Seaport Planning - Focus

SEAPORT PLANNING
Possible Fields of Collaboration

TransCare’s experience covers a broad variety of projects in seaports, e.g. reorganization of transshipment processes, planning and calculation of terminals and on-port railways, hinterland concepts and tender management.

We offer the following activities:

- **Benchmarking of competing seaports**
- **Re-developing the port areas**
- **Re-designing infrastructure, superstructure and processes**
- **Improving and developing hinterland connections**

During a personal meeting, topics of Your interest should be discussed in detail. The upcoming slides give an impression what tasks could be done in the above mentioned activities.

Reference Ports:

- Amsterdam (NL)
- Bonn (GER)
- Bremerhaven (GER)
- Cuxhaven (GER)
- Duisburg (GER)
- Emden (GER)
- Frankfurt/Main (GER)
- Friesoythe (GER)
- Germersheim (GER)
- Halle (GER)
- Hamburg (GER)
- Hannover (GER)
- Koper (SLO)
- Ludwigshafen (GER)
- Luebeck (GER)
- Moerdijk (NL)
- Novorossiysk (RU)
- Rotterdam (NL)
- St. Petersburg (RU)
- Sassnitz (GER)
- Vostochny (RU)
- Wilhelmshaven (GER)
1. Benchmarking

- Competing seaports and / or European main hubs

- Selection of possible benchmarking contents
  - Identification of main competitors and their role: main hubs vs. feeder ports
  - Type of main transport goods and flows
  - Shipping lines and connected international regions
  - Local companies / business fields and port-organization structure
  - Infra- and superstructure and how they affect processes
  - Processes and costs: container handling, THC, railway and transshipment operations, safety issues / ISPS, etc.

Result: practice-oriented recommendations

- Future strategic role and focus of Your Port
- Multimodal hinterland-connection demands
- Infra- and superstructure requirements
- Process-improvement potentials
- Rough estimation of possible savings
- Organizational measures
- Optional: marketing plan

References:
- Port of Hamburg (GER)
- Port of Koper (SL)
- Port of Rotterdam (NL)
2. Re-development of the Port Areas

- **Value-benefit analysis of existing port areas and / or businesses**
  - Effects caused by the historically grown port layout
  - Evaluation of existing and new port areas (construction intentions)
  - Definition of branch-specific requirements (transshipment companies, logistics-service providers, industrial sectors, residential areas, etc.)
  - Segmentation of port districts according to the branch requirements

**Results:**
- Segmentation of existing and new port districts according to defined requirement profiles
- Structural recommendations about the port layout
- Possible integration of additional value-added services (safety areas, pre-customs clearance etc.)

- **Development and (if required) re-design of infrastructure**
  - Intra-port railways and roads
  - Goods and passenger traffic-flows within the port

**Results:**
- Optimized traffic flow, eliminating bottlenecks
- Improved capacity of the port

References:
- Jade-Weser Port Wilhelmshaven (GER)
- Novorossiysk (RU)
- Port of Bonn (GER)
3. Re-designing Infrastructure, Superstructure and Processes

- Terminal-layout planning of new or expansion of existing Terminals
- Intra-port railway infrastructure and operations
  - Bottleneck in connecting on-port railways to main lines
  - Process-oriented rail operations, e.g. by consolidation of transhipment and railway processes
  - Rail-carrier check and contracting (tender management)
- Optimizing transshipment operations
  - Container handling (craning and transshipment equipment, stack, etc.)
  - Dry and liquid bulk handling

Results (depending on objects of optimization):
- Extension of the port capacity at low invest and cost
- Reduced process times, particularly in container business
- Lower process costs
- Improved competitive position (e.g. THC)

References:
- Port of Hamburg (GER)
- NLE Novorossiysk (RU)
- Port of Koper (SL)
4. Developing and Improving Hinterland Connections

- **Multimodal approach or focus**
  - Rail
  - Truck
  - Short sea / feedering
  - Inland navigation
  - Multimodal capacity management and coordination

- **Development of an international hinterland-hub network**
  - Railway transportation and/or short-sea shipping
  - Coordinate different modes of transport
  - Avoid or eliminate existing hurdles
  - Set up efficient, reliable and high-frequented hinterland relations
  - Establish a hub-and-spoke network step by step

**Results:**
- Increased attractiveness as a port of first call for shipping lines by covering broader hinterland areas
- Bigger turnover capacity of the port by using hinterland hubs as “stack” areas

**References:**
- Port of Rostock (GER)
- Port of St. Petersburg (RU)
- NLE Novorossiysk (RU)
Selected References Seaport Projects

