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EUROPEAN CONFERENCE OF MINISTERS OF TRANSPORT

ECONOMIC RESEARCH CENTRE

ROUND TABLE 101

EXPRESS DELIVERY SERVICES

ECONOMIC RESEARCH CENTRE

REPORT OF THE
HUNDRED AND FIRST ROUND TABLE
ON TRANSPORT ECONOMICS

held in Paris on 16th-17th November 1995
on the following topic:

EXPRESS DELIVERY SERVICES

EUROPEAN CONFERENCE OF MINISTERS OF TRANSPORT

THE EUROPEAN CONFERENCE OF MINISTERS OF TRANSPORT (ECMT)

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Roissy, June 1995

1. EXPRESS DELIVERY SERVICES

We consider it important to begin this assessment of express delivery markets and of the economic importance of the business, its processes, inputs and continued growth potential, by defining precisely what we understand by "express delivery" as opposed to conventional carrier services.

The express delivery concept first evolved in the United States towards the end of the 1960s in response to a perceived need in both domestic and international markets, for fast, reliable delivery of time-sensitive or important documents and packages.

Express services were immediately able to fill some of the gaps and make good the shortcomings in traditional systems such as postal, air freight and road delivery services, etc.

To ensure a rapid and reliable delivery service, express operators typically provide world-wide services (a major innovation in the early days) all under the control of one operator. The main services they provide are as follows:

- door-to-door delivery (from point of collection to point of delivery, scheduled or on-demand collections);

- fastest possible delivery:

  - "Overnight" delivery (late afternoon collection, delivery by 10.00 or 12.00 the next morning) for national, continental and intercontinental deliveries -- technical, geographical and administrative constraints permitting -- e.g. for North America, Europe and Europe/USA, or at least between the main business centres in these locations. For the customer, this means that virtually no working time is lost (collections from factories/offices at close of business, deliveries at the start of the working day).

- "Next-day" delivery -- (afternoon delivery) in less populated areas.
- "1 to 2 day" delivery -- for short-haul intercontinental routes USA/Europe, Europe/Middle East, USA/Asia.
- "2 to 4 day" delivery for long-haul routes such as Europe/Asia.

– identification systems (consignment notes, bar codes, etc.) so that consignments can be traced at any point on the delivery chain, using computerised tracking systems and/or fax and telephone communications.

In order to guarantee performance and benefit from economies of scale, the main operators have all opted for "hub and spoke" logistics structures and have set up one or more groupage or sorting centres in each country or continent. All road or rail consignments collected in that country or continent are first routed to these centres where they are sorted on arrival and re-routed the same night to the destination country/continent, for delivery by the operator's distribution networks.

To ensure quality and cost control and to standardize their operating procedures, the major operators have expanded their own logistics capabilities so that they are in control of the entire transport chain:

– distribution transport for collections/deliveries by light goods vehicles;
– heavy transport (planes, lorries) for linehauls to, from or between hubs;
– powerful IT for real-time data processing and auditing performance standards.

Because they provide a "one-stop service", building up their own logistics capacities in order to do so, the main operators (UPS, FEDEX, DHL, TNT) came to be known as integrated operators or "integrators", as opposed to the more traditional companies which frequently offered fragmented services or used a series of subcontractors. Since the integrators use both air and road transport, they do not fit neatly into any one category.

On the United States market, express services, driven by demand, economic growth and expanding international trade, rapidly became a success. In concrete terms, this success has translated into a double-figure growth rate in both volume and turnover for over 20 years, now.

The two main growth sectors of the market are:

- business documents in general, such as contracts, tenders, plans, bills of lading for sea transport;
- parcels weighing less than 30 kg, for practical distribution/delivery reasons, i.e. the ability to use light vehicles (motorcycles, vans) for fast delivery and flexibility.

Now that all the major operators have stepped up their logistics capabilities, they have recently begun to accept parcels weighing more than 30 kg, the core business of the air freight and parcels delivery market.

The success of companies like FEDEX and DHL forced UPS, the biggest delivery service in the United States, to respond. It did so by entering the express market in the early 1980s and taking a large market share.

The expansion of express delivery services has, of course, had a major impact on air freight and traditional delivery services.

In the United States, the largest and oldest market, express freight operators handled 94 per cent of all air freight transported in 1993, equivalent to 78 per cent by value or 51 per cent by weight.

As an illustration of the concentration of the market, the three main companies (FEDEX, UPS and Airborne, in decreasing order of volume) together handled 85 per cent of approximately 1 billion consignments, leaving less than 6 per cent to the United States Post Office in this sector, which generated total revenues in excess of FF 70 billion in 1992. (*Source*: Journal of Commerce/ DAFSA).

2. EXPRESS DELIVERY SERVICES IN EUROPE

Despite the dramatic expansion of the United States domestic and international express delivery markets in the 1970s and 1980s, the transport industry in this sector in Europe remained relatively unresponsive, with the notable exception of the UK, and to a lesser extent the German, market. This gave the large integrators the opportunity to set up operations in Europe, and

take a dominant position on the international market there. It also allowed far-sighted carriers such as JET services and TAT Express in France or SEUR in Spain to set up national express delivery networks.

The unresponsiveness of the industry in Europe can be attributed to a number of factors which made it difficult to set up express services at the time but which have since changed or no longer apply:

- the existence of postal monopolies whose position was staunchly defended by the governments concerned, making entry into the business document sector difficult;
- the sheer volume of national regulations applicable to transport;
- customs barriers within Europe, which made procedures cumbersome and delayed consignments;
- little or no strategic vision of the development of a pan-European market;
- little or no ability to foresee the trends towards faster services controlled by a single operator;
- inability to organise door-to-door services other than through partnership agreements/subcontracting arrangements which were often not reliable enough.

By the mid-1980s, the integrated operators with their global strategic vision and their persistence, had overcome most of the obstacles: i.e. they had achieved deregulation of the postal services and streamlining of customs procedures for express traffic. Meanwhile, they had also secured a dominant position in international services on the main European markets and major or dominant positions on the main national markets (except in France).

Europe reacted in three main ways:

- national postal authorities set up specialist domestic express services and formed a joint body, EMS, to handle international express mail services: some went further and formed alliances with TNT through a jointly held subsidiary (GD Express) to expand their European logistics capacity;
- the major road hauliers set up, bought out or developed nation-wide express networks and signed operating and commercial agreements with their counterparts at international level;
- airlines set up express services (Air France), acquired substantial holdings in integrated operators (Lufthansa in DHL).

After reviewing the main European markets we will attempt to assess their overall economic importance and the main market trends.

2.1. The express delivery market in the United Kingdom

The United Kingdom was certainly the first of the European markets to develop both domestic and international express services. It is one of the most demanding markets as regards quality and is probably the most competitive, besides being one of the largest in terms of both volume and value.

The rapid expansion of the UK market was probably attributable to the fact that the Post Office monopoly on specialist services was dismantled more quickly than in other countries, that the business culture was more receptive to developments in other markets, particularly the US market, and that "just-in-time" production and distribution was introduced in entire sectors of the economy.

The recession in the early 1990s had relatively little impact on market growth in terms of volume at either domestic or international level, but did result in stiffer competition, which forced prices down, particularly for domestic traffic.

Table 1. **The domestic and international express services market in the United Kingdom by volume and value, 1990-94 (million packages and FF billion)**

Year	National		International	
	Volume	Value**	Volume	Value**
1990	476	12.02	16.2	3
1991	494	11.84	17.2	3.28
1992	503	11.58	18.3	3.52
1993	520	11.52	20.0	3.77
1994	543*	11.77**	22.3*	3.94*

* Estimations.
** £1 = FF 8.

Source: MSI.

The domestic market accounts for around 95 per cent of the express delivery market by volume but only 75 per cent by value. This reflects the higher costs of international services and the fact that there is less pressure on prices in this sector. Although the volume of the domestic market grew by roughly 4 per cent per year, revenues fell by 2 per cent in the period shown.

In the same period, the international express market almost doubled its growth rate, with revenues up by 32 per cent. The concentration of operators is high on both the domestic and international markets.

In 1992, the three main operators (Parcelforce -- formerly Royal Mail -- Securicor and TNT Express) handled almost 60 per cent of the total domestic parcels market. (*Sources*: Distribution Business/DAFSA).

In 1993, three integrators, DHL, TNT Express and UPS alone accounted for nearly 55 per cent of the international express market.

The destinations of international traffic remained relatively unchanged, although there was a slight decline in consignments to the United States, and a corresponding increase in those to new markets, i.e. Asia and Eastern Europe.

Table 2. **Traffic by destination (as a percentage of total value)**

	1990	1991	1992	1993	1994
Europe	67	66	66	67	68
USA	21	21	20	18	17
Other	12	13	14	15	15

Source: MSI.

2.2. The express delivery market in Germany

The data available for the German market are not as detailed as those for the United Kingdom market.

First, it should be noted that the conventional distinction between fast and express delivery is less marked in Germany than in other markets, as in the former Federal Republic the largest German domestic delivery operators from the start targeted the next-day, door-to-door delivery market.

The German market is the largest in Europe, worth (national and international) an estimated FF 25 billion in 1992, for a total of some 600 million consignments, not counting parcel post (*Sources*: DAFSA, DHL). Operators are expecting a high growth rate as a result of reunification and the coming down of barriers with Eastern Europe.

On the international market, the main players are German companies, the chief exception being UPS which had been in the FRG since 1976 and, to a lesser extent, TNT.

The four main private operators -- German Parcel Paket Logistik, DPD (*Deutscher Paket Dienst*), UPS and Trans-O-Flex -- handled some 530 million parcels in 1992, in addition to the substantial volume (644 million parcels) handled by the Bundespost (*Source*: DAFSA).

On the international market, worth an estimated FF 5 billion in 1993, with total consignments of 8 million, the Bundespost, operating through the EMS and its joint subsidiary with TNT (GD Express) overtook DHL and UPS, which had previously dominated this market. German firms (Thyssen Haniel air, KNX, etc.) have a small share of the market.

The major German delivery networks (DPD, Trans-O-Flex) are committed to winning a share of the international express market, in Europe at any rate, and are developing their expertise abroad through partnerships, with a view to building up pan-European networks.

Lastly, Lufthansa acquired a large stake (25 per cent) in DHL's non-US business.

With reunification and the opening of new Eastern European markets, all the operators are confident that growth will continue from now to the year 2000 and expect volumes to double.

2.3. The express delivery market in France

Up until the end of the 1980s there was little or no reaction from French delivery firms to the emergence of the express market, for the reasons outlined earlier. This left the field open to the emergence of three types of operators:

- on the international market, the integrators, with DHL in the dominant position, and to some initiatives by far-sighted carriers like Jet Worldwide or CRIE which, although successful, still have only a small market share;
- on the domestic market, express networks set up by far-sighted carriers such as JET Services, TAT Express and Colirail;
- lastly, the French Postal service which, since setting up Chronopost as an affiliate of the EMS network in 1985, has managed to operate on both markets, taking over the lead position in just a few years and consolidating that lead through its recent acquisition of TAT Express. Its express business now exceeds FF 2 billion.

French carriers began to react from the end of the 1980s and successfully set up domestic express delivery networks. First came SERNAM and the SCETA group, with the France Express network, followed by Extand, Grimaud, with Nightexpress, and Dubois.

This response was all the more necessary in that integrators such as UPS and TNT, which wanted to extend their services on the French market, had begun to acquire sizeable companies size such as Prost and Chronoservice.

As elsewhere, the French express delivery market has differentiated itself from conventional carrier services by speeding up delivery (next-morning delivery for domestic traffic and the main economic centres in Europe and the United States), by using computerised tracking systems and, increasingly, by offering guaranteed services.

Despite the recession, the market still has a steady double-figure growth rate (11 to 12 per cent per year from 1991 to 1993), which has been maintained partly at the expense of fast delivery services (24/72 hour delivery).

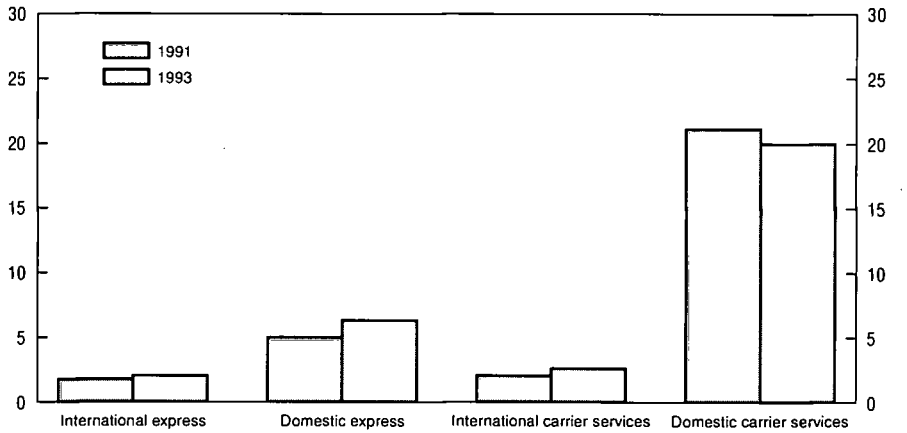
Table 3. **Domestic and international delivery services markets in France (1991-93, in FF billion)**

	1991	1993
Express delivery	6.5	8.1
Fast delivery	23.2	22.5
Total market	29.7	30.6

Source: DAFSA.

When these figures are broken down by market segment, it is seen that the growth of the French express market in general and in international delivery services was at the expense of domestic carrier services.

Figure 1. **Market segment growth**
1991-1993 – In FF billion



Source: DAFSA.

As the figure shows, the annual growth rate of international and domestic express traffic was 11 to 13 per cent while domestic carrier services fell by almost 3 per cent per year.

In France, too, the market is concentrated at both international and domestic levels:

- four operators have cornered almost 80 per cent of the domestic express market, worth an estimated FF 6.2 billion: SERNAM, SCETA/ Calberson, Jet Services and Chronopost;
- in 1993, the four main international express operators (DHL, Federal Express, Chronopost/GD Express and SERNAM) controlled close on 85 per cent of the market, worth an estimated FF 1.9 billion. *Source*: DAFSA.

