



*The EU's Motorways of the Sea (MoS) initiative aims to achieve a modal shift from land to sea transport. However, as **Professor Alfred J. Baird** argues, the first step is to establish a clear definition of what constitutes maritime transport infrastructure – which implies a shift of emphasis from ports to shipping*

Redefining maritime transport infrastructure

Definitions of transport infrastructure identify assets such as roads, railways, airports and ports. When we refer to maritime transport infrastructure, the emphasis is therefore directed towards ports.

There is universal acknowledgement that roadways and railways are transport infrastructure platforms, but there remains uncertainty about what constitutes the seaway platform. Clearly, to suggest that the maritime transport infrastructure platform is simply the port itself seems inadequate when talking at the same time about roadway and railway infrastructure platforms which extend to hundreds or even thousands of kilometres.

In Europe, governments at EU and Member State levels are now working to facilitate 'Motorways of the Sea' (MoS) services leading to large-scale road-to-sea modal shift. According to the European Commission (EC), the sea represents the best solution for tackling road freight traffic growth, hence the inclusion now of MoS

projects in the Trans-European Transport Network (TEN-T).

The TEN-T of MoS is ambitiously intended to recreate the road and rail network on the water, by concentrating flows of freight in viable, regular sea routes (see Figure 1). EU-funded TEN-T MoS projects are expected to improve port facilities and infrastructure, provide

electronic logistics management systems, enhance safety/security and administrative/customs procedures, and improve access routes for year-round navigability. For MoS, the TEN-T policy and funding emphasis is therefore primarily aimed at ports and transport access to ports. But as ports are not seaway platforms, is EU funding really about

creating motorways of the sea?

EU funding is intended to help counteract transport market distortions favouring land transport modes. Some success seems evident with the Marco Polo Programme, which aims to support MoS service start-ups through limited grant awards based on the forecast modal shift of freight tonne-kilometres.

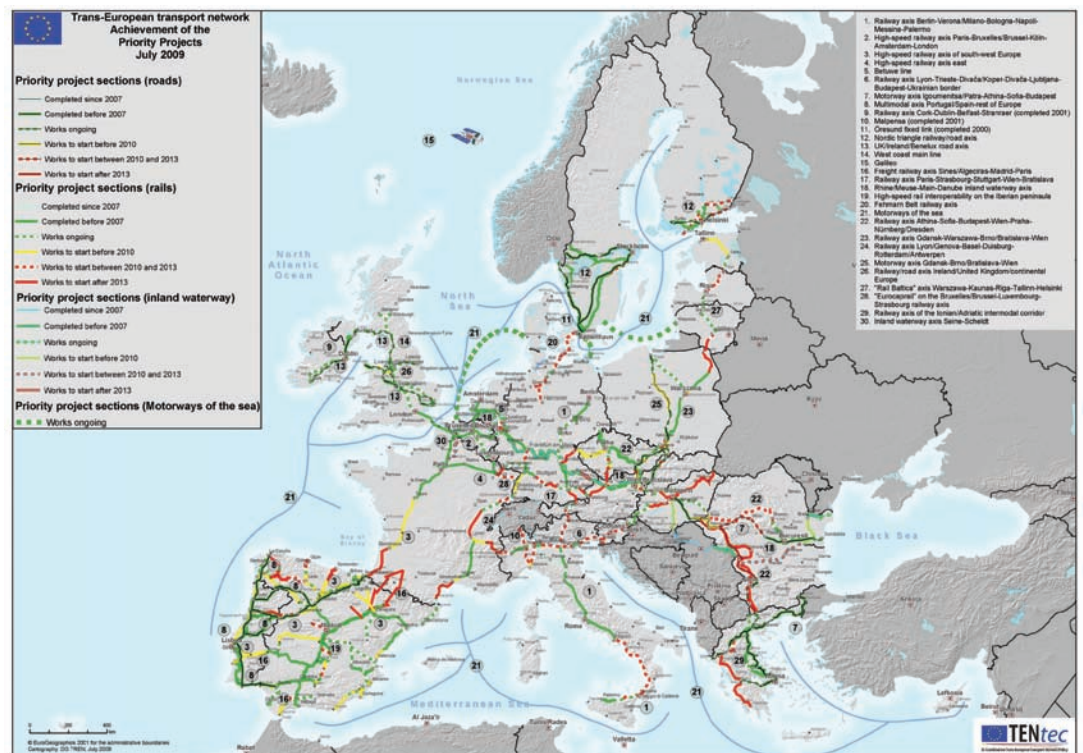


Figure 1: Trans-European Transport Networks (TEN-T), showing proposed Motorways of the Sea (MoS) areas. Source: European Commission

However, Marco Polo funding is only awarded for a limited period of 3–4 years and, even if an MoS project secures funding, the majority of the investment required for any individual MoS initiatives (i.e. 90% or more) is still expected to be provided by private transport operators themselves. In other words, the risk involved in creating MoS services is borne by the private sector.

