



# EMCC case studies

## Transport and logistics sector: Padborg cluster, Denmark

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*Padborg is located in Jutland in southern Denmark at the border with Germany. It is one of the largest transport hubs in Denmark, both in terms of volume and value. About 200 transport companies and service-related enterprises occupy a 5km<sup>2</sup> area in Padborg beside the European motorway E45 – the main traffic corridor between the Scandinavian countries (Denmark, Finland, Norway and Sweden) and the rest of Europe. The companies of the Padborg transport cluster have gone through a continuous process of change, by adapting their businesses to new technologies, infrastructure development and their customers' needs. In all, 3,000 people work in the Padborg cluster, offering an impressive expertise in freight forwarding and logistics. The companies in the cluster are facing a number of challenges in the future, including the need to strengthen competencies and use new technologies, and road congestion.*

## **Introduction**

The town of Padborg which is located in Jutland in southern Denmark on the border with Germany holds a cluster of road transport and logistics companies, with about 4,500 trucks moving through Padborg every day. In all, some 200 transport and service-related companies occupy a distinct area in the town. Padborg as a transportation hub started off in 1920 as a border control post at the Danish-German border with a railway station.

The companies in the area have been through a process of continuously adapting their businesses to new technologies, infrastructure development and the changing needs of their customers. The backgrounds of the companies in Padborg show a history of industrial change, globalisation and technological advancement. Many of the companies have moved from being merely transporters of industry goods to international logistics companies which handle production processes, logistics and transport. The companies have crossed the Danish border and are now mainly operating in Germany, and most of the truck drivers are German or Polish nationals.

In total, the Padborg transport hub employs 3,000 people with a great know-how in freight forwarding and logistics. If entrepreneurship and the pool of know-how are to remain in Padborg, the transport cluster will also continue to exist. In terms of a future outlook, the companies in the cluster are facing a number of challenges, including: the strengthening of their competencies to remain competitive; using new technologies to maintain effective communication channels with their employees located throughout Europe; and last but not least increasing road congestion in Europe.

## **Cluster development**

### **Truck city**

In Padborg at the Danish-German border, almost 150 transport logistics companies are gathered in an area of just five square kilometres (km<sup>2</sup>) which can be best described as a 'Truck city'. The roar of diesel motors, air compression from gearshifts, the mix of different languages in the service centres, the multitude of trailers everywhere, the trucker dress code and the oversized parking lots are all elements that add to the impression of a very unusual 'Truck city' (Figure 1).

Figure 1: Aerial view of trucks and terminals in Padborg, with the red line indicating the north-south motorway E45



Note: The view is taken from above the Danish-German border.

Source: Google Earth

Almost everything in Padborg relates to the truck transport business, comprising warehouses, truck terminals, petrol stations, tyre companies, transport organisations and coffee shops. It appears as if the whole town is about trucks, transport and logistics. The hub never seems to rest, staying open 24 hours a day and 365 days a year. Padborg accommodates almost 5,000 trucks a day. Some 50 service companies are as important for the trucks as the trucks and their drivers are for these service companies.

A recently published book about Padborg describes the town as a function rather than as a city (Institut for Transportstudier, December 2007). When looking at the development of the companies in the Padborg transportation cluster over the past 90 years, it is a story of transport companies constantly adapting and restructuring to follow their markets. This situation has turned Padborg into a city on the move.