Information supplied by the international operators suggests that international traffic flows are not far off those reported in the United Kingdom and Germany, i.e. 60 to 65 per cent to European destinations with the remainder to the United States or the rest of the world.

2.4. The express delivery markets in Italy and Spain

As there are only limited data available on these last two large European markets, we have based our assessment on data supplied by operators (DHL, FEDEX) or published by DAFSA.

The Italian express market

While the development of the international express market in Italy has paralleled that of other countries, the domestic market (valued at under FF 3 billion in 1993) has grown less rapidly. Italy's geography goes some way to explaining this: the Italian "boot" does not lend itself to grouping of consignments, and in the industrial north most needs can be met by regional services.

International operators such as DHL or TNT, through the acquisition of Traco, took the lead on the domestic market to which they brought their own specialist expertise.

The estimated value of the international market is over FF 1.5 billion, of which more than half is controlled by DHL, with the rest shared between other integrators operating in Italy.

The Spanish express market

The situation is the reverse in Spain, where growth in the domestic express market has been strong.

The domestic market is still growing strongly; in 1993 it was estimated to be worth more than FF 4 billion, with one Spanish operator SEUR taking almost a 45 per cent share through a franchise chain. Far behind SEUR come two other companies, UPS (after its acquisition of Cuallado) and Jet Services, a subsidiary of France's Jet Worldwide.

Other important players are TNT, since its acquisition of UNITRANSA, the Spanish Post Office, with its "*Los Correos*" service, and the national railways (RENFE).

Despite strong growth, the international market is still much smaller, with an estimated annual turnover of about FF 5 million, of which over 50 per cent is held by DHL: UPS and Jet Services each have a 10 per cent share.

2.5. The express delivery market in Europe

Mid-way between the gigantic, essentially domestic, US market, and the Asian market, which is made up of a number of domestic markets of varying sizes and international traffic, is the European (EEC) express delivery market. This is evolving from the traditional two-tier pattern of domestic/international traffic into a three-tier market of domestic, intra-Community and intercontinental traffic.

The advent of the Single Market, long awaited by the integrated operators, naturally facilitated the development.

However, the removal of customs barriers, which facilitated and speeded up package handling and deliveries, combined with the wide use of powerful logistics capacities (aircraft, vehicles and information technology) have blurred the traditional distinction between conventional carrier services and express services at the domestic and intra-Community levels while at the same time offering a wider range of services to the customer.

With the onset of the recession, competition increased, driving prices downwards to the benefit of the customer.

For some time now, the various players have been developing different strategies in response to the above factors and the substantial costs of developing European networks.

- Almost everywhere the national postal authorities have expanded into domestic express services and have set up the necessary structures and facilities to handle international traffic. Some (France, Germany, the Netherlands, among others) have even formed alliances with TNT, through GD Express, chiefly to manage intra-Community traffic.

- The integrators have opted for service differentiation:

  - In 1992, Federal Express (FEDEX) pulled out of the intra-Community market and, outside the United States market, successfully refocused on intercontinental routes (Europe/ USA/Asia). Its earlier acquisition of the world's leading air freight company, Flying Tigers, now enables it to promote a full range of conventional air freight services alongside its express services. FEDEX aims to cater for customers who need a global express logistics service.

- UPS is continuing to ensure a presence in all niche markets by amalgamating its European acquisitions, such as Prost and Cuallado. It plans to be in a position to offer express or rapid delivery services to all potential customers for domestic, European or international traffic. It aims to offer a full range of services meeting all the needs of the delivery market.
- DHL, the market leader in Europe in the business documents and small parcels sector, is concentrating on developing intra-Community and intercontinental traffic but is not really developing the capacity to handle domestic markets.
- TNT is now handling the international express market mainly through joint-ventures with national postal services and is targeting domestic and European services through its subsidiaries.

National express delivery networks which grew out of conventional carrier services (e.g. DPD, SCETA/Calberson) or which were set up from scratch (such as SEUR and JET services), are seeking to develop international services, chiefly in the intra-Community market, through commercial and operating partnership agreements with companies which have a similar profile to their own and a solid national base from which to build pan-European networks. This is a less costly way of breaking in to the international market and is more financially feasible for companies which have to compete against the integrated operators.

In twenty years, the express market in Europe has grown from almost zero to a turnover of around FF 60 billion as at 1993, counting international as well as domestic traffic. It is thus almost as large as the USA market and far larger than the Asian market, which is worth an estimated FF 20 million. This explains its strategic importance for the integrators and the vast amounts they have invested in it.

The international market accounts for almost 25 per cent of the total turnover: i.e. FF 15 billion of which FF 8 to FF 10 billion are generated by intra-Community traffic.

In the same period, investment to keep up with the expanding market has escalated dramatically. Between the provision of distribution networks almost everywhere, the establishment of air transport hubs (Brussels, Roissy, Cologne, etc.) for international trade, and road transport hubs for domestic traffic, the express market has been responsible for the creation or transfer from the conventional carrier sector of some 100 000 jobs within the European Community.

Almost 50 000 vehicles or 100 cargo planes of all kinds, from Cessnas to Boeing 747s, are employed daily in the provision of express services.

3. OUTLOOK FOR THE EXPRESS DELIVERY MARKET IN EUROPE

Initially, express services handled mainly "time-sensitive" packages whose economic value lay in their timely delivery (e.g. sea transport bills of lading, computer components) rather than in the value of their contents.

More recently, the sheer size of the market has enabled massive deployment of logistics capabilities, creating opportunities for both operators and customers to use the networks in new ways.

Although there is some strategy differentiation, all of the industry professionals are turning to the heavier end of the market. The traditional 30 kg upper weight limit is fast disappearing, or is being increased to 70 kg. Moreover, economies of scale and competition are pushing prices down, especially in domestic and intra-Community markets. These factors are conducive to the shift of large consignments from conventional services to express delivery which has already been observed in some markets.

Some sectors of the economy already use express services extensively and on a regular basis.

The high-tech sector (information technology and aerospace industries) is one sector in which the savings on stockholding costs more than offset the higher costs of express delivery.

Other sectors, such as the mail order and car distribution businesses use express delivery both for financial reasons and to improve their image by ensuring that stock and spares are rapidly available to customers.

Other factors, too, can only contribute to the future growth of the express market:

- Systematic extension of "just-in-time" techniques in major industrial sectors such as the automobile, information technology and pharmaceutical industries, both upstream (production) and downstream (distribution).

- Increasingly compact products (less bulk and weight) in sectors such as the electronic industry, which will improve the cost/benefit ratio of express delivery over conventional carrier services.
- The provision of guaranteed services, offering customers greater reliability.
- The wider range of services offered by integrated operators who provide storage depots and can offer the customer a one-stop express or conventional distribution service nationwide, Europe-wide or worldwide, as the customer requires.
- The opening up of new markets in Eastern Europe: countries such as Poland, Hungary and the Czech Republic, where traditional carriers are no longer in business or are unsuitable or inefficient, offer large scope for growth. The annual growth rate registered for these markets by companies like DHL and TNT, which have been operating there for some time, regularly tops 50 per cent.
- The strong growth in several Asian markets such as China, Singapore and Taiwan.

The above factors, taken in conjunction, prompt industry analysts and professionals to forecast that the express delivery market will double between 1993 and the year 2000, although growth rates in different markets will vary widely.

Table 4. **Annual growth rate from 1993 to 2000**

	1993	2000
Europe	10%	15%
Asia	20%	25%
North America	5%	7%

The start of the 21st century should see a European express market worth in the region of FF 130 billion to FF 150 billion, i.e. double the value of the US market and far outweighing the Asian market.

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DHL, Federal Express.

FRANCE

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SUMMARY

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Noisy-Le-Grand, May 1995

PRELIMINARY COMMENTS

In addition to work by the author, this report is based on two joint research projects which lasted a number of years.

Eurotrans Club carried out the first economic, organisational and exploratory study on express delivery services in Europe by discussing the cases of France, Germany, Italy, the Netherlands and Spain. Its approach differed from that of various consultants who had already produced market surveys and projections on express delivery services in Europe, although Eurotrans did use the same data. The study started by examining the demand for rapid services and went on to consider in turn the structure and organisation of supply, market mechanisms, network development prospects and the place of express services in freight transport as a whole. The results of this study were published as "*La Messagerie express en Europe*" in 1993 by *Presses de l'École Nationale des Ponts et Chaussées* (Paris).

COST Action 314 comes under the programme for scientific and technical co-operation in Europe which is run by the European Commission (Directorate General VII, Transport) but is open to all European countries whether they belong to the European Union or not. This project has built on the Eurotrans Club study by updating the statistics and extending the coverage to more countries -- Finland, France, Ireland, Italy, Netherlands, Slovenia, Spain, Sweden and Switzerland -- and providing information on Greece and the United Kingdom. Its originality lies in that it addresses the policy implications of express delivery services, whether they concern this activity itself or a wider field. The final report of COST Action 314, *Express Delivery Services*, will be issued in 1995.

I should like to express my warmest thanks to all the practitioners, officials and researchers who have contributed to these studies. The author of this report assumes full responsibility for the opinions expressed in it and any mistakes it may contain.

The members of the Eurotrans Club at the time of its comparative study on express delivery services in Europe were as follows:

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INTRODUCTION

Express delivery services are one of the most buoyant sectors of goods transport. The demand for rapid services is developing throughout the economy. On the supply side, new kinds of express systems and services are being set up -- as reflected in technical and organisational innovations and in competition between old and new European and non-European operators -- in an attempt to meet a continually increasing demand. If they are not to appear behind the times, all road hauliers now have to spell out in large letters on their lorries that they provide an express service. Since the introduction of express services, the technical and economic system for the transport of small consignments consisting of mail and parcels has been radically reshaped throughout Europe.

Express delivery services therefore appear as a testing ground for the development of freight, since advanced methods are being devised that will gradually spread to the more conventional market segments. By increasing its traffic, the express delivery industry is contributing to the internationalisation of the economy and particularly to European integration, and the carriers themselves are becoming internationalised. Express delivery services give a very sharp focus to policy issues that may throw light on the problems and challenges confronting the entire transport system.

1. DEFINITIONS

"Express" has become a current term in goods transport. It refers to a type of service in which delivery times along with flexibility and reliability are paramount, taking precedence even over the usual criteria of productivity and cost.

The meaning of express varies from one country and one operator to another. The fact has to be accepted that there is no strict and universally recognised definition of express. It is a relative and shifting concept.

A relative concept in that express is simply a more rapid form of transport operation than the usual type and corresponds to a particular stage in techniques and commercial practices. It is, moreover, on the basis of this view that the European Commission gives the only legal definition of express and excludes it from postal monopolies.

An express service is not, however, the most rapid form of transport possible -- courrier services, which involve the extremely fast transport of a single item; in contrast, an express service is a messenger service grouping a number of consignments.

"Express" is a **shifting** concept in that what is regarded as normal at a particular time becomes outdated a few years later when a new **standard** has been set. Fifteen years ago the French national parcels service usually took about a week to deliver a package. Today 48 hours are a maximum for most destinations, and a firm incapable delivering within this time would be put out of business. Express services have, moreover, contributed to this change since they have pushed up the standards expected of non-express transport.

For the time being, some *de facto* standards have been established which relate the all-important time parameter to the type of consignment (weight and size), the distance involved and the geographical link. The term "express" means that the customer has a guarantee concerning the delivery time, with provisions for compensation in the event that the consignment is not delivered on time. Two categories of items are transported: letters and small parcels with no commercial value (enabling frontiers to be crossed quickly); parcels up to 30 kg (which can be handled manually). Above this level comes freight, which comprises goods requiring heavier handling and transport equipment and which, technically and commercially, is not carried on the same network as express parcels. Express delivery times on local and national transport services are less than 24 hours, the basic formula being the "evening of day A to the morning of day B". In Europe, 24 hours (and sometimes less) is the usual delivery time between major towns, but occasionally more time is needed to make deliveries between areas far from the main infrastructure hubs. Times are generally longer for intercontinental transport. In addition, letters are usually delivered more quickly than heavier and bulkier objects, with more frequent use of air transport and easier or even no customs formalities.

2. DEMAND

In the interaction between supply and demand, the advent of the new service has revealed a latent, hitherto unexpressed, need. Demand for express delivery services forms part of a wider demand for rapid flows originating in the spread of lean manufacturing and distribution methods that keep stocks to a minimum (downstream management system, just-in-time deliveries, etc.).

Although rapid means of transport are mainly used for products such as those with a high specific value or perishables, they are also used by all economic sectors, from the high-tech to the most traditional, at every stage in their production process -- supply, manufacturing, distribution and after-sales services (express services being used in particular for the transport of spare parts) -- not to mention all the transport connected with research, prototypes, machinery maintenance, samples and technical or commercial documents, etc. In the various industries producing small, high value products and in the wholesale trade, parcel services are an effective method of distribution to a widely dispersed market consisting of small enterprises. In tertiary sectors such as banking and advertising, firms use express services intensively for packages and letters.

Despite leaner management by consignors of their shipments and the advent to some extent of alternative services (such as fast parcel services, with slightly longer times but lower prices), not to mention the growing use of the fax, demand for express services is still strong.

The explanation is that express services are not only used by consignors to deal with emergencies or urgent repairs, or to avert stops in production or losses in sales, i.e. as last-minute attempts to make up for manufacturing and distribution delays. They are not limited either to the supply of a costly but reliable service in countries without efficient postal services.

The general trend towards a reduction in fixed assets, just-in-time operations, and the split-up of consignments, results in steady, routine use of express services. For example, they make it possible to supply spare parts (for cars and office and industrial equipment, etc.), thereby guaranteeing a high quality of service, while reducing the range and volume of stocks: total logistical costs are accordingly reduced while the service provided is improved.

