Dry ports best-practice

Photo: Wiktor Szydarowski

For a strategically-orientated project such as TransBaltic, Australia is the perfect source of information and ideas on dry ports and measures on how to control approaching traffic as well as to learn from experiences made.

With this in mind, a TransBaltic delegation set off on a journey to 'Down Under' earlier this year, expecting an interesting exchange of experiences. With established contacts in Australia's three major cities the study tour would include a stop at each; Perth, Melbourne and Sydney.

The economy on the fifth continent is vibrant. The government has established a "Nation-building Fund" for the creation and development of transport infrastructure within the scope of which new ports will be built and/or existing ones expanded. Furthermore, its coastal shipping plans to be revived.

Studies predict Australia's international container trade to increase to more than 10 mln TEU by 2020. Melbourne, Australia's largest port, handled 2.3 mln TEU in 2008, and was followed by Sydney with 1.85 mln TEU and Brisbane with nearly 1 mln TEU. Perth's current yearly turnover rates stand at about 0.5 mln TEU; however, plans are to expand the port to facilitate handlings of 1.2 mln TEU by 2020/25.

Many Australian ports, including the port of Melbourne, Sydney and Perth, are having problems to manage increasing traffic loads caused by their vicinity to cities. The limited land resources and traffic infrastructure capacities have created a high demand for innovative ideas and solutions in order to manage the traffic efficiently.

Cooperation between the Australian ports is excellent. They are very open about their respective plans and eager to share ideas. One reason might be the fact that they do not rely on a common hinterland and thus do not compete with each other.

WP 5.1: Dry port development

The Hamburg Port Authority (HPA), part of the study tour delegation, is engaged in TransBaltic Work Package 5.1, which deals with dry ports with special attention to "Solutions for controlled and alternative port-related traffic flow". A concept study on PreGate car parks (PGP) is currently under preparation within this framework. PGPs will help optimize the control of traffic approaching port areas and the aim is:

- to provide additional parking space for waiting traffic;
- to buffer traffic in the event of disruptions at the place of destination or within the road network; and/or
- to introduce the (mandatory) option to preregister with the place of destination.

The ports of Melbourne, Sydney and Fremantle (Perth) are investigating different solutions on how to control approaching traffic, among others by establishing marshalling areas which are or may be considered variants of PreGate car parks. The Australian framework conditions can be compared with many European ports, for example, the port of Hamburg as an innercity port.

Perth/Fremantle Ports

Fremantle is the biggest and busiest general cargo port in Western Australia and the fourth largest container port in the country. It operates from two locations – Fremantle Inner Harbour and the Outer Harbour, 20 km south of the city at Kwinana.

The Inner Harbour accommodates the port's two container terminals and a number of general cargo berths used mainly for break bulk and liquid bulk cargoes. At Kwinana, Fremantle Ports operates Kwinana Bulk Jetty and Bulk Terminal. The Kwinana Outer Harbour is one of Australia's major bulk handling ports.

Most cargo shipped through the Inner Harbour enters or leaves by road. Maintaining an adequate level of road access is vital to the efficiency of future port operations. The Traffic Management and Heavy Vehicle Congestion Policies have been designed to guide tenants and other North Quay users on how to plan parking and traffic flows within and external to their sites.

Fremantle Ports has provided a truck marshalling area (TMA). The TMA is a parking facility for truck drivers who cannot go directly to their container park/terminal due to congestion. Furthermore, they developed an electronic control system to manage the flow of vehicles through the TMA.

The overall goal is to put permanent infrastructure measures in place to move congested traffic from public roads, while still allowing the container parks/terminals affected by the traffic build-up to call through vehicles in an orderly manner until the congestion has dissipated. Further goals for added value are to include automatic recognition and registration of congestion and to provide live or near live data of traffic flows to the industry located in the port's precinct area.

Melbourne

As the hub of a logistics network which stretches across south-eastern Australia, the Port of Melbourne is Australia's largest container and general cargo port, handling around 37% of the nation's container trade. The port is located in the heart of Victoria's major road and rail network providing efficient connections to South Australia, regional New South Wales and to the east coast of Australian mainland.

