DISCUSSION PAPER

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Cefic requirements and recommendations to boost Combined Transport

Combined Transport (CT) will be a significant contributor to achieving the EU Green Deal's ambition to reduce transport GHG emissions by 90%. Cefic supports the ambition to increase the modal shift from road to rail, inland waterways (IWW) and short sea shipping (SSS). However, measures must be taken to further increase the attractiveness of combined transport. This paper sets out chemical shippers' requirements towards the combined transport system, which must be fulfilled to increase rail freight 50% by 2030 and double it by 2050, resp. wanting to increase IWW transport by 25% and 50% in the same periods of time.

Summary

There are **4 main action areas** to make CT chemical producers' first choice: (1) CT services to be focused on satisfying end-customers' needs at all times, (2) CT to be competitive compared to road transport, (3) adequate network infrastructure structure must be in place both to access rail as well as capacity to enable reliable and efficient execution of main legs, and (4) CT transport chains to be fully digitalized end-to-end, enabling seamless information exchange and optimization of operational execution.

Satisfying end-customer needs

- **Reliable and flexible execution** is vital; arrival punctuality to be > 90% within 1 hour of schedule
- **Proactive real-time ETA** exception alerts (ELETA) are required, in case of delays
- S**ystematic punctuality monitoring** (Q-ELETA), as basis for continuous performance management and improvement
- **Additional transit time** compared to all-road not to exceed 12 hours / max. + 1 day

CT must be competitive compared to all road transport

- **Digitalisation and automation** as well as **elimination of national rules & regulations** will boost competitiveness
- **Collaboration of all actors** along the CT transport chain is required, enabling further integration and harmonisation of processes, making cross border CT to be "as easy as driving a truck"
- Infrastructure to be upgraded, **enabling longer heavier CT trains**
- **Maximum vehicle gross weights** for first- and last mile road legs must be increased and harmonised

Optimal access to CT and availability of resilient infrastructure

- **More capacity** is needed (terminals + network) to enable further growth and shift to rail and IWW
- **Terminal access** to be extended to 24/7
- **Terminal availability** to be within 50 km radius (or 1 hour drive)
- **Better integration of IWW** by increasing number of **tri-modal terminals**

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- Consequences of **temporary capacity restrictions** and line closures to be mitigated through sufficient **alternative resp. diversionary routes** and improved international **contingency management**

End-to-end digitalization and innovation

- Enables **seamless data exchange** and **paperless transport processes**
- Is the basis for **operational execution and optimization** (improving service levels and reducing costs)
- Enables **tracking & tracing** of CT order status and proactive exception alerts
- **First- and last mile road legs must be electrified**, switching from fossil fuel truck engines to BEV and FCEVs
- **Support technological innovations** such as Digital Automated Coupling (DAC) and innovative loading units, such as extra-large tank containers

Issues and solution areas for Combined Transport in more detail

Satisfying end-customer needs

The choice for combined transport is made during the **contracting phase,** in a triangle between chemical producers with their customers and transport service providers. CT is expected to be both **reliable and flexible in execution** to enjoy the necessary level of shippers' and their customers' confidence.

Current issues:

- Performance of rail freight is falling short of shippers' and their customers' expectations, which is preventing further shift to rail. Shippers are the ultimate rail freight customers, being the ones that decide on the mode of transport.
- Combined transport is complex, requiring multiple parties and stakeholders to engage their resources and align operational plans.
- Rail transport is lacking transparency and reliability. A customer relation cannot be jeopardised with lower reliability and lack of information. Loss of customer confidence or unsatisfied customers would lead to loss of business for both shippers and CT-providers.
- Barge transport for maritime pre-carriage needs better integration with deep-sea vessel and terminal operations, synchronising the respective operations such as the timing of the arrival and (off)loading operation of the barges with deep-sea container terminal operations.
- Congestion in ports drastically impacts supply chain reliability.
- Container shortage pushes customers to truck to be able to access available equipment.
- Modal shift to rail and IWW requires re-discussion of lead times and potentially also contract volumes with customers.
- There appears to be a general lack of sufficient understanding and training on how to organise and perform CT transport.

Possible solutions:

- A drastic improvement of CT reliability and punctuality is needed, specifically in the rail freight part of combined transports. Therefore, it is essential for those stakeholders, collectively responsible for the execution of CT services, to maintain an effective cross-border traffic management system, ensuring CT loading units to arrive at destination terminals on-time-in-full. Shippers expect an arrival punctuality of > 90% within 1 hour of schedule.
- In case of delays: CT-operators to be able to provide proactive provision of real-time ETA exception alert to transport service providers (implementation of ELETA project). This is the basis for ETA calculation of arrival of CT loading units at their end destination (the consignees, the shippers' customers).
- Systematic monitoring and measuring of punctuality, as the basis for continuous performance improvement. Cefic made a project proposal, referred to as Q-ELETA, on the development of harmonised punctuality KPIs along with a supporting collaborative punctuality management framework.
- Improving time window management and accessibility of terminals in seaports: better time coordination of inland navigation schedules with the priority lay times of seagoing vessels.
- Strengthen business relationship by striving for longer term contracts and higher volumes. This allows setting up more stable Combined Transport connections.