- In Italy, the business climate in the transport field is good, particularly for express services. According to express traffic forecasts, Italy has the best growth prospects in Europe, but this can also be seen as an effect of unsatisfactory postal services.
- In the Netherlands, express delivery services have been boosted by the development of new methods of supply management (global sourcing) and stock reduction and the creation of an integrated logistical system. The focus is on flow planning and monitoring, which requires flexible and reliable transport.
- In Spain, and particularly in Catalonia which is the main dispatch market while the Madrid region is the main destination, the sectors which use express delivery services most are equipment, machinery, industrial supplies and spare parts and the graphics, textile and made-up goods sectors, as well as the chemical industry which may have special requirements for the transport of hazardous goods. Dynamic SMEs use such services for their marketing operations.
- In Sweden, consignors use just-in-time production methods, farm out an increasing proportion of their activity, organise sub-contracting on a stable basis by strictly selecting their partners, and centralise their stocks; the intrinsic value of the goods carried is tending to rise.
- In Switzerland, the industrial sector accounts for 56 per cent of demand; the sectors using express services most intensively are banking, the machine tool industry, high-tech industries, insurance companies and chemical firms. The reason for this is not always so much the time factor as the reliability.
- In Greece, the maritime shipping industry uses express delivery intensively for the transport of the official and commercial documents required for international services, particularly those to the United States.
- In France, parcel traffic (ordinary and express services) is taking an increasing share of the transport of manufactured goods (corresponding to Chapter 9 of the goods classification for transport statistics).

The diversity of demand is seen particularly in the transport distances covered: although express services are very closely identified with international services, the heaviest flows are still European national, and even regional, flows. This diversity explains the size of the networks, the density of commercial structures, the predominance of road haulage (unlike activity in the United States where the emphasis is on systematic use of air transport), and the vigorous response by national or even local operators to the efforts of major international companies to set up networks and a world market.

As in the product cycle pattern, express delivery is probably out of its initial launch phase marked by high growth rates and competition based more on the novelty of the service than on prices which were high. It is now in a phase of development, if not of maturity: growth rates are slowing down (more on domestic than on international networks) and competition is bringing down prices. Owing to the decrease in its relative prices, express turnover is rising less quickly than express traffic expressed in the number of shipments, in tonnes or in tonne-kilometres.

In future, the demand for rapid transport will be fuelled by underlying trends whose impact is still being felt: shorter demand/supply response times in all sectors of industry, distribution and services; leaner inventories at all stages of the production and marketing process; globalisation of the economy. Express traffic should therefore continue to grow strongly over the next few years, regardless of cyclical fluctuations.

3. SUPPLY

Various systems are used for handling rapid flows, depending on whether they are concentrated or dispersed, irregular or regular. They range from systems which are fully integrated with an industrial or commercial enterprise, such as the shuttle services which connect a company's various places of business several times a day, to the exclusive use of outside operators whose services are more or less adapted to needs.

Express delivery is a service designed for the grouped transport of a large number of shipments by a wide variety of different customers. The sum of the dispersed or irregular flows in express delivery services results in a lower transport cost than that of an exclusive, special delivery service. But the transport chain consists of a number of links; in the course of the journey, the load is broken up: first, the load is collected and sorted, transported over a long distance (directly or via a relay), broken up and sorted again, and finally delivered.

The major innovation was in the United States, where Federal Express set up in the 1970s an original type of network based on the integration of the entire transport chain (hence the name "integrators" given to this type of operator), the systematic use of air transport (except for terminal road transport), a hub-and-spoke system with a single sorting point at the Memphis hub, computer

tracking of each package and flat-rate pricing (independent of distance). Fedex started competing simultaneously on a number of hitherto separate markets -- the transport of parcels by road, mail and air freight -- and forced the operators on them to reorganise their resources and redefine their services, i.e. to become integrators themselves or be taken over by a more powerful group.

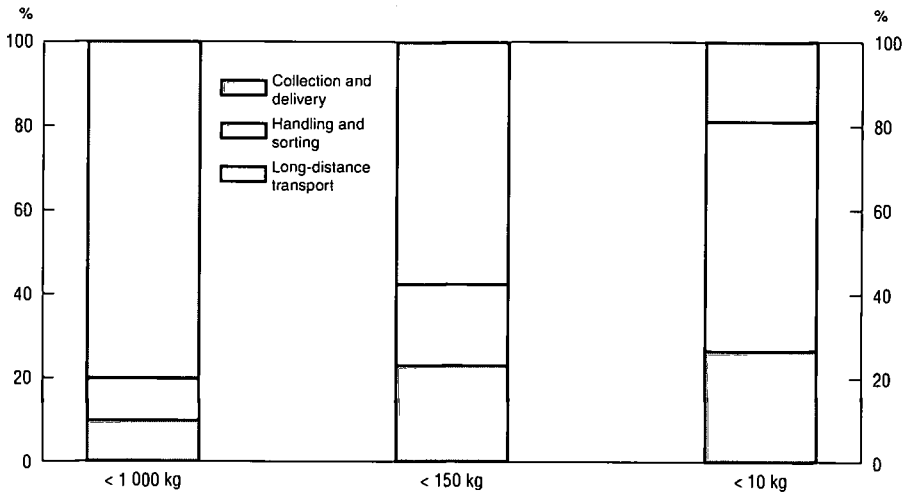
In Europe, a high proportion of traffic is carried by inland transport owing to the distances involved and the fact that the continent is still split up into compartmentalised national markets.

Each of the transport modes now tends to be selected for a specific purpose. For example, the operators who until recently used primarily air transport, as is the practice in the United States, now keep it for the longest routes or for when deadlines are tight, but whenever possible use much less costly modes, mainly road haulage, which, when all operations are included, usually proves to be just as rapid as air transport within Europe. After losing much of its express and ordinary parcel traffic, including that carried by its specialised services and subsidiaries, rail could be put to new uses in conjunction with other modes (combined transport), pending the advent of a high-speed goods train which could play a leading role on some major routes in Western Europe's economic heartland.

Intermodal transport is not only a technical issue, but a matter of co-operation among participants with different traditions, skills, interests and methods of organisation. Co-operation is even difficult between adjacent rail networks despite the necessity of their operating on a wider geographical scale.

The breakdown of parcel service production costs into three main components -- terminal operations (collection and delivery), static operations (handling and sorting) and long-distance transport -- highlights the importance of terminal operations, particularly for small shipments, so that transport distance itself is no longer a relevant factor in pricing, while the more usual concept of cost related to distance, depending on the weight and volume of freight, remains decisive in the case of heavy consignments.

Figure 1. **Breakdown of parcel service costs**



In the case of conventional parcel services, transport proper accounts for only a third of total production costs. This proportion is even lower for mail. Rapid and reliable transport is essential for parcel services but not sufficient to achieve efficiency, which mainly depends on local operations: feeder services, which are increasingly hampered by urban traffic and are subcontracted to local carriers; sorting and handling centres which require investment for mechanisation and automation and contribute to the "industrialisation" of the process.

The same firms cannot be expected to handle the different market segments on an optimum basis. Firms specialising in express focus more on administrative, collection and delivery and sorting costs, while the conventional operators continue to see the actual transport as their main comparative advantage.

Table 1. **Breakdown of available express delivery services by size of consignment**

Market segment	Description	Main participants		
		National	Europe	Inter-continental
Mail and small parcels	Letters and parcels < 5 kg	Post Offices, private and public express delivery operators	Post Offices and integrators	Post Offices and integrators
Express packages and freight	Parcels between 5 and 30 kg, consignments of over 30 kg (packages, pallets)	National parcel carriers and integrators	International road hauliers, forwarders, airlines and integrators	Forwarders, airlines and integrators

- In Finland, the Post Office is developing its parcel and logistical service and operates its market according to three quite different delivery times: "Same Day" (day J), "Blue Line" (day J + 1) and "Green Line" (normal parcel post, day J + 2). Express services (day J) are the domain of three national operators (the Post Office, the bus company Matkahuolto and Finnair's subsidiary Airpak), while conventional parcel services (day J + 1) are still provided by small operators, as well as by the Post Office and Kiitolinja, an association of eight road hauliers. International services are operated by the integrators and the Post Office (EMS).
- Sweden is both far from the economic heart of Europe and a vast and sparsely populated territory. Outlying regions are served by coach companies, and firms trying to enter this market serve only the urban areas. Effective alliances have been formed by operators: Bildspedition and SAS in the case of "Jet Pack"; the Post Office and the railways; ASG and the railways.
- In Greece, the transport system is developing rapidly but has not yet caught up with those in other Community countries -- which are sufficiently distant for all international routes to be served by air -- while

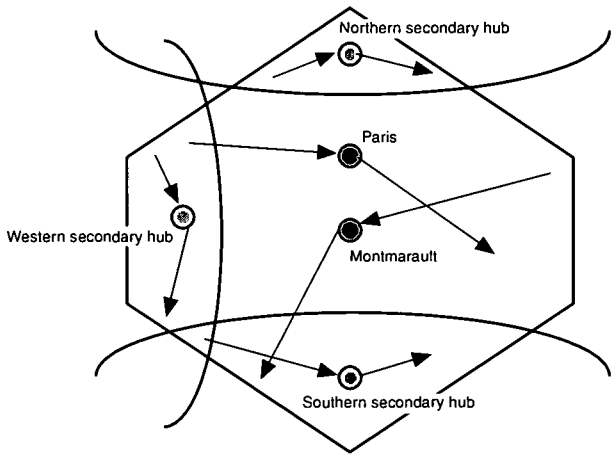
owing to the weakness of rail, all domestic transport is by road, with a normal delivery time of 2 days. Express services are, however, provided between the major towns (day J).

The efforts being made to achieve greater output are tending to reduce the number of network hubs and increase their capacity. But mechanised sorting, which requires some standardisation of the customers' goods or at least their packaging, is reducing the sector's ability to handle diversified flows. Concentrated resources and flexible procedures have to be combined in order to remove certain flows at the right time from the parts of the general processing system which would not be suitable for them, and to re-insert them at the appropriate stage: for example, in the case of car spares, which account for a large volume of express delivery traffic, the most fragile parts are still sorted by hand, although they are loaded onto the same vehicles with the other packages.

The transport network reflects the trade-offs between improved hub productivity and the reduction in the length of the spokes. The trade-off will not be the same for the heavier shipments, which are carried on a grid system, as for very light consignments, for which a single centralised sorting system can be used. Between these two extremes, every network seeks the right compromise in the light of its customers and location.

- For example, SERNAM, the French rail parcel service, operates a hub used entirely for traffic between the Paris region and the provinces. Services between the other regions are mainly via another hub located in the geometric centre of France (the village of Montmarault, in the Allier region). However, the flows within the southern, western and northern parts of the country are routed via secondary hubs in order to reduce transport distances and times.

Figure 2. **Diagram of SERNAM's express network**



Computer systems have been rapidly developed. The network of physical flows is duplicated by the network of information flows which precede the movements of consignments and enable them to be organised and monitored. Information systems (for example Federal Express's COSMOS system) are simultaneously used for managing transport operations (tracking and tracing), commercial relations via electronic data interchange (EDI), and business management, for which they supply statistics and performance indicators. The technical and organisational decisions concerning information systems have not yet been taken everywhere, and will in any case have far-reaching effects: will the systems be open or closed, standardized or specific, accessible to SMEs or only to major firms, will partners come to depend on one another on a more or less lasting basis, etc.? Owing to its implications, standardization is a legitimate area of intervention for the authorities and international bodies.

Lastly, owing to growth in demand but also to the declining market prices for pure transport, many carriers are developing logistical services in addition to transport: storage, packaging, preparation of orders, distribution, installation and maintenance operations and after-sales services, and even the industrial finishing of products, etc. In this case express services may be a means of considerably reducing the range and volume of stocks needed to supply a continental market.

4. THE MARKET

Owing to the lack of precise definitions and the keen competition which encourages firms to be secretive, statistical information on express delivery services is scarce. The turnover for the world market in 1993 can be put at FF 133 billion.

Table 2. **World express market in 1993**

	Turnover (FF billion)	Percentage
North America	71	53
Europe	36	27
Asia-Pacific	20	15
Rest of world	6	4
Total	133	100

Source: Chronopost.

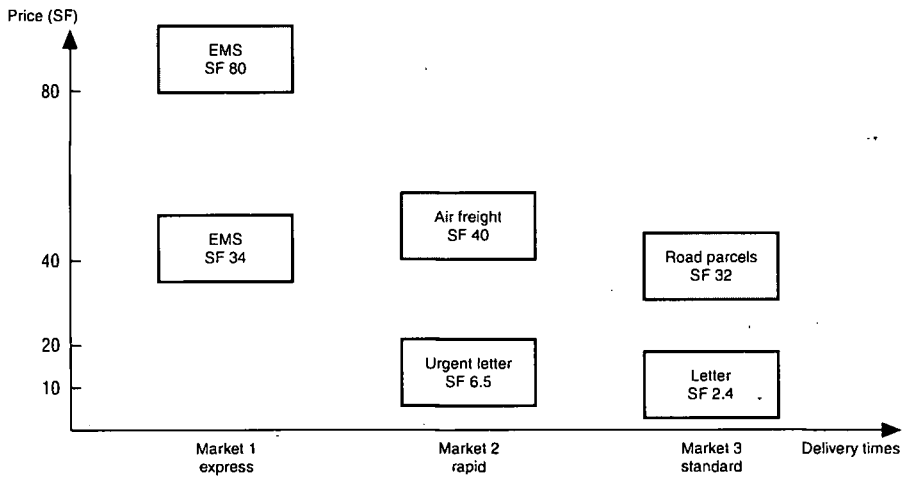
In this table all traffic is related to the departure regions. In each case the greater volume of traffic is intra-regional: 85 per cent of consignments in North America are within this region, as compared with 80 per cent for Europe; the Asia-Pacific region seems to have a larger proportion of outward traffic, with internal traffic accounting for only 60 per cent.

