

# Embedded WiSeNts



Cooperating **Embedded** Systems for Exploration and  
Control featuring **Wireless Sensor Networks**

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## A Cooperating Objects Research Roadmap

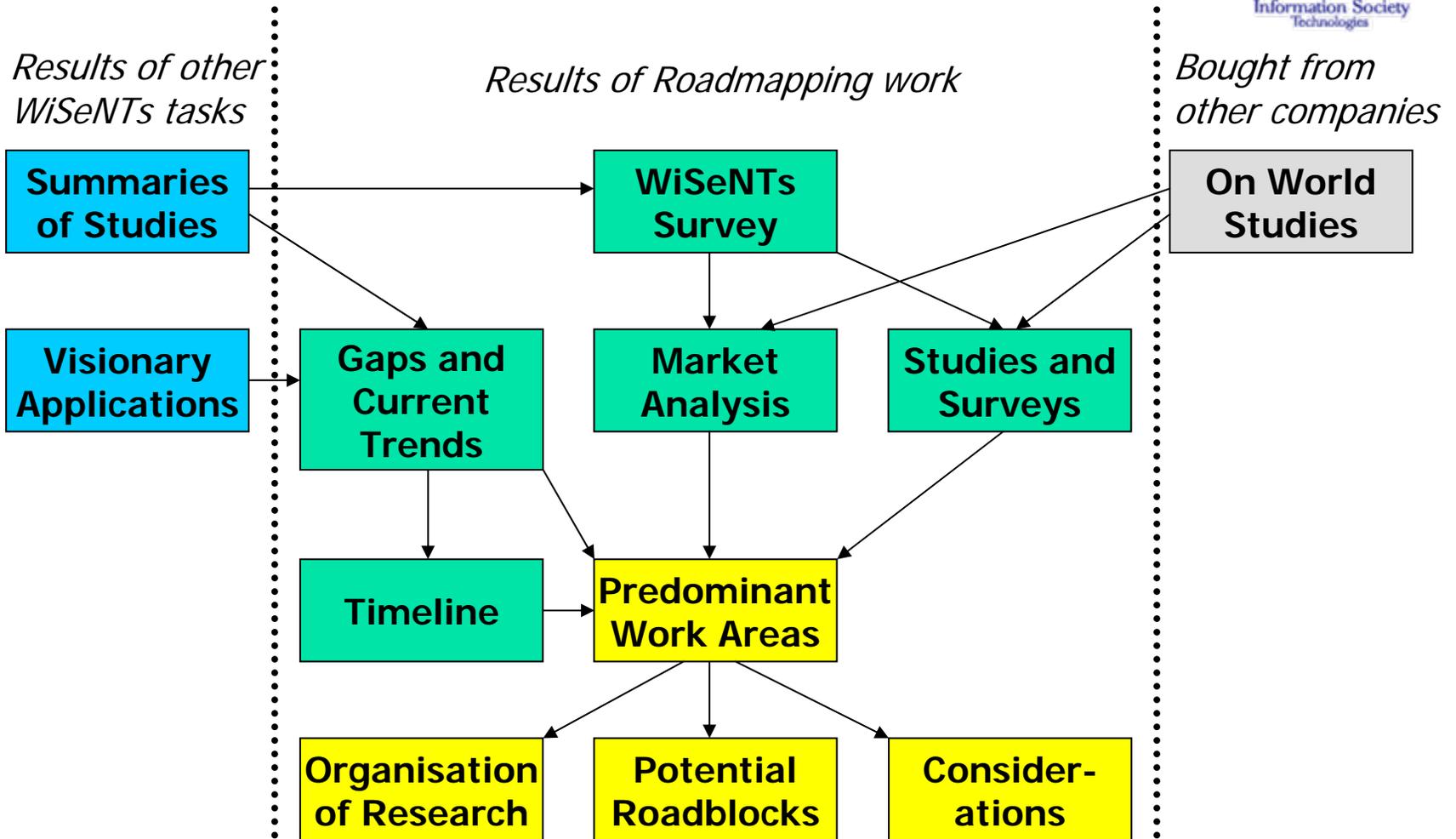
September 29<sup>th</sup>, 2006, Karlsruhe  
Daniel Minder, Universität Stuttgart