- Much more promotion and training is needed to make industry (shippers and consignees) as well as logistics service providers more aware of CT opportunities. In that context we also recommend more active promotion of the European Rail Facilities Portal[1].

CT must be competitive compared to all road transport

A shippers' choice of transport mode is determined by competitive freight costs, as well as reliability and flexibility. Therefore, combined transport cost should be lower compared to all-road transport, at least for transport distances from 500 kilometres. Rail transport can realise substantial efficiency improvements through digitalisation and automation, and by elimination of national rules & regulations which hinder seamless cross-border traffic (e.g. driver language). Cefic's views on the need for better cross-border cooperation and harmonisation in rail freight and combined transport has been well described in Cefic's Position on Rail Freight and Rail Freight corridors.[2]

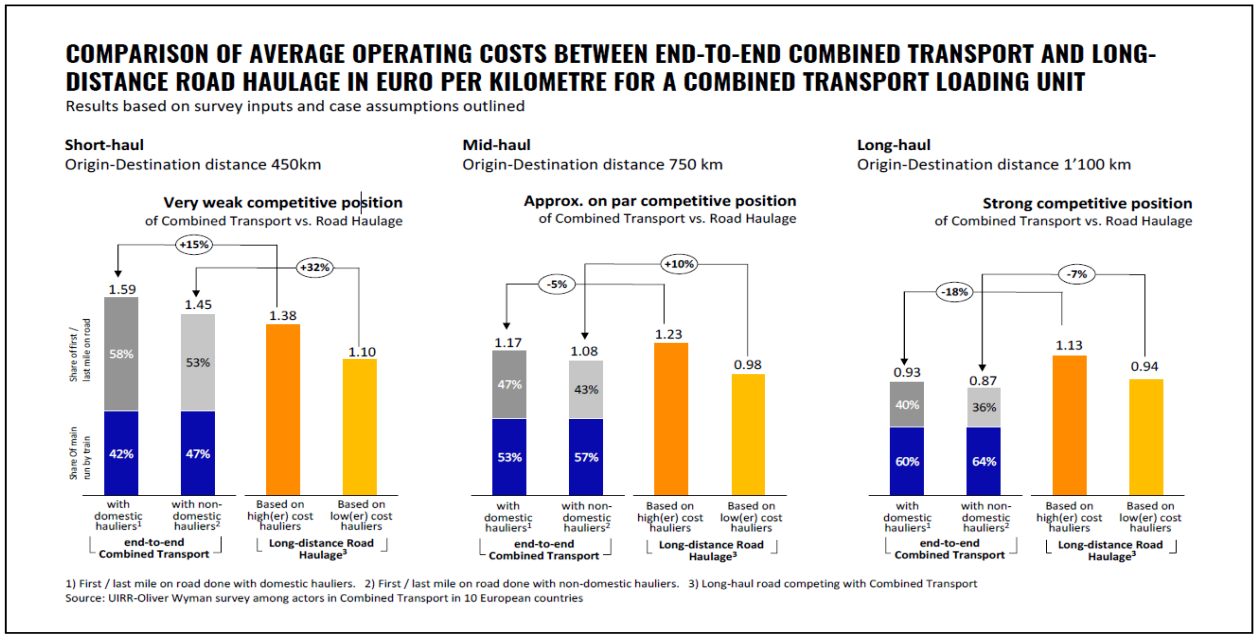
Current issues:

- Currently, rail is only competitive as from 750 kilometres.
- First/last mile and transhipment operations are not yet as well synchronised and optimised as they could be.
- The current lack of reliability comes at significant costs to every stakeholder along the CT chain. All stakeholders would equally benefit from increasing asset productivity. Punctuality losses translate directly into capacity losses for loading and unloading operations at shippers and consignees, for terminal operations as well as for railway undertakings and barge operators.
- Competitiveness of CT would be further hampered, if the first- and last mile road leg of an international CT would be subjected to European cabotage regulations, as intensively discussed during the last attempt to revise the CT Directive. Subjecting it to cabotage would put international CT at a disadvantage compared to all-road transport, reducing first- and last mile road transport capacities and thus increasing costs as shown in the analysis belowconducted by Oliver Wyman