Although the European and, in particular, the Asian markets are expanding rapidly, the US market is still the largest. Express parcel services originated in the United States (where Federal Express was the main innovator, with DHL already specialising in international mail). The front runners on the United States market (Fedex, UPS), DHL and the Australian operator TNT have tried to apply their know-how to other markets and set up intercontinental networks, but their entry into Europe has not lived up to their expectations.

Europe was until recently a configuration of national markets rather than an integrated market. Customs procedures were complicated. A number of European Post Offices provide an inexpensive quality service, unlike the US Federal Post Office. Lastly, European operators had foreseen the arrival of these new competitors and launched preventive strategies which proved quite effective. For example, the French Post Office set up a private subsidiary aimed specifically at this emerging market, and acquired a strong position on it.

Despite general trends that apply from one country to another and growth in international traffic which contributes to the homogeneity of products and transport systems, express parcel services in Europe are still marked by great diversity: the same services are not provided in all European countries, while prices differ considerably. The following diagram shows the breakdown of the Swiss market in 1992 by delivery time and price.

Figure 3. **Breakdown of the market by time and price**



The operators are not the same, and alongside integrators and the more or less integrated Post Office networks, which are present on all fronts, the regional and national market leaders are local operators, whether they specialise exclusively in express services or not, and are greatly influenced by their past, their location and their market, while the international market is mostly cornered by the integrators. This was brought home to the Australian and United States integrators when, initially, they tried to apply exactly the same systems they had developed on their home markets.

These market divisions are in a state of flux. While the most powerful integrator in the world, Fedex, has withdrawn from the intra-European market, others are rather trying to develop their national activity by buying up existing networks (UPS, TNT), while DHL is consolidating its position as leader of the intercontinental mail market. Conversely, some European operators are stepping up their international activity on their own, or through more or less integrated alliances, or even through alliances with integrators. This is the case of five major postal networks (Canada, France, Germany, Netherlands and

Sweden, perhaps soon to be joined by Switzerland) which, while maintaining their arrangements for sending mail between postal systems, have formed a joint venture with TNT: Global Delivery Express Worldwide (GDEW).

- In 1993, turnover on the French market amounted to FF 9 billion, FF 7 billion on the domestic network and FF 2 billion on the international intra- and extra-European network. Three-quarters of domestic market turnover was shared equally among five national operators (Calberson, Chronopost, France Express, Jet Services and SERNAM, each with about 15 per cent of the total), while on the international network Chronopost led the field with 27 per cent of the market, followed by four international integrators: DHL (26 per cent), TNT (14 per cent), UPS (8 per cent) and Fedex (5 per cent). According to Fedex, intra-European operations account for 60 per cent of France's international traffic, and intercontinental operation for only 40 per cent. According to UPS, growth on the French domestic market is about 10 to 12 per cent a year, and according to DHL the figure for the international market is between 12 and 15 per cent (*Source*: Les Echos, 23 February 1995).
- In Switzerland, there was no great pressure at the start of the 1980s for the development of express delivery services owing to the high standard of the postal service. The market was opened up by international traffic. The integrators are mainly located in major towns. The leading operator for international mail is DHL and, following its take-over of XP Parcel, TNT is the front runner in the freight field. In Switzerland, as in other European countries, UPS has a road transport and lower price strategy. One company -- World Courier -- provides a luxury service with each consignment accompanied by a company representative. On the domestic network the Post Office holds the monopoly for parcels of under 5 kg, and the private companies which handle these consignments pay the Post Office SF 1 per package. The Federal Railways are developing their Cargo-Rapid parcels network. The major forwarders, Danzas, Khün & Nagel and Panalpina concentrate on freight.
- In Italy, the railways (FS) are trying to recapture a part of the parcels market, on which they recently lost much ground, by using wagons drawn by passenger trains and two specialised north-south and east-west trains (Omniaexpress). Alitalia has given up door-to-door services but is working with forwarders and developing its Verona Quadrante Europa intermodal hub. The Post Office (60 per cent of its parcels traffic is in Lombardy and Piedmont) is launching new products in order to be able to compete with the integrators (Postacelere).

For the time being express services in Europe are in a transitional phase. The market is not yet unified. It is no longer simply a configuration of diversified national systems connected by a few "bridges". Domestic markets are still much larger than the international market, but growth is higher on the latter. Will the present range of systems be maintained, or will economic integration and the intensive development of intra-European trade flows give rise to a homogeneous European express system?

5. STRATEGIC IMPLICATIONS

For several years express delivery services were seen as an exceptional, expanding and profitable sector in a transport market in which traffic was marking time and prices were declining. This sector was fuelled by many technical and commercial innovations. Today, express services are no longer isolated but form part of **a continuum ranging from conventional parcel services to rapid and express delivery**, with the express service itself varying in speed and extended by special courier services. Express services have played an experimental role, and their innovations are tending to spread to the more routine transport operations.

In some countries, which are easier to serve by road owing to their size, express delivery services have already replaced conventional parcel services. In larger, less compact countries, conventional services have been maintained, but delivery times have been reduced from 8 to 2 days, at the same or lower prices. Between express and conventional services, the "rapid" parcel services which are being maintained or developed are slower than express but comparable in terms of reliability and cost less. The relative and shifting characteristics of express services (which are more rapid than ordinary transport) are therefore becoming more pronounced.

- In France, shippers are choosing increasingly carefully from a range of competing services, thus adding to competitive pressure. Express specialists are confronted with a difficult choice: either they consolidate their specific role by further improving their network and enhancing their supply, or they diversify into "super express" services and, conversely, into rapid parcel services, with the risk of having their own services compete and of jeopardising the technical and pricing consistency of their product range.

Operators are confronted with a number of crucial questions, to which they give different answers, depending on their skills, experience and resources. Is the express market still open to new entrants? What are the technical and financial barriers? Is it already too late for those who have not yet entered the market, and will developments be rather decided among existing operators through mergers?

In such a shifting environment, firms are taking many initiatives and facing up to those of their competitors.

All growth and amalgamation possibilities are being explored: internal growth, sometimes with intermediate stages such as the creation of subsidiaries that are merely agencies; external growth as when a company acquires complementary networks, whether the aim is to acquire market share, extend the network (geographically or in terms of product range), make it denser in order to strengthen the foothold in key areas (horizontal concentration) or to integrate the operations chain more firmly (vertical concentration).

- In the United Kingdom, entries and departures concern enterprises that are among the front runners: Federal Express has withdrawn and DHL is sub-contracting its UK business, while Securicor (which has bought Elan from DHL) and UPS (which has adopted a strategy of controlling national networks in all European countries and has bought out Carryfast), are entering the market, and the Royal Mail's Parcel Force (GPO subsidary) is on the list of enterprises that could be privatised.

Alliances do not only involve carriers. Ties with forwarders are also being strengthened, although their network power base is often limited to customer contacts, marketing, organisation and supervisory activities, while operational activities are systematically sub-contracted (which conflicts with the theoretical concept of integrators who claim they do everything themselves without delegating any operations). Even competitors are forming alliances, in order to share facilities or attenuate competition.

- In the Netherlands, Fedex, Securicor and TNT have a *de facto* alliance in which each company develops its niche without attacking the others' market. Airlines in particular form alliances with forwarders; for example, KLM receives 90 per cent of its freight through forwarders with which it has agreements.

The **network** concept, with all the meanings attached to it, does appear as a central factor. The **internationalisation** of trade requires the use of increasingly vast systems with improved reliability. Following the creation of national networks, it is now the turn of international networks which serve neighbouring countries, all Europe or even wider areas. The network concept, with all the meanings attached to it, does appear as a central factor. The internationalisation of trade requires the use of increasingly vast systems with improved reliability. Following the creation of national networks, it is now the turn of international networks which serve neighbouring countries, all Europe or even wider areas. The largest operators now have "global" networks which -- with a "hub" in the United States, one in Europe and one in South-East Asia (chiefly the Philippines) -- span the three main centres of the Triad of internationalisation of investment, production and trade. These hubs are linked by direct daily flights and are used as groupage and deconsolidation depots for the regions they serve.

Should the operational system include both the commercial and technical sides, or can these two aspects not be dissociated? Should a company operate independently, which requires heavy investment, competent staff and a lengthy organisational phase, or team up with local partners? What degree of **consistency** is required on essential aspects such as **techniques** (to integrate computer systems, connect up transport networks, and use the same kind of packaging and sorting methods) and **management** (covering marketing, commercial policy, corporate identity and rates)?

- The recent development of the DPD German network to include a number of neighbouring countries in Western and Central Europe, the taking of direct responsibility for its international services by the French company Calberson instead of using associates, and the continual effort to achieve operational consistency by the European company Danzas are so many examples of this extensive and intensive approach to achieving an efficient network.

Will the coming years see the emergence of fully-fledged integrators in Europe who will not use the same methods or operate in the same regions as the US and Australian companies?

Is express delivery an exclusive speciality or must it be provided in addition to other kinds and levels of service? Some carriers opt for specialisation or the niche market, or resign themselves to it if they have no alternative. They can at least diversify to a limited extent their basic product, with regard to collection, delivery, payment and other conditions. Other operators diversify their activities to meet a range of needs with the intention of

improving their productivity and commercial efficiency. But the actual technical linkages between specialised networks are limited: letters, parcels and heavy freight are not treated in the same way, with the same personnel and the same facilities, and it is not possible either to mix urgent and less urgent goods, fragile and ordinary goods, etc. Do the latter category of operators benefit from economies of scope? Is their corporate image enhanced or blurred?

Whether to specialise or to diversify is a strategic choice that is not confined to the express services sector alone; it affects other transport sectors as well. Particularly for intercontinental flows, and if they extend their activities into the carriage of larger consignments (packages up to 70 kg or more), integrated services look like providing a radical alternative to the traditional arrangement allying forwarders and airlines. The relationship between forwarders and air freight carriers is one of mutual dependency: forwarders need the resources of the carrier sub-contractors they use, while air freight carriers can hardly market their services directly since this would bring them into competition with their main customers, the forwarders. Conversely, although integrators are themselves forwarders, selling door-to-door transport services, they themselves own the bulk of the transport capacity they use.

Different forms of cross-sectoral alliance are appearing. While some air freight carriers have acquired substantial holdings in integrators (Lufthansa and JAL in DHL), some forwarders are allying themselves with integrators and are sharing the market (reserving freight up to 30 kg for the integrators and heavier freight for the forwarders). TNT, for example, in addition to its joint venture with five major Post Offices, has formed an alliance with Schenker, while UPS has formed a partnership with Kühne & Nagel. Fedex, however, seems to prefer to keep its links with all forwarders on an equal footing and sells available capacity to them, much in the way that air carriers do. Similarly, some forwarders (Panalpina, Danzas) have no special links with any one integrator either. It is still too early to tell whether these arrangements will last or whether one particular formula will prove more efficient or more dynamic than the others.

Lastly, the relationship is also changing between carriers and customers, leading to steadier and more intensive productive co-operation aimed at a good balance between the advantages of standardization (economies of scale) and of differentiation: this partnership sometimes results in the creation of joint, dedicated subsidiaries. While the logistical methods of flow management promote demand for express services, express specialists can in turn extend their service range and include various logistical services before and after transport: storage and stock management, supplies, preparation of orders, packaging and

even finishing of industrial products; the delivery, installation and introduction of equipment and even integrated maintenance. The subcontracting of wider aspects of logistical operations by manufacturers (facility management) may lead to lasting agreements between express operators and their customers, but since it is not easy to go back on such decisions they are more difficult to take.

6. POLICY ISSUES

Apart from being an economic and technical testing ground, express services also serve as an indicator for some crucial transport policy issues. Admittedly labour regulations and working conditions are not such serious issues as in other transport sectors, but those concerning competition, public service, infrastructure management, statistical information and expansion into central and eastern European countries are particularly important.

6.1. A specific transport policy for express services

No country has a specific transport policy for express services. In most countries regulations and action mainly cater for the different types of transport, whereas express is very largely an intermodal activity. Within road transport itself, which is the mode used the most intensively in express services in Europe (unlike the US market, which is based on air transport), carriers mainly operate small vehicles that are subject to less stringent regulations and checks than heavier vehicles.

6.2. Public service

Public enterprises in the transport sector are sometimes included in the privatisation debate. But rail does not play a major role in express services, except, occasionally, for its specialised services or subsidiaries which mainly use road haulage. The privatisation of rail is therefore not the central issue it may be with regard to other types of freight.

However, the status of Post Offices and the rules governing their activity are on the agenda everywhere. Despite a general trend towards market liberalisation, Post Offices have kept a specific role. In a number of European countries, their organisational ability and their capacity for technical

and commercial innovation (as upheld by the principle of "adaptability" in France's public service philosophy) are such that Post Offices can offer a quality service at particularly low prices.

The current debate on the universal service to be defined at European level shows that this concept is still relevant from the viewpoint of social justice, regional cohesion and economic development. In a number of countries Post Offices are no longer public services but public enterprises, some of which have been privatised, at least partly, or exposed to competition from private enterprises that have been deliberately encouraged to enter the market. Within the functions devolving on government, the distinction has become clearer between its role as a regulator and its role as an operator.

The differences between countries with regard to the limits and functions of the postal monopoly are still very great, despite efforts at harmonization. In any case, express delivery services are unaffected by the postal monopoly, and are fully exposed to competition. Express operators are inclined to accuse Post Offices of unfair competition, as they are often suspected of using their public service activities (run as monopolies and with explicit public support) to cross-subsidise competitive activities either directly or indirectly. Transparent accounts produced by all the parties concerned would help to clear up this issue.

6.3. Market liberalisation

There is no regulatory barrier to entry into the express market, as seen in the number of foreign operators in every country. Only the Post Office's public service, which has already been mentioned, is usually run as a monopoly. If it were authorised, liberalisation of the postal market would concern only a few segments which could be made to pay and would not affect those with a chronic deficit (i.e. the profitable sectors would be "creamed off").

The criticism of some postal authorities for using cross-subsidisation practices could also be extended to some international operators, in particular the US integrators, who subsidise their losses on the European market with the profits on their home market.