### A town on the move

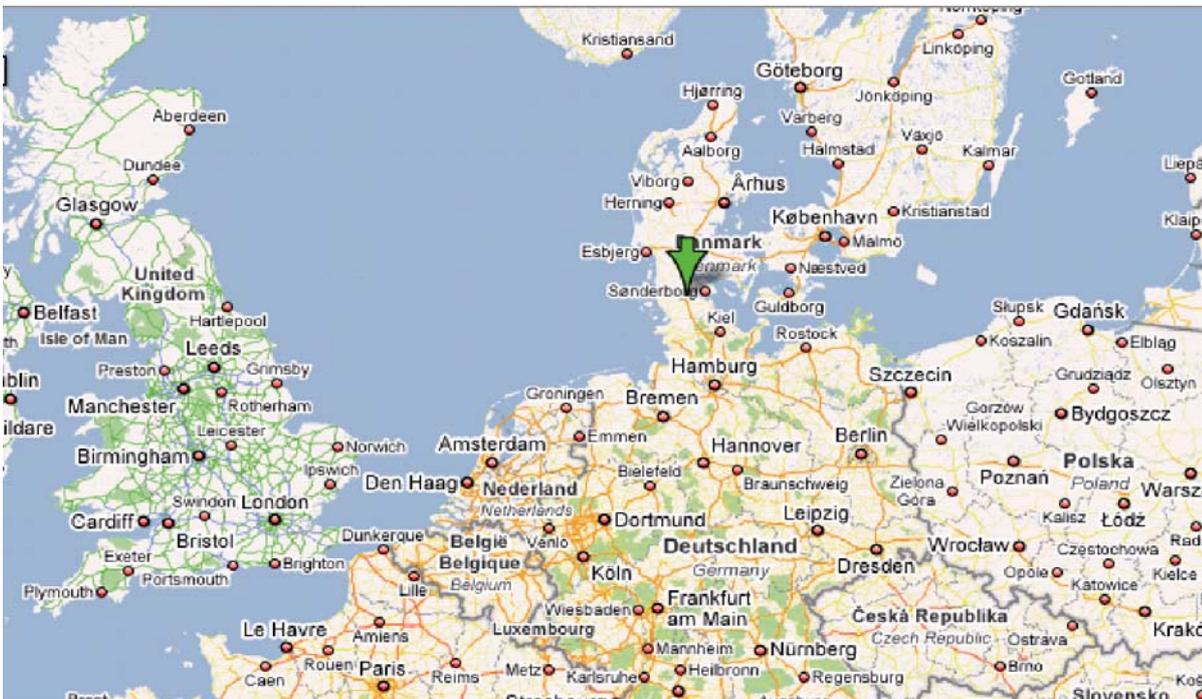
In 1919, Padborg was a calm German village called 'Pattburg' with a small railway station. In 1920, the Danish-German border was placed here after a referendum and life almost changed overnight. As a border town on the north-south railway line, Padborg became a very important transport hub, and the place was suddenly becoming very active, with several administrative bodies such as customs authorities, police and postal services setting up offices, in addition to an increased number of railway workers living in the town. In order to deal directly with the customs authorities and handle the paperwork, the first transport companies emerged, of which Andreas Andresen, who founded the biggest of the Padborg logistics companies, was one of the first. As early as 1930, some 1,000 people were living in the Padborg community.

After the Second World War, Padborg developed into the main hub for transporting Danish food products, including fish and livestock, to the rest of Europe. The Padborg hub was the main terminal for consolidating freight transport between Denmark and the rest of Europe. The Danish national railway company, *Danske Statsbaner* (DSB), was still the largest

company in Padborg with almost 250 employees in the mid 1950s. At that time, most handling of goods was done manually.

In 1973, Denmark became a member of the European Union and its EU membership accelerated the development of Danish imports and exports. As a result, the amount of freight transport out of Padborg increased. For instance, in 1972, some 7.2 million tonnes of goods were exported from or imported into Denmark; in 1980, this amount increased to 9.6 million tonnes and in 1992 to 16.9 million tonnes. Of these goods, the railways handled three million tonnes in 1972 and 2.5 million tonnes in 1992, which shows that trucks quickly became more important for the transportation of goods than railways. The new technologies were more reliable and flexible, with trucks, trailers and warehouses becoming larger, more efficient and modern; in other words, containers and faxes allowed for faster, more efficient and standardised forms of transportation. An example in this regard is the emergence of air cooler trucks which replaced the use of ice to keep perishable goods fresh during transport. The importance of the railways as a means of freight transport in Padborg was declining, and the E45 motorway across the Danish-German border opened in 1974 (Figure 2).

Figure 2: Location of Padborg at the Danish-German border next to the European motorway E45



Source: Google maps

### Industrial restructuring

The Schengen Agreement, along with the establishment of the Single European Market, have gradually removed border controls and introduced the free movement of persons, goods and capital across the EU. Since then, a number of Danish export and import companies have been through a process of restructuring into large companies and outsourcing production to eastern European countries or Asia. Danish companies are increasingly part of an international network with customers all over the world.

The restructuring of industry processes has also forced transport and logistics companies to restructure to remain in business – like their customers, the transport and logistics sector has gone through a process of companies consolidating into larger establishments and outsourcing of drivers and trucks to Germany and eastern Europe.

Against this background, Padborg has become an international transportation hub, as its companies have established alliances with foreign transport companies. Moreover, Danish transport companies have set up offices abroad and international companies have established subsidiaries in Padborg.

### Characteristics of road transport cluster

The industry organisation, International Transport Denmark (ITD), which is located in Padborg, monitors the freight traffic between Denmark and the EU, by counting northbound trucks and trailers at the border. ITD statistics reveal a busy border in terms of road freight transport, as well as the international character of the businesses. In the third quarter of 2002, some 2,676 trucks a day crossed the border travelling northbound, while, in the third quarter of 2007, this number amounted to 3,230 trucks a day; 24.7% of these were from Denmark, 48% from Germany, 16% from eastern European countries, 6.4% from the Netherlands, 0.9% from the other Scandinavian countries – Finland, Norway and Sweden – and 4.1% from other countries. The proportion of Danish trucks crossing the border is declining, while that of eastern European countries is increasing.

By 2007, Padborg has developed into the largest transportation hub in Denmark, measured by both volume and value of goods (Table 1). Padborg is the largest transport centre for foods in north and central Europe. In fact, 25% of the Danish cooling capacity is located in Padborg, and both Danish and foreign trucks make a stopover on their way between the Scandinavian countries and continental Europe.