[1] www.railfacilitiesportal.eu

[2] https://cefic.org/app/uploads/2019/06/Cefic-Position-on-European-Rail-Freight-and-Rail-Freight-Corridors.pdf

The following graphic[3] shows the relative cost position of CT vs. all-road transport:



Possible solutions:

Combined transport should be competitive compared to road at least as from 500 km (= average road distance for chemicals). Therefore, the following actions are needed:

- Increase competitiveness by optimizing current asset utilization:
  - Infrastructure to be upgraded, enabling longer heavier CT trains, further reducing unit costs.
  - Allow higher vehicle gross weights and/or axle loading for the first and last mile road leg of CT, e.g. increase to 48 tons/truck or even 50 tons/truck for zero emission trucks, also cross-border. Today, road limitations are also rail limitations which is hindering full utilisation of rail capabilities.
    In a first step - where resistance otherwise is high - this could be implemented in defined zones (e.g. ports, industry clusters) or on dedicated lanes (e.g. TEN-T core and comprehensive network).
  - To further increase utilization and speed-up CT transport chains, first- and last mile road transport of CT loading units should also be exempted from the weekend- and Sunday driving ban. This also counts for the positioning and repositioning of empty CT loading units.
  - Do not subject first & last mile of CT by road to cabotage rules nor regular return to country of establishment, as this puts CT at disadvantage compared to international all-road transport (social fairness for truck drivers is already ensured via posting of workers regulation)[4].
  - Exempt first/last mile road leg of CT from road access charges as a credit for the lower external cost of CT (and therefor incentive for shift to rail/IWW).
- Funding: income from taxation / internalisation of external costs should be earmarked for reuse in sustainable transport solutions, such as CT

[3] Impact of the new road haulage rules on combined transport, Report summary, 30 November 2020, Oliver Wyman

[4] Data gathering and analysis of the impacts of cabotage restrictions on combined transport road legs : final report https://op.europa.eu/en/publication-detail/-/publication/a6718302-72a1-11eb-9ac9-01aa75ed71a1

Optimal access to CT and availability of resilient rail and IWW transport infrastructure

Capacity of CT rail is not sufficient to be flexible: terminals are overloaded, there are not sufficient terminal connections, frequency of departures is of too low. Easing access to CT and increasing CT capacity is essential to enable further shift to CT.

A. Terminal infrastructure

Current issues:

- The high terminal costs per road consignment are the "ticket to the rail system" and today represent a major hurdle for the shift of traffic to rail.
- While in the densely populated industrial centres in Europe, there is less an issue with the distance for the first and last mile to/from a CT terminal, in the periphery of Europe the issue is the other way-around: the length of the first/last mile road leg is often far too long, making CT not sufficiently competitive.
- Intermodal transport does not offer sufficient possibilities for the transport and transhipment of temperature-controlled as well as dangerous goods. Terminals and CT transports often lack facilities for the heating and temperature monitoring of goods requiring temperature management during interim storage and transit.

Possible solutions:

- Launch a systematic review and overarching, well-coordinated planning of an optimal network structure of CT terminals regarding their availability and range of services, e.g.:
    - spatial density and proximity to loading and unloading points,
    - terminal opening hours, terminal capacities, suitability of transhipment facilities,
    - adequate offers of train connections and their departure frequency
- **Capacity** must meet future demand; **opening hours** for container drop-off or pick-up should be in line with producers or final end-customers' needs.
- **Access to terminals** for drop-off / pick-up should extended to 24/7.
- **Terminals to be available within 50 kilometers or 1 hour drive** away from sites shipping and receiving CT loading units.
- Provide services and suitable plugin facilities at adjacent hubs, e.g. for heating / temperature control of thermo-containers, trailer- and container parking, cleaning, maintenance.
- Attention must be given not to remove (unused) rail tracks but to preserve or reactivate them to enable adding of further terminals, providing better access to rail.
- Increase capacity of existing terminals (in number of TEU handling + 750m train access) as well as investment in additional terminals. Investments in transhipment infrastructure on private sidings could also be considered to increase access to the CT rail network.
- Improve terminal funding schemes (incl. at sidings both public and private)

B. Rail/IWW network infrastructure

Current issues:

- Frequent daily disruptions, construction works, total line closures
- Lack of sufficient capacity (both existing main routes and need for alternative routes).
- Inland waterways are suffering from old infrastructure, for which there are no renewal plans (only basic maintenance, old locks). Even when renewal plans are in place, realisation is taking far too long (with construction only being completed beyond 2030).

