What is a Smart Port?
A best practice approach for digital port infrastructure

Dr. Stefan Wiech

Smart Ports and Terminals Forum
HPC Hamburg Port Consulting

We take your segment’s view and look at your specific needs

OUR APPROACH IS YOUR SUCCESS

Marine Container Terminals
We've got the key to successful container terminal operation

Governments, Communities, Ports
We provide a fundamental understanding of ports and transport

Intermodal Rail Terminals
Managing growth and increasing efficiency in intermodal terminals

Multipurpose Terminals
Providing flexible and efficient operating concepts to create solutions for a modern port

Bulk Terminals
Let’s grab the bulk

Cruise Terminals
Cruising on the wave of success

Airports
Ready for takeoff to your destination

Marine Shipping
Mastering the challenges is the key success of our team
Background HPC
Global Experience, Operational Innovation and Down-to-earth Attitude

- Founded in 1976 as subsidiary of HHLA Hamburger Hafen und Logistik AG
- Around 100 experts, annual turnover in 2018: approx. €12m
- Reputation as one of the world’s leading consultants in the port and transport sector
- Since 1976 port and transport-related projects in more than 120+ countries, both in the private and public sector

- Approx. 1,600 projects world-wide with extensive experience in container terminal planning
- Developed HPC Ukraina (now CTO) as terminal operator in Odessa (Ukraine)
- Accredited with all major development organizations and banks (World Bank, IFC, ADB, KfW, etc.)
- Independent assessment of solutions, no affiliation with any equipment manufacturer in the market
Digitalisation

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The Significance of Data

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There are a lot of opportunities to improve
Find the right starting point for your community:
Build a good foundation and add value through quick wins
Success Story

01

HVCC Hamburg Vessel Coordination Center
Success Story 1: HVCC – Hamburg Vessel Coordination Center

Geography
Vessel Routing Optimisation with HVCC
Hamburg Vessel Coordination Center – Feeder Logistics Center – Nautical Terminal Coordination
Adjusting speed on transit to Elbe approach

NTC distributed 2018 more than 3,350 passage plans for an optimal speed instruction

If sailing with 14 kn instead of 18 kn

22 t
bunker savings

66 t
less CO₂-emissions
HVCC software project 2.0
2017-2018: Partner specific dashboard-solutions and interfaces

- Integration of partners and strengthening of networking through tailor-made dashboard solutions, interfaces and reporting functions as part of the Software as a Service (SaaS) model
- Project co-financed by the Transport within the IHATEC-project
- Service providers benefit from data and established planning process
- HVCC and Port of Rotterdam established first operational interface based on Sea-Traffic Management (STM) Standard
HVCC collaboration platform

Aim: One single truth across all partners

- Terminals Port of Hamburg
- Carriers
- Authorities
- Agents
- Ports

Planning data

HVCC internal work process

- Data aggregation
- Data interpretation
- Vessel coordination

Interpreted traffic situation via HVCC-Dashboards and interfaces

- Authorities
- Terminals
- Ports
- Carriers
- Agents
- Service Providers

11/4/2019

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Success Story

02

RPIS – RheinPorts Information System
Success Story 2: RheinPorts & Upper Rhine Information System

Transparency matters

Objectives:

- Create visibility to supply chain partners
- Better utilisation of physical infrastructure
- Increase service level
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LEGEND
ALREADY IMPLEMENTED
IMPLEMENTATION PLANNED
FEASIBILITY STUDY PLANNED

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Success Story

03

HHLA Fuhre 4.0 Truck Appointment
Success Story 3: Truck Appointment – Fuhre 4.0

Peak load e.g. 20,000 TEU container vessel
Key Takeaways
Key Takeaways

- **Service quality and reliability** become increasingly important.

- **Collaboration**: Stakeholder, change & integration management are key success factors.

- **Standardisation** should be established as much as possible.

- **Modular design of IT systems** & flexible interfaces are vital.

- **Involvement of new technologies** like IoT & big data, blockchain, drones, AI should be considered.

Port infrastructure must have a digital counterpart that serves the whole community.
Thank You!

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