- 1997 Third party traction on European major railways (Port of Hamburg)
- 1997 Strategic coaching (German seaports)
- 1998 Port railway concept Hamburg
- 1998 Container shuttle Lübeck - Hamburg
- 1998 Container terminal Brunsbüttel (Hoyer)
- 1998 Development concept port of Bonn
- 1999 Port railway realisation Hamburg
- 1999 Optimisation of the port infrastructure in Amsterdam
- 1999 Expansion of a port terminal in Frankfurt-Höchst
- 1999 Layout planning port of Hannover
- 2000 Marketing research continental traffics (Hamburg)
- 2000 Benchmark ports of Rotterdam and Hamburg
- 2000 Strengthening of the market position of a port
- 2000 Hinterland traffics port of Cuxhaven
- 2000 Hinterland traffics deep sea port of Wilhelmshaven
- 2002 Realisation port railways Emden
- 2002 Container shuttle Bremerhaven – Cuxhaven
- 2002 Infrastructure pricing port of Saßnitz
- 2002 Profitability calculation port of Rostock
- 2002 Internal transport flows port of Rotterdam
- 2002 Planning container terminal port of Novorossiysk
- 2003 Port railway optimisation port of Koper
- 2004 Logistics park deep water harbour Wilhelmshaven
- 2005 Innovative rail-based container hinterland transportation concept for a deep water harbour
- 2005 Rail-based hinterland supply chain, Vlissingen
Development of a Russian port towards a container terminal

**TransCare`s Service:**

» Development of various layout scenarios for an optimised use of the on and off-port area.

» Planning of a shuttle-train concept to combine on and off-port area.

» Market research to determine the future container potential for the port.

» Development of a rough business plan (best, worst and average case) to show the port’s profitability.

**Client`s Benefit:**

» TransCare increase the container capacity by 100%.

» The customer will take TransCare’s recommendations into account for the future terminal development.
Logistics Park Deep Water Harbour Wilhelmshaven

» Status quo analysis of the site, the traffic connection and the surrounding region

» Competition analysis of other cargo transport centers

» International market study, interviews with potential customers and marketing of the project to interested companies

» Identification of potential investors and customers as well as their requirements

» Planning and evaluation of different layout variants

» Suggestions for the implementation of value added services in the logistics park

» Clarification of possible subsidies, organisation structure and financing models
"Europe is growing, new centers for transportation and value added services arise..."

The port of Nürnberg-Roth and the integrated cargo transport center - handling 9.2 Mil. tons of various goods per year - represent already today an outstanding logistic centre in the south of Germany. The core competence of the port is based on the customer orientated networking between different transport modes. Building transshipment facilities for combined transport and a third dock water, railway and street based transports will interact in the future even more efficient than today. This concerns the transshipment of bulk and general cargo as well as of containers.

**Cargo Transport Center Nürnberg: At the gateway to East- und Southeast Europe**

To identify future strategies and other opportunities for the integration of the railway, a project about utilization, optimization and expansion of the quayside railway was carried out. On the basis of the as-is situation and in consideration of additional rail traffic from and to the intermodal terminal, technical and organizational required measures for the handling of the expected rail traffic were determined and analyzed.

The results of the project are taken into consideration for the reorientation of the long-time port strategy.

**TransCare’s Service:**

- As-Is analyses of the railway traffic, shunting processes and port infrastructure
- Prognosis of railway traffic and future infrastructure capacity utilization
- Development and recommendation of different layouts in consideration of the future quayside railway requirements
- Simulation of current and future railway traffic and shunting processes with FBS software
- Estimation of investment costs for the recommended infrastructure measures
- Analysis and presentation of opportunities for the startup of an own railway company
- Evaluation of subsidy measures for infrastructure and railway operations
• **TransCare`s Service:**
  
  » Identification of Railway Processes
    - Data and Process Evaluation
    - Identification of Strengths and Weaknesses
  
  » Cost Calculation
    - Analysis of Personnel, Infrastructure, Locomotive and Other Rail Related Costs
    - Activity-Based Costing
  
  » Benchmark of Railway Processes
    - Analysis of Railway Costs and Costs of Comparable Competitors
  
  » Creation of Optimized Railway Processes

• **Client`s Benefit:**

  » Neutral Recommendations for Optimization of Port

  Railway Processes Indicating
   - 20% Reduction of Dwelling Times
   - 12% Reduction of Costs per Wagon
   - 30% Increase of Port Handling Volume
   - 10% Increase in Utilization of Track Capacity by Introducing a New Smart Traction Concept

  » Management Action Plan Including Guidelines for Realization of Quick Wins and Midterm Wins
Development of the port of Bonn

- **TransCare`s Service:**
  - Definition of the logistics and urban needs for the future development of the port areas
  - Development of a concept for the future use of the port including the logistics areas and the bordering buildings
  - Modular layout planning for the realisation
  - Profitability calculation for the scenarios and recommendations

- **Client`s Benefit:**
  - Functional concept for the future development of the port areas
  - Information about the needed investments and the achievable rental fees
  - Planning reliability for the future activities in the port area
Expansion of a port terminal (trimodal)

**TransCare`s Service:**

- Analysis of the company profile
- Progosis of the commodities and transport flows
  - Evaluation of the loading points
  - Marketing study and road shows for potential customers
- Reorganisation of the intermodal logistics processes
  - Optimisation of the internal port railway
  - Development of a flexible and transparent tariff system for using the port railway
  - Capacity calculation for the container terminal
- Modular layout planning of the container terminal
  - Definition of development steps
  - Planning of the railway infrastructure
  - Definition of the transhipment technique (gentry cranes, reach stackers, van carriers)

**Client`s Benefit:**

- Optimisation of the internal logistics processes
- Enlarging of the business potential by additional customers
- The terminal is operation successfully