Possible solutions:

- Sufficient alternative and diversionary routes must be available to prevent disruptions because of unexpected events.
- Closure of missing rail links must be speeded up, alternative rail routes added to accommodate additional rail volumes. These lines should therefore also be part of the core and comprehensive TEN-T network.
- Better coordination of infrastructure works and line maintenance by the Rail Freight Corridor management, by granting them more power via Regulation 913/2010
- International contingency management to be further improved, minimizing the consequences of line closures and prevent supply chain disruptions.
- Increase track capacity on the core network by implementing ERTMS, line electrification, 740m train accessibility, P400 loading gauge, etc..
- Grant sufficient priority for international freight trains.
- Establishing and implementing the masterplan for inland navigation (NaiadesIII) which defines measures to increase the attractiveness of inland navigation in CT, such as for example:
    - Creating further (trimodal) connections and their optimisation in terms of terminal capacities and operation, both in seaports and in the hinterland.
    - Increasing the transport capacities for inland waterway container transport by barge, e.g. by raising the height of bridges to enable carriage of containers stacked in 2- and 3-high layers.
    - Faster implementation of urgently necessary lock renovation and modernisation.
    - Removal of structural bottlenecks such as on the Middle and Lower Rhine (levelling and dredging of riverbed) to reduce the consequences of low water periods.

End-to-end digitalization and innovation

Digitalisation enables seamless data- and information exchange, providing transparency along the entire CT transport chain. It is the basis for operational execution and optimization (improving service levels and reducing costs), enabling tracking & tracing of CT order status, physical position of CT loading units and proactive provision of revised expected estimated times of arrival (ETA) in case of delays.
End-to-end digitalization also enables process integration between CT stakeholders: shippers, freight forwarders and transport service providers, railway undertakings and barge operators, CT operators and CT terminals and ultimately the consignees of the goods transported in CT loading units.
There are still plenty of opportunities to introduce technical innovation to CT. For example, innovative transport equipment can enable further volumes shift to CT by increasing the range and availability of loading units which can be handled by the CT system.

Current issues:

- Lack of transparency and slow speed of (manual) information exchange is hampering the speed of CT chains

- Driver shortage is increased because of lack of digitalization, requiring more time and effort to handle CT documentation and to comply with operational procedures
- Lack of transparency on current road flows, to specify where (terminal, rail and IWW) capacity is needed to foster further modal shift
- Danger of implementation of rulings that increase bureaucracy, proving transport to be on route to/from CT terminal
- Rejection of CT at terminals because of missing documents
- Too many loading units are not suitable for CT, hampering shift to rail
- First and last mile road legs of CT still largely based on fossil fuels (diesel or LNG trucks). Alternative engines and alternative fuels not yet available at scale

Possible solutions:

A. Digitalisation of end-to-end CT processes:

- Further automate terminal processes, e.g. through:
  - implementation of smart gates using OCR technology for fast optical loading unit and vehicle recognition,
  - smart cameras on portal cranes and reach stackers, enabling fast correct recognition of trucks and loading units, real time information sharing, as well as damage recognition and registration
- Paperless freight transport information management, by implementing the eFTI Regulation[5] and corridor data exchange by all stakeholders (authorities, logistics service providers and industry).
- Consequently, improve working conditions for drivers and preserve valuable driver capacities: easy access to terminal and loading units, smarter faster processes with zero paperwork and significantly reduced turnaround times.
- Cross-system tracking and tracing (open data concept) including the preliminary leg on the road, to increase visibility and to optimise terminal operation
- Proactive reporting of delays, including provision of reliable expected time of arrival (ETA), at terminals as well as at loading or unloading points.

B. Innovative equipment solutions to maximise CT opportunities:

- Implementation of the Digital Automated Coupling (DAC), enabling easy coupling and decoupling of container wagons.
- Data exchange on wagon and loading unit level opening a whole range of digitalisation opportunities.
- Roads are the “red carpet” to access the CT network, offering ample opportunities for equipment innovation:
  - Promote switch to battery electric and fuel cell electric vehicles in first/last mile operations, including incentives such as higher weights and exemption from road tolls or road vehicle taxes for zero-emission vehicles.
  - On selected routes in the close vicinity of intermodal terminals, first- and last mile road legs could be suitable for automated guided vehicles (AGVs) in conjunction with increased weights. Specifications regarding engine types, speed and maximum could be scaled and adapted to local situations.

[5] Regulation (EU) 2020/1056 of the European Parliament and of the Council of 15 July 2020 on electronic freight transport information

- Standardise and extend loading units to be useable for CT: increase fleet of cranable semi-trailers, develop innovative handling equipment to allow handling of currently non-cranable road transport equipment for CT.

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About Cefic
Cefic, the European Chemical Industry Council, founded in 1972, is the voice of large, medium and small chemical companies across Europe, which provide 1.2 million jobs and account for 16% of world chemicals production.