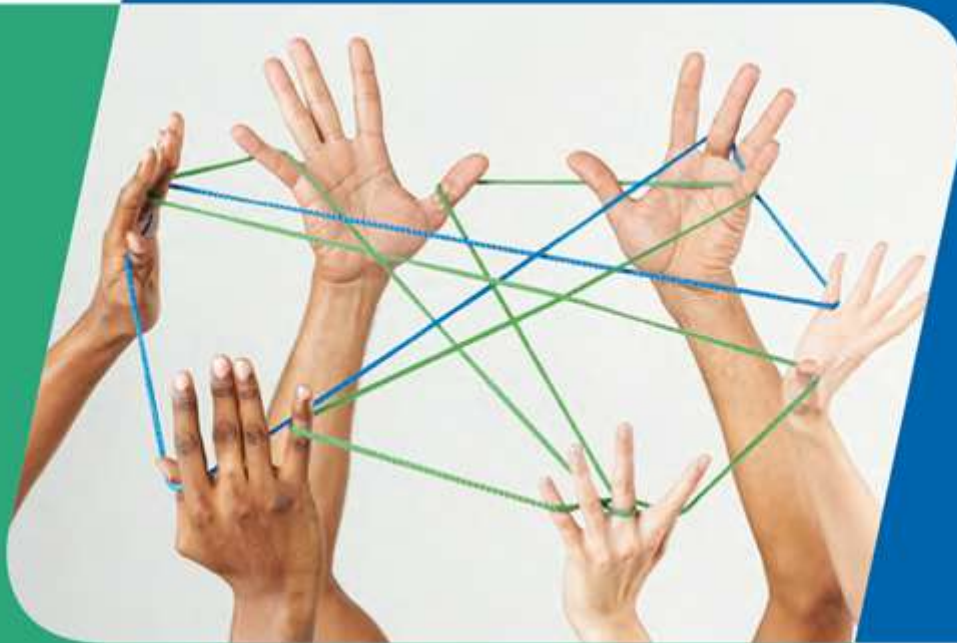


The future of  
**PROFIBUS &  
PROFINET**  
technology

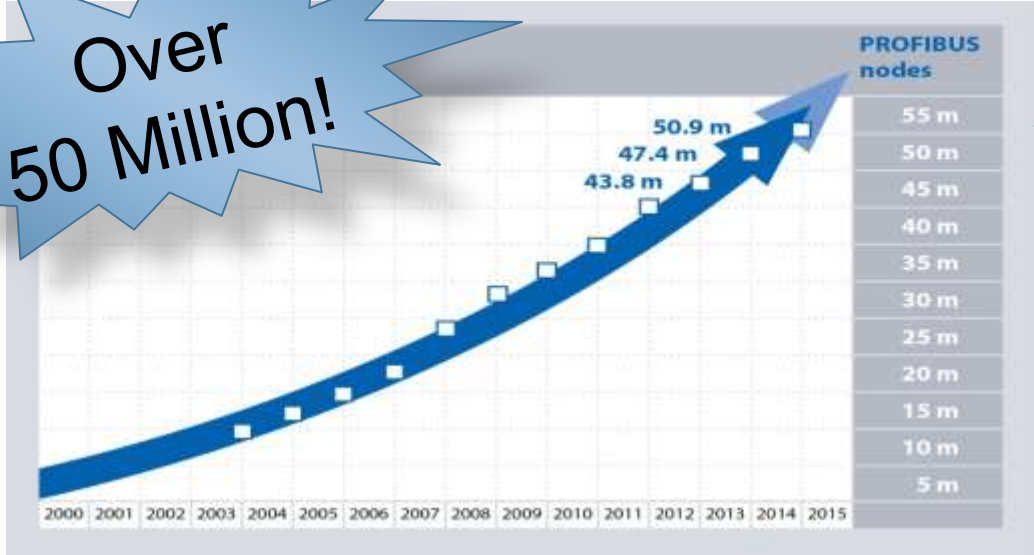


Xaver Schmidt

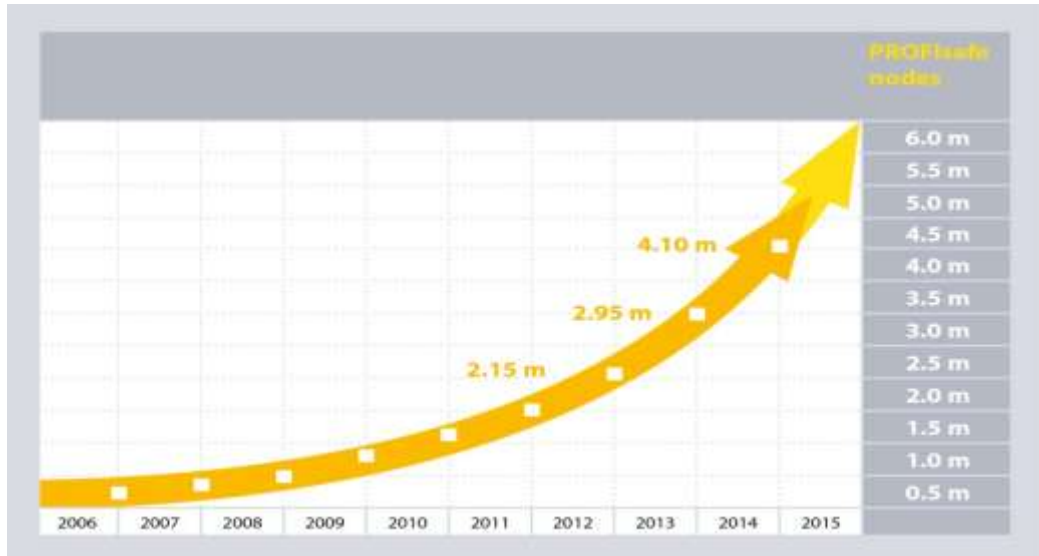
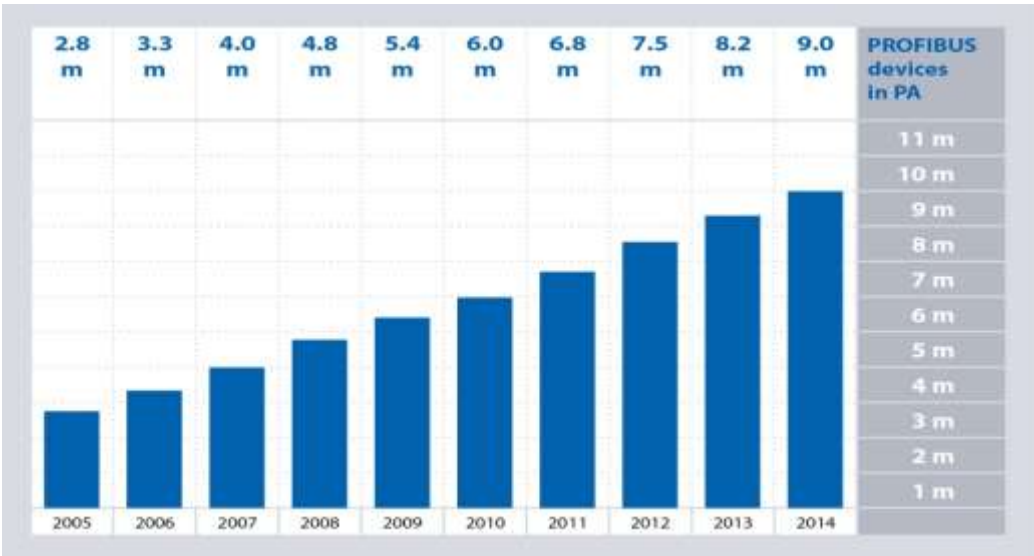
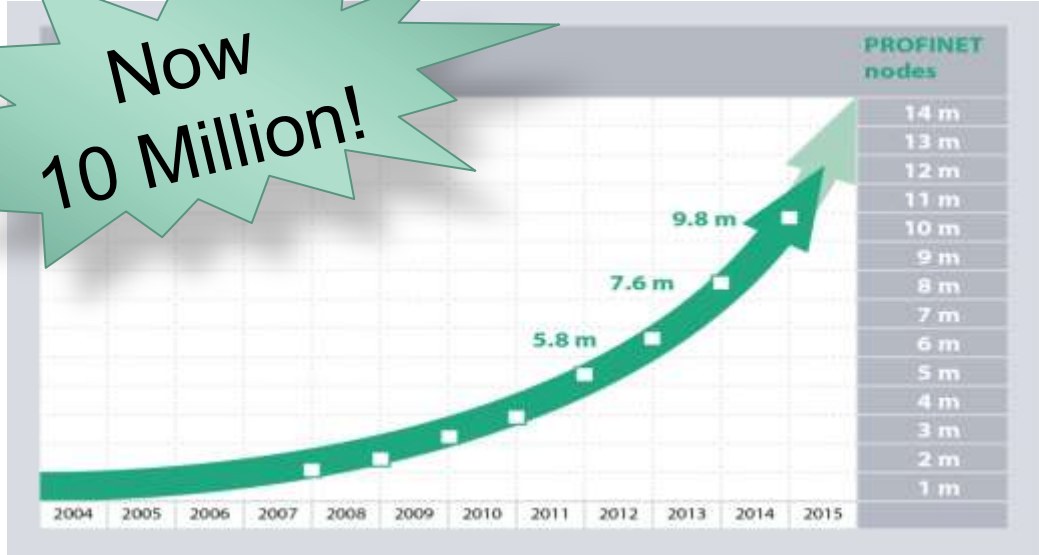
UK Conference, June 23<sup>rd</sup> 2015

# Where are we today?

Over 50 Million!



Now 10 Million!



Industrie 4.0

?

?

?

?

?

Industrial Internet

vs.

?

IIoT

Industrial Ethernet

?

?

?

IoT

?