In the meantime, the public funding of roadway and railway infrastructure is set to continue at high levels for the foreseeable future, which will lead to ongoing challenges for MoS start-ups. Across the EU there are over 5m km of publicly financed paved roads (of which 61,600 km are motorways) and 215,400 km of railways.

It seems questionable for the EU to provide limited/marginal short-term support for maritime transport MoS modal shift initiatives (the latter mainly dependent on private capital and at private risk), when at the same time far larger-scale public sector funding continues to be applied in an unrestricted manner to create and maintain competing roadway and railway infrastructure, and for which any ‘risk’ involved is born by the public sector.

State entities need a much better understanding of what is meant by the term ‘maritime transport infrastructure’, or MoS. In particular, there need to be far more appropriate policy mechanisms in place to help level the playing field to enable MoS services to develop.

MoS in practice

New MoS modal shift services



Figure 2: ‘Standard’-type 2,300 lane metres, 24-knot ro-pax ferry. Source: Norfolk Line/Visentini

have nevertheless been introduced in a number of countries over recent years. Italy was at the forefront of European MoS developments, beginning in 1991 when the state-owned Finmare company started its innovative Viamare service. Viamare employed five three-deck ro-ro ships each capable of carrying over 120 road trailers plus 50 drivers, to provide a daily link and an alternative to road transport between two dedicated out-of-town terminals at Voltri (Genoa) and Termini Imerese (near Palermo).

Since then, ship design and efficiency have continued to improve. Existing ro-ro and ro-pax ships offer attractive speeds (21 knots or more), coupled with high payloads and reliability. Although ships above 2,000 lane metres capacity (equivalent to approximately 150 trailers) have become something of a standard size for many MoS services, far larger ships are now in service, offering over 4,000 lane metres, and new ships of over 5,000 lane metres will be delivered during 2010.

Sea transport economies of scale are therefore unmatched by other transport modes, and

this has helped to drive down the relative cost of sea transport vis-à-vis road and rail.

To cater for the largest ro-ro/ro-pax vessels, ports have had to expand terminal land/storage areas and offer rapid handling, greater turning areas for longer/wider ships and improved road access to accommodate larger traffic volumes at any one time.

Key advantages of the ro-ro/ro-pax MoS modal shift platform for logistics operators include factors such as:

- Ability of vessels to carry unaccompanied or accompanied vehicles;
- Drivers may use the ferry trip as a statutory rest break;
- Reduced wear and tear of trucks and trailers, reduced vehicle maintenance costs and lower vehicle insurance costs;
- Greater reliability from deployment of large vessels which can better withstand the effects of adverse weather;
- Lower road fuel costs; and
- Avoidance of road tolls and circumventing weekend bans on truck movement by road.

However, while size/scale benefits may give the sea leg of MoS alternatives a basic unit cost per km advantage over road

haulage, certain factors can limit the overall advantages of MoS. These include ongoing subsidies for roadways and railways, ro-ro terminal handling charges for unaccompanied trailers and local road haulage expenses at either end of an MoS route.

MoS carriers maintain that the actual sea leg of their services may actually represent no more than half the total door-to-door cost of a trailer movement.

Towards a new definition

The aim of any transport infrastructure platform is to provide for territorial continuity. This implies that, once transport infrastructure is in place, it offers capacity for unhindered movement of persons and goods across the Earth’s surface.

Once created, road and rail infrastructure offers this potential. But the sea on its own does not, and in this sense the sea is just like land without any transport platform (i.e. before any roadway or railway is built).

Transport economists and policy-makers generally consider ‘maritime transport infrastructure’ to be the port. However, in view of MoS industry experience, and also taking into account the concept of transport infrastructure providing for territorial continuity, this point of view seems very much mistaken.

As far as MoS services are concerned, ports are no more than ‘nodal points’ along a transport chain. Ports themselves are not the transport chain; ports act as an interface between transport modes.

Indeed, the paramount economic ‘good’ a port must provide in order to facilitate its

range of services is not water, but land. Although it is correct to say that ports depend on sea transport, ports are also highly dependent on land transport, primarily road and rail.

If roadway and railway infrastructure, extending hundreds if not thousands of kilometres, both represent a transport platform between points/nodes, it is evident that a port does not offer the same comparable good (or anything close to it). A transport platform (or transport 'way') must therefore consist of far more than just a port/node.