# General information



- Coordination Action funded by EU IST FP 6
- Start: 01.09.04 End: 31.12.06
- Participants: 12 universities from across Europe
- Goals:
  - **Research Integration**
    - Survey on platform and tools, Distinguished visitor program, Organisation of EWSN
  - **Education and Training**
    - Repository for teachware material on Cooperating Objects, Organisation of Summer School on Sensor Networks, Student Mobility
  - **Road Mapping and Technology Adoption**
    - Survey of today's state of the art in Cooperating Objects research
    - Visions for Innovative Applications
    - Describe emerging trends and technological opportunities
    - Develop a roadmap to ensure continued progress

# Roadmapping process

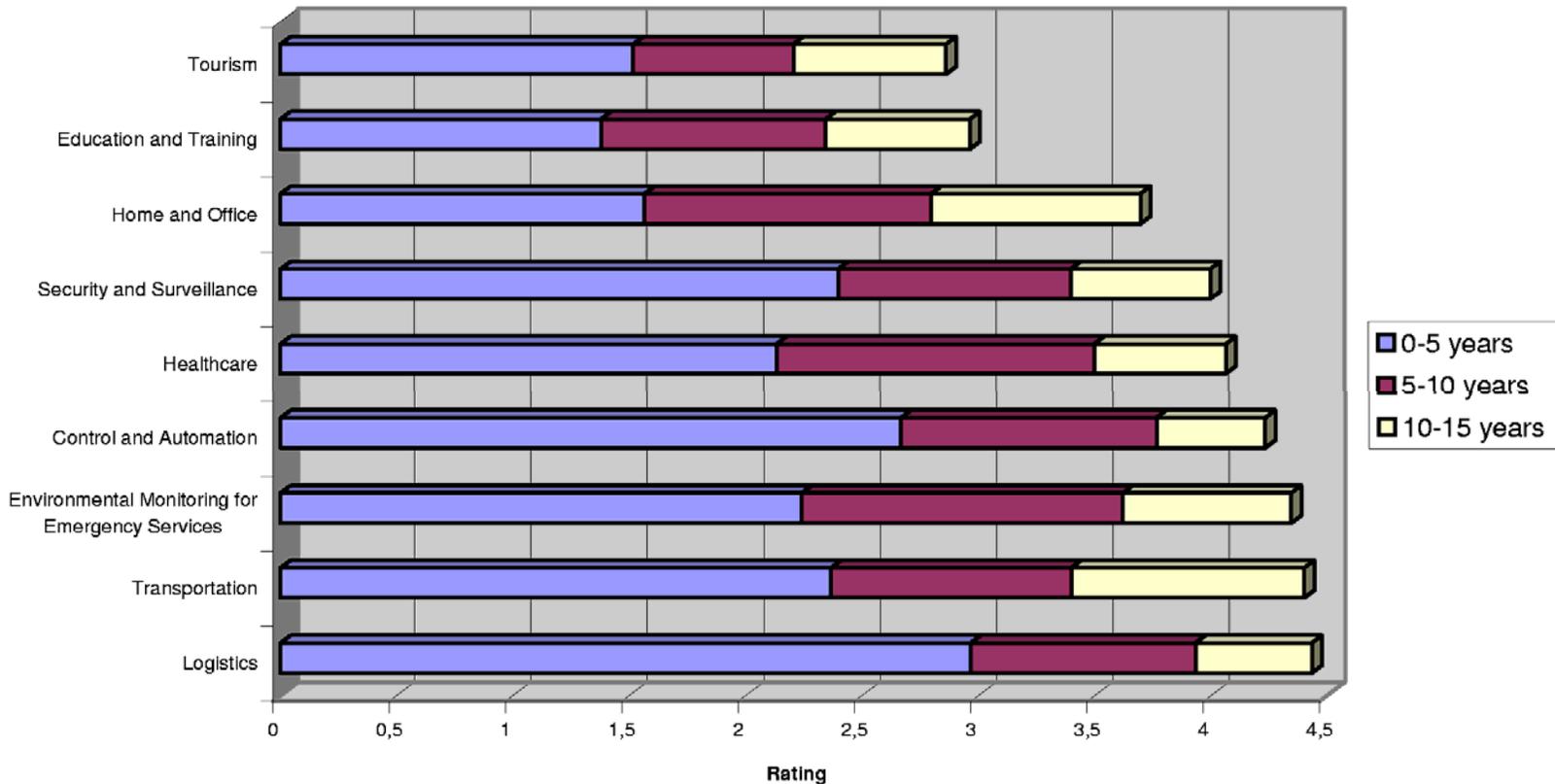


# WiSeNTs Survey

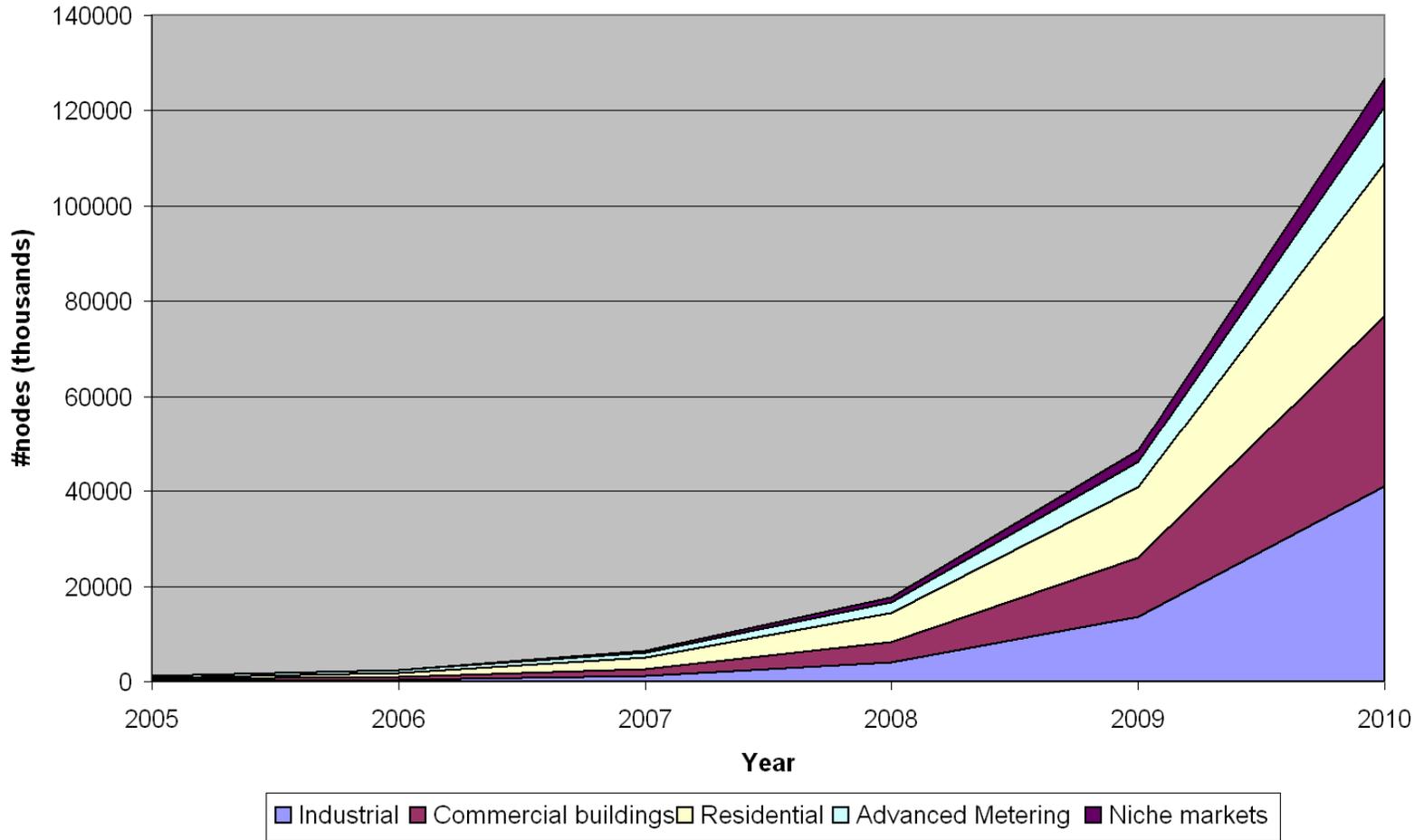


- Carried out at the EU workshop „From RFID to the Internet of Things“ in Brussels on March 6th/7th, 2006
- Questionnaire:
  - **Background and work area**
  - **Rating of significance of application areas**
  - **Rating of severity of technological inhibitors**
  - **Free text space for market entry barriers**
- 51 persons filled out the questionnaire

