

CONGESTION

Overview and consequences for logistics

Congestion in logistics is generally due to problems in the transport leg. It is very seldom heard that logistics service providers do not have space in their warehouses or do not have sufficient resources to handle requests from their clients, even in very difficult periods such as Christmas and summer holidays. Harsh competition between logistics service providers normally ensures that efficiency is guaranteed.

The same is not necessarily true when discussing transport services and transport infrastructure.

Transport congestion can be divided into two types:

- *Occasional congestion*, which occurs because of unpredictable reasons, such as a sudden disruption of the infrastructure (e.g. Mont Blanc Tunnel damaged by a fire and closed for a couple of years) or peak traffic;
- *Structural congestion*, which is of a perennial nature and stems either from ill-adapted infrastructure, insufficient for the level of traffic within the physical and environmental constraints, or due to a lack of technical compatibility. Administrative procedures or handling problems (Customs, and security procedures) are others causes of congestion. Places plagued by structural congestion are bottlenecks.

Whereas by definition occasional congestion can only be dealt with when it occurs, by taking measures to minimise its duration and effects, structural congestion must be tackled in a more comprehensive manner. Structural congestion requires a concentration of efforts in order to solve the problem, and prevent it from escalating.

Occasional congestion can be mitigated by high resilience and great flexibility, but we shall not dwell on this concept, because we consider structural congestion much more important, with far reaching consequences for the entire logistic system.

Structural congestion is generally caused by what we call a "bottleneck".

Main bottlenecks in Europe

Bottlenecks in Europe are at several levels:

Geographical/topological bottlenecks

This mainly concerns mountainous regions such as the Alps and the Pyrenees. Straits, river crossings and other geographical constraints can be bottlenecks until they get solved by infrastructure building (Channel tunnel, Oeresund, etc.)

Lack of optimal use of infrastructure

Ideally transport infrastructure should be used 24/7. However, this would entail substantial changes in the work methods of all actors of the supply chain, both public and private: shippers, Customs authorities, carriers, freight forwarders, terminal operators, warehouse keepers and workers (and their trade unions).

Busy periods of the year

Christmas and New Year are a temporary though recurrent period of congestion, in particular in ports and airports. The large increase in shipments over a couple of weeks sometimes creates congestion, in particular in terminals and warehouses.

Urban areas

This is particularly the case in areas with a high level of population density, such as:

- Almost all connections of the M25 around London
- Paris, Ruhrgebiet and Milan motorway systems
- Italian Riviera and Cote d'Azur motorways.

Central areas of almost all EU cities are plagued by congestion, which is made worse by lack of respect for driving and parking rules. Distribution in downtown areas is a sore point, some restrictions and constraints aimed at mitigating the impact on the public in fact often contribute to creating greater congestion by concentrating deliveries on certain given times.

We take the opportunity to stress that not only the areas with a high level of population density are affected: in Italy for instance connections around Mestre are regularly congested.

Strategic corridors

- ⇒ Corridor V
- ⇒ Polish, Czech and Hungarian corridors
- ⇒ Rhine-Danube, the Danube being interrupted at Straubing.

All the above show a very high number of bottlenecks, mainly due to a lack of cross border infrastructure and/or lack of harmonisation.

Strategic infrastructure and access to it

- ⇒ Ports and inland terminals
- ⇒ Airports: according to an independent study¹, without expansion, congestion at UK airports could cost up to £20 billion by 2030.
- ⇒ International / cross-border bridges and tunnels (such as Alpine tunnels)

Technical and administrative bottlenecks

- ⇒ Lack of interoperability (e.g. different gauges between Spanish and French rail systems) and technical harmonisation on the Trans-European rail transport axes
- ⇒ Administrative and Customs procedures in ports hindering the full development of Short Sea Shipping
- ⇒ Congestion problems at the border between Russia and Finland

Greater attention should be paid to the lack of interoperability between the various concerned authorities and the stakeholders: the one-stop-shop concept must be strongly supported.

¹ *The Economic Contribution of the Aviation Industry in the UK, Oxford Economics Forecasting, 2006*

Global effects of congestion

Freight forwarders and logistics service providers maximise the use of available infrastructure in order to offer the best solution to their clients. Despite these “smart logistics services”, congestion problems are present and growing. The two most obvious effects of congestion certainly are delays and costs. Delays are all the more harmful since our transport system is governed by “just in time” deliveries. Because of the structure of the supply chain, there is a “domino effect” that affects all the operators. Problems of this kind may also have far-reaching repercussions for trade and industry.

The average efficiency in delivery/collection rate per vehicle in Western Europe has decreased enormously in the last 30 years, despite the adoption of technical aid such as cell phones, on board units etc.

Possible solutions to congestion

The following table gives an overview of the solutions advocated by CLECAT in a number of contributions to EU consultations and discussions. This list is not exhaustive.

| Actions to be undertaken | Responsible body |
|---|--------------------------------|
| Development/enhancement of infrastructure (roads, ports...) | Public authorities |
| Targeted use of infrastructure pricing policies (“smart pricing”) in order to encourage users to use less congested areas and off-peak times | Public authorities |
| Use/promotion of fully interoperable loading units (such as 45’ pallet-wide containers) and avoidance of the proliferation of standards | Public authorities Industry |
| European information system for driving bans | Public authorities |
| ‘Motorways of the Sea’ when they provide a geographical advantage (Baltic Sea and Mediterranean connections) and actions of the Marco Polo II programme | Public authorities Industry |
| Extensive use of consolidation, to mitigate empty space | Industry |
| Comprehensive logistic solutions to avoid empty runs | Industry |
| Modular concept to decrease the number of vehicles on roads | Public authorities Industry |
| Efforts to streamline, harmonise and facilitate customs, and security procedures | Public authorities |

One concrete example:

Congestion in ports

Situation & forecast

On average, traffic in European ports has increased by 4% a year in the last 20 years (+ 7% for container traffic). Traffic Asia-Europe grew by 15% a year in the last few years². Although the overall level of congestion is not as alarming as in the U.S., Asian or Russian ports, a number of European ports already find themselves in a difficult situation. All the more if one considers that a port is said to be at full capacity when 80% is used, because there is then very little scope to deal with peaks. When one looks at the prospects, between 2005 and 2011, container traffic is expected to grow by 7.8% per annum while European port capacity should increase by 4.2% a year.

