“Less-Than-Truckload Networks”

Fraunhofer SCS Study of the European Market for Network Based Cross Border Goods Flows

The European market for less-than-truckload (LTL) services is characterized by rising competition and price pressure. A high-performance and well-structured network of hubs and depots is necessary to effectively meet customer requirements and to fulfill agreed service levels. The study “Less-Than-Truckload Networks” conducted by Fraunhofer SCS in cooperation with Altana, Dachser and KPMG aims to reach a higher level of transparency for the European cross-border LTL market.

LTL refers to individually labeled dry or staple goods and so-called groupage goods in shipments weighing between about 30 kg and 3 t, very often palletized. These shipments cannot be efficiently delivered directly to the consignee but require certain handling, including pickup and distribution by fleets of smaller trucks and consolidation for long-distance connections between regional depots or hubs. Because of the unique product features, especially the chemical and pharmaceutical industries show a variety of requirements for logistics service providers, but also a high relevance for international logistics services. Besides bulk goods transports, which are of enormous importance regarding logistics services for chemical and pharmaceutical products, LTL shipments are also relevant for this market segment.

Chemical and Pharmaceutical Industries

In 2012, the European chemical and pharmaceutical industry (in EU’s 28 nations plus Norway and Switzerland) generated a turnover of more than €850 billion, which is a share of nearly 10% in the total volume of all manufacturing industries in Europe. Around 33,000 companies offered employment for approximately 1.7 million people. Regarding sales, multinational players dominate the market. Five of the top 15 companies, presented in figure 1, are based in Germany, three each in Switzerland and in the United States.
The product range of these companies includes, for example, chemical feedstock and specialties, material science, cosmetic and sanitary products, as well as healthcare solutions and pharmaceuticals. The industry is characterized by a high level of concentration with regard to the distribution of revenues.

Large companies with more than 250 employees represent 3% of all market players but generate more than half of the sales revenues. Nearly two-thirds of market actors are small companies with a staff of fewer than 10 people. These firms only account for 2% of sales volume.

**Sector-Specific Requirements**

Since shipments for the chemical industry frequently contain sensitive or hazardous goods, it is essential to find logistics operators with the necessary know-how and handling skills. Topics like safety, security, quality and environmental awareness are of high importance here. Staff has to be appropriately educated, and the provider must be able to cope with the high complexity and to fulfill the prerequisites regarding transport and cargo securing, temperature control or traceability throughout the supply chain; this makes a flawless IT infrastructure indispensable. Very often it is not allowed to transport and store chemical or pharmaceutical goods with other commodity groups, which makes dedicated logistics networks or systems indispensable.

Besides the typical customer groups such as manufacturing companies, the do-it-yourself market is an integral part (e.g., delivery of paints and varnishes). The competitors providing LTL services for this cluster are large network operators, e.g., Dachser, DB Schenker or Deutsche Post DHL. However, specialized logistics companies such as Talke, Chemion or Hoyer should also be mentioned.

**European LTL Tonnages**

The total transboundary tonnage of all manufacturing industries traded between the 28 European countries assessed in the study comes to more than 1.12 billion t/y. As not all goods groups are equally manageable as LTL freight, only a small part is regarded as LTL potential. The volume for pan-European cross-border LTL transportation corresponds to around 89 million t, of which approximately 10 million t is attributable to the chemical and pharmaceutical industry.

As shown in figure 2, the hot spot for cross-border LTL transportation in this industrial branch is in central and western Europe. By far Germany is the largest exporter and importer of these products. The most important trading partners
inbound and outbound are Belgium, France and the Netherlands, covering approximately 60% of German imports and about 38% of German exports. Belgium and the Netherlands also have high potential outgoing transport volumes of chemical and pharmaceutical goods, whereby the role of these countries as gateways for shipments from Asia or Arabia to Europe is also a reason for this.

The southeast European area shows comparatively weak demand. The top 20 trade lanes (measured in potential LTL tonnage) represent only a small share of 2.6% of all trade lanes surveyed, but amount to almost half of the potential LTL tonnage. To avoid empty return transports, back load probabilities play a significant role for logistics companies. When regarding only chemical and pharmaceutical goods flows, a well-balanced trade lane with a back load probability of about 80% is from Germany to France. In contrast, transports from Germany to Italy show a back load probability of only 0.5%. To compensate for this, the service providers have to find solutions such as shifting to customer groups from other industrial branches.

**Trends Affecting Daily Business**

Price pressure, especially in countries with high minimum wages, has the strongest negative influence on the daily business of logistics service providers. Since transportation is a cross-border business, foreign companies are able to use their advantageous cost structure and compete with lower prices. An interesting fact is that price pressure seems to have a lower negative effect in the northern European countries than in the rest of the continent. Another trend showing strong negative effects is the rising competition on international logistics markets. Due to the ongoing extension of the European Union, especially long-haul services and the traffic between LTL hubs are affected by this trend. A higher competition does also influence and even intensify other trends like rising price pressure or lacking cost efficiency. LTL service providers have to find alternative strategies to escape from this price competition. This development is in particular crucial for central Europe.

IT and new technologies have a strong positive influence on the logistics industry. Logistics companies see huge potentials in integrating new technologies and applications. Buzzwords here include the Internet of Things, machine-to-machine (M2M) communication, Big Data, cloud computing or mobile apps. Nevertheless it is important to make sure that investments in IT are well-planned and that the implementation is not too complex for the supply-chain partners, as well as to be aware that benefits will not be realized in the short term.

**A Highly Volatile Market**
The European LTL market is a highly volatile market segment with rising price pressure and competition. In comprehensive pan-European networks, the market is dominated by large logistics companies having many operational locations in different countries at their disposal. Also cooperations play an important role, since they are very well-connected because of their network of often smaller members. Furthermore, a variety of smaller and regionally oriented logistics service companies are also able to cope with the challenges of this market segment and can offer efficient and reliable services on certain national and international trade lanes.

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