## Typical Use Cases

Remote Access



Cloud



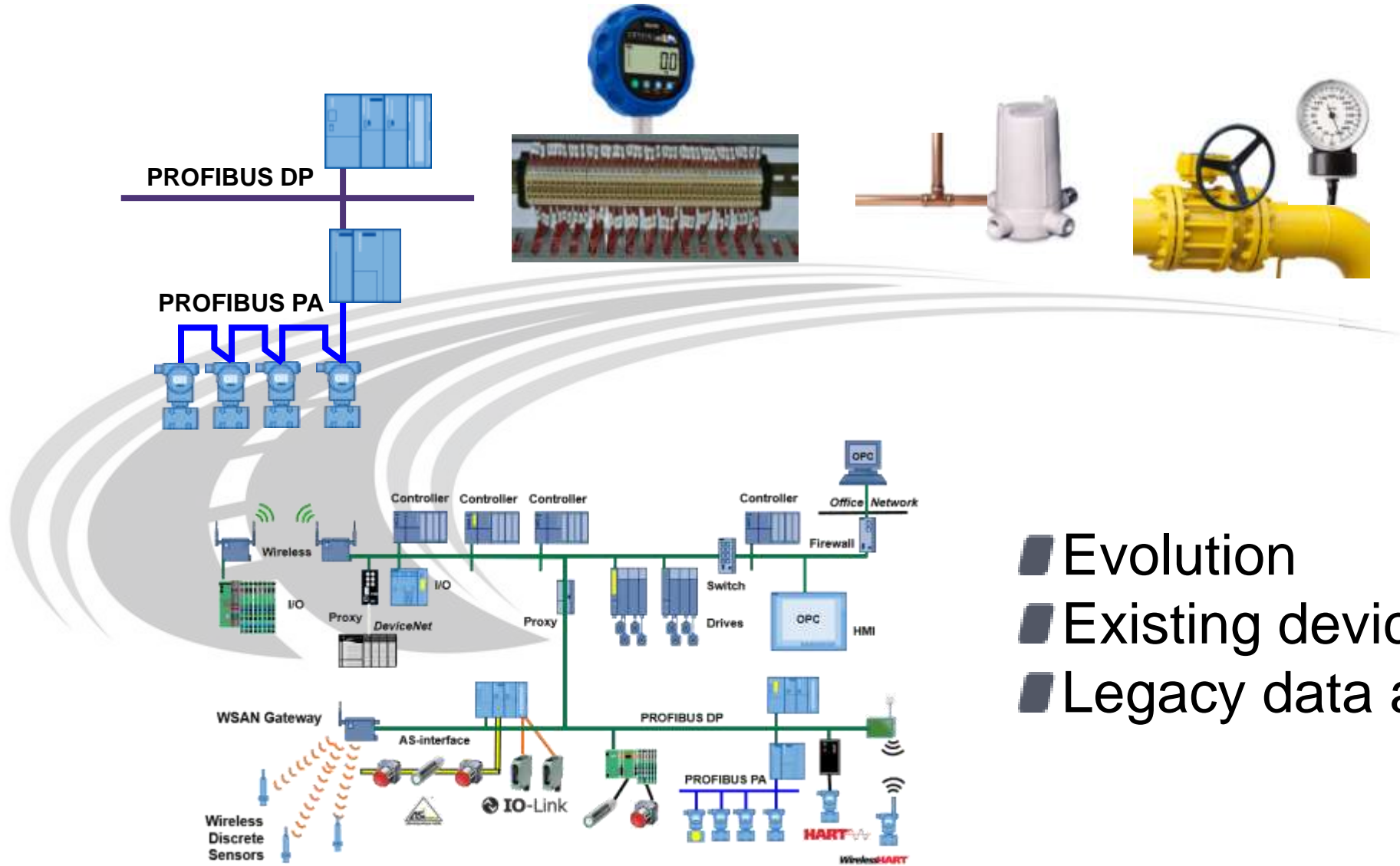
Big Data



