



World port
in good hands

The Smart Port Concept

+ an integral Perspective

Dr. Jan-Niklas Bamler
Consultant & Project Manager

The Smart Port Concept

an integral Perspective



Talking Points:

- (1) Conceptual Development: 1st to 5th / 6th Generation Ports
- (2) The Smart Port



The Smart Port Concept - an integral Perspective

Conceptual Development: 1st to 5th / 6th Generation

- + Concepts change over time
- + Concepts can consider:
 - + Services
 - + Intermodality
 - + Type of goods
 - + Containerisation
 - + (Economic / natural / social) environment
 - + Value addition
 - + Degree of information sharing / interconnectivity
- + Common ground: Idea of evolutionary development
- + Forward ever, backward never?
- + How to become smart?

The Smart Port Concept - an integral Perspective

Evolution path of generation of ports

+ Generation / Level 1

- simple loading/unloading operations ports

+ Generation / Level 2

- logistic ports providing various services including warehousing

+ Generation / Level 3

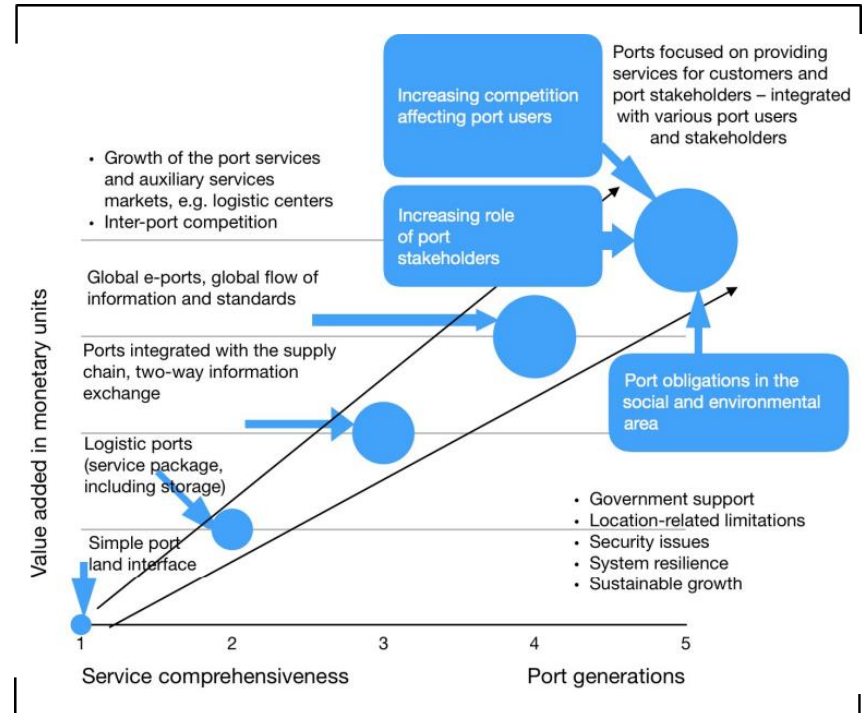
- ports being a part of the supply chain, making use of bilateral electronic data exchange, i.e. exchanging data with the customers

+ Generation / Level 4

- global e-ports transferring information on a global scale, having global standards of cargo handling

+ Generation / Level 5

- ports focused on customers and the local community offering deep IT integration with various stakeholders



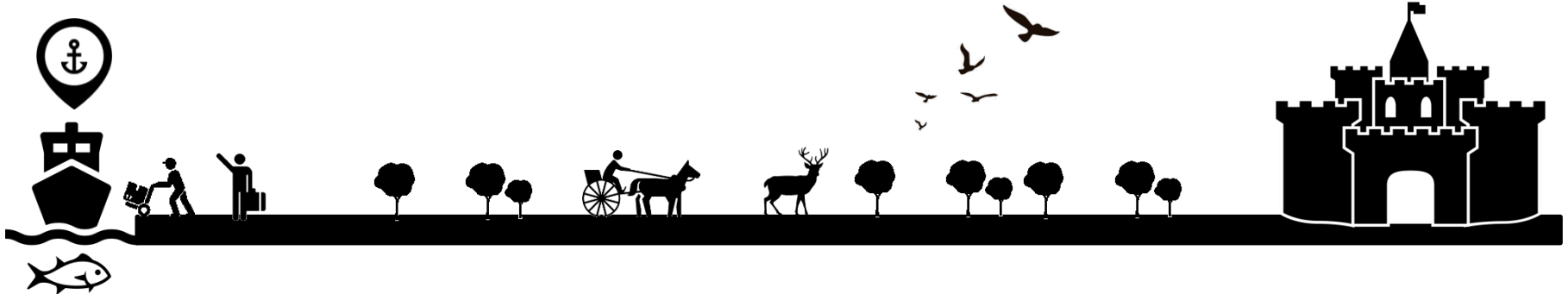
Source: Lee and Lam (2016)

The Smart Port Concept - an integral Perspective

Conceptual Understanding: Port Typologies / Evolution

1st Generation:

- “Land-Sea-Interface” for goods and passengers
- Mainly unrelated to the socioeconomic environment