North European Deep-Sea Ports: Utilisation 2004

| Port | Capacity Utilisation |
|----------------------|----------------------|
| Le Havre | 89.6% |
| Antwerp | 92.9% |
| Rotterdam | 92.5% |
| Bremerhaven | 95.5% |
| Hamburg | 93.2% |
| Southampton | 99.3% |
| Felixstowe | 77.1% |
| Others | 41.9% |
| <i>Total average</i> | <i>86.6%</i> |

Source: Drewry Shipping Consultants³

Forecast Container Handling Supply / Demand Balance to 2015

| mTEUs/year | | 2005 | 2010 | 2015 |
|-----------------------------|--------------------|---------------|---------------|----------------|
| North Continent East | Capacity | 12.95 | 21.70 | 23.80 |
| | Demand | 11.42 | 17.06 | 23.63 |
| | <i>Utilisation</i> | <i>88.2 %</i> | <i>78.6 %</i> | <i>99.3 %</i> |
| North Continent West | Capacity | 24.18 | 45.64 | 51.14 |
| | Demand | 18.52 | 25.41 | 32.89 |
| | <i>Utilisation</i> | <i>76.6 %</i> | <i>55.7 %</i> | <i>64.3 %</i> |
| Scandinavia | Capacity | 5.13 | 6.56 | 6.51 |
| | Demand | 3.63 | 4.71 | 5.61 |
| | <i>Utilisation</i> | <i>70.8 %</i> | <i>71.9 %</i> | <i>86.2 %</i> |
| East Baltic | Capacity | 3.13 | 6.51 | 8.89 |
| | Demand | 2.17 | 5.04 | 9.17 |
| | <i>Utilisation</i> | <i>69.2 %</i> | <i>77.4 %</i> | <i>103.2 %</i> |

Source: Ocean Shipping Consultants

² Source: CGA-CGM (Workshop on Port Services, November 14th 2006, Antwerp)

³ See http://www.nol.com.sg/newsroom/05news/toc_europe_2005_drewry_report.pdf

Effects

Ports are obviously the first to experience the consequences of congestion. The UK ports of Felixstowe and Southampton have already had a taste of these consequences: some ship operators opted to unload cargo in Rotterdam or Antwerp and then fed the freight back to the UK by shipping on smaller vessels through alternative ports.

At port-only level, congestion adversely affects all operators:

- Carriers: vessel delays, extra fuel costs, missed feeders
- Terminal operators: extra manpower, yard congestion
- Road hauliers: waiting time
- Shippers: longer transit times, delayed inventories, longer lead times

Considering ports are the main nodal point for EU imports and exports, the effects of congestion at their level spread throughout the entire supply and transport chain. Port congestion seriously affects the quality of life of the citizens living in port areas, along with jeopardising the efficiency of our services.

Examples of practical solutions found by the industry⁴

In Rotterdam, ship operators, barge companies and other stakeholders have set up a group called "Hinterlink" with the objective of mitigating the problems involved in moving cargo from the port to the hinterland via inland waterways.

One of the group's ideas was to set fixed, synchronized time slots for trans-loading cargo from ocean going vessels to barges; according to pilot runs, this idea was successful.

Another idea was to improve data exchange among maritime industry partners: a protocol is being developed that would make it the standard for Europe's entire ocean/inland waterways network.

In the ports of Felixstowe and Southampton, the freight forwarder *Kuehne + Nagel* has established an intermodal rail service that moves cargo as quickly as possible off the docks to staging locations inland. By doing so, the company reduces the number of containers stored at the terminals.

In Belgium the port of Antwerp has actively worked to build a collaborative environment with other Belgian inland ports to distribute the intake of boxes in a more rational manner.

Stakeholders and authorities contributed actively to the "E-port project" in Genoa, Italy, which is aimed at improving port logistics operability by facilitating formalities for containerised cargo. The system acquires data from the relevant parties by means electronic customs declarations. A data base is then made available to the control authorities, allowing time schedules to be respected and, in some cases, speeding them up.

⁴ See http://www.logisticsmgmt.com/contents/pdf/LMX051101_EUX.pdf

Conclusion

In conclusion the key elements to tackle in order to mitigate and hopefully resolve the problem of congestion are the following:

- inadequacy of infrastructure in planning, availability and often even maintenance;
- concentration of use-time, in other words: how can logistics better use the available 24hrs?
- The need to improve transport capacity and/or optimise the use of available capacity
- Ensure technical compatibility and resolve procedural and administrative problems

Many of the above points were very clearly identified during the latest freight Forwarders' Conference on Nov 30th 2006 amid the variety of other topics dealt with during the conference. Finally, we deem it necessary to stress the importance of continuous information exchange regarding the "bottlenecks".

Clecat and FIATA are available to continue and deepen dialogue with institutions and other stakeholders to propose practical actions which may offer solutions without the disruption of services.