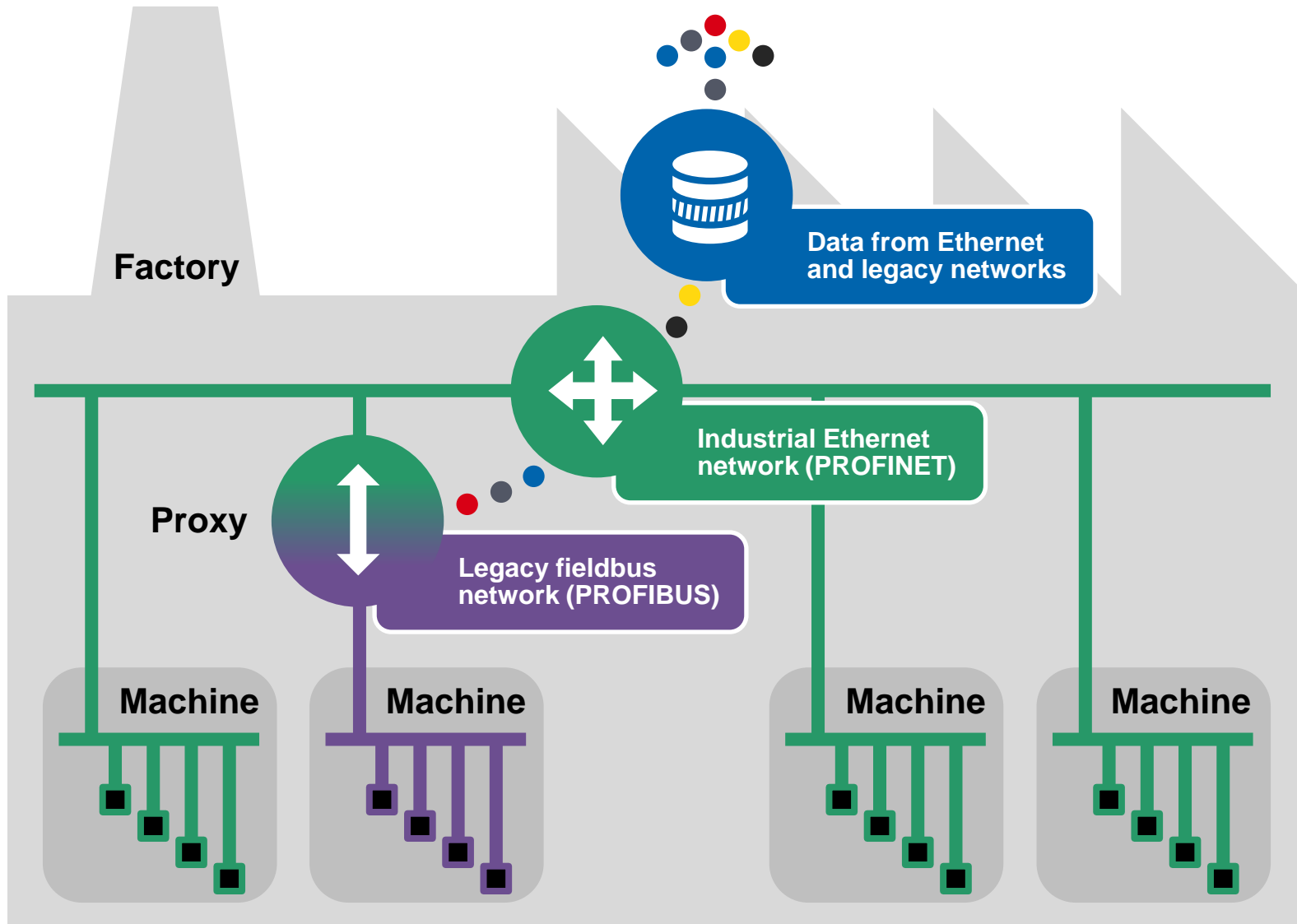
...

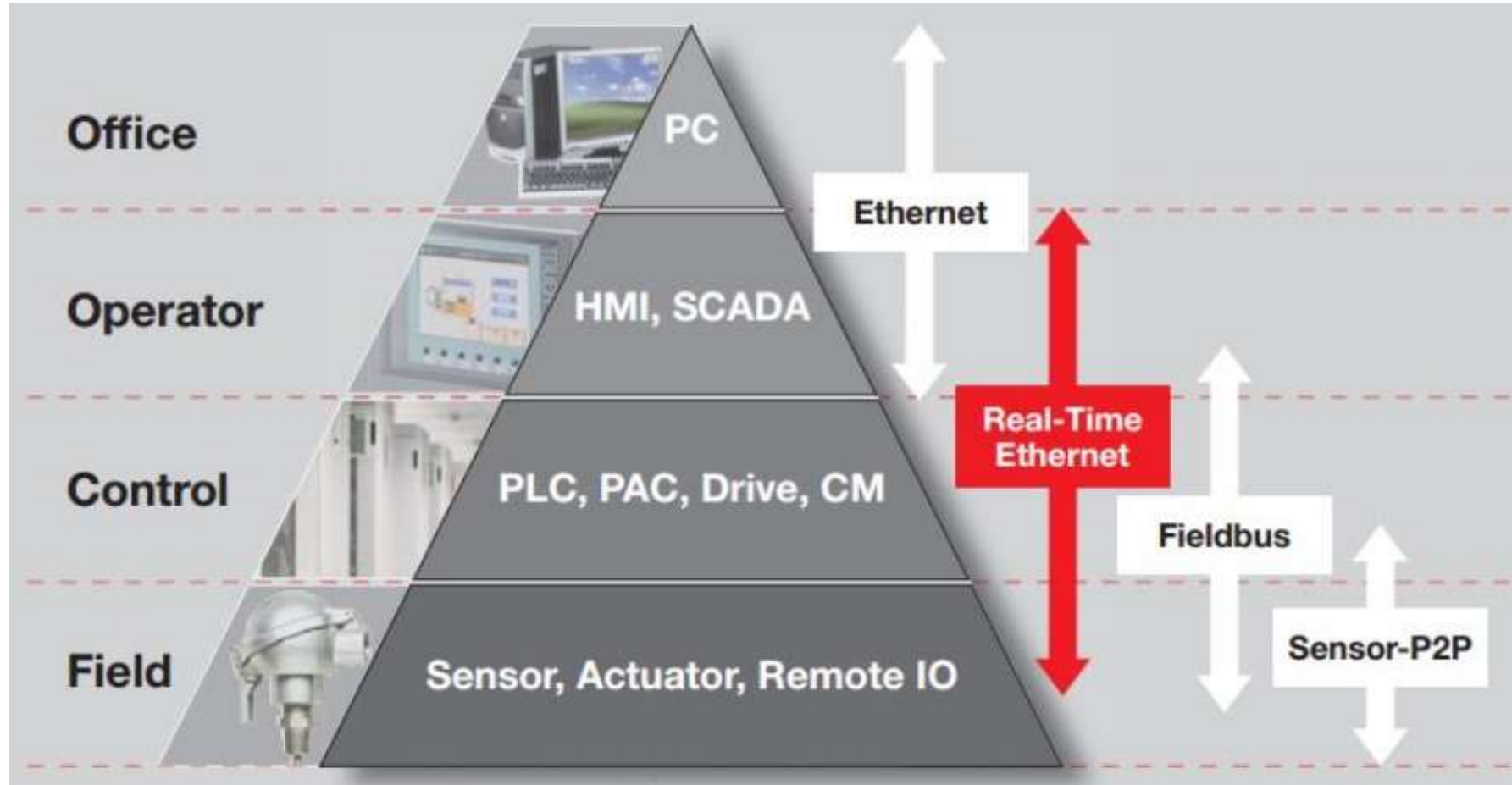
Do they sound familiar?

