



Horizontal cooperation among Logistics Service Providers (LSPs) within the chemical industry and its effects on planning processes: a LSP's perspective

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Abstract. The chemical industry has a substantial interest to design its supply chains in a sustainable, safe, secure and efficient manner. Intermodal transport demonstrates a potential way of fulfilling aspects related to environment, costs and safety and security. As environmental aspects gain in importance and competition is high among Logistics Service Providers (LSPs), the potential of horizontal cooperation poses a possibility to tackle those issues. Thus, the authors reviewed existing literature and conducted ten expert interviews with selected LSPs located in the industrial region of Upper Austria. Collected data were analysed according to the quantitative content analysis of Philipp Mayring (2015). The paper reveals that LSPs consider the approach to cooperate horizontally as a possibility to increase the potential for intermodal transport as the required volumes for an economic and efficient carriage are attained. Moreover, the likelihood to meet environmental targets, increase competitiveness and design more efficient transport chains increases. However, the reluctance to share firm-internal data represents a significant obstacle. On a long-term basis LSPs need to reconsider their business models. Horizontal cooperation among LSPs should trigger a modal shift towards an increased share of multimodal transport within the chemical industry.

1 Introduction

Today, the changing market conditions and customer's expectations have forced LSPs to reconsider their strategic orientation. Despite the introduction of environmental targets by authorities, increasing competitive pressure and increasing transport volumes within the transport branch, Logistics Service Providers show reluctance towards the idea of horizontal cooperation and the utilization of intermodal transport solutions.

2 Intermodal transport

Intermodal transport is characterized by the involvement of at least two different modes of transport and the freight remaining in one single transport unit. Combined transport is commonly used as a synonym.[1] Due to the fact that the freight remains in the same transport unit during the

entire transport, the aspect of safety is facilitated.[2] This type of transport stands out due to the ability to transfer bigger amounts than with unimodal transport. The latter is limited by 40 tons regarding the maximum gross weight, whereas with combined transport the maximum gross weight for trucks is 44 tons.[3] Apart from this, the actual length of a truck is allowed to exceed the common length by 15 cm when being involved in combined transport.[4]

In terms of product type also the density of the transported product is of relevance, especially with gaseous or liquid substances. Thus, due to the underlying price structure (Euro per ton) and the possibility to transport high volumes by train, intermodal transport poses the ideal mean of transport for large and heavy goods as well as for materials with a high density.[5]

The process of globalization did not only trigger benefits for the logistics service provider's sector

because already well-established, international and large companies were put in an even more favourable position. Due to their advantage in size such LSPs are able to make use of a strong market position and a respective network. Furthermore, a broader portfolio enables them to have more resources at their disposal.[6, 7]

On the other hand, for small and medium companies (SMEs) globalization encountered them with challenges due to a lack of resources. For example the attainment of sufficient freight volumes in order to realize global and competitive transport, is more challenging for SMEs.[8]

3 Horizontal cooperation

Companies either cooperate in a vertical or horizontal manner. A vertical cooperation is characterized by a connection between actors on different levels of the supply chain, whereas horizontal cooperation is defined as a connection between actors being located at the same tier. Thus the companies offering a similar portfolio, utilizing the same means of transport and operating at the same level of supply chain are maintaining a horizontal cooperation.[i.a. 6]

Therefore SMEs see a necessity in cooperating with actors located at the same supply chain level to compensate e.g. a lack in resources. Eventually, the aim is to remain competitive and survive on the market. In the long run an increase in profits is anticipated, whereas the separation of such demonstrates a critical aspect in horizontal cooperation.[9] In addition, the overall intention is to make use of synergy effects.[10]

3.1.1 Motives

In the context of this research different fields such as cost reduction, improvement of customer service, increase of flexibility and market power were investigated.

Transportation costs make up a significant proportion of a company's overall logistics costs, thus a decrease is aimed for. By an increase in volumes, companies are enabled to make use of economies of scale and attain a decrease in costs. Thus, also the degree of loading increases and impacts the transportation costs in a positive manner.[11] It is argued that the primary motive for a LSP with regard to horizontal cooperation is to improve service quality in terms of reliability and speed. This motive is followed by the extension and protection of market share. Furthermore, LSPs consider the possibility to broaden service portfolios while specializing as a triggering motive.[12] Moreover, a LSP categorized as SME might be able to reach an increase in customer satisfaction by offering a more competitive price through a broader, geographic presence. Thereby, the network within the branch gets extended.[6] As the transport sector

is growing in volume noise, air pollution and time loss are arising side effects. Thus, a decrease of congestions and respective CO₂ emissions is aimed for. Better utilization of resources is targeted as a shared objective by LSPs.[13]

LSPs are intending to attain such motives, but in order to increase the likelihood of success, certain factors need to be discussed beforehand.