Table 1: *General statistics on Padborg transport cluster*

<b>Total area of transport and logistics centre</b>	5 km <sup>2</sup>
<b>Number of companies in transport, logistics and terminal activities</b>	150
<b>Number of service companies for trucks, drivers and goods</b>	50
<b>Employees</b>	About 3,000
<b>Company size</b>	15–99 employees
<b>Population of Padborg</b>	About 10,000 people
<b>Daily freight destinations</b>	1,000
<b>Diesel – largest diesel tanking capacity in Europe</b>	190 million litres of diesel a year
<b>Number of trucks</b>	4,500 pass through Padborg daily
<b>Cold store capacity</b>	Over 200,000 m <sup>3</sup>
<b>Warehouse capacity</b>	Over 200,000 m <sup>2</sup>

Source: *Padborg Transport and Logistics Centre, 2007*

### Entrepreneurship – a driving force

What started out as an important railway hub and border post almost 90 years ago has evolved into an important turntable for freight transport by road. Padborg is virtually a town on the move.

The Development Manager of the Institute for Transport Studies (Institut for Transportstudier) in Padborg, Lars Dagnæs, points to the fact that entrepreneurship is one of the driving forces of the town:

*'History has created a hub of know-how and entrepreneurship in Padborg. Buying and selling of companies and exploiting new business opportunities is part of the culture here. It is a culture of entrepreneurship which has not been created by politicians but shaped by the local conditions in Padborg. Entrepreneurship keeps Padborg on the move – companies start up, while others close down, merge or restructure. Even if truck drivers are not directly employed here anymore, new diesel stations, catering businesses or cooling-system services are still being set up. In Denmark, Padborg is included in the list of the top five entrepreneurial cities.'*

## Localisation strategy

Padborg is considered a cluster according to definition – a group of similar things or persons positioned or occurring closely together. It is a major transport and storage hub for transporting goods primarily by road between Denmark, the other Scandinavian countries – Finland, Norway and Sweden – and the rest of Europe.

Depending on the context, Padborg is also considered to be part of other transport clusters, such as that around the city of Hamburg in northern Germany, the south-Denmark cargo centre around Billund Airport, the ports of Esbjerg in southwest Denmark, Vejle and Fredericia in the southeast of the Jutland peninsula, or the transport cluster along the E45 from the Port of Aarhus to Padborg.

In this presentation, Padborg is considered as a transport and logistics cluster in its own right, due to the fact that a great number of companies in Padborg are active in the transport and logistics sector. The services provided by the companies are primarily related to transport and logistics activities (Table 2); as a result, the transport and logistics sector is the largest employer in the area.

Table 2: *Facilities for companies and drivers*

Companies	Drivers
<ul style="list-style-type: none"> <li>• Refrigerating and cold stores with a capacity of more than 200,000 m<sup>3</sup></li> <li>• Over 200,000 m<sup>2</sup> warehouse capacity for dry goods</li> <li>• Terminal for combined freight with a capacity of 60,000 units</li> <li>• Customs declaration</li> <li>• Distance to Ro/Ro (roll on/roll off) port 25 kilometres by motorway</li> <li>• 14 filling stations (largest filling area in Europe)</li> <li>• Vehicle washing</li> <li>• Seven authorised truck dealers</li> <li>• Workshops for trucks, trailers and truck supplies</li> <li>• Tyre centres</li> <li>• Sale and rent of semi-trailers, swap bodies and trailers</li> <li>• Vehicle varnishing</li> <li>• Authorised weighing</li> <li>• Production and repair of trailer tarpaulins</li> <li>• Production and repair of truck signs</li> <li>• Trailer rental</li> <li>• Temporary work agency for drivers</li> <li>• Vehicle electronics</li> <li>• Monitored car park</li> <li>• Upholstery services</li> <li>• Repair and sale of cooling aggregations</li> <li>• Repair and sale of satellite equipment</li> <li>• Dealers of truck supplies and spare parts</li> <li>• Roadworthiness test station for trucks</li> </ul>	<ul style="list-style-type: none"> <li>• Eight cafeterias with over 550 seats</li> <li>• Stores and supermarkets</li> <li>• Drivers' motel</li> <li>• Shower and changing facilities at the filling stations</li> <li>• Access to photocopying, fax and internet</li> <li>• Value-added tax (VAT) refunding</li> <li>• Currency exchange</li> <li>• Coin-operated laundry</li> <li>• Leisure activities</li> </ul>

Source: *Padborg Transport and Logistics Centre, 2007*

### Importance of capacity and know-how

The Padborg transport cluster provides a number of advantages for road transport companies. An information brochure on the Padborg hub, entitled Close to Europe and Scandinavia and published by the Padborg Transport and Logistics Centre, highlights some of the advantages:

- Padborg's transport companies circulate hundreds of trucks all over Europe 24 hours a day, and Padborg offers the largest concentration of warehouse and terminal facilities;
- Padborg has an incredible amount of transport know-how;
- the Padborg Transport and Logistics Centre is situated directly at the European motorway E45, which is the most frequently-used traffic corridor in Scandinavia for all destinations, regardless of whether the goods travel north, south, east or west.