IoT	IIoT
Revolution	Evolution
New <ul style="list-style-type: none"> <li>• Devices</li> <li>• Standards</li> </ul>	Existing <ul style="list-style-type: none"> <li>• Devices</li> <li>• Standards</li> </ul>
Things	Data
Lots of data	Tons of data
Ad hoc connectivity	Structured connectivity
User serviced	User + OEM + Vendor serviced
Important –but not critical	Mission critical <ul style="list-style-type: none"> <li>• Analytics</li> <li>• Security</li> <li>• Data integrity</li> <li>• Response times</li> </ul>



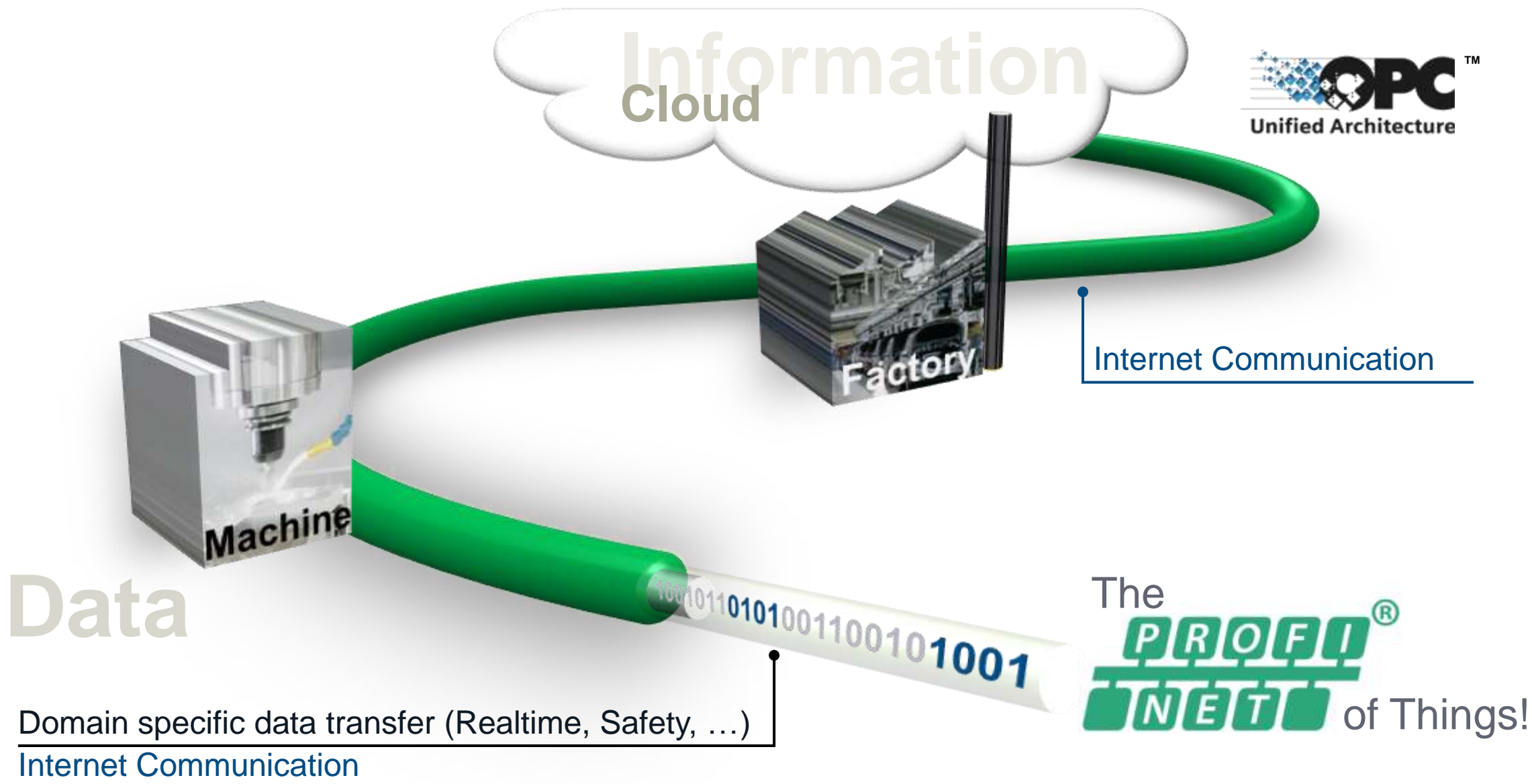
- Evolution
- Existing devices
- Legacy data access







There will be more than one protocol!



Information  
Cloud



Internet Communication

Data

Domain specific data transfer (Realtime, Safety, ...)

Internet Communication

The **PROFINET**® of Things!

## Grain Management

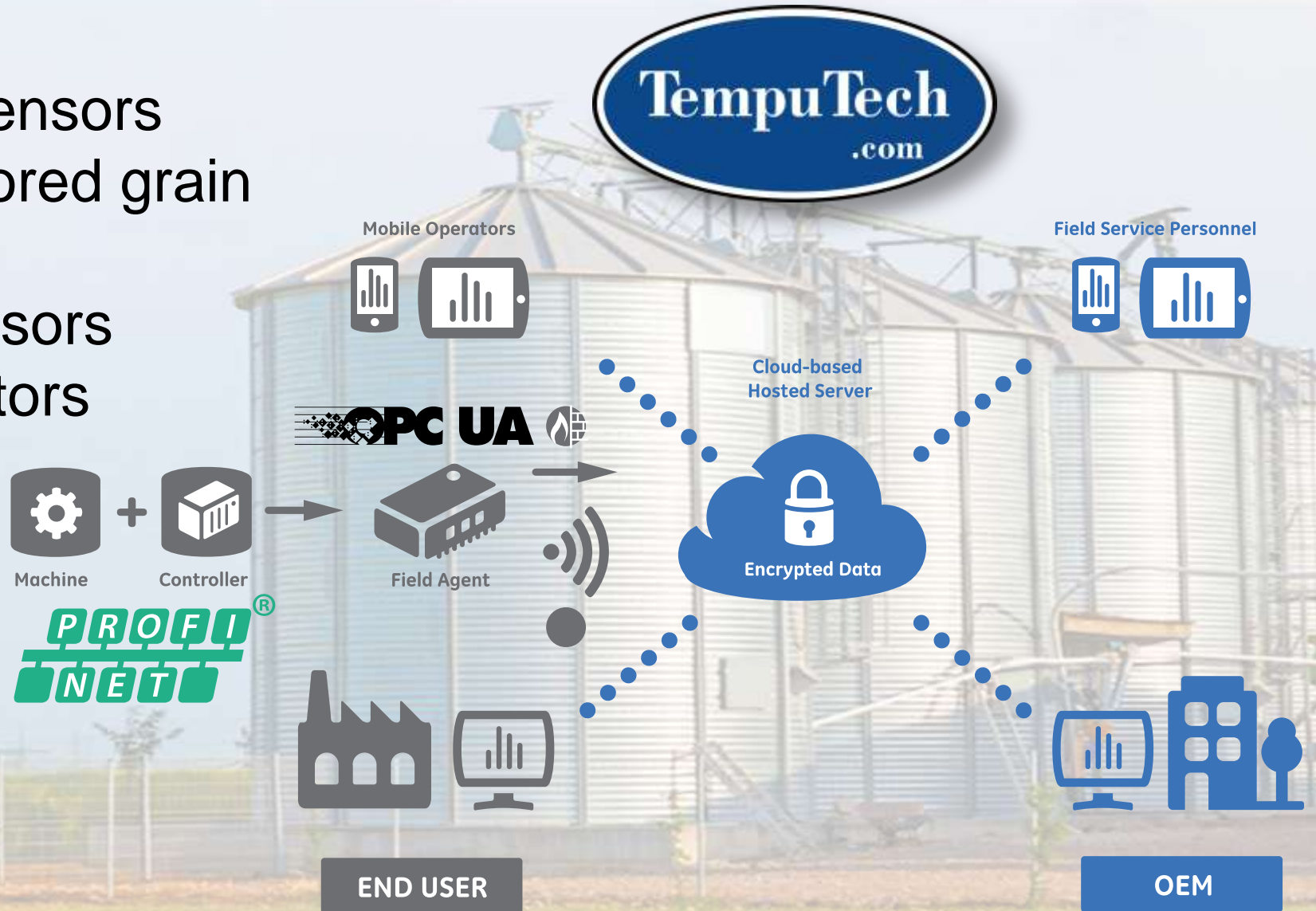
- Temp & moisture sensors collect data from stored grain