3.2 Success factors

By entering a horizontal cooperation with another LSP, the participants need to clarify and agree on certain aspects in order to increase the chance of experiencing intended benefits. In the course of this research the following success factors were elaborated based on the literature reviewed:

- clear definition of terms (e.g. fairness) and objectives, [12]
- clear separation of roles and tasks, [14]
- implementation of a method to distribute generated benefits, [9]
- clear rules in terms of communication and information flow, [15]
- introduction of adequate contractual agreements to ensure clear guidelines in combination with [16]
- relationship building, which should be pushed in order to develop trust and commitment. [14]

The listed success factors are solely based on existing literature, thus the authors decided to either support or neglect those factors. As an empirical approach, LSPs in the industrial area of Upper Austria were selected. In the end ten expert interviews, either with the managing director or transport and logistics representative, were conducted in accordance with a preliminary designed interview guideline. Due to the limited number of samples the qualitative content analysis was chosen as a method of analysis.

4 Research results

Our research revealed that horizontal cooperation is considered as a way to increase the share of multimodal transport within the chemical as well as any other industry. Influencing factors such as the degree of competition and the power distribution within the cooperation contribute to the likelihood of an effective cooperation. However, mitigating aspects such as commitment and a high degree of trust were mentioned.

In the course of the research the following three main areas were retrieved: potential benefits, existing barriers and requested prerequisites. Those categories were elaborated based on the qualitative content analysis.

4.1 Benefits

By entering a horizontal cooperation LSPs follow certain intentions. Either the possibility of sharing costs, extending the service portfolio and consolidating freight volumes in order to meet the future demand, were mentioned frequently. As the overall freight volumes are expected to grow, an increase in chemical transports is anticipated respectively.[2] In addition, a more efficient utilization of the available infrastructure and equipment were stated in the same breath as potential cost savings due to an increased efficiency of transport.

4.2. Barriers

Even though that beneficial aspects are anticipated, when cooperating horizontally, LSPs are hesitant to establish such. Impeding issues such as negative experiences during previous cooperations with other LSPs and the risk of violating against the competition law were stated. Furthermore, LSPs are concerned about the behaviour of the opponent. More precisely, companies fear that partners put a greater focus on their own benefits instead of emphasizing the cooperation's well-being. To overcome such barriers prerequisites are stated in the next subchapter.

4.3 Prerequisites

Before entering a horizontal cooperation the partnering LSPs need to be aware of their position regarding the competitive relation and their future responsibilities within the partnership. Clearly defined structures demonstrate a possibility of support. Thus, an implementation of compliance guidelines is recommended. This mitigates the risk of violating against competition law. Horizontal cooperation requires LSPs to show willingness and respective commitment in order to derive the expected benefits. Moreover, cooperating partners request for neutrality to avoid opportunistic behaviour and consequent organizational damage. This stands in close relation to trust and commitment, which comes along with neutral behaviour of cooperating LSPs.

5 Conclusion

As it became obvious that horizontal cooperation might lead to an increase regarding the share of intermodal transport, the potential to attain environmental targets, exonerate overwhelmed roads and secure future competitiveness are desired results. SMEs are the ones profiting most from cooperations due to limitations in resources compared to the big players. The Austrian landscape of companies is dominated by SMEs, thus the research is primarily relevant for this geographic area or areas, which show similar characteristic.

The increased number of actors involved, both, in terms of horizontal cooperation and intermodal transport, has an increased degree of complexity as a result. Therefore the planning processes tend to require more time, thus effort. Interfering points pose vulnerable points to trigger mistakes.

5.1 Limitation

For an increased generalization and better comparison it might be interesting to gather data from Switzerland and Germany as the chemical industry has a significant importance for the economy. Furthermore the perception of horizontal cooperation might differ in other countries due to cultural differences. Thus an extended scope of nations should be aimed for.

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