The Port of Melbourne is one of Australia's oldest city ports, located centrally in an established metropolitan area. Although port operations have moved downstream over time, the government is committed to maintain and expand port operations and port development in Melbourne. As mentioned above, urban growth and development is increasingly putting pressure on ports with an inner city location.

Whilst port-related traffic is only a small component of the overall freight volume moved through the port area, approximately 80% of all trade is currently moved by road transport. Basic strategies that PoMC will support to manage the growing volume of truck traffic include:

- increasing the utilization and back loading of trucks to reduce the relative number of truck trips;
- optimizing truck trips to reduce the distance travelled;
- moving more cargo by rail to reduce the road share;
- locating appropriate container management functions including empty container parks, close to the port;
- optimizing the use of the existing road infrastructure;
- improving the road network by increasing its scope, capacity and convenience.

Sydney

Sydney hosts the second largest container port in Australia (Sydney Port Corporation), serving Australia's largest market. Located 22 km south of the entrance to Sydney Harbour and the city's central business district, Botany Bay is well serviced by road and rail networks. Container trade through Sydney has developed at a compound growth rate of about 9% per annum for the last five years. Trade forecasts indicate that this growth will continue.

With around 80% of containers handled at Port Botany arriving and departing by road, Sydney Ports seeks to actively facilitate improvements in the performance of road operations for the benefit of all port users. Sydney Ports' goal is to move more goods by rail and diminish the growth of freight trucks on the roads. Dry ports are considered crucial in achieving this goal.

The current project "Intermodal Logistics Centre (ILC)" at Enfield is part of a network of existing and planned intermodal terminal facilities in Sydney and will service around a quarter of the total intermodal demand.

An analysis by Sydney Ports indicates an emerging trend of truck movements outside peak periods. There is also a proportionate increase in truck movements at weekends. This trend has been accompanied by reductions in truck turnaround times during a period of strong container growth. The anticipated increase in truck volumes over the next few years will require a further shift towards operations on a 24-hour, 7-day a week basis.

In the beginning of 2011 PBLIS (Port Botany Landside Improvement Strategy) started their operations. PBLIS aims to improve the competitive access and service arrangements of container movements between stevedores and transport carriers at Port Botany. The strategy's core components are a mandatory truck appointment system operating on a regular basis, radio frequency identification (RFID) as well as a marshalling area, which is currently in the planning stage. Hauliers/carriers are obliged to comply with the subsequent performance standards:

- all trucks are obligated to make a truck appointment;
- no appointment means no entry at the terminal gates;
- for identification purposes all trucks must be equipped with a Sydney Ports RFID truck tracking tag;
- no slot cancellation within 24 hours.

In turn, terminal operators undertake to comply with the following service standards:

- Truck Turnaround Time (TTT) < 50 minutes;
- min. number of slots per hour (24/7) = 50;
- no slot cancellation within 36 hours.

If any of the above regulations is not observed, a financial penalty will be imposed.

Final remarks

The conducted study tour provided numerous insights of great value for the continued work in the context of dry port development in the Baltic Sea area. Consultations with port authorities, local authorities, terminal operators/developers on the three locations and an exclusive workshop session organized by Michael Pal – a senior transport analyst of Fremantle Ports, with high level representatives from the Fremantle ports, the local university and local authority gave a mutual understanding and exchange of experiences. Discussions on gained experiences by the Australian colleagues, regarding planning process, operations of marshalling areas and effects of introduced traffic control measures will for example have a major impact on the PreGate car park concept that is being prepared by Hamburg Port Authority.


From the left: Michael Pal, Wiktor Szydarowski, Jukka Siren, Jens Elvers and Sascha Westermann , Photo: TransBaltic

Further exchange of knowledge regarding for instance empty container management and RFID systems were of much relevance for all involved. The trip may be over, but the contact and exchange with the Australian colleagues has continued to be lively and informative. Apart from the enormous gains of experience, with 30°C and sunshine (in February) the weather was an additional appreciated factor. As WP 5.1 leader fittingly remarked, "Australia and Finland have a lot in common, even the temperatures. Only, in Australia there is a plus sign before the temperature, whereas in Finland it's a minus." ■

Sascha Westermann
Head of Road Development, Strategy and Traffic Development
Hamburg Port Authority

Green transport solutions

Making the BSR a well-tuned model region

Photo: TransBaltic

Photo: TransBaltic

Successfully halfway through its lifetime, TransBaltic has already yielded valuable studies on territorial distribution of existing and expected international freight flows and their impact on regional growth. On 11 and 12 May, the Municipality of Skellefteå in the Swedish region of Västerbotten hosted the 2nd TransBaltic Conference.