In other words, the availability of capacity, experience and the geographical situation are important reasons for companies to be located in Padborg, as emphasised by the Development Manager, Mr Dagnæs, from the Institute for Transport Studies:

*'Being part of a cluster provides companies with certain advantages, such as access to specialised services and a competent, skilled workforce. Many companies started here for historical reasons – but the huge pool of know-how and competence, as well as of companies specialised in the field, means that many transport companies have an advantage from being located in Padborg.'*

### Competitive market position in a global economy

With increasing internationalisation of European markets and the disappearance of border controls – the latter having brought about the Padborg hub in the first place – it could be expected that the importance of transport and logistics in Padborg will decline in the future. However, this future vision is not shared by people working and living in Padborg. On the contrary, people in Padborg strongly believe that the town will remain a centre for transport and logistics companies in the future. ITD Head of Section, Anders Jessen, stated:

*'Padborg has continued to develop further, even after the disappearance of the Danish-German border controls. Today, international companies are located in Padborg and only a few of the local companies have moved up north. I believe in continued growth in Padborg and that road freight transport will meet the increasing demand for flexible transport of goods. A new cluster secretariat in the region of south Denmark has been set up focusing primarily on competence development and education in the field of transport and logistics. Companies are still located in Padborg while sourcing their drivers or subcontractors in the Czech Republic, Germany, Lithuania and Poland. This is due to the fact that wages and taxes are lower in these countries. Moreover, regulation on the driving and rest times for truck drivers makes Padborg an obvious place to change drivers close to the border, after Danish goods have been loaded on trucks for export.'*

The Chief Executive Officer (CEO) of H.P. Therkelsen (HPT), Mogens Therkelsen, is also optimistic about the future of the Padborg transport cluster:

*'Padborg is a strong transport centre – in fact, one must go all the way to Rouen in northwestern France to find a comparable place with 24-hour services for all, including materiel, storage, warehousing, cooling and facilities for drivers. [...] Padborg's existence results from the development of the town in the past; in the 1940s, leading transport companies were located here. Since then, many competencies and know-how have been gathered in Padborg, with some 3,500 people working in the transport and logistics sector. It is difficult to move these competencies elsewhere, so I expect that Padborg will continue to play an important role in the sector for the next 20 or 30 years. Padborg is well known and part of a global transport network – although its share in terms of globalisation is restricted to Europe.'*

For most companies, the German language is a prerequisite for persons who wish to work in Padborg. For instance, the CEO of the transport and shipping group E3, Per Jørgensen, points to the fact that:

*'Today, the company only employs German drivers, so our employees must speak German. It is difficult, however, to find Danish people with a proficiency in German – the advantage of being in Padborg is that it is easy to recruit German nationals from just across the border.'*

#### **Textbox 1: H.P. Therkelsen's localisation strategy**

The H.P. Therkelsen (HPT) transport company has been in existence for three family generations, going back to its establishment in 1918. HPT transports perishable goods, as well as industry goods, as general cargo, part loads and full loads throughout the whole of Europe. The company offers transport of both temperature-sensitive goods and industry freight.

HPT has evolved from a mere transport company into a company handling the logistics from production planning to delivery all over Europe. Today, its headquarters and terminal facilities are located in Padborg, but the company's 110 drivers and trucks are mainly German. Both German and Danish are the languages used in the company. The development of HPT is a story of location decisions and entrepreneurship.

Source: Website of H.P. Therkelsen and interview with CEO Mogens Therkelsen

HPT's CEO Mogens Therkelsen states:

*'H.P. Therkelsen moved to Padborg when the E45 motorway opened in 1974 to be part of the international freight transport by road. Over the years, the market has changed: we used to mainly export goods and would sometimes have trouble in finding a load to bring back, while the opposite happens today. This is due to the fact that so much production has been outsourced or moved to other parts of the world – a clear sign of a de-industrialisation process in Denmark. We have set up a German transport company which hires the truck drivers. All of the company's drivers are German because of more flexible employment contracts and lower wages. This is our way of outsourcing.'*

Mr Therkelsen adds that HPT has also established a new company department close to the city of Bremen in northern Germany for the following reason:

*'We are in Bremen because a major customer invited us to move with them to Bremen in northern Germany. We moved and the customer stayed with us. As a side effect, we are now getting new customers in Germany, as well as in other European countries. It is all about seizing the opportunities you get.'*

### External relations

External relations in Padborg exist in the form of cooperation between companies within the sector's interest organisation ITD. The latter is mainly a source of useful information for the companies and acts as a lobby organisation, while also taking initiatives to establish formal networking activities between companies. Furthermore, as people working in transport and logistics live in the same geographical area, informal relationships remain among workers who have gone to the same kindergarten, school, scout association, sports club or who have been neighbours on the same road – this situation also contributes to the creation of informal networks across companies in Padborg. The impact of such informal networks is difficult to measure in exact figures, but there is no doubt that they are important in terms of exchanging information.