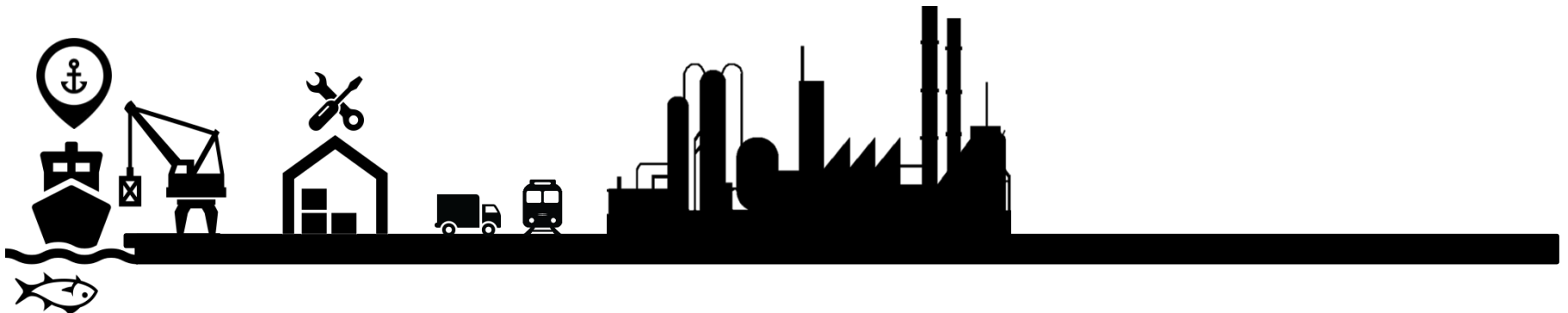


The Smart Port Concept - an integral Perspective

Conceptual Understanding: Port Typologies / Evolution

2nd Generation (Industrial Ports):

- + Transportation hub
- + Center of industrial and commercial activity
- + Services for ships (e.g. repairs) and goods (e.g. warehousing)
- + Processing industries in vicinity



The Smart Port Concept - an integral Perspective

Conceptual Understanding: Port Typologies / Evolution

3rd Generation:

- + Logistics functions related to the distribution of goods
- + Data processing
- + Telecommunications systems

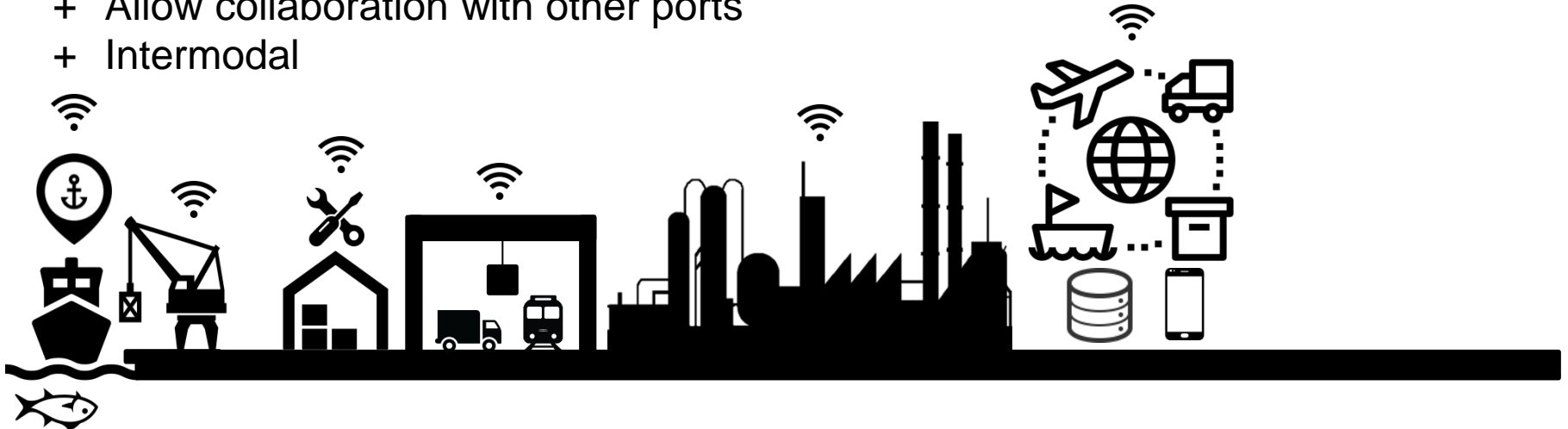


The Smart Port Concept - an integral Perspective

Conceptual Understanding: Port Typologies / Evolution

4th / 5th Generation (Network Ports / Intelligent Ports):

- + New telematic networks
- + Connect different port areas, automatic, intelligent ...
- + Allow collaboration with other ports
- + Intermodal



The Smart Port Concept - an integral Perspective

Conceptual Understanding: Port Typologies / Evolution

5th (/6th) Generation (Smart Ports):

- + Stakeholders
- + Social and natural environment / “Sustainability”
- Integral / holistic perspective



The Smart Port

- + “A **smart port** equips the workforce with relevant **skills and technology** to solve the unique **internal and external challenges** of the organisation, and to facilitate the **efficient movement of goods, delivery of services** and smooth flow of **information.**”
 - Improve **efficiency** to gain **competitive advantage**
 - **Increase business resilience** to economic shocks or disruptive forces
 - **Extract maximum value** from physical assets
 - Develop **new revenue streams** based on digital value propositions
 - Increase **employee engagement and (societal) wellbeing**
 - Achieve and exceed **environmental commitments**

- **Main Tools: HOLISTIC VIEW, DIGITALISATION & SUSTAINABILITY**

The Smart Port Concept

Q & A of the Session





www.bremenports.de



Dr. Jan-Niklas Bamler

Consultant & Project Manager

Mob.: +49 (0) 160 977 588 30

jan-niklas.bamler@bremenports.de



www.linkedin.com/in/bamler/