The Skellefteå conference featured green transport solutions in the context of both policy and actual business operations. Together they have the potential of making the Baltic Sea region a model area throughout Europe and globally. The main focus of the conference agenda was on the region's connectivity, with additional inputs on trade exchange flows and transport greening policies provided by guests from the United States and India, exploring the external dimension of transport development in the Baltic Sea area.

An overview of the region's status as regards transport infrastructure and projected trends, presented by Helena Kyster-Hansen (Baltic Transport Outlook), set the scene for the internal connectivity day of the conference. The BTO study, being part of the EU's strategy for the BSR, is intended to achieve better prerequisites for long term infrastructure planning, to enhance the region's accessibility and competitiveness. Project deliverables include proposed shapes of strategic networks for rail and road transport, as well as for ports. Besides, research activities identified key demographic, environmental, technological, economic and institutional drivers and trends determining the situation in the Baltic Sea region.

Debating the BSR's green transport system

The core event of the conference was a panel debate with representatives from relevant pan-Baltic organizations, dealing with transport and regional growth: CPMR Baltic Sea Commission, CPMR North Sea Commission, VASAB, Union of the Baltic Cities and HELCOM. As an introduction to the debate, Wiktor Szydarowski, the TransBaltic Project Manager, presented an overview of the integrated transport system components as seen by strategic partners of the project, with such obvious elements as the infrastructure with cross-border sections of priority networks, the inter-regional and regional transport links improving access from the European and transnational corridors to local and regional production areas and customer markets and – ports and airports acting as interfaces and hubs. Some organizations are keen to see inland waterways as a part of intermodal transport, while no due attention has been paid to this issue so far. Other natural choices include interoperability between the modes of transport, with emphasis on railroads and short sea routes, efficient local and regional public transportation, innovative solutions in logistics and in traffic monitoring systems. Also, some soft measures have been indicated, such as platforms for cooperation between public administrations, research and business sectors to identify potentials and pave the way for future investments. This category of pre-requisites also includes harmonized policy interrelations between transport planning bodies with similar thoughts on developments at different policy levels. On the other hand, the unknown impact of policies or of natural and infrastructural developments can change geography of freight flows in the BSR. Therefore, a question has to be asked: is our envisioned system able to cope with the challenges?

Towards the green scenario

When asked about the weakest component of the BSR transport system, the debate panel's participants indicated the infrastructure, but a reservation was made that even the best infrastructure is worth almost nothing, if not used by the operators in an intelligent manner. Eliminating infrastructure bottlenecks and filling the missing links should also be regarded as priorities. The issue of operational skills and co-operation schemes was the second response with most indications.

The next issue discussed was whether any geographical pattern can be found in the BSR transport system quality. The option that the difference between 'the old' and 'the new' economies is most visible gained the strongest support, but it was noted that because investments in transport infrastructure are costly, changes will not occur in a short period of time. There has to be a very deliberate policy towards new EU members, so that when new investments in railway and in roads and hubs are made, they are made green right from their start.

Yet, to meet the challenges of the future, transport modes cannot be developed separately – the corridor approach needs to be adopted. The old, mono-modal network has to be replaced with a network of green multimodal corridors, with special focus on the last mile

infrastructure to strategic nodes (ports and inland terminals). This should be a mix of hubs and smaller feeding terminals.

Among pre-requisites that could support the green scenario the most, the market response was indicated as the strongest factor, with coordinated policy support almost equally strong. The debate's participants emphasized that these factors are very closely connected: if the market finds the regulations unacceptable, freight flows may be relocated to, e.g. Mediterranean or some other destinations. Therefore, political tendencies need to be realistic and oriented towards business decisions. Green must be easy and affordable. It is very important that external costs of transport are internalized. We could imagine a kind of redistribution scheme, whereby income from road charges could be redistributed to the most sustainable transport modes. Here, shipping seems to be the key, with Motorways of the Sea in the core of the maritime dimension of green transport.