The real barriers to express market entry are technical and economic. It takes time and money to set up a network, especially in the larger countries which are more difficult to serve, such as France, Spain and Italy.

Trade associations seemed to play only a limited role. They are not even in a position to draw up -- and especially to disseminate -- full, reliable information on their sector although every member company needs it. But the objective of maintaining commercial secrecy outweighs the need for information. At European level, the lobbies are monitoring Community policies, particularly with regard to Post Office activities, and try to take action whenever it is necessary.

The internationalisation of competition is becoming more pronounced. Domestic markets are larger than international markets, but the latter are growing faster. The main divide is between national companies and those capable of extending their network from their own country into neighbouring countries (in a regional approach, as in the Baltic, for example), or to a larger part of Europe or world-wide.

After an intensive phase of mergers and take-overs, the concentration of the sector has recently been marking time. Some operators have systematically taken over other operators and, like UPS, have moved into the lead on a number of national markets. Others have pulled out, such as Fedex which no longer carries intra-European traffic but includes Europe in its world network. The technical and commercial integration of networks encourages financial concentration, but various, gradual forms of co-operation are observed, ranging from the simple interlining agreement between two operators to joint ventures, cross-holdings and actual mergers.

Competition on the technical and commercial sides will still be confronted with the same dilemma: how is it possible to achieve dense coverage of the region served, which is essential for quality of service and productivity, while continually extending the network? Will national markets remain separate to some extent from international markets in the long term, or will the same operators be used on both? Concentration at international level will thus probably continue.

6.4. Environment, safety, energy

Express delivery services are a limited segment of total goods traffic and therefore do not require any particular policy on environmental, safety and energy issues.

Any policies to encourage the transfer of traffic from one mode to another (from road to rail or waterway) cannot apply to any great extent to express services which use the road for reasons of flexibility and time, and in some cases aircraft. More frequent operation of combined rail/road transport or the use of the future high-speed freight train can probably be considered at a future date, but not directly for environmental reasons.

However, the active urban freight management policies in a number of European towns might affect parcel services, and in particular express services, as an attempt is made to limit utility vehicle traffic in central areas. Well-established local operators could be made responsible for delivering the parcels carried by other firms.

Express services are affected by environmental problems owing to aircraft noise at night. Because of the restrictions on movements at Maastricht airport, the companies operating there transferred to Brussels and Cologne which are not so strict. Moving into small specialised airports far from major urban centres is not necessarily a solution because of the distance from markets and the limited range of services that would be provided for users.

As regards transport safety, the time factor probably results in very fast driving on certain motorway links where transport schedules are tighter. Major operators are said to keep more closely to the regulations than their sub-contractors. The transport of dangerous goods is not always satisfactory, especially when they are mixed with ordinary goods without the carrier being aware of the fact.

6.5. Regional development

Regional development might have been confronted with considerable difficulties if express delivery services had been available to only a few major cities while small towns and outlying regions were neglected. This is not the case since most operators try to offer their customers homogeneous coverage of the market, which also applies to quality of service and prices (using a pricing system with an element of cross-subsidy). For technical reasons, major urban centres, which also form the hubs on the parcel service network, benefit at the very most from more rapid services than remote districts. Sometimes full market coverage is based on the very dense network served by the Post Office, which can distribute the consignments transferred to it by other express carriers.

6.6. Central and eastern European countries

It cannot be said that express delivery services are used more in central and eastern European countries than in Western Europe, although for reliability reasons express services may be preferred to the postal network for certain sensitive consignments.

Although its development was until recently extremely limited, the express market has seen spectacular growth since these countries were opened up to trade with Western Europe. But traffic in absolute terms is still small. As neighbours, Germany, Austria and Italy have close ties with these countries, while the recent free trade agreements among the countries in the region are also promoting demand for express parcel services.

There are two reasons why major operators are present on the central and eastern European markets: first, they wish to offer their customers the same services in this region as in the rest of the world; second, they wish to acquire a foothold in the market immediately, even if they have to accept deficits for a few years until traffic develops and becomes profitable.

The smaller firms cannot afford to operate directly. They accordingly seek alliances -- joint ventures or other arrangements -- with local partners who, in turn, are given a means of extending their services to the international network.

For the time being express delivery services are developing in quite a special way in the central and eastern European countries; these countries are on the fringes of the expanding European market and it will be some time before they are fully integrated into it.

6.7. Social issues

Working conditions are generally satisfactory in major firms, but more difficult or even very poor in the small firms acting as sub-contractors for the former and in urban messenger firms (particularly the risks taken by messengers on their two-wheelers since they are paid on a piece-work basis). Rather than introduce regulations which might not be implemented, a possible approach is to try to have a control procedure set up by the operators' representative bodies which would issue a professional standards or quality certificate.

The emphasis on training varies greatly from one country and one company to another. In this respect, express delivery services are hardly any different from other transport sectors.

In time, however, the growing needs of the economy for quality of service and the attempts to improve and harmonize social conditions at European Union level, may help to reverse the trend, if the political will is expressed and an explicit agreement is reached among the social partners (consignors and carriers, employers and employees).

6.8. Information

Available statistical data on express delivery services are invariably very poor. Even those countries which have a good statistical system for measuring traffic can give only a very vague idea of this activity for which the usual accounting units (the tonne, the tonne-kilometre) are not suitable. As for economic and social data, for which firms are necessarily the source, they are considered confidential, particularly with regard to costs and prices, and they are not even available to the bodies representing the sector.

It may be asked whether the express delivery sector, which sees itself as being at the leading edge of freight transport today and refers more than others to free competition, can continue to do without a real information system guaranteeing the minimum transparency which is one of the theoretical requirements for the smooth operation of market mechanisms.

7. CONCLUSION

Compared with other forms of transport, express delivery services are probably not the main concern of transport policies, considering the relative modesty of its traffic if not of its labour force. But it does play its role as an indicator of other more general problems, whether in the case of market regulation, occupational structures, infrastructure planning and use, the external effects with which the advocates of sustainable development are concerned, the seriousness of social problems, the inadequacy of information systems, etc.

Express delivery services are also one instrument for the setting up of a real single market, and preparing it well for access to other parts of the world. Lastly, it gives the possibility of assessing the competitiveness of European firms, their specific methods and their ability to form effective alliances in response to operators from other continents.

The importance attached by freight specialists and, for example, by articles in the trade press to express delivery services, is much greater than its place in transport statistics suggests. This exceptional importance and its exemplary value should not diminish in the future.

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1. INTRODUCTION

Changes in the management of industrial supply chains combined with developments in communications and information systems have stimulated a dramatic growth in express parcels services during the past 15 years. The growth in the market as a whole has been accompanied by changes among the parcels carriers and by changes in the nature of the services themselves. One result of the evolving nature of the parcels sector is that while ten years ago there would probably have been general agreement about the definition of a parcel, the present position is rather less clear. Traditionally a parcel was considered to be an item in a carton weighing up to about 30 kg. The definition has become blurred as carriers have sought to extend the nature of the services they provide by carrying larger consignments. A recent report on the parcels sector (Distribution Business, 1994) referred to the parcels carriers' own definition of a parcel in the following terms:

> *"..a parcel can be anything from an envelope to a 1-tonne pallet. Some of them even handle full truckloads for single customers"*(page 17).

Within the UK market there has been some polarisation between carriers specialising in lighter and heavier packages with, for example, Business Post and Red Star traditionally at the lighter end of the market and United Carriers and Nightfreight at the heavier.

The term express suffers some of the same difficulties in trying to find a uniformly acceptable definition. Express is often taken to mean an item of a time sensitive nature normally requiring delivery within three working days and increasingly requiring delivery the next working day. However the concept of express is relative and is defined by comparison with normal services. Within national markets items collected on the evening of day A will, in many cases, be required to be delivered on the morning of day B (Eurotrans Club, 1992)[i].

The focus of this paper is the UK market for express parcels services. As the previous section explains there is no precise definition of a parcel. Therefore the paper will encompass developments in the movement of consignments that

may be little larger than an envelope through to consignments that are often transported in pallet loads. Although rail is used for parcels movement to a certain extent, the focus of this paper is on road based transport since that forms by far the most important mode for national movements of express parcels within the UK. Parcels are also transported by air within the UK but air transport is really of most significance in the international air express market. A detailed discussion of the international market is outside the scope of this paper, although Section 5.2. highlights some developments in this area.

2. THE UK MARKET FOR PARCELS AND EXPRESS SERVICES

2.1. Market size and trends

Details of market size, market share and trends rely mainly on surveys carried out by market research organisations since official statistics provide little information at the necessary level of detail. Two recent surveys suggest that the domestic UK express parcels market was worth between £1.3-1.4 billion in 1992 rising to just under £1.5 billion in 1994 (Mintel International, 1993; MSI Databrief, 1994).

Overall growth in the market has been evident but the rate of growth has varied considerably from year to year, largely reflecting changes in the performance of the UK economy as a whole. Between 1985 and 1992 the value of parcels deliveries within the UK grew by 68 per cent from £804 million to £1.35 billion while the volume of deliveries increased by 40 per cent from 374 million packages to 525 million packages (Mintel International, 1993).

However, if a shorter period from 1990 to 1994 is considered, then some of the difficulties affecting the market become clear (see Table 1).

Table 1. **The UK market for internal express delivery services, 1990-94 (million packages and £ million)**

Year	Volume	% Change	Value	% Change
1990	476	+4	1 503	+3
1991	494	+4	1 481	-1
1992	503	+2	1 448	-2
1993	520	+3	1 441	neg
1994	543	+4	1 472	+2

Note: 1994 figures are a projection.
Source: MSI Databrief, 1994 (Table 4).

Widespread price discounting would appear to be the underlying cause of the decline in the value of the market in recent years despite the continued growth in volume. It is estimated that up to 80 per cent of businesses use a parcel service on a daily basis and 85 per cent of households order goods via home delivery at some point during the year (Nash, 1993). Despite these levels of demand the sector suffers from excess capacity and further consolidation among companies is likely, even though there is widespread expectation that growth rates of about 5 per cent a year are likely during the next five years.

The domestic market accounted for 96 per cent of the volume of the total UK express parcels market in 1994. However during the same year domestic services represented 75 per cent of the market by value reflecting the higher cost of international services (MSI Databrief, 1994).

Express parcels carriers offer a variety of services, the main ones are:

- Same day delivery;
- guaranteed next day;
- other guaranteed services such as two day or three day delivery;
- premium timed service -- delivery before noon or 9 a.m.;
- non-guaranteed service.

Table 2 shows a simpler division of services between next day, other guaranteed and non-guaranteed together with estimates of the volume of parcels carried.

Table 2. **The UK market for internal express delivery services, by time sensitivity 1990-94**

	1990		1991		1992		1993		1994	
	vol.	%	vol.	%	vol.	%	vol.	%	vol.	%
Next day	181	38	193	39	202	40	218	42	233	43
Other guaranteed	211	44	224	45	236	47	245	47	252	46
Non-guaranteed	84	18	77	16	65	13	57	11	58	11
Total	476	100	494	100	503	100	520	100	543	100

Source: MSI Databrief, 1994.

Growth has been greatest in those services offering a guaranteed next day delivery. This is mainly in response to the need among buyers for certainty in service provision and the greater use of parcels services as part of a systematic logistics approach. But it may also reflect the fact that parcels carriers are simply getting better at providing guaranteed services of a high standard at a low price. In part the carriers are doing this to maintain market share, however it is also the result of improvements in the use of information and communications systems which have enabled carriers to enhance performance and productivity.

The market can also be divided between *ad hoc* delivery and collection (led by Parcelforce wholly owned by the Post Office and therefore in the public sector) and contract services (see Table 3).

Table 3. **The UK market for internal express delivery services, by type of user, 1994 (million packages)**

Description	Volume	% of total
Contract	472	87
Ad hoc	71	13
Total	543	100

Source: MSI Databrief, 1994.

Recent growth trends have been towards longer-term contracts and in some cases, carriers such as Lynx have started to develop work in the form of an integrated express logistics service where they work closely with a manufacturing company very much in the style of contract distribution operations. White Arrow, which in the past received the bulk of its business from a sister company in the Great Universal Stores group, has begun rapid development of its third party services to take advantage of the network built up over many years of operation in the mail order market. Nevertheless, the company focuses on contract rather than *ad hoc* business.

White Arrow also represents another aspect of the parcels and express market, concentrating on home deliveries for large industrial clients. Home delivery services are a potential growth area given the current commercial interest in the opportunities for a new style of home shopping based on the merging of information and communications systems.

2.2. Market structure

There are between 20 and 25 firms offering a nationwide express parcels service with many niche operators specialising in small geographical markets or certain commodities or working with certain types of customer (Distribution Business, 1995 & Distribution, 1994). These niche operators often use the linehaul services of a larger carrier in order to compete on a nationwide basis and it is estimated that they account for between 10 and 20 per cent of the market (see Table 4).

Table 4. **Market shares in the UK market for internal express services, 1990 and 1993 (% by value)**

Company	1990	1993
Parcelforce	30	29
Securicor Omega Express	11	14
TNT Express UK	12	10
Federal Express (*)	7	-
Lynx Express Delivery Network	6	6
Parceline	3	5
ANC	2	4
United Carriers	3	4
Interlink Express Parcels	3	3
Red Star	5	3
UPS	2	2
Tuffnells Parcels Express	2	2
Others	15	18
Total	100	100

(*) Federal Express withdrew from the UK market in April 1992 and their customer base was taken over by Securicor Omega Express.
Source: Based on Metcalfe, 1992 and MSI Databrief, 1994.

From the data contained in Table 4, three leagues of competitors can be identified based on market share:

- League 1 contains Parcelforce, Securicor Omega Express and TNT Express;
- League 2 contains the remainder of the nationwide carriers who have broadly similar market shares;
- League 3 consists of the category 'others' containing the niche and specialist operators.

