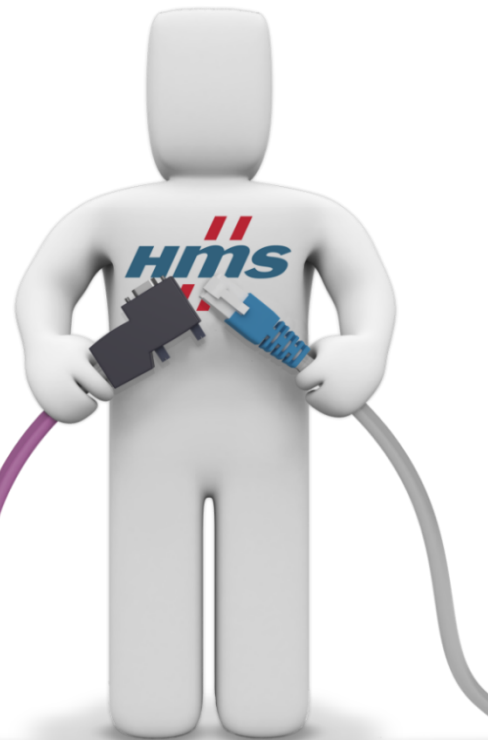HMS Industrial Networks view of

Industrial networks 2018

Hardware
meets
Software

- HMS is a Swedish based technology company
- On the market for 30 years
- Manage three strong brands:
 - **Anybus**, **IXXAT** and **eWON**
  - (NW connectivity, CAN+Safety, Remote)

Introduction

- Every year in Q1, HMS presents an updated analysis and estimation of industrial network market shares globally
  - The figures represent HMS' consolidated view, taking into account our own sales statistics, insights from colleagues in the industry, and overall perception of the market

- This presentation includes HMS estimation for 2018 based on number of new installed nodes* in 2017 within General Factory Automation, including:
  - Market shares for individual fieldbuses, industrial Ethernet and Wireless
  - Growth rates
  - International variations
  - Market drivers and outloook into the future

- 2018 special: Looking back 5 years, how has the market evolved?
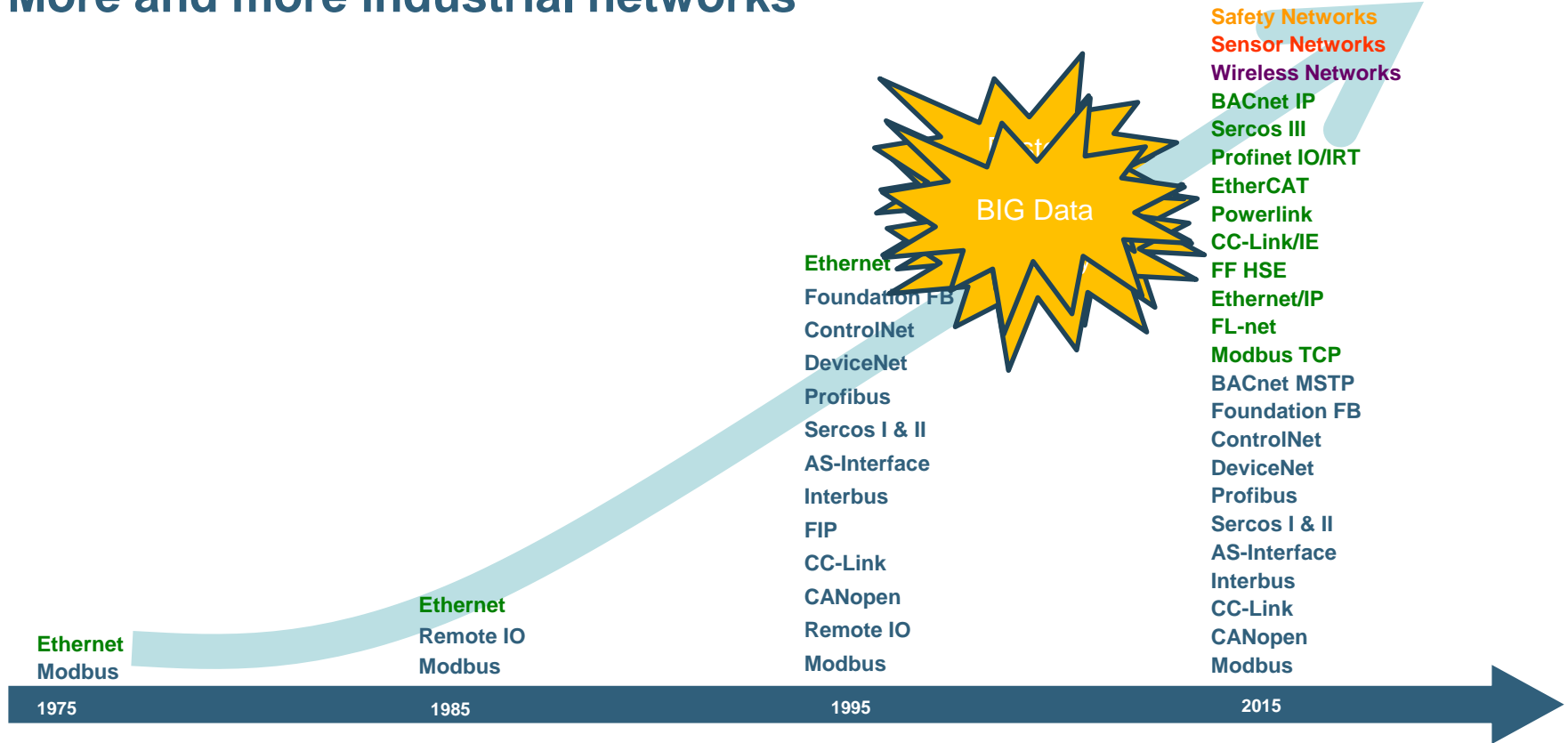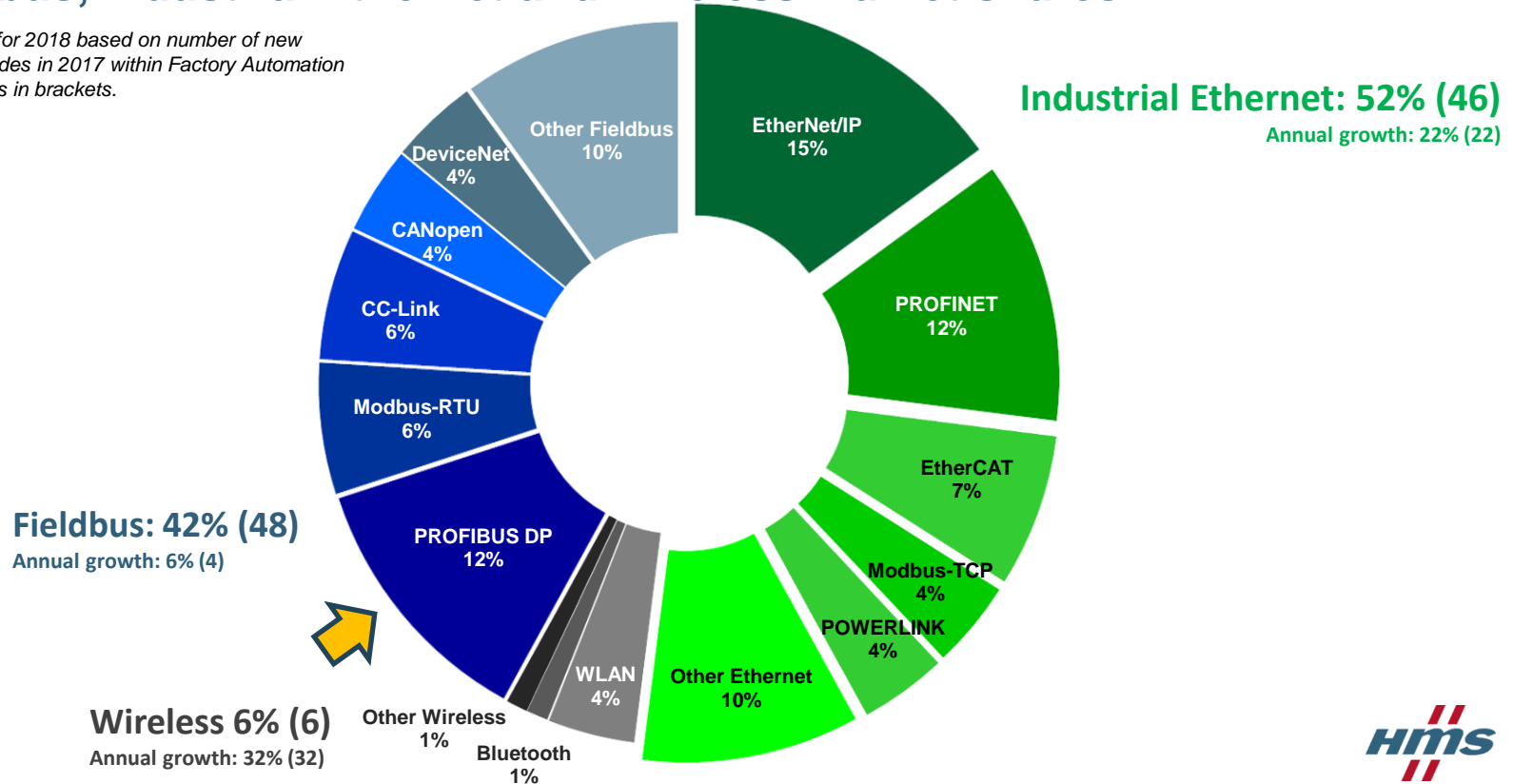
Audience survey!

How many here (still) uses

?

Fieldbus, Industrial Ethernet and Wireless market shares

Estimation for 2018 based on number of new installed nodes in 2017 within Factory Automation 2016 figures in brackets.

Industrial Ethernet: 52% (46)
Annual growth: 22% (22)

Fieldbus: 42% (48)
Annual growth: 6% (4)

Wireless 6% (6)
Annual growth: 32% (32)

Pie chart labels:
- EtherNet/IP 15%
- PROFINET 12%
- EtherCAT 7%
- Modbus-TCP 4%
- POWERLINK 4%
- Other Ethernet 10%
- WLAN 4%
- Bluetooth 1%
- Other Wireless 1%
- PROFIBUS DP 12%
- Modbus-RTU 6%
- CC-Link 6%
- CANopen 4%
- DeviceNet 4%
- Other Fieldbus 10%

HMS conclusions for Factory Automation

A strong industry that is getting more and more connected

- The estimated total growth of <u>new connected nodes 2018 is approx. 13%</u> (fieldbus, industrial Ethernet and Wireless)
  - Growth supported by a strong global Industrial Automation market
- IIoT accelerates the need to get industrial equipment connected. Retrofitting solutions are requested.
- EtherNet/IP is now the most widely installed network globally on a very fragmented market. PROFIBUS and PROFINET are equal 2nd.

Industrial Ethernet and Wireless grow faster than the market

- The move towards **industrial Ethernet** is continuing. IE is growing steadily at 22%, for the first time accounting for more that half of the market at 52%.
  - No consolidation of industrial Ethernet networks can be seen.
  - Drivers for Ethernet growth: High performance and <u>accelerating integration between factory installations and IT</u>.
- **Fieldbuses** "fight back" with 6% growth (4), but are expected to decline step by step
  - Fieldbus is still installed thanks to factors such as simplicity, tradition reliability and cyber security concerns.
- **Wireless** growth remains at 32%, keeping 6% of the market. WLAN and Bluetooth are leading the way.
  - IIoT important driver for Wireless solutions. Growing usage of Wireless among machine builders.

Trends: Geographical markets

Europe and Middle East

- Fastest growth rate: EtherNet/IP, PROFINET followed by EtherCAT
- PROFIBUS is still widely used
- Modbus TCP/RTU and CANopen are still used in new installations

U.S

- CIP networks dominate: EtherNet/IP is the leading network
- EtherCAT is continuing to gain market share
- Modbus RTU and Modbus TCP are still popular

Asia

- Fragmented market - no network stands out as truly market-leading
- PROFIBUS, PROFINET, Ethernet/IP, EtherCAT, CC-Link and Modbus RTU/TCP are the most used networks