New technologies will push the matters ahead

The last question of the debate concerned the policy measures most crucial in achieving a green and sustainable transport system in the BSR. Support for technologies from the public policy sector, harmonization of transport regulations and infrastructural investments were given the highest priority. This seems to be very promising for the cities – specialized functional urban areas gaining a new position of the green corridor operators and high-tech providers.

New technology, although key to green transportation, is a long term driver: one needs to be careful and allow for transition in terms of both technical and financial requirements, while combining economic efficiency with environmental performance. Any efficiency improvements in freight transport and logistics services, whether achieved by means of technological innovations or new business practices being deployed, by definition should result in better environmental performance. Integrated journey planning that could be implemented in the same manner as it is planned for passenger transport, can be given as an example of a new technology-based solution, combining the economic and environmental effect.

The safety and security aspect cannot be underestimated here. Major accidents may obviously have a very visible impact on the environment and they can be partly prevented by investments and new technologies, therefore technological projects should provide a high level of security.

North America: dangers of the bottom-up approach

Challenges to green transportation in North America – so entirely different than in Europe – were discussed by Professor Stephen Blank, representing the North American Transportation Competitiveness Research Council. While developments at the firm and the industry levels can be described as green there, such environmental issues as climate change are becoming enormously politicized and in the public's opinion, the seriousness of global warming is exaggerated in the news by political ideology. Besides, any efforts to institutionalize research activities, such as NAFTA's Commission for Environmental Cooperation have been cut due to the anti-globalization pressure. Therefore, although the substructure of the North-American economy is composed primarily of extended supply chains crossing national borders, it is lacking a superstructure of institutions and elements providing any transport policy concept or vision, either at the North-American or even at national levels. Everybody – each country and even each state – represents itself and it is very difficult to reach a consensus.


Photo: Destination Skellefteå AB

Private sector – a third party in TB

One of TransBaltic's aims (Work Package 5) is to test practical business solutions contributing to the integration of transport patterns and networks (BSR transport blueprints). Dry ports are one such concept – an infrastructural solution of the future, based on a seaport directly connected to inland intermodal terminals.

Tuomo Vallas, CEO of Speed Group (a Finland-based container transport company), stressed that the project has offered him a unique possibility to benchmark the existing Dry Ports outside of Finland, to visit them and get best practice information and insight to the Dry Port research. The support to Speed's activities to implement the dry port concept in Lahti is showing a way how to establish an efficient facility in specific local conditions.

Erling Sæther, representing the Norwegian Logistics and Freight Association, emphasised the "no corridor thinking" problem which hampers the desirable shift of the mode from road to railway transportation. Describing the operation of Europe's longest rail route connecting Oslo with Narvik via Sweden, Sæther expressed a strong belief that it is possible to develop a southern corridor from Norway to other European countries. To achieve this, however, rail operators, freight owners and forwarders have to be brought together and incentives are required to replace the existing, well-tuned business model of road transport with a corridor-oriented approach. ■

Małgorzata Nosorowska

Recent TransBaltic Events

4th Steering Committee meeting, Kristiansand/NO
Seminar on Development perspectives for medium and small Baltic Sea ports, Elblag/PL
2nd Umbrella Seminar for transport related projects and initiatives, Helsinki/FI

TransBaltic events in the close future

8-9 Sep
3rd Umbrella seminar for transport related projects and initiatives, Stockholm/SE
An event exclusively for transport related initiatives and projects in the Baltic Sea and North Sea Region for knowledge exchange and streamlining of work in the context of green corridors.

13 Sep
TransBaltic Partnership meeting, Riga/LV
The whole TransBalic partnership will come together for a cross work package/task meeting to present results and outputs.

14 Sep
Stakeholder's Debate, Riga/LV
A debate inviting business representatives and policy makers to discuss strategic transport development issues of Latvia and the neighbouring countries.