Although there may be dominant players in the market place, it is important to note the general level of instability. Companies have left the market suddenly and with little warning of their imminent collapse. For example, the long-established company Placketts called in receivers in

Summer 1994 (Forbes and Rowland, 1995). The withdrawal of Federal Express from the UK market in April 1992 demonstrated that even the largest operators can find it difficult to achieve sustained success in the market.

2.3. Competitive forces

The strength of competition in the market for express parcels services is influenced by many factors. Some tend to promote competition while others may help make the market more defensible for the carrier. The power of customers is particularly important in stimulating competition in the market. For a number of reasons buyer power is high in the express delivery business. First, there is a lack of service differentiation between the carriers and this reduces customer loyalty. As many as 30 per cent of business users claim to have stopped using a carrier in the previous year (Nash, 1994). Secondly, many companies are using a parcels carrier as their main mode of distribution and therefore may have large volumes of traffic with which to negotiate low prices. Even customers with smaller volumes of traffic may in fact be able to secure significant discounts. A recent report stated that discounts on parcel deliveries "are now being secured by even the smallest user and in many cases pricing practices defy commercial logic" (Forbes and Rowland, 1995). Thirdly, distribution costs may be an important element of the final product cost and buyers are concerned to reduce or minimise these costs wherever possible (especially during a period when all businesses are responding to pressure on margins).

Barriers to market entry and exit should help to moderate competition within the market. Capital requirements are the main barrier to entry. Establishing a depot network able to offer a nationwide service is very costly. One way to avoid some of the costs may be through franchising (see Section 3.4.). The vehicle acquisition costs are also significant as is the need for major investment in information and communications systems for both internal operations and to provide links with customers.

High fixed costs (in the hubs) and the resulting economies of scale encourage concentration among the service providers. The three leading companies control in excess of 50 per cent of the market (see Table 4 above). Metcalfe (1992) points out that market exit is difficult because of the high costs of redundancy associated with high numbers of staff.

At present there is no real substitute for a parcel service. However, the market is eroded at the heavier end by groupage and part-load services and at the lighter end by courier services. Substitution through electronic communications is only a substitute for document transmission and even here, despite progress in the past five years, there are few signs of a reduction in the volume of letters and documents.

Carriers take these competitive forces as incentives to improve their services and the sector is recognised in general for its efficiency. The attempt to secure loyal contract customers has seen the introduction of dedicated computer terminals for key customers to improve ease and speed of ordering and to assist in any audit trails (examples include DHL's 'Easyship' system and Parceline with 'Laserline'). Despite these attempts to encourage customer loyalty and a less volatile market, there is intense price competition.

2.4. Costs and prices

Carriers generally have one or several standard tariffs which represent a starting point for negotiation and may be the base for small accounts. These tariffs are widely regarded as meaningless since they are so heavily discounted and prices are negotiated on the basis of the volume of business, weight and type of traffic, consolidation of delivery and consignment sizes.

During periods of rapid market growth (1984 to 1988) it appears that the avergage price charged per parcel grew by about 5 per cent a year (Metcalfe, 1992). But when the market has grown more slowly (for instance during a period of economic recession) then it has been impossible for carriers to sustain price increases for parcels movements (see Table 5).

Table 5. **Average Market Prices per Parcel (1990-1994)**

Year	Average Price (£)	% Change
1990	3.16	-
1991	3.00	-5
1992	2.88	-4
1993	2.77	-4
1994	2.71	-2

Source: MSI Databrief, 1994.

Carriers need to maintain the utilisation of vehicles, the hub, and the linehaul network to cover fixed costs and this in turn drives companies to reduce prices in the hope of achieving higher volumes and increased market share.

3. SERVICE SUPPLIERS

The express industry has evolved from the increasing pace of business and the growing need for a fast, reliable delivery service. Companies providing parcels and express services come from a variety of backgrounds with some emerging from among freight forwarding companies, while others have a background in road haulage. Some companies have become integrated carriers, meaning that they can collect a consignment and deliver it to any destination, using various modes of transport often wholly owned or controlled by the integrator. In view of the varied origins of companies in the sector it is useful to explore the main similarities and differences in the way they provide services.

3.1. Operations

Large operators in the market tend to operate in a broadly similar way, with one major central sortation depot and a number of satellite depots throughout the country where small vehicles are based to make the collections and deliveries. The satellite depots arrange the collection and delivery of parcels in their local area. Parcels are collected throughout the day with a peak period during the late afternoon and are then transported in bulk each night to the hub. The transport to the hub is generally performed by large goods vehicles (typically 38 tonne articulated lorries or road trains). At the hub the parcels are sorted and then transported to the appropriate satellite depot for transhipment to smaller vehicles often for delivery the next day. The movement between the depot and the hub is frequently referred to as linehaul or trunking.

The major carriers typically operate 30 or more satellite depots within the UK and many of the sortation hubs are sited in the central part of the UK (the Midlands). An alternative to hub and spoke operation is 'direct trunking' which involves a series of linehaul movements as each depot has to send a vehicle to every other depot. Table 6 indicates the scale of operation of 20 of the largest express parcels carriers in the UK.

Table 6. **Scale of operation of selected parcels carriers in 1994**

Company	Depots	Fleet	Staff	Turnover (£m)	Consign-ments per annum (million)
Amtrak	120	947	230	30	n/a
ANC	76	1 000	2 500	85	13
Business Post	64	900	2 000	42	6
City Link	58	610	1 000	n/a	n/a
Group 4	17	420	900	27	6
Hellman	57	400	n/a	n/a	2
Home/Business Express	32	1 500	2 750	110	60
Interlink	120	890	1 450	58	6
Lynx	34	1 500	3 200	80	10
Nightfreight	42	800	1 400	60	1
Paniclink	100	500	1 000	25	2
Parcelforce	113	9 000	13 000	500	160
Parceline	32	1 000	2 400	81	25
Red Star	218	n/a	650	25	2
Securicor Omega Express	167	4 630	9 000	300	104
TNT Express	155	3 000	4 592	167	n/a
Tuffnells	17	500	1 100	42	7
United carriers	22	1 373	2 800	70	5
UPS	45	1 129	3 376	n/a	n/a
White Arrow	37	2 900	5 000	n/a	110
Total	1 526	32 999	58 348	1 702	518

n/a=figure not available
Source: Based on data from Distribution Business Parcels Survey, 1995.

The trend to hub and spoke operation is very pronounced. Among the major companies within the UK, only Tuffnells still uses inter-depot trunking. A further advantage of centralised sorting is that it is easier to develop sophisticated IT systems to track the packages through these sorting pools which in turn allows audit trails to be generated. Working in and out of a hub has advantages for a franchised operation; usually the linehaul operation is carried out by the parent company, while local collections and deliveries (and sometimes marketing as well) are undertaken by the local operator in each area (see also Section 3.3. below).

Despite the existence of automated sortation hubs, the express parcels industry remains a major employer. Using data for 20 of the largest parcels carriers the level of employment is clear (see Table 6).

3.2. Information technology and communications

Leading operators in the express parcels market have all made heavy investments in IT systems. These systems are commonly referred to as 'track and trace' systems and they use bar-code technology to monitor the progress of a shipment from the point of collection to the point of delivery. On board vehicle equipment allows the satellite depots to keep in touch with the collection and delivery vehicles. The level of sophistication here depends to a large extent on the size of the carrier and their strategy. This can vary from simple mobile phones through to systems providing vehicle location information with the ability to download cargo details automatically once the consignment details have been recorded or captured by the driver.

The essence of many of the information systems is the same. However, the scale of investment required can be seen by considering an example. Parcelforce announced in late 1994 that it was starting work on the second stage of a project that would allow the company to track and trace all the 170 million parcels handled each year (Linsell, 1994). The capital investment required was £7.7 million to enable over 100 depots to be equipped to scan bar-codes on all standard deliveries. The system has been designed to use laser scanning guns linked by radio transmitters to the Parcelforce computer system. Communications developments also include the collection and delivery vehicles and about 1 800 vehicles are equipped with a radio system that allows the driver to scan the bar-code on the consignment document and key in the recipients name to enable Parcelforce to produce proof of delivery within a few minutes of the consignment being handed over.

3.3. Franchise operations

Franchising of services is common in the express and parcels sector in the UK. This reduces the companies direct labour, vehicle acquisition and operating costs as franchisees are responsible for purchasing and running their own vehicles and are self-employed. Franchised operations for collection and delivery are playing an increasingly important role in this sector. Local franchisees are interested in encouraging local growth and this enables the express parcels operator to achieve good geographic coverage without excessive

overheads. The true extent of franchising is hard to measure and terminology can complicate the assessment. For example, Red Star refers to 'agents' and Nightfreight describes its franchisees as a 'federation'. Interworking is also a common feature of the sector, with even large operators interworking packages (i.e. transporting them via other parcels carriers) to obtain coverage of remote destinations at reasonable cost.

Current indications are that franchise operations are growing relatively quickly and the benefits of this type of organisation can be expected to result in a continued expansion in the number of franchised operations. A survey by Triangle Management Services (1993) showed that customer perceptions of service were good for franchise services and that in general companies structured in this way were performing well. The pattern appears to be consistent as the author of the report notes that during the eight years (1985 to 1993) franchise operators consistently ranked higher in terms of value for money and reliability.

Control of franchisee performance is a key element of overall quality assurance. A good example comes from Interlink (a medium sized operator with turnover of £50 million and pre-tax profits of £5 million in the year to June 1993). All parcels collected and delivered by Interlink go through its hub at Hartlebury in the Midlands. All sorting and destination checks are done here by Interlink staff and operations are very tightly controlled. Staff members' mistakes are recorded and kept on charts for analysis by the Operations Director. If anyone makes more than five mistakes out of 6 000 'sorts' during the night they will be notified. The same rigid standards are apparently applied to franchisees, who run 119 out of 120 Interlink depots. The company places great emphasis on the right approach to the work and is more interested in a willingness to learn than in any precious experience. Indeed it seems that previous transport experience can be a barrier to working as a franchisee. (Commercial Motor, 1994).

3.4. Range of services

Dividing the market into next day, other guaranteed and non-guaranteed services provides some insight into the nature of the services provided by carriers. However, the range of services offered by individual companies may be rather different (Table 7 illustrates this point).

Table 7. **Services offered by 20 of the largest UK parcels carriers**

Company name	Same day	By 09.00	By 10.30	By 12.00	Next day	2 day	3 day	No. of services	Max weight (kg) 1993	Max weight (kg) 1994
Amtrak	No	Yes	Yes	Yes	Yes	No	No	4	100	100
ANC	No	Yes	Yes	Yes	Yes	No	Yes	5	1 000	1 000
Business post	Yes	Yes	Yes	Yes	Yes	Yes	Yes	7	30	varies
City Link	Yes	Yes	Yes	Yes	Yes	No	No	5	100	varies
Group4	No	Yes	No	Yes	Yes	No	No	3	25	25
Hellman	No	No	Yes	Yes	Yes	Yes	No	4	n/a	no limit
Home/Business Express	No	No	No	No	Yes	Yes	No	2	none	25
Interlink	No	No	No	No	Yes	Yes	No	2	50	350
Lynx	No	No	Yes	Yes	Yes	Yes	Yes	5	pallet	no limit
Nightfreight	Yes	Yes	No	Yes	Yes	Yes	No	5	1 000	1 000
Paniclink	Yes	Yes	Yes	Yes	Yes	Yes	No	6	50	50
Parcelforce	Yes	No	Yes	Yes	Yes	Yes	Yes	6	30	30
Parceline	No	No	Yes	Yes	Yes	Yes	No	4	250	50
Red Star	Yes	Yes	Yes	No	No	No	No	3	50	no limit
Securicor Omega	Yes	No	Yes	Yes	Yes	Yes	No	5	50	50
TNT Express	Yes	Yes	Yes	Yes	Yes	Yes	No	6	none	no limit
Tuffnells	Yes	No	Yes	Yes	Yes	Yes	Yes	6	none	no limit
United Carriers	No	No	Yes	Yes	Yes	Yes	Yes	5	none	no limit
UPS	No	Yes	Yes	Yes	Yes	No	Yes	5	40	40
White Arrow	No	No	No	No	Yes	Yes	Yes	3	25	25

Source: Based on data from Distribution Business Parcels Surveys, 1994 and 1995.

A number of points can be inferred from Table 7:

- The carriers can be divided into those providing a full service range and those that provide a narrower range of services (usually at either the premium or standard end of the market). The narrow approach applies to:

  - Group 4: three services;
  - Home/Business Express: next day or two day service only;
  - Interlink: next day or two day services only;
  - Red Star: three services only (premium end of market);
  - White Arrow: three services only (standard end of market).

The other 15 carriers all provide at least four alternative services.

- Six of the 19 carriers taking part in both surveys reported a change in the weight of package they are prepared or able to accept:

Increased weight limits:	Business Post City Link Interlink Red Star
Decreased weight limit:	Home/Business Express Parceline

There are other significant differences between the services offered by parcels carriers. For example, White Arrow deals only with large industrial users, mostly on long-term contract and offers no *ad hoc* delivery service. The company is geared very strongly to the home delivery market reflecting its background as the transport division of mail order company Great Universal Stores.

Other differences can be discerned by the weight of parcel carried. United Carriers specialise in the heavier end of the market. Its average consignment weight rose from 54.8 kg in 1989 (already a high figure) to 72.1 kg in 1993 and it is committed to continuing to push up its average weight. The high average weight is reflected in a higher than average revenue per consignment (Distribution Business, 1994).

4. DEMAND SIDE DEVELOPMENTS

The shift towards just-in-time production techniques has led firms to devise distribution systems that typically require the delivery of smaller consignments on a more frequent basis. This has encouraged companies to consider the scope to build parcels style services into their distribution strategies which in turn means a larger market for express parcels.

4.1. Carrier selection criteria

Surveys regularly illustrate that price is a key determinant of carrier selection (see for example Table 8).

Table 8. **Selection criteria for companies using express parcels services**

Selection criteria	
Price	62%
Reliable/guaranteed	58%
Speed	39%
Quality/efficiency	7%
Range of services	5%
Security/insurance	5%
Reputation	5%
Other	8%
Do not know	2%

Notes: Survey based on 365 interviews with UK firms. Respondents could indicate more than one criterion for selection.
Source: Triangle Management Services, 1994.