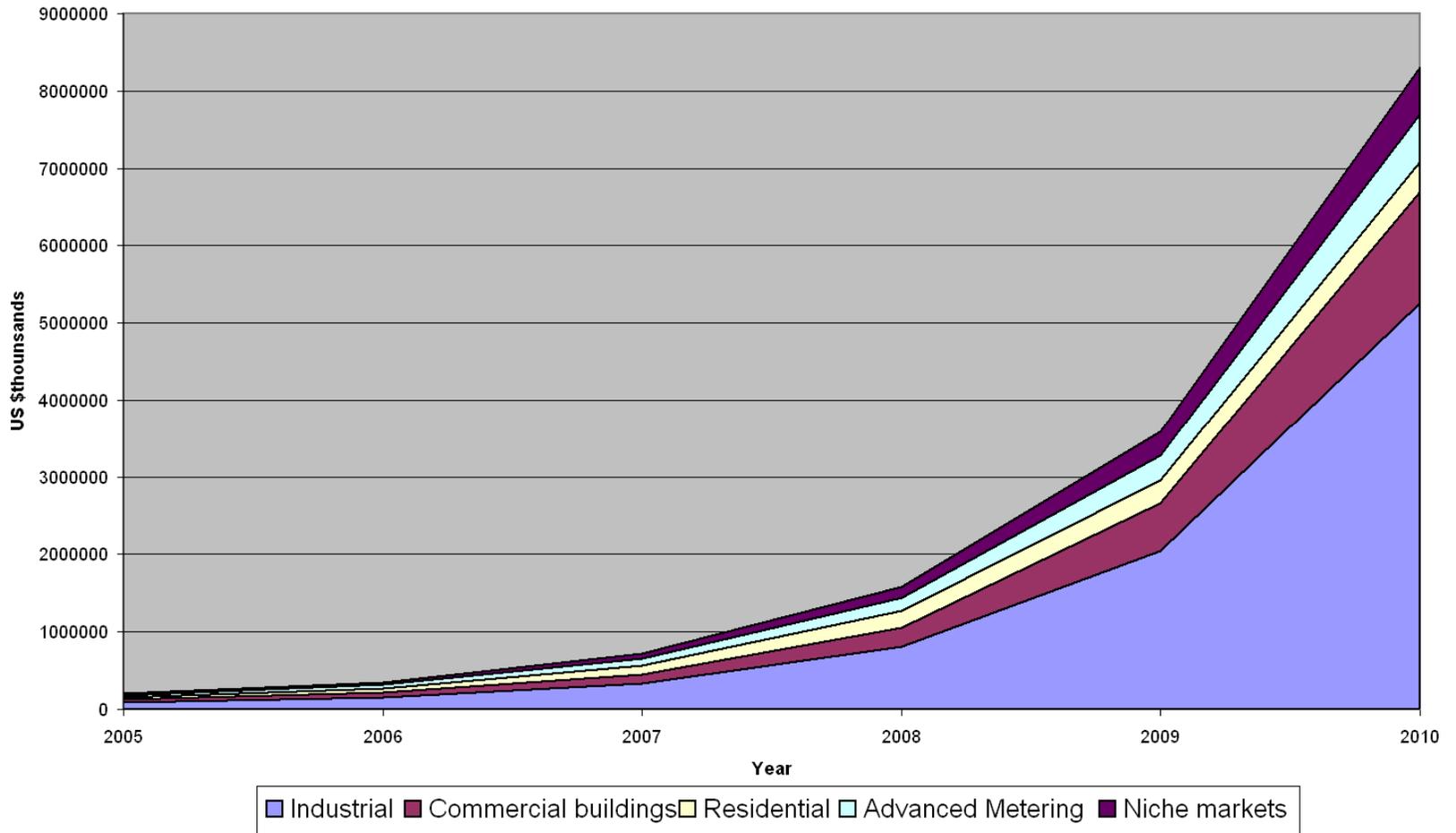
# WiSeNTs Survey: Applications



# ON World: Global Deployed Nodes



# ON World: Global Revenues



# Comparison

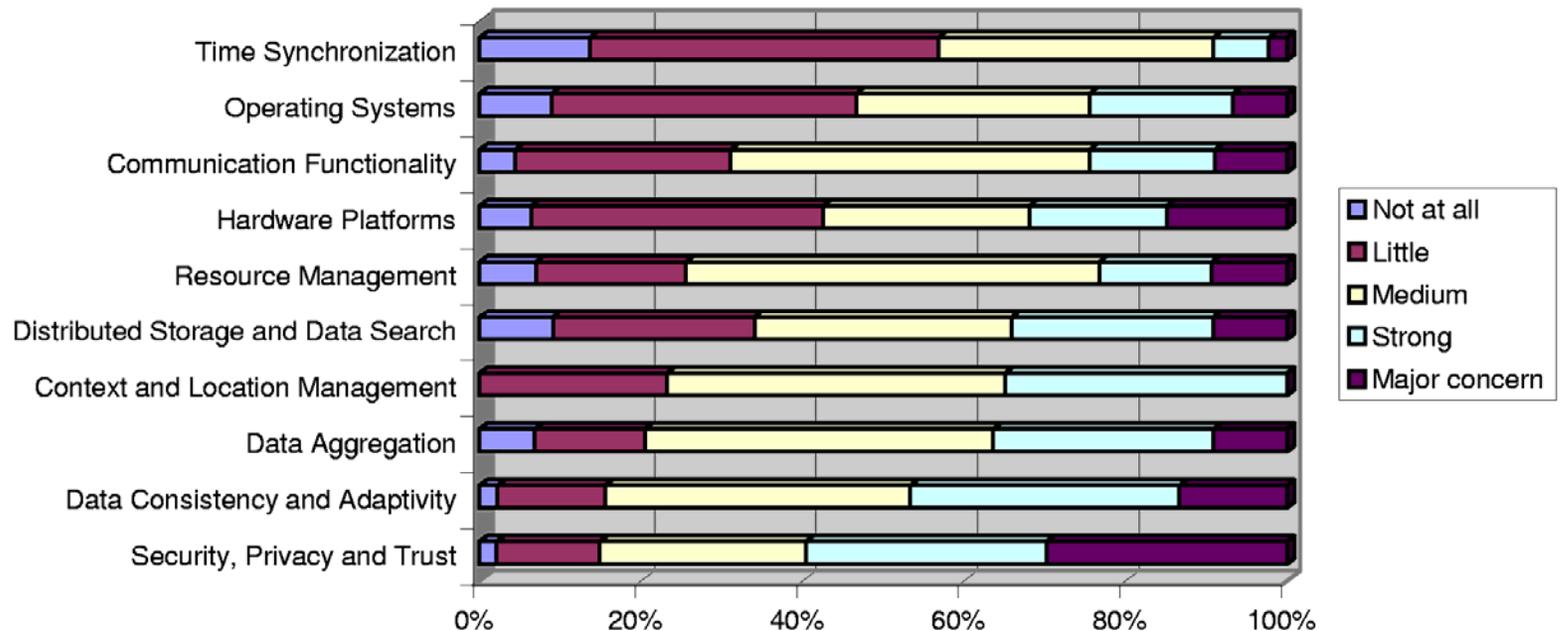


- Mapping of ON World domains to WiSeNts application domains is possible
- “Home and Office”: low rating in WiSeNts survey vs. high potential in ON World studies
- “Healthcare”: only a niche market in ON World study vs. middle position in WiSeNts survey
- “Logistics” and “Transportation”: not a main sector in ON World studies
  
- Possible reason: WiSeNts assesses importance on an abstract scale, ON World measures it in number of deployed nodes  
→ market exists also with low number of deployed nodes

# WiSeNTs Survey: Technology



- Most important inhibitors for CO adoption



- Inhibitors were used in the selection of predominant work areas

# WiSeNTs Survey: Market Entry Barriers

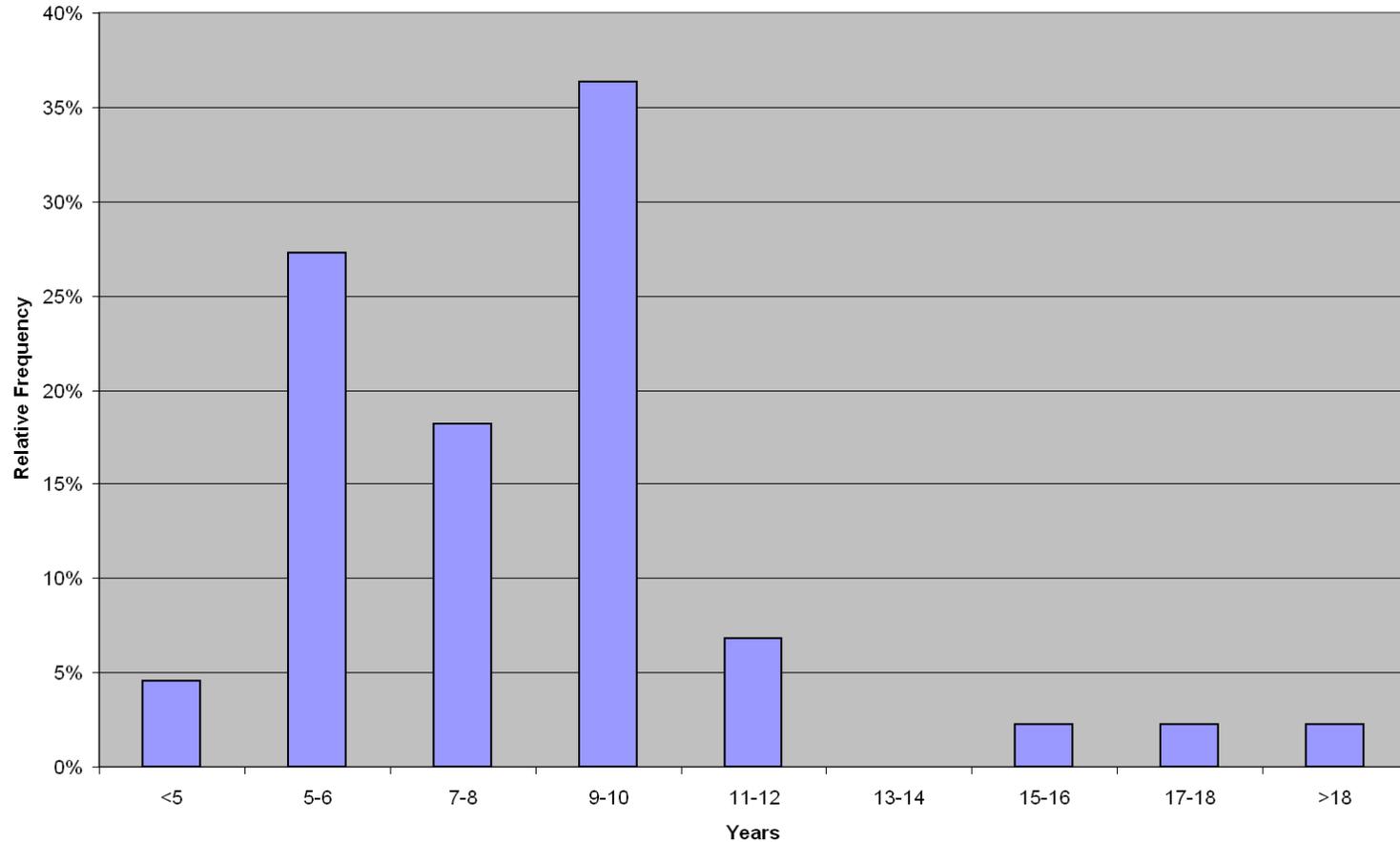


- Security and privacy issues
- No (convincing) applications for Cooperating Objects → no business cases
- Deficiencies in technology and needed research
- Lack of standards
- Only 10% indicated costs!

# WiSeNts Survey: Usage in Industry



- When are COs widely used in industry?



# Thank you!



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