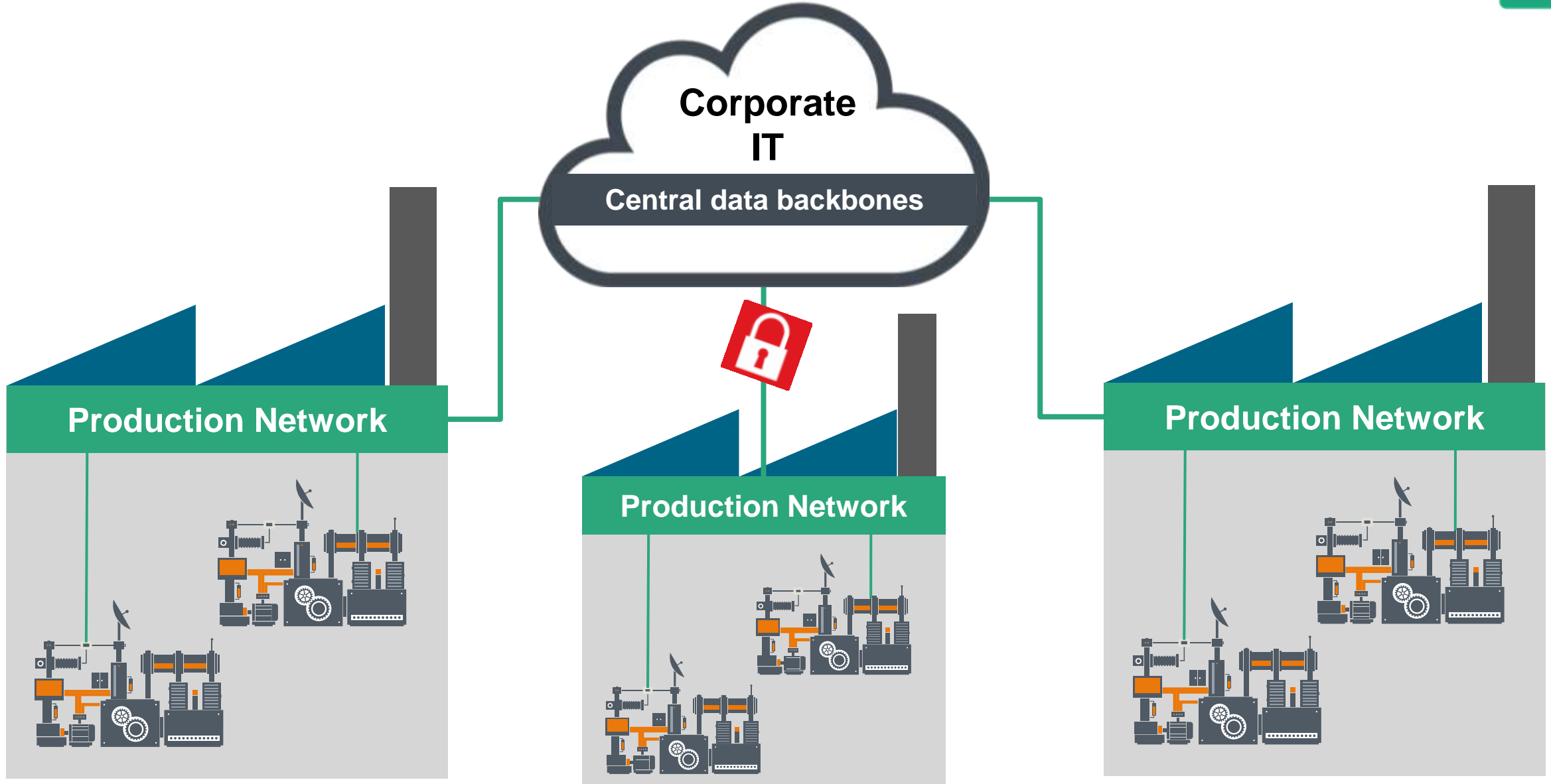
## Hazard Monitoring

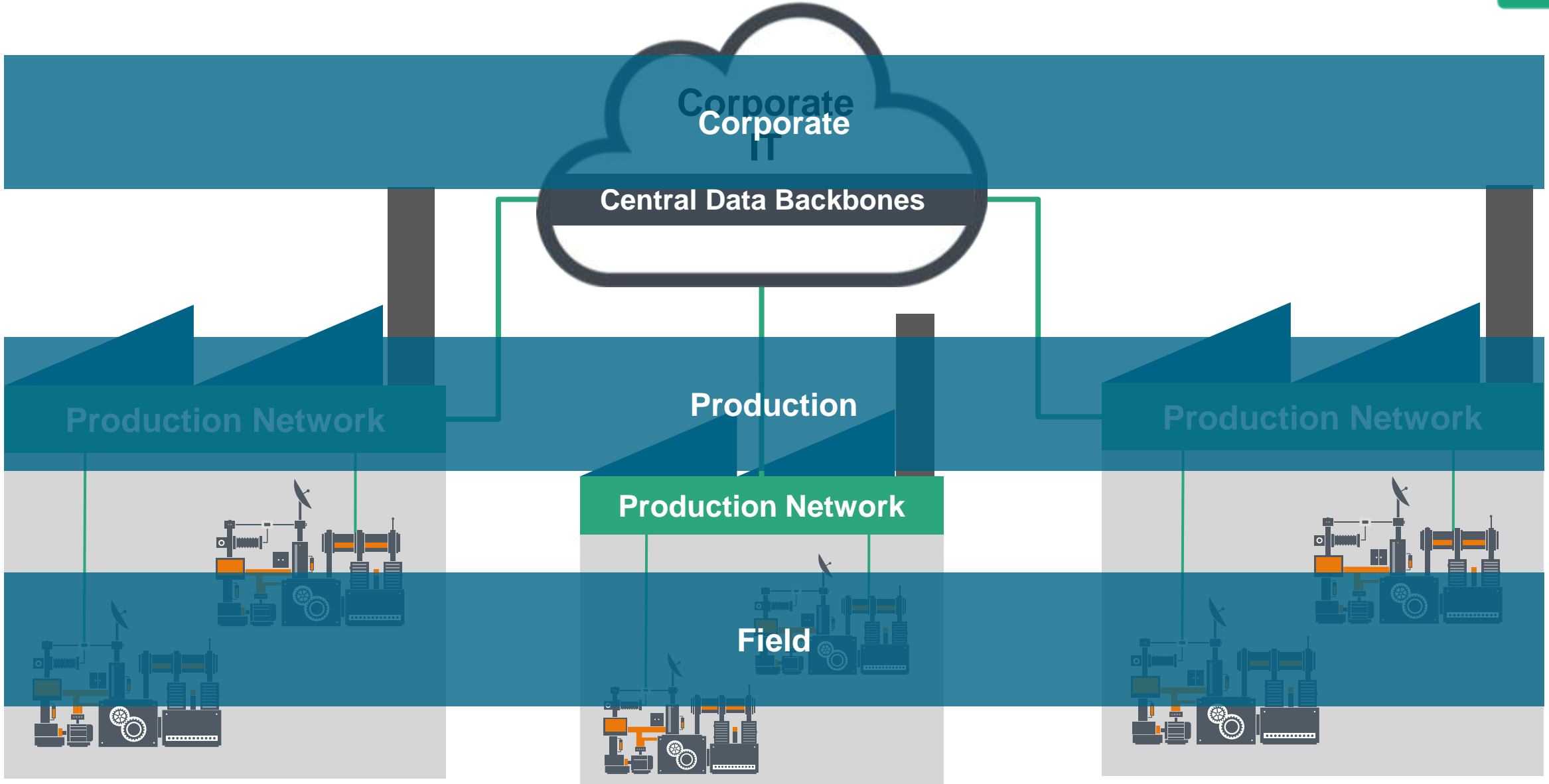
- Temp & motion sensors monitor grain elevators

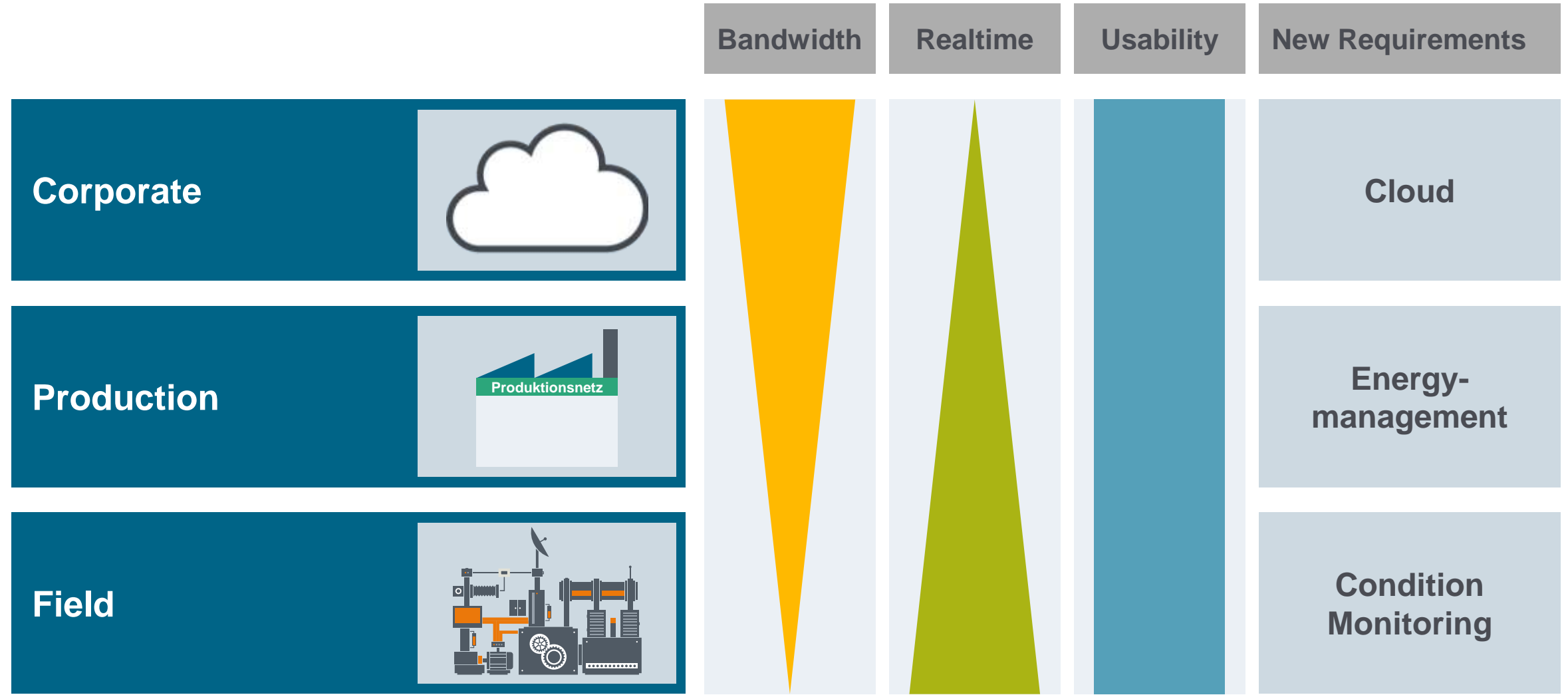
## Why PROFINET?