However, the survey results do support the suggestion that customers also require high levels of service and that a particular importance is attached to guaranteed service standards. Despite the increased use of parcels services as part of a systematic distribution strategy, it may be the case that the method of payment is rather more transparent and direct which in turn makes the price element more obvious than in the case of more complicated services such as contract distribution. In many cases it appears that there are few reasons for customers to remain loyal to one carrier.

4.2. Loyalty and carrier changes

An interesting and detailed insight into customer loyalty has been provided by Metcalfe (1992) based on market research in the parcels and express market. Her research showed that there was very little loyalty among the users of express parcels services, with companies, on average, changing their carrier 1.5 times in a five-year period. Some of the companies had changed carriers more than five times in five years (Table 9).

Table 9. **Frequency of carrier change in five year period (1987 to 1991)**

Frequency of change in the last five years	No. of companies	Percent of total
0	62	26
1	81	34
2	45	19
3	30	12
4	9	4
5	5	2
5+	9	4

Source: Metcalfe, 1992.

According to Metcalfe the responses suggest that there are few long standing supplier-customer relationships and since market shares did not change significantly, the sales activity of the carriers seems to have little effect other than to replace lost business.

The use of more than one carrier at a time is common (see Table 10).

Table 10. **Number of carriers used**

Number of express parcels carriers used on a regular basis	% of respondents
Use one carrier only	38
Use two carriers	50
Use three or more carriers	12
Total	100

Source: Logistics Supplement, 1994 (based on Mintel International research report 1993).

It is apparent that many firms feel that using more than one carrier gave them more choice of services and greater flexibility. Metcalfe suggests several reasons to explain the use of a number of carriers when, in many cases, one carrier would be able to provide a nationwide service:

i) Having a range of suppliers allows the buyer to play off one carrier against another and improves the buyer's negotiating position.
ii) Prices vary for different weights due to the different pricing methods used by the carriers. Some carriers employ a fixed price per parcel and only carry parcels up to a certain weight. Where this is the case, it may be cheaper to send heavier parcels which are near to the maximum weight limit with one carrier and the lighter ones with another.
iii) Price may vary on a geographical basis. Since most national carriers offer fixed rate prices regardless of place of collection and delivery this can make local deliveries relatively expensive. Customers may be able to obtain lower prices by using a small local company specialising in local services.
iv) Varying delivery time requirements. Users appear to perceive that some companies are more reliable for timed deliveries even though they may be more expensive. When this is the case then very urgent consignments may be sent through the carriers perceived as more reliable while less urgent consignments go with the usual carrier.
v) Variations in collection capabilities. Some users may find advantages in using firms which have a depot very near to the collection point as this allows a later cut-off time for afternoon collections.

4.3. Customer service

Given the important role played by express parcels carriers in the distribution systems of their customers, the issue of consistency in achieving high levels of customer service should be of particular importance. Although there would seem to be clear differences in the level of customer service achieved by express parcels companies, the results of surveys are rarely consistent. An example of a recent survey illustrates some interesting points about customer service (Table 11).

Table 11. **Comparisons of parcels services for a small package from Scotland to Cornwall**

Carrier	Price	Rank	Time	Rank	Service	Rank
Amtrak	12.22	3	23hr 27 min	2	48 pts	1
ANC	13.27	5	27hr 43 min	7	32 pts	8
Bullet Express	17.10	7	26hr 05 min	5	39 pts	4
Business Post	11.51	2	22hr 27 min	1	41 pts	3
DHL	31.49	10	53hr 25 min (*)	10	23 pts	10
Group 4	17.63	8	26hr 51 min	6	35 pts	6
Interlink	12.34	4	24hr 12 min	3	43 pts	2
Parcelforce	10.30	1	51hr 28 min (*)	9	24 pts	9
Sinclair Freight	19.32	9	25hr 33 min	4	35 pts	7
TNT Express	15.39	6	28hr 05 min	7	37 pts	5

Notes:

1. The service requirement was for a delivery during the next working day -- no requirement was specified for an early delivery. Therefore all the carriers except DHL and Parcelforce met this requirement.
2. Pricing levels for many of the carriers are very similar.
3. Service standards were a subjective measure based on a mixture of marks awarded for:
   (i) Telephone manner;
   (ii) Standard of collection (driver and vehicle);
   (iii) Standard of delivery (driver & vehicle). Those companies which failed to deliver on Day B received no points for standard of delivery.

Source: Commercial Motor, 1993/1994.

As the authors of the survey noted, paying the most does not guarantee a good service, although the service being offered is not always the same -- for example DHL's price included insurance whereas most of the other carriers' prices did not. The most consistent shortcoming was apparently a failure to identify the addressee. However, only two companies did not meet the service standard required and this is an achievement given that the collection and delivery addresses were over 900 km apart.

Express parcels carriers have tried to ensure that they are able to achieve more consistent levels of customer service by using formal quality assurance standards. For example, Business Post is a franchise operation that has adopted BS5750 (ISO 9001). The company has tried to ensure that everyone works to the same standard in more than 60 locations (franchise and hub). Other, larger, companies have been even more ambitious. Federal Express now advertises that it is the first and only express carrier to achieve the ISO 9001 global quality standard worldwide (Evening Standard, 2 May 1995). The main feature of the many quality initiatives in the express parcels sector is that it highlights the importance attached by management to a systematic approach. This is no surprise since the nature of the service provided by many express carriers demands a rigid adherence to procedures and routines.

5. FUTURE DEVELOPMENTS

There are a number of developments that are likely to have an impact on the pattern of UK express parcels services during the next few years, these include:

- scope to develop a differentiated service based on a logistics approach;
- growth in international services;
- privatisation initiatives (Parcelforce is currently under the control of the Post Office);
- policy measures that could influence parcels operations (e.g. road user charging).

Each of these subjects is discussed in greater detail below.

5.1. Express parcels and logistics

To a considerable extent the rise of express parcels services and their growth in importance in recent years has been as a result of industry adopting a more structured approach to logistics management. A key element of this approach has concerned removing stock from the supply chain. One way to achieve this without reducing levels of customer service has been to switch to faster and more certain means of transport. The impact of these general developments has already been discussed in the paper, but it is interesting to consider the specific approach of an automotive manufacturer because this provides a good example of the way logistics developments may well provide new opportunities for certain express parcels carriers.

The Swedish car manufacturer Saab has closed its UK parts warehouse and instead now arranges for most of its spares to be delivered to all of its 104 dealers direct from Sweden (Banner, 1993). The service is provided by Lynx in the UK and there are three deliveries a week from Sweden into Lynx's Dartford centre (south east England). From there, the parts are fed into the Lynx hub at Nuneaton and then on through the parcels network. Engines and body panels go into an adjoining hub designed to handle palletised loads. The urgency of the order dictates the distribution arrangements:

i) Vehicle off road (VOR) spares: 3 per cent of parts (ordered and flown from Sweden on day A and delivered before 10 a.m. on day B);
ii) Supplementary orders: 17 per cent of parts (ordered day A, picked and flown day B and delivered before 10 a.m. day C);
iii) Stock: 80 per cent of parts (despatched on regular service by road from Sweden three times a week).

Parts sourced from UK suppliers are stored in a warehouse operated by Lynx (the company has also taken over Saab's central warehousing activities). All deliveries go through the normal Lynx network but vehicles being used for the stock deliveries need to be equipped with tail lifts to cope with the larger consignments. The key point is the way the companies (Lynx and Saab) are working together to develop a system that provides a high level of customer service but at a competitive price.

Another example of providing a more integrated service comes from Parceline. The company has started what it describes as a logistics contract for Lloyds Bank which has involved the development of a narrow-aisle warehouse.

Although the company stresses it has no wish to move out of its core business (parcels) it is clear that it is prepared to develop an extended service for customers.

A number of features of the extension into logistics activities are important:

i) Companies devising these more integrated services may have an advantage if they have parent or sister companies which specialise in the provision of logistics services.
ii) Introducing services that are dependent upon a significant degree of trust and the integration of systems may lead to greater customer loyalty and help the an express carrier to develop a more stable place in the market.
iii) Providing an alternative service does provide some degree of company differentiation and this in itself may be worthwhile.
iv) A parcels network can form the basis for a network designed to handle larger consignments which may be carried as part of a service tailored to particular customers' requirements.

5.2. International services

The market for global services (i.e. those spanning North America, the Far East and Europe) is dominated by the integrated air express carriers (Cranfield School of Management, 1994). As the detailed report by Cranfield notes, the air express carriers were able to:

- create a new market because of the quality of service they provided;
- take part of the market that previously belonged to the air freight forwarders.

Unfortunately, global recession has had a significant impact on the strategy of carriers to provide a worldwide "one stop shop" service for multinational and global companies. Despite a steady increase in the importance of international trade throughout the world and cross-border trade within Europe, the majority of freight movements remain national. Even the largest express companies such as Federal Express and UPS have been forced to concentrate on specific market sectors. As noted above some parcels and express carriers see opportunities in developing logistics services involving more complicated operations and often handling larger items.

The position within Europe is somewhat different in that many routes can best be served by means of road based transport which reduces the scope for the integrators to dominate. Nevertheless, even parcels carriers that until recently were almost entirely devoted to the UK market are now starting to develop a European capability. As Hastings (1995) has noted, domestic express companies in general are eager to handle international business particularly European traffic, because without such capabilities, they could lose business to established international operators. This trend has been reflected in the development of international consortia or alliances between national parcel delivery companies within Europe. Parceline, Lynx, Securicor Omega Express and Business Post all have partnerships with continental European carriers to offer a Europe-wide service.

5.3. Privatisation

Postal deregulation and liberalisation is a European issue which affects all carriers involved in express delivery of mail and parcels. In recent years there has been increasing pressure for liberalisation of European postal services and this has a particular importance for cross-border mail services. Within the UK there has been much debate about the possible merits of privatising the Post Office. Despite strong indications that the Post Office was to be privatised the government has now decided not to proceed with this step in the near future. The decision not to sell off Parcelforce (the parcel delivery service of the Post Office) has been viewed with concern by private delivery companies (Willis, 1995). Interestingly, Parcelforce does not have to charge VAT on its services. Although this has little or no impact on most business to business transactions (since VAT paid can be reclaimed) it may be important when providing services to the public and to VAT-exempt businesses such as banks and the legal profession.

Private carriers in the express parcels market argue that Parcelforce losses are underwritten by the Government and that this encourages Parcelforce to drive down prices in a search for greater market share. However, losses have come down in recent years from a high of £100 million to £19 million in 1994 (Willis, 1995). The counter argument is that there is such a high level of overcapacity in the sector that even if Parcelforce lost its state subsidy another carrier would be certain to try to buy volume through lowering prices, even if this meant making a loss in the short term.

5.4. Changes in public attitudes and policy

Changes in public attitudes towards transport together with the possible introduction of more restrictions on road freight have encouraged the wider distribution industry and parcels carriers in particular to consider the implications for their operations. A number of development could lead to changes in express parcels operations within the next few years. First there are general measures that may be introduced to reduce fuel emissions or to limit the use of commercial vehicles. In some cases parcels carriers have taken the initiative and acted in advance of legislation. For example, UPS has introduced its own design of lightweight vehicles using aluminium and fibreglass -- these vehicles enable UPS to achieve between one quarter and half a mile more per gallon of diesel, depending on road conditions.

Secondly, there are specific measures that have been discussed by the government concerning both charging for urban roads and possibly introducing motorway tolls. Parcels carriers would have limited opportunities to avoid road charges in cities since their operations are carried out throughout the working day and they are effectively constrained by the nature of customer demand. Motorway tolling could force truck operators to reconsider the way they run long-haul operations but the opportunity for a significant change or for a dramatic increase in the use of rail seems limited for parcels operations.

Thirdly, there are policy measures concerned specifically with reducing the use of large goods vehicles in urban areas. Banning vehicles over a certain size from city and town centres and encouraging the use of vehicles powered, for example, by compressed natural gas would have implications for all distribution operations. In a number of countries (e.g. Netherlands, Germany, USA) urban transhipment centres have been created to encourage the transhipment from large lorries to smaller trucks and vans of consignments destined for the city centre. In many cases express parcels companies already use small vehicles for their collection and delivery services and a change of this type would probably have only a limited impact on their operations. Of more importance would be any attempt to insist that all commercial vehicles performing collections and deliveries in urban areas should be powered by alternatives to petrol or diesel.

6. CONCLUSIONS

Improvements in express parcels services and the focus of attention on logistics strategies designed to remove stock from supply chains, have combined to encourage significant volume growth in the express parcels sector. Yet despite this growth the sector has been characterised by overcapacity and low prices. To a large extent the low prices are the result of the intense competition between a relatively small number of carriers for increased volume and a larger market share. The nature of parcels operations, depending as most of them do on automated sorting hubs, leads companies to adopt a marginal cost approach to their pricing strategy.

Although express parcels carriers play a very important role in the supply chains of many of their customers there is only limited carrier loyalty. This lack of loyalty and the difficulty carriers face when trying to differentiate their services also make a major contribution to keeping prices low. In recent years some express carriers have started to develop strategies to try to reduce their dependence on the volatility of what can be viewed as a 'commodity market' for parcels carriage. An important initiative in these strategies has been to concentrate on market sectors where it may be possible to link up with customers requiring long-term contracts and to develop new services which extend the parcels operation into a more integrated logistics operation. Clearly, as express parcels carriers follow this latter route they will, in many cases, have to be able to manage larger consignments and in doing this they will tend to come into competition with service providers specialising in shared contract distribution or even some general haulage operations.

Information technology and communications systems have been essential, enabling technologies allowing express parcels operators to develop very high levels of service while maintaining, or even enhancing, productivity. Carriers will continue to invest in this area in order to keep up with each other and in an attempt in some cases to differentiate their service. However, it will be very difficult for a carrier to obtain any form of sustainable competitive advantage though information and communications systems.