### Organisational changes

Companies in Padborg have repeatedly sold their businesses or parts of it and bought into each other. Some companies have merged or cooperated with each other, and many of the companies in Padborg are already formally or informally part of large European transport and logistics companies, such as the German-based international transport and logistics groups Kuehne and Nagel or DB Schenker.

Mr Jørgensen of E3 also describes this form of networking with regard to the E3 Gruppen transport company:

*'We drive for many of the other transport companies, including DSV [De Sammensluttede Vognmænd], DB Schenker or Lehman. In that sense, we still work as a classic transport company rather than a modern logistics and freight forwarding company.'*

### Networking

#### **Textbox 2: International Transport Denmark – a professional network organisation**

International Transport Denmark (ITD) is an interest organisation which comprises almost 400 international transport companies as members. ITD is located in the office and conference section of the Padborg transport hub, namely the FDE Centre Padborg – a centre for transport and logistics knowledge. The member companies have between them about 6,500 trucks and 10,000 employees in the sector. ITD is a member of the International Road Transport Union (IRU) and the inter-professional organisation for temperature-controlled transport and logistics, Transfrigoroute International. Mr Therkelsen of HPT is currently Chair of ITD.

Source: ITD website and interview with Deputy Director Poul Bruun

The Chair of ITD, Mogens Therkelsen, who is also CEO of HPT, describes the organisation's role as follows:

*'We and other transport companies in Padborg use ITD as a source of information about new legislation, taxes, information technologies (IT), software or new hardware for the trucks. Many companies get assistance from ITD for booking or insurance offers. Companies are also getting better at working together – the culture here is very individualistic but ITD runs a number of networks among transport operators on transport of livestock, container transport and so forth.'*

One of the owners of the Dansk Transport Kompagni (DTK), Susanne Provstgaard, who is the company's administrative and IT assistant, also points to an increasing cooperation among companies today:

*'Companies used to be very individualistic, but today many of the transport companies are more open about their business and cooperate more closely. Despite competition, we are able to work as colleagues in many cases – and families know each other from private life, so both formal and informal networks are at play here. External challenges, such as the price of diesel or regulation of working conditions, can also make us work together. I take an active part in formal networks run by ITD.'*

## Experience and innovation

Transport companies in Padborg have to use new truck and trailer technologies to stay in business. The business framework is changing continuously, and especially new information and communication technologies (ICT) are applied to handle advanced transport logistics, including keeping track of loads, trucks, drivers and the respect of rest and driving times to deliver goods just-in-time in very narrow timeslots. In this regard, ITD represents one important source of information, along with the suppliers of the technology that are actively canvassing transport companies. Some of the transport and logistics companies have their own development departments. HPT, E3 Gruppen and DTK all mention that customers are important drivers of innovation.

### **Textbox 3: E3 Spedition-Transport AS – Surviving globalisation effects through change**

At the turn of the century, E3 felt the impact of globalisation when many customers moved their production away from Denmark and, at the same time, an important client in the retail trade sector expanded its operations to Germany. As a result, E3's market disappeared very quickly in Denmark. Today, E3 has transformed itself into a German company with Danish ownership: all of the company's drivers are German; it has offices in Hamburg, Zarrentin, Homberg and Neuenberg in Germany, Contern in Luxembourg and Warsaw in Poland; moreover, the company language is German. Nonetheless, E3 is still domiciled in Padborg in Denmark. At present, the E3 Group has at its disposal over 143 hauling units as well as chartered equipment. The E3 Group employs about 240 people and transports a volume of 400–500 full loads on a daily basis.

The story of E3 includes surviving the effects of globalisation by redefining the business and following the client markets.

Source: Website of E3 and interview with CEO Per Jørgensen

E3's CEO Mr Jørgensen emphasises today's different business strategy to offset any negative effects of globalisation:

*'We used to have about 50% Danish trucks – today we do not have any. In this sense, we have become a German company with headquarters in Padborg. It is very difficult to move people and know-how away from Padborg. In Padborg, however, we have increased our workforce from 25 to 50 staff.'*

On the other hand, it could be assumed that E3 has become a global company in Germany, according to Mr Jørgensen's comment on the type and volume of goods transported:

*'80% of what we transport is not produced in Germany – it is imported goods from China and the East.'*

One important business innovation is the shift from being a transport company to being a logistics company. HPT has been through that transition process, as Mr Therkelsen explains:

*'HP Therkelsen is part of a team which is planning the production, storage and transportation for a large bakery – we could not fulfil this task without strong competencies in IT and communication. We have a development department with three IT experts and the solutions which they provide in one area often turn out to be useful for other customers as well. This is a sound business. You have to be creative and think in new ways. At the moment, we are considering setting up evening and night teams in the company's administration, in order to utilise our capacities as fully as possible.'*

#### **Textbox 4: Institute for Transport Studies – a research institution in the cluster**

The Institute for Transport Studies (*Institut for Transportstudier*) is an independent foundation and carries out sector research in logistics and freight transport. Its primary business focus comprises the analysis and optimisation of freight transport chains, as well as the investigation and description of the development, requirements and options in the transport sector. The institute was established in 1989 at the initiative of public and private bodies. It is located in the same building as ITD, which ensures a close connection to both transport and logistics organisations and companies in Padborg.