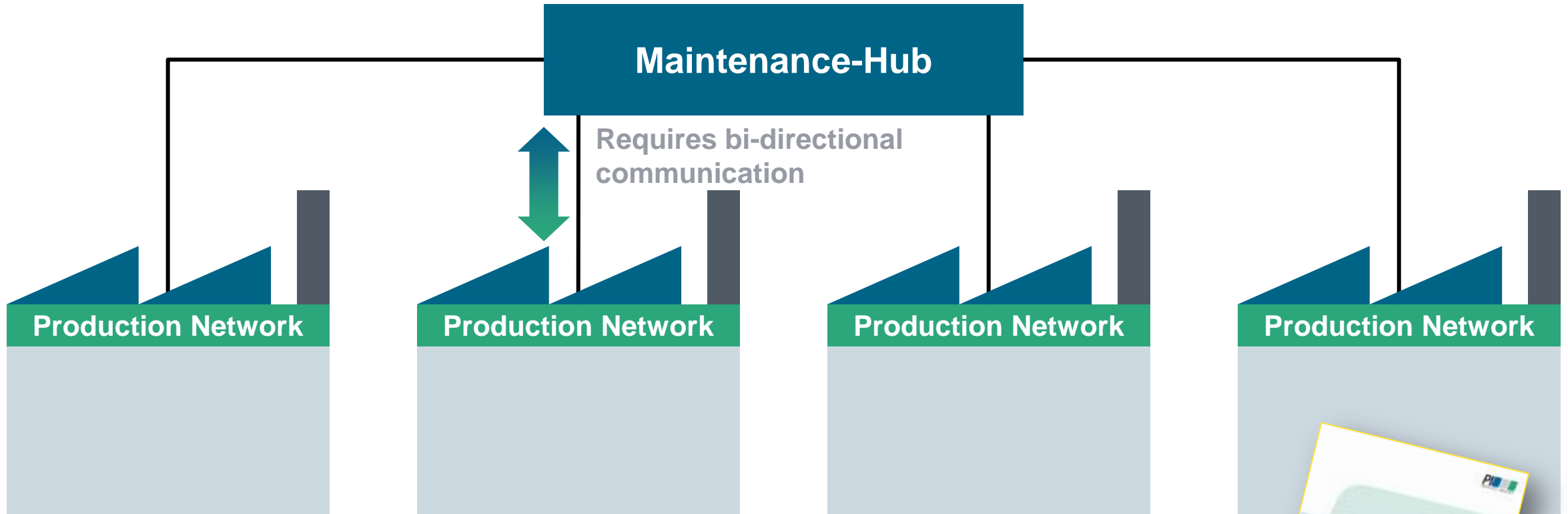
- Uptime!
- Real-Time!





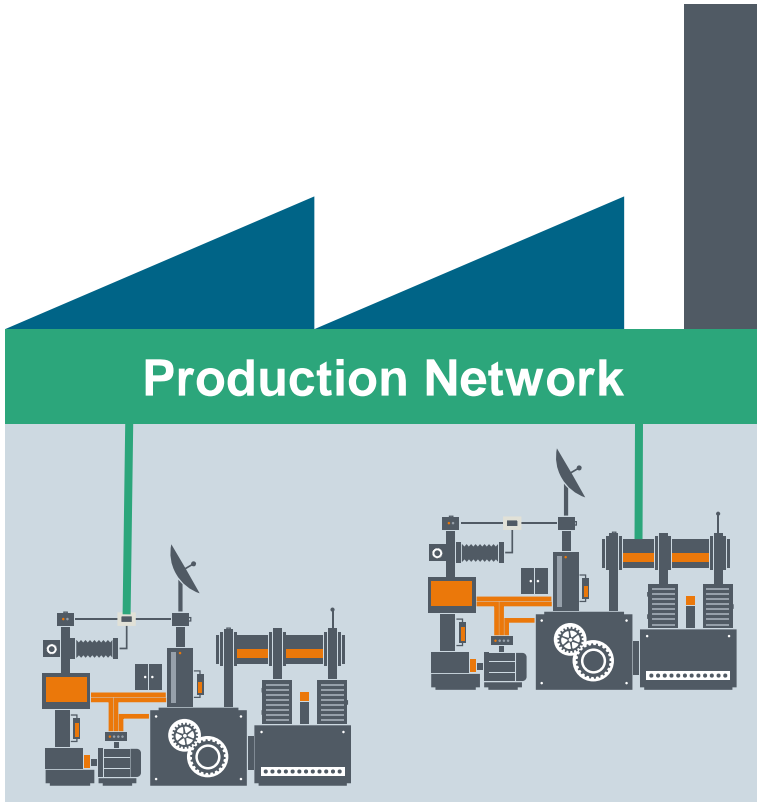






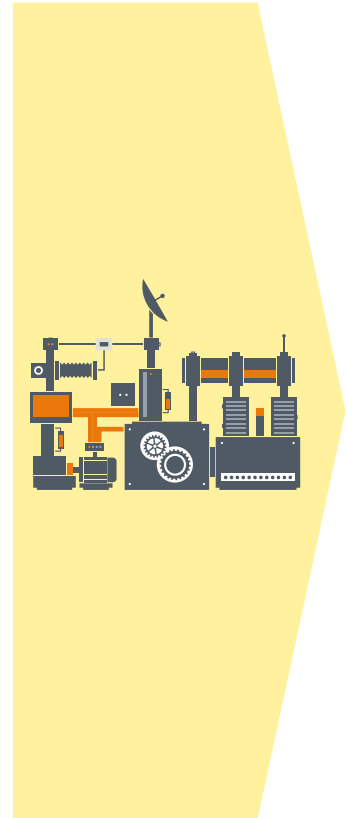
- Requires access down to the field level
- Secure access needs to be ensured
- Transparent connection between networks