Market growth will continue to be encouraged by further trends in industry aimed at driving stock out of supply chains. However, a major potential area for future growth may occur as a result of changes in the way consumers purchase goods. If there is a significant increase in home shopping during the next ten years then this could result in new opportunities for those companies specialising in deliveries to private addresses.

The great majority of domestic express parcels traffic within the UK moves by road. The growing concerns about whether current transport trends are sustainable have forced industry to consider the nature of many of their distribution operations. Express parcels carriers will need to ensure that they develop strategies to cope with policy measures that may include: restrictions on vehicle access to towns and cities, changes in legislation about vehicle fuel and user charging for roads both within urban areas and for long distance trips. The dynamic, highly competitive nature of the express parcels sector and the innovative way in which companies have devised services, suggest that some of the carriers will choose to take the initiative rather than merely to respond in an *ad hoc* way to measures of the type outlined above. However, the pressure on margins will, in many cases, make it difficult for managers to justify decisions that do not contribute to both savings in costs and environmental improvements. Yet if companies do not decide to take the initiative, there will almost certainly be calls for much more drastic measures to be introduced to establish strict limits on the use of road vehicles in sensitive areas such as town and city centres.

NOTE

1. Day A refers to the day on which the consignment is collected i.e. the first day. Day B is the second day, Day C the third day and so on.

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SUMMARY OF DISCUSSIONS

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All countries are seeing spectacular growth in the express transport of documents, parcels and packages. Express transport originated in the United States as operators known as integrators started to "integrate" the different parts of the transport chain, and also in Australia, as a reaction to rail's monopoly and shortcomings. Boosted by the removal of frontiers and the globalisation of trade, the express transport market is a major attraction in Europe, although the traditional carriers have not really felt the wind of market change. The product itself has not in fact been precisely defined, and European operators specialising in conventional services are penetrating the express market, while the integrators are also branching out into conventional transport. Radical changes can therefore be expected in both express and more conventional transport operations. It is precisely these probable changes that the Round Table endeavoured to identify by examining various aspects of the problem:

- the specific characteristics of express delivery services;
- the importance of networks;
- market trends;
- operators' strategies.

1. THE SPECIFIC CHARACTERISTICS OF EXPRESS DELIVERY SERVICES

There is no simple and universally accepted definition of express delivery services, but they can at least be identified by the particularities of the operation which comprises the transport of parcels -- meaning anything from documents to much larger packages -- within short, guaranteed times at a reasonable price. The specialists at the Round Table pointed out that these various concepts of short and guaranteed delivery times at a reasonable price -- the latter characteristic marks the difference between express and special delivery, i.e. of a single item -- have changed over the course of time. Owing to improved transport infrastructure and techniques, transport times have been considerably

reduced, while practically all transport times are now guaranteed since customers want to know exactly when goods will be available at destination. Since at the same time non-express services have been improved and have become rapid services, it can be said that the characteristics of conventional parcel services have not remained static. Express delivery is no longer an isolated component within the transport field, as delivery services now form a whole in which the dividing line between express and non-express may be blurred. When speaking about express delivery, we are therefore referring to relative characteristics, although time was originally the crucial factor. Express service parcels will be delivered on the same day in an urban area, the next day within the country, in 24 to 48 hours on the inter-European international network and in 3 or 4 days to other parts of the world. As for the weight of the parcels carried, it was usually considered that the limit could be set at 30 kg, but some carriers are now raising this limit to 70 kg, thereby increasing the range of products that can be carried.

An express service can also be defined as door-to-door transport by a single operator responsible for the entire transport chain, a system which was one of the main innovations made by the integrators. Every consignment is identified and tracked over every link in the chain, which requires the use of powerful and standardized computer systems throughout the network. Here the important point is the reliability with which the various operations are carried out, for although delivery time was initially the main difference between express and non-express, reliability has become a decisive factor in the choice made by corporate or private customers. A category of services that are less rapid than express but just as reliable may also be provided, depending on the actual needs of customers who do not always expect ultra-rapid transport. Accordingly non-express services will not necessarily become express services, although a country's geographical characteristics must be taken into account. In the Netherlands, for example, express and non-express delivery services have been merged. In Italy, France and Spain, the size of the countries and the dispersion of activities may result in the use of different types of services. Although conventional parcel services have become rapid, express may still be more suitable for goods for which transport time must be kept to a minimum. Separate services may be maintained owing to various compromises between costs and delivery times.

Customers have become accustomed to high quality of service: in many respects express is a catchword reflecting the consignor's intention to do his utmost to guarantee delivery, even if there is no real economic need for the shortest possible delivery time -- a point which was particularly stressed at the Round Table. The importance of satisfying the customer is a good reason for

merging non-express and express services. Many justifications for the standardization of services exist, although the reasons for keeping them separate can be seen in diversified economies where requirements are not always the same.

The Round Table participants also pointed out that, as the gap between transport times for the two categories of service narrows, the difference between conventional and express operators tends to be expressed in terms of reliability or performance standards. While a conventional operator keeps to delivery times in 95 per cent of cases, the express operator does so in 98 per cent. It is precisely because of this reputation for guaranteed high performance that express operators have managed to make their mark, since the consignee has to know the time of delivery so that he can plan his schedule. This improved reliability provided by express services is all the more important as the practice of collecting packages at factory closing times and delivering them the next day at opening times -- which is tending to spread and might subsequently be adopted for rapid delivery services -- has in fact eliminated the time factor since the packages are carried overnight outside working hours. Keeping to the guaranteed delivery times at all points in the network is another characteristic highlighted by express operators.

The technique used for rapid and express delivery services is much the same: consignments are directed to central hubs where they are sorted and re-routed. Individual consignments are identified and tracked throughout the operations in the logistical chain. This is essential to ensure not only that services are reliable but that the consignor and consignee can be given a progress report on consignments at any time. IT systems are used as much for the benefit of the operator as his customers and are a typical feature of express delivery services.

In addition to its role in collection and distribution operations, road haulage is the main form of transport in both conventional and express delivery services in Europe. The routing of flows to a sorting centre and the consolidation of shipments result in productivity gains since transport and processing capacity is provided on a common basis for many different customers. Collection and distribution cannot, however, be streamlined to the same extent and, additionally, the times required for these operations must be compatible with the plans for transport from the hub or its satellites. Flexible collection and distribution systems have in fact been set up to reduce the times concerned, since collection as late as possible in the day for delivery as early as possible the next day is becoming the rule in national express delivery services.

It can be said that two distinct market segments exist -- mail and parcels, sometimes with the use of pallets for the latter. Parcel transport services are being enhanced, admittedly to an extent differing from country to country. External storage and packaging operations are increasing as industrial and commercial firms farm out everything which does not come under their main activity. Specialisation is a growing trend which express delivery services in particular have turned to their advantage. To ensure reliability even during traffic peaks, however, express delivery services need to operate with excess capacity, with the result that operators also seek subsidiary freight of the kind they initially carried. This is how express services encroach upon conventional services. Once again it can be seen that the borderline between rapid and express delivery services is not clear-cut. Although transport within a guaranteed time is no novelty, reducing this time and keeping to it for various categories of goods and geographical areas, especially at a competitive price, are the hallmark of express services.

Major express operators have an integrated network, while the rapid service network is less dense and has fewer agencies. Both types of network, however, will need to find an appropriate response to the internationalisation of trade, which obviously will first require an answer to the question of what constitutes an efficient network.

2. THE IMPORTANCE OF NETWORKS

The Round Table discussed the networking of operators and the possibility of using the same network for small parcels and packages weighing over 30 kg. A number of sub-markets in fact exist: printed matter, parcels weighing less than 30 kg, parcels weighing less than 70 kg and those weighing more than 70 kg. At present few operators in Europe can handle packages in the 70 kg range. However, in some cases the highest weight categories seem to be arousing the interest of both Post Offices and integrators. Apart from printed matter, 80 per cent of the freight handled by operators falls within their own area of specialisation, while the remainder, despite being supplied by the same customers, practically fails to meet their own handling specifications. It is therefore in the interest of a carrier to have a flexible system of operation, for a customer uses a firm because of its reputation for efficiency and he expects a maximum in terms of services from it. Operators must therefore always accept some outsize consignments if they are to keep their customers, especially in such a volatile market.

Broadly speaking, collection and distribution are the costly phases in the transport of small packages, whereas in the transport of heavy freight, it is not so easy to consolidate shipments -- because of the capacity limits of vehicles and aircraft -- which makes it more difficult to streamline the main transport operation. This main transport operation is therefore the most costly component. According to the Round Table discussions on these topics, there is no single solution for handling different-sized packages: specialised channels can be devised, as can a joint processing system using varying procedures within a carrier or network of carriers. Since operators are taking marginal shares in market sectors other than their own or intend to do so, it would seem that they are still feeling their way in what might be considered different types of activity, for it might well be that small parcels as opposed to heavier packages require quite distinct capabilities. But the Round Table did not come to any definite conclusion on these issues, simply noting that light parcels are more suitable for mechanical processing, which suggests that a special type of network can be set up.

With regard to network operation itself, a study of operators' practices shows that every network is organised in a particular way and that there is no standard approach. What matters is how well a network is adapted to markets and customer needs, as the network structure depends on traffic volumes, the geographical distribution of consignees, and the types of product carried. A network structure that is consistent at every point in the transport chain does, however, appear to be crucial. Although the emphasis is usually on the hub and spoke system, direct point-to-point services also exist. Such direct services are in fact organised when the volume of traffic is sufficient, for they are obviously less costly than transport to a central point followed by re-routing to satellites. The hub system provides economies of scale for sorting operations through bulk processing. In some cases, the sorting operation can take place at the origin point and more direct transport services can be provided. Once again, it must be said that there is no standard method for organising express delivery services. If, however, a partnership is formed by operators, a range of quite different technologies may be used and there may also be too many sorting centres, which may not be ideal since there is no longer a central hub to provide economies of scale by absorbing the various traffic flows. Standardization is therefore not to be seen in the various possible organisational formulae, but rather in the end product available to customers, since this product has become quite comparable, even if every operator tries to offer something different or develop an attractive specialised activity.

Another issue addressed by the Round Table concerned the current spectacular growth in conventional and express delivery services in Europe with the creation of European or even global networks. Two conflicting objectives are to be reconciled within a network: realistic pricing and simplicity. It is extremely difficult and costly to produce a very detailed breakdown of the various operations concerned, while inadequate knowledge of what it costs to operate a service may well compromise a firm's financial balance. As pointed out by the operators represented at the Round Table, it would be counterproductive for the firms in a network not to invoice one another, even if this the elimination of internal invoices would seem to be justified on the grounds of greater simplicity, i.e. lower administrative costs. Internal invoicing can be avoided in small networks that require less detailed accounts. Within a larger entity (different firms or agencies operating as a network), costs are an essential indicator of how efficient the business operation actually is. As far as possible an operator must know the cost of a homogeneous segment of activity, such as a transport plan. Knowledge of the marginal cost of a service is probably not significant or even possible to obtain, but the costs of the various phases in a service must be assessed. This knowledge of costs is too often still inadequate in the transport field, and there is a risk of market operation being disrupted if costs are not accurately assessed. By evaluating costs, it is possible, for example, to decide whether a route should be maintained or whether resources should be re-allocated. Since services are increasingly sophisticated and adapted to the industrial and commercial needs of firms, it is necessary to understand costs, particularly if a service is enhanced.

Networks are set up as an individual operator expands or forms strategic alliances with other operators already present in the market. The Round Table discussed the basic characteristics of such networks and the prerequisites for their success. First, it should be pointed out that the initial fixed costs for the creation of a hub and spoke system operating at national, European and even world level are very high -- particularly because of the very sophisticated information technologies on which these systems are based -- which rules out the advent of new entrants. The trend in the sector has shown that operators are confronted with the dilemma of having to choose between internal growth or alliances.

Internal growth has the advantage of maintaining an operator's cohesion but requires heavy initial investment. External growth in the form of alliances does not require the same initial investment but provides rapid territorial coverage guaranteeing market shares. But if an express delivery network is to work properly, great consistency is required of the system. This consistency is not only essential at operational level (information and sorting technologies,

packaging, procedures) but also at commercial level (pricing and brand policy, management). The specialists at the Round Table stressed the need for a single decision centre to define information system, product and marketing policies.

Alliances between existing European networks are in fact giving rise to serious integration problems, for the aim is to define a common organisational scheme that will also respect national cultural differences. Express delivery services require extremely strict operating rules, and every operator on a network must understand and implement this network's policy, which makes any form of partnership difficult.

The choice facing operators between internal growth and partnerships also depends on the opportunities open to them, since a partnership may be the obvious solution when, for example, firms offering the same type of services operate in geographically complementary markets. It can therefore be considered that the various forms of growth will co-exist in the future, although alliances will sometimes remain necessary. It seems, however, to be a fact that such alliances are often unstable and therefore temporary. In practice, alliances between operators have not always been successful and have often ended with the weakest partner being bought out. Nonetheless strategic alliances will continue to be formed by European operators, and between some of these operators and integrators to create, in this case, world networks. The optimal solution adopted by operators is governed by current circumstances and possibilities. Such a solution is not necessarily the best one in the long run. The need for an authority that will impose strategic decisions will still be decisive, which may require a single capital structure for all the operators. In an alliance, moreover, one of the operators, particularly the smaller, may find itself in difficulties if its partner withdraws and, in such a scenario, it is seldom the efficient operators that are put up for sale.

In any case, integrators obviously seek alliances in response to the globalisation of trade, and it would also seem that the independence of operators within an alliance is becoming increasingly limited. This is perhaps the only certainty which can be expressed on the future of partnerships. Franchising, for example, makes it possible to reduce the fixed costs of development and accordingly has a future; it is, however, a good example of this limitation on independence.

Following this discussion on the structures of express delivery services, the Round Table went on to discuss trends on market for such services with a view to assessing their growth potential and profitability.

3. MARKET TRENDS

The integrators consