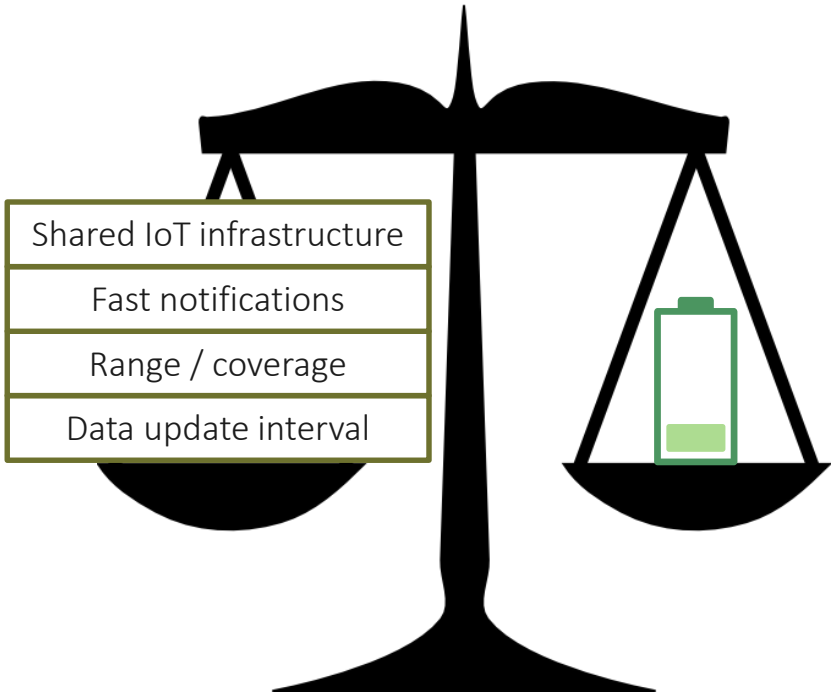
Balancing the scale

kamstrup

Fact: The new IoT technologies have higher power consumption than what we have been used to with wM-Bus

Where to compromise – on battery lifetime, on data update interval or perhaps on network range?

What is *your* right balance?



SIGFOX

kamstrup

Introduction

A privately owned French company, funded by venture capital.
SIGFOX Network Operators (SNO) provide the ”Network as a Service”. Wants to be *the* IoT company worldwide.

Business model

SIGFOX network operators install, own and operate the infrastructure. Devices send data to the SIGFOX cloud. The network operator is responsible for the network performance.

Benefits

- SIGFOX is already rolled out in several countries, also within Kamstrup focus markets
- No CAPEX cost for network infrastructure for the utility
- Customers don’t need to manage their own network

Uncertanties/risks/drawbacks

- Will it be long lasting?
- ”One point of failure” risk
- High battery consumption compared to wM-Bus
- Yearly data fees

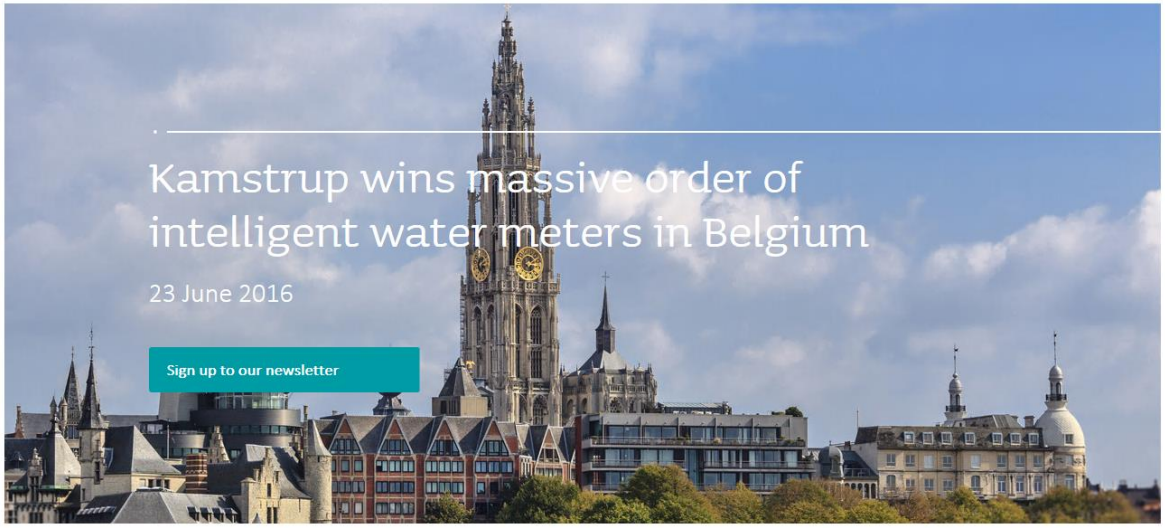
SIGFOX
One network A billion dreams

SIGFOX status

kamstrup

Kamstrup MC21 water meters with integrated SIGFOX sold to Antwerp, Belgium.

First units will be ready during 2017.



Danish metering solutions provider Kamstrup has won a contract to supply around 193,000 intelligent water meters to the city of Antwerp.

NB-IoT (Narrowband Internet of Things)

kamstrup

Introduction

Same principle as cellular based mobile phones (with SIM cards), but optimized for small data amounts and increased coverage.
M2M GPRS gapfiller.

Business model

Tele providers see a business potential in connecting billions of devices on their infrastructure.
Will charge for using the network.

Benefits

- Infrastructure already installed
- Can guarantee a Quality of Service level
- No network infrastructure CAPEX cost for the utility

Uncertanties/risks/drawbacks

- Very high battery consumption compared to wM-Bus
- NB-IoT radio chips availability
- Network rollout is very limited today
- SIM cards (or eSIM) needed for each device
- Yearly data fees
- Overall coverage in basements – will it be ok?

A GLOBAL INITIATIVE

NB-IoT status

kamstrup

- Kamstrup trials with NB-IoT ongoing in selected countries
- We are using an external bridge unit that converts wM-Bus to NB-IoT.
- We can do more trials in this way (low volume)

LoRaWAN – Long Range Wide Area Network

kamstrup

Introduction

LoRa technology owned by company Semtech. The LoRa Alliance has specified the LoRaWAN protocol.

LoRaWAN Business model

To provide the technology and sell the hardware, but let others create their own IoT LoRaWAN networks.

Benefits

- Private and public networks – you decide
- Open technology with wide adoption – not tied in with a company
- Low cost hardware
- Technology is already available

Uncertanties/risks/drawbacks

- High battery consumption compared to wM-Bus
- No nation-wide coverage yet

Kamstrup status

- A solution for trials expected in 2017

LoRa™

Key questions

kamstrup

Business Case

- Battery lifetime needed to secure your business case?
- Is sharing network costs with other verticals part of the business case?
- Do you want to avoid a yearly fee for communication?

Smart Utility

- Do you just need data for billing?
- Do/will you also need data for analytics to make network optimizations and cost reductions?
- Longevity - What are your data needs in 10 years?

Quality of Service

- Performance guarantee – with whom do you sign an agreement?
- Network coverage, also in pits and basements?

Security Criteria

- Security levels needed? Who to handle this?
- Interoperability at which level? Devices? Communication infrastructure? Management systems?
- Keeping private data truly private?

IoT Solution choice

How utilities test and choose IoT

kamstrup

We experience a general IoT rollout according to this model.
How do you see this?

Trial phase

- 1-20 meters

Pilot phase

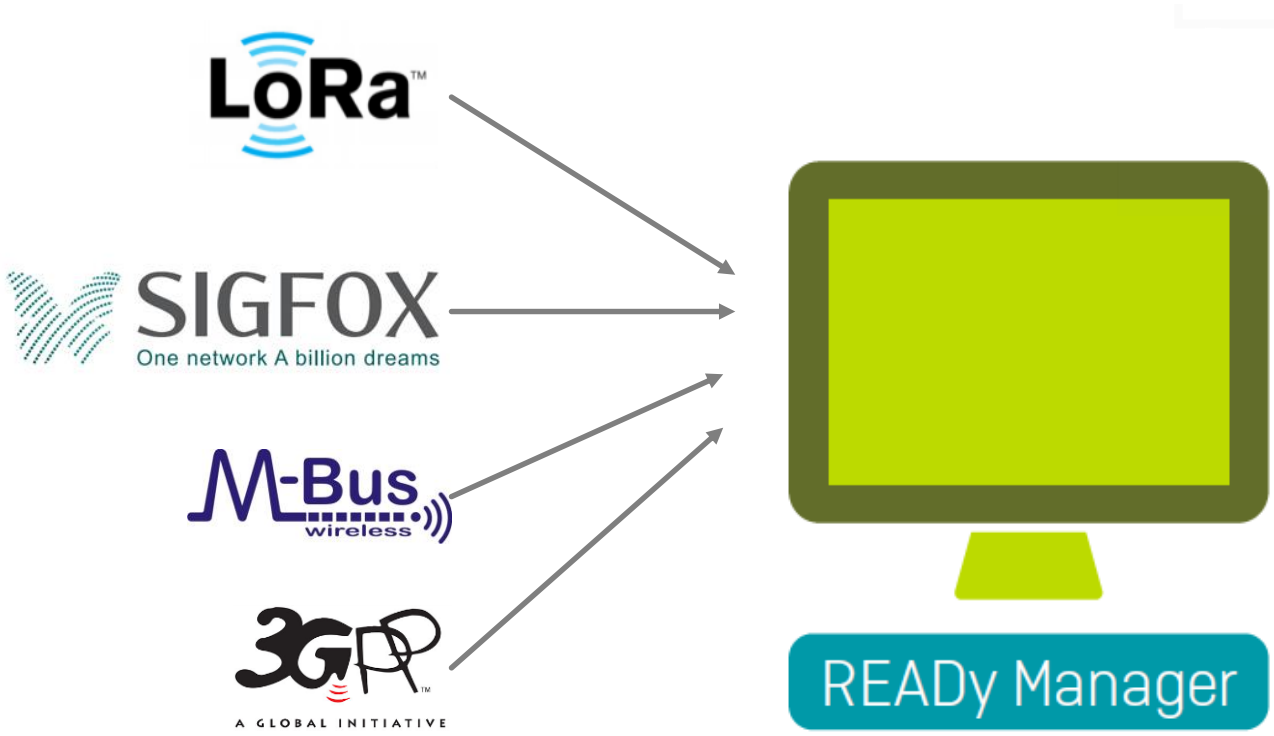
- 100-1,000 meters

Rollout phase

- High volume rollout

READy

Interoperability: We will update READy Manager in the future to allow for connections with the new IoT technologies to our MDM system



kamstrup

Think forward

Danny Stærk
Commercial Product Management, Heat/Cooling
dls@kamstrup.com