A key part of the institute's strategy is to create networks with institutions inside and outside of Denmark to expand the pool of competencies. The Institute for Transport Studies and the University of southern Denmark have established a Centre for Applied Logistics and Transport (CALT) research. The objective of the centre is to carry out user-oriented research and communication in the field of logistics, distribution and transport (for further information, see the centre's website at <http://www.calt.dk>). The Nordic Transport political network is also part of this network, as well as other regional institutions, such as the Padborg International Transport Centre (<http://www.pit-stop.dk>), the department of procurement, traffic and logistics of the University of Applied Sciences in Flensburg (Fachhochschule (FH) Flensburg, <http://www.wi.fh-flensburg.de/bwl/krieger/>) and the Danish Academy of Transport (<http://www.transportakademi.dk>).

Source: Website of the Institute for Transport Studies and interview with Development Manager Lars Dagnæs

### Use of information and communication technologies

ICT are used throughout the transport and logistics companies in all business areas, including:

- track and trace systems;
- onboard computers in the driver's cabin;
- online measures of driving time, fuel consumption and cooling temperatures;
- logistics planning systems;
- administrative and accounting systems;
- internet and email.

The freight forwarders can pull up an online map on their computer screens, which shows in real time the position and activity of each vehicle in the fleet.

Mr Therkelsen of HPT explains:

*'The use of new technology is part of being an attractive company. Employees expect to be working with new technology; this holds true for most areas of the company, such as administration, freight forwarding, warehousing and onboard the trucks. Our systems allow us to follow all of our trucks and get a quick overview of the geographical position of our trailers, driving time and expected time of arrival – we can communicate directly through email or phone with the truck drivers. We have had this system for the past six years, and we are developing new systems based on general packet radio service (GPRS) to offer us this information online. In particular cases, we can even allow customers to access part of the system over the internet. New information technology is not restricted to certain parts of the company – it is everywhere.'*

Ms Provstgaard of DTK also underlines the importance of ICT in the work organisation of the company:

*'We use IT to get a better overview. Plans are changed several times every day and it is important for us to follow these changes. We have to fit loads, trucks, drivers, as well as driving and rest times into the planning. The technology is in every part of the value chain and optimisations are important. All our trucks have a computer screen to manage diesel consumption, rest periods and effectively communicate between the trucks, office and drivers. The drivers have to use the onboard computer. The advantage of IT technology is that it reduces the vulnerability of the company – if someone leaves the company, the knowledge of this person is saved in the company's IT systems.'*

### Profile of the workforce

Padborg is a location for forwarding and storing freight, and has a great number of warehouses. The Padborg hub thus offers work for freight forwarders, administrators and skilled and non-skilled workers. Few academics are employed in Padborg, but this may change in the future. The workforce is increasingly international in its composition, with a high proportion of Danish and German nationals.

ITD's Deputy Director, Poul Bruun, outlines the profile of the cluster's workforce as follows:

- truck drivers are mostly German;
- the majority of logistics and forwarding people are trained on the job, some of whom do not have any formal education;
- a great number of both non-skilled and skilled labourers work in storage and warehouses;
- people skilled in IT software development work in Padborg to support the transport and logistics companies;
- workers in transport services, such as at diesel or tyre service stations, or in catering;
- educational tutors;
- advice and business services are provided by accountants or solicitors who are experts in the transport sector.

### Need for training

The policies of human resource (HR) management, as well as the demand for skills and tradition of training, vary among the individual companies in the Padborg cluster. The practice of cooperating with training centres varies from company to company.

One important research on the significance of training in the transport business was carried out among Danish hauliers and logistics companies in south Denmark in 2000. The research, entitled *The competent transport firm*, revealed that many companies do not clearly recognise a link between competencies and competition (Institut for Transportstudier, 2000). This may still hold true for many transport and logistics companies in the Padborg cluster. Furthermore, companies acknowledge that their provisions for improving workers' qualifications and skills are rather limited – only about 20% of Padborg's companies have a written education and training policy.

Nonetheless, Mr Jessen of ITD emphasises:

*'The demand for education and skills is increasing. At the same time, we have a lack of transport education. The existing education is not well integrated with the needs of the transport and logistics sector and it is not well integrated with the educational system. ITD works with educational institutions, schools and companies in the region to improve the situation. Educational centres do offer education and training for German employees working in Denmark, because such facilities are lacking in Germany and waiting lists are long.'*

#### **Textbox 5: DTK's international workforce and human resource management**

The Dansk Transport Kompagni A/S (DTK) was established in Padborg in 1991. DTK transports all forms of industry goods and specialises in flowers and high-value goods. The company's markets are Austria, the Benelux countries – notably Belgium and the Netherlands – Germany, Italy and Switzerland. As in other transport companies in Padborg, DTK's drivers and trucks are German, while the parent company is still located in Padborg. DTK has tried new ways in human resource (HR) management.