### Machine Builder

Delivers machine with automation solution and network configuration



### Plant Operator

Integrates machine in plant → requires changes in network configuration

**Automation and network configuration  
intrinsically tied together today**

Machine Builder

**Test independent of network configuration**

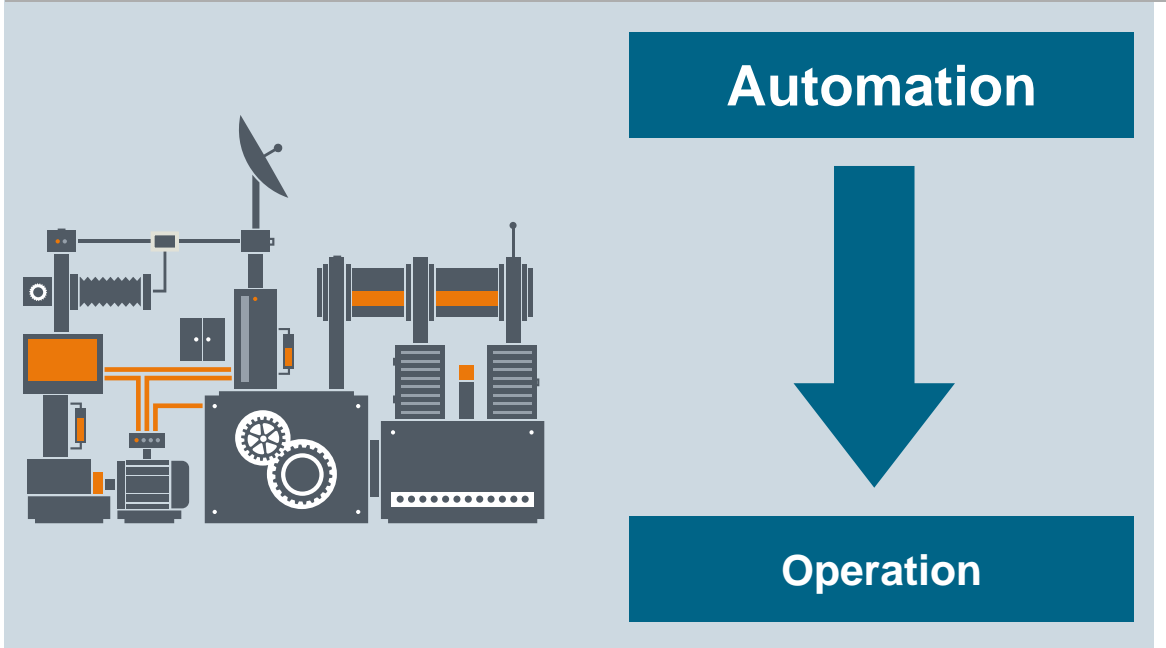
- No IT-Services
- Commissioning with temporary configuration

Doesn't want to deal with IP-Addresses

**Integration in existing network**

- Individual requirements of local IT

Simply wants to connect the machines



Plant Operator

**Automation and Network Configuration must be separate in the future**





**Cloud**

**Energy-  
management**

**Condition  
Monitoring**

**New Applications demand higher Bandwidth**

- PROFINET is scalable to higher bandwidth

**IP-based communication will push more in the field level**

- Multiple protocols in parallel to deterministic, cyclic I/O
- OPC UA as a standard on higher levels

**But Industrial Communication should not become more complex!**

## Energy Management

One cable for all purposes  
Condition Monitoring Easy cabling

Fast device replacement  
Ruggedness/stability **Safety**

## Security

Speed

Real time communication

**efficiency**

Large quantity structures

Open standard Expandability  
**flexibility**

## Diagnostics

Industrial Wireless LAN  
Flexible topologies  
Web tools

High transmission rate

Fast start-up

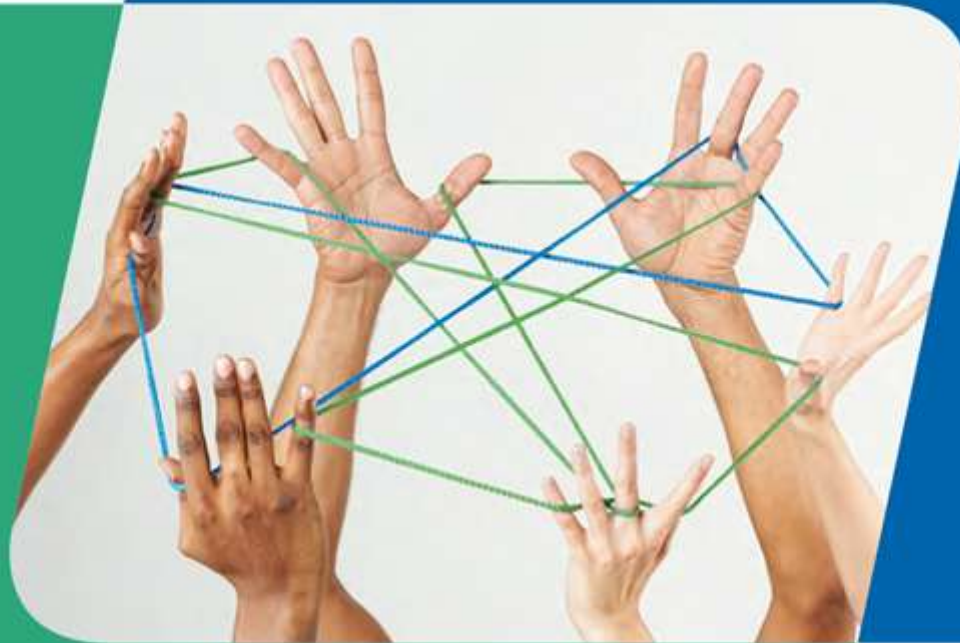
High precision

**performance**

Media redundancy

**PROFINET addresses each of these imperatives**

**Thank You!**



UK Conference, June 23rd 2015