5-year track record – industrial network evolution 2014-2018

- Steady growth of the industrial Ethernet market share => passed fieldbus during 2017
- Fieldbus still hangs on, but a continuous decline was seen during the 5-year-period
- Wireless is here to stay with the highest current growth rate
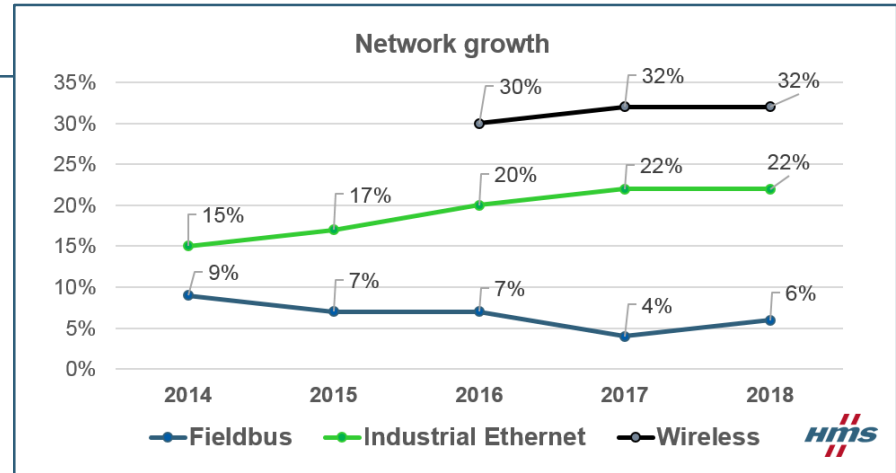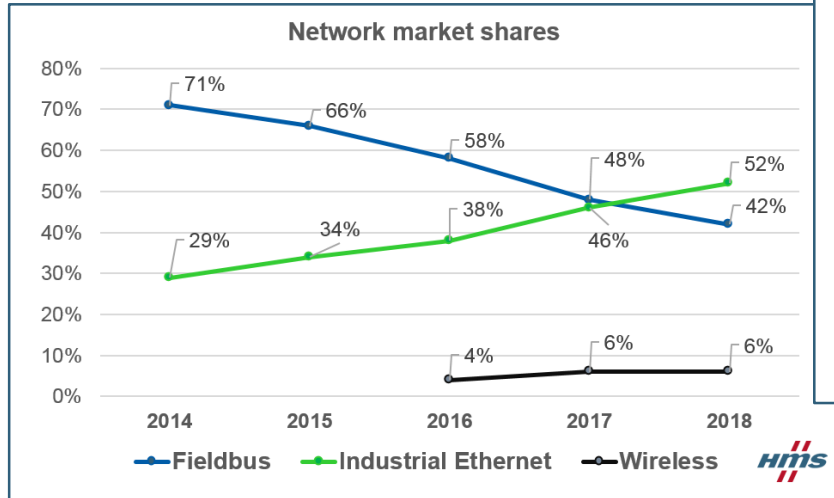
The future

- The overall growth of industrial networks is expected to be approximately 10-13% during the next few years. Forecast:
  - Industrial Ethernet: >20% growth
  - Wireless: >30% growth
  - Fieldbus: Continued decline expected

- Continued impact from the Industrial Internet of Things
  - Devices and machines will become even more connected in line with IIoT
  - New standards such as TSN, OPC UA, MQTT are emerging, but no significant market shares yet
  - Buzzwords: IT/OT bridging & IoT-integration, Smart Industry, Industry 4.0

- Current trends associated with industrial networking
  - Security, BYOD, functional safety, predictive maintenance, energy savings, sustainable solutions and need for high performance on the factory floor
  - Increased amount of simple low-cost devices are getting connected
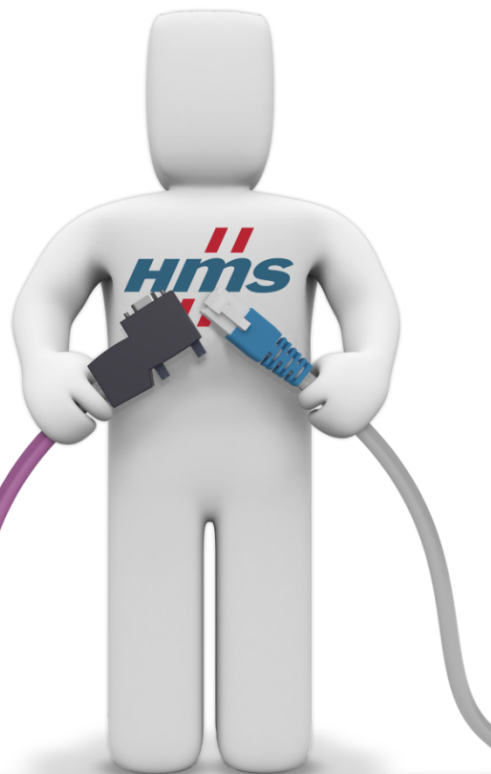
Thanks for listening!

www.hms-networks.com