Source: DTK's Danish and German websites and interview with one of the owners of DTK, Susanne Provstgaard

According to Ms Provstgaard of DTK, it is not unusual anymore for a woman to work in the transport and logistics sector, given the gender distribution of staff in administration or freight forwarding companies. For example, in DTK, three out of 38 drivers are women. Ms Provstgaard points to the fact that:

*'The increased proportion of women in the sector has led to new demands among employees. Freight forwarders used to work until late every night – this is not the case anymore. They also wish to be with their families. On the other hand, the work intensity has increased due to new technologies. For instance, it is so high that, on an experimental basis, we virtually closed the phone lines between 12.00 and 13.00 for a certain period to give us some time – and it was a success. Customers accepted the idea and were positive about it.'*

As DTK employs German drivers across the entire country, this poses a particular challenge in terms of communication; according to Ms Provstgaard:

*'We do not have meetings with all employees at one time, but we keep in contact with the drivers via email. Information is important. Most drivers come to Padborg once or twice every week; I try to keep in touch with them and do some small talk, so I know what is going on. Most drivers are on fixed employment contracts and we conduct individual wage negotiations with the German drivers.'*

Finally, Ms Provstgaard underlines the necessity of employing people with substantial academic education:

*'At the moment, we have an employee with a master's degree in business economics. The main goal is to find new business ideas for the company, by combining theoretical knowledge with real working life.'*

### **Basic qualifications**

The research on The competent transport firm concluded that all transport workers currently need four qualifications in three to five years, regardless of the function they have (Institut for Transportstudier, 2000). These qualifications relate to:

- customer service – customer knowledge or the ability to understand the customer;
- IT applications;
- quality management and quality control;
- foreign language skills.

Submanagers, forwarders and warehouse workers need qualifications in logistics, while administrative and managerial staff require skills in economics.

### Higher education

Regarding the employment of higher qualified workers in the sector, Mr Dagnæs of the Institute for Transport Studies sketches a possible future outlook:

*'The key competencies here in Padborg are trade, understanding the logistics business and readiness for change. The demand for education is very important: today, we employ skilled workers, but especially the larger companies will increasingly be hiring academics in IT, human resources, process management and innovation. In the near future, more and larger companies will emerge in the sector. Attracting academics might also increase the flow of workers from one transport and logistics company to another.'*

### Managers

Managers in the sector need to be qualified in the following areas: finance; customer services and knowledge; language skills; quality management; knowledge of driving and rest time regulations; marketing and sales; business development and innovation; as well as IT and logistics. In the future, project management and analytical skills will be in demand to plan and run larger operations in bigger companies for larger customers. Communication skills and HR competencies are already important requirements for managers, in order to deal with employees who are from different cultural backgrounds, speak different languages and are scattered all over Europe.

### Drivers

The required key competencies of drivers include driving skills, knowledge of driving and rest time regulations and customer service, as well as foreign language skills, computer skills and quality control (Dagnæs, 2000).

No Danish nationals are employed as truck drivers in Padborg anymore, according to the Institute for Transport Studies:

*'None of the companies in Padborg are hiring Danish drivers anymore – only German drivers. Wage and control of driving and rest times are the main reason for this development. In addition, the share of Danish trucks has halved since 2002, while the proportion of German trucks has doubled over the same period.'*

E3's CEO, Mr Jørgensen, confirms this development and adds that many of the truck drivers are in fact subcontractors:

*'We have hundreds of Polish subcontractors – but Polish drivers are not much cheaper than German drivers. Today, we cover about 60% of the company's drivers ourselves and about 40% are subcontracted drivers. It used to be the other way round, so the trend is positive.'*

In Denmark, wages are negotiated at central level by the respective employer and worker organisations. In Germany, wage bargaining is done individually with the drivers and standard employment contracts are signed.

Even if drivers come from Germany and Poland, some transport companies recognise the necessity of training, as highlighted by Mr Jørgensen:

*'We used to spend 10 minutes on training a new driver: "This is the truck, this is the route, and here is a mobile phone and have a nice trip." Today, we spend a day introducing drivers to their new job, since they have to be able to do a lot more than just driving a truck. We have a welcome package for drivers, introducing them to the expectations and demands of the company. We want our drivers to make a positive difference, and on some weekends we have organised training courses in environmentally-friendly driving or driving in icy conditions – in the future, courses in dealing with customers might become part of it.'*

Drivers also require some formal skills; for instance, Mr Therkelsen of HPT explains how the company cooperates with training institutions in Denmark and Germany:

*'Continued education and vocational training is necessary for all employees. Employees participate in one or two courses every year. We cooperate with the Centre for Transport Training and Education (Transportuddannelsescenteret) in Vejle in southeast Jutland in Denmark – we often require our drivers to train in a driving simulator. The simulator works in German, which is a necessary language skill for our drivers. Furthermore, we cooperate with the Chamber of Industry and Commerce (IHK) in Flensburg in northern Germany, which issues certificates for drivers transporting hazardous goods.'*

All 110 drivers at HPT are German nationals because of the possibility to negotiate individual and more flexible employment contracts.