It is inevitable that ports will play an important role in the development of MoS services. But without doubt MoS are more than simply ports. Importantly, this also suggests that ports are not MoS, and this in turn raises questions about the EU emphasis on port infrastructure when it comes to the application of TEN-T-MoS funding.

Moreover, if ports, being nodes, are not the 'transport platform' or 'transport way', then the seaway (or MoS) must represent the platform. And if the port is not seaway or MoS infrastructure, then that raises another question, namely – what is seaway/MoS infrastructure?

Historically, transport economists and policy-makers have tended to regard the sea as some sort of 'free highway'. However, if a trailer or container is placed directly into the sea it goes nowhere other than where wind and tide may take it (assuming it floats). Sea transport needs a platform in order to function effectively, just like road and rail transport. The sea is not a free highway.

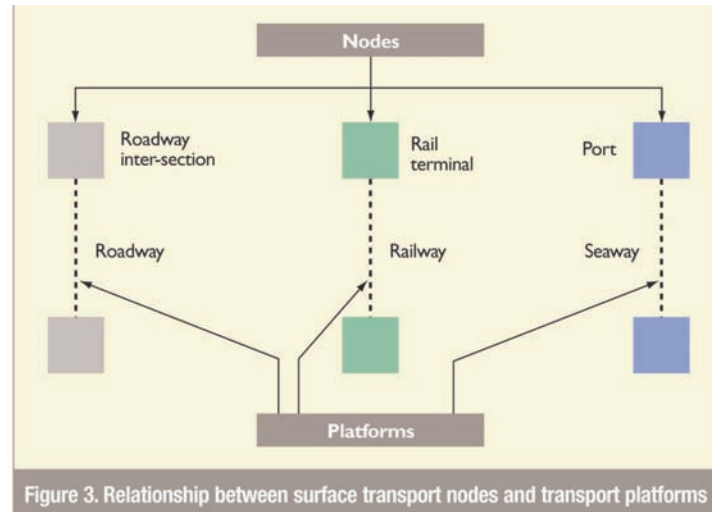


Figure 3: Relationship between surface transport nodes and transport platforms

While governments build, finance and maintain roadway and railway infrastructure platforms, and in many countries ports as well, this is not the case with seaway platforms. Policy-makers may assume (incorrectly) that a port is maritime transport infrastructure, but a port is most definitely not a sea-way platform. The port is a transport node, but it is not a transport platform. Port infrastructure can never be comparable to roadway and railway infrastructure in providing transport platforms and ensuring territorial continuity over long distances.

For the sea there is also therefore a need to create a basic transport platform (i.e. the seaway platform). That platform must be comparable in a functional sense to roadway and railway. In other words, sea transport cannot function without a platform, which comprises, in effect, maritime transport infrastructure, thereby facilitating territorial continuity.

If transport infrastructure comprises any kind of works and structures that establish the platform of a means of transport,

then the seaway/MoS platform must therefore be the ship. This is already in part recognised at EU level; in 2002 the van Miert EC High-Level Group investigating extending TEN-T suggested that a ship is a 'floating structure'.

However, the policy implications of this reality (vis-à-vis state-funded roadway and railway infrastructure) were never thought through. In other words, the ship has yet to be accepted for what it is – maritime transport infrastructure – and regarded as such from a public policy/funding perspective.

Undoubtedly, the floating structure (i.e. the ship) comprises, in effect, both the infrastructure and the platform of waterborne transport. Ports and their navigation aids (e.g. port access channels, lights, etc.) can be considered auxiliary to maritime transport infrastructure. However, maritime transport infrastructure or the seaway is

composed fundamentally of the floating infrastructure of ships.

Although mobile, the ship must therefore be acknowledged for what it is – maritime transport infrastructure. The ship can also be termed the seaway transport platform.

Irrespective of the terminology used, the ship must be regarded as entirely comparable to roadway and railway transport infrastructure platforms in providing for territorial continuity.

Summary

The theory as presented states that the maritime transport infrastructure platform (i.e. the seaway) is the ship. The port is not a seaway platform; the port is a node. The seaway platform, and therefore maritime transport infrastructure directly comparable to roadway and railway infrastructure, is the ship. It is the ship that provides for territorial continuity, not the port.

Transport policies require appropriate adjustment in order to more adequately reflect this new definition of maritime transport infrastructure. Respecting the new definition should involve policy-makers developing and implementing policies and initiatives that ensure that maritime transport infrastructure (i.e. the seaway platform) receives appropriate consideration relative to other surface transport modes. ■

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