### Forwarders and logistics people

Forwarders and professionals in logistics constitute an important occupational category of workers in Padborg. Traditionally, workers in these occupations are aged between 20 and 40 years and work long hours. The key competencies required for these workers include customer services, knowledge of driving and rest time regulations, IT, foreign languages, logistics, marketing and quality control (Dagnæs, 2000).

According to Mr Jørgensen of E3:

*'Many of the logistics people are non-skilled sales personnel. They are very good at spotting a transport demand and new customers. About 70% of our customers contact us directly, while we have to find 30% ourselves. This is why it is important to have committed employees. We train the people working in our offices ourselves – a formal education is not really important, because we are not doing anything difficult. We can give them the knowledge they need – but we have considered developing a training programme.'*

### Future challenges

There are several challenges for the future development of the transport sector and the cluster of transport and logistics companies in Padborg. The main question relates to whether the transport hub will still exist in Padborg in 10, 20 or 30 years. There are compelling reasons to anticipate the continuation of the cluster, such as the following:

- there is solid know-how vested in the 3,000 people working in Padborg – a function like Padborg will also be needed in the future and, for historic reasons, it will most probably remain in Padborg as people do not move easily;
- thriving entrepreneurship – a great number of entrepreneurs are in Padborg, inventing and reinventing the transport business, while also setting up new companies;
- road transport will continue to dominate in the future, and growth in this area will ensure a continued demand.

However, a number of challenges facing the transport and logistics sector, as well as the Padborg cluster, have been identified. These challenges are outlined in the following paragraphs.

### Competencies and competitiveness

The structure of the transport market has clearly shifted from moving goods from A to B to a new market based on the following characteristics: customer orientation, innovation, punctuality, reliability, higher frequency, flexibility, and worldwide logistics services and solutions based on know-how and the use of IT (Dagnæs, 2000). These developments

surely represent a challenge for the cluster, industry and education sector to develop and determine new core competencies for the sector's workers. This is due to the fact that the employees' competencies make up a significant part of a company's competitiveness. Findings by the Institute for Transport Studies show that, in many cases, Danish hauliers and forwarding agents have not recognised the importance of training their employees as a means of increasing workers' competencies and, consequently, improving the company's competitiveness. In compiling this cluster study, the authors have met company representatives who clearly understand the positive impact of training and also with those who do not.

### Use of new technologies

It is paramount to be a lead user of new technologies, as underlined by Mr Therkelsen of HPT:

*'Just as in the Tour de France, it is important to stay in the "yellow jersey" and lead the way in the use of new technologies. Only by using new technologies, we can remain an attractive employer for new employees and deliver the right solutions to our customers.'*

### Customer orientation

The Padborg cluster has survived and thrived by constantly adjusting its transport and logistics services to its customers' needs. For Padborg to remain a major transport and logistics hub in the future, this flexibility and adaptability has to continue. For example, Mr Therkelsen of HPT proceeds as follows in this regard:

*'We must understand our customers. Before a visit to a client, I often ask the key account manager to explain his or hers thoughts on the client – how would he or she challenge the existing transport solutions to offer something better?'*

### Road congestion

A common belief exists in Padborg that road freight transport will continue to grow in the future. Mr Jørgensen from E3 points out that:

*'In reality there is no alternative to road transport right now. Freight transport on railways will not happen in the next 20–30 years. The railway infrastructure is old and, in Padborg, the industry railway tracks have just been removed. We have tried a combination of rail and road transport – but very often, it is too costly, too slow, takes too much storage and the risk of damage to the goods is also higher. A few times, we had sea transport from Poland to Denmark.'*

However, congestion on the roads will be a major issue in the future. Nevertheless, the organisations and transporters in Padborg do not believe that sea or rail transport will be the alternative solution in the long term. Poul Bruun of ITD outlines the problems that the sector faces due to road congestion:

*'The growth will continue and road congestion will force us to examine alternative distribution systems. The time window for delivery at the recipient is frequently very narrow and everyone wishes to receive their delivery during rush-hour, between, for example, 08.00 and 10.00. We continue to do this today, but congestion will make this increasingly difficult.'*

### Intercultural communication

As transport companies are growing and their staff working in different countries across Europe, the issue of establishing the workers' commitment to and a clear identity of the company will play an increasingly important role. Communication competencies will be required to exchange effectively information with truck drivers, workers in the warehouses and forwarders in the offices.

## Contact details

### Companies and organisations interviewed

All interviews were carried out in Danish and quotes have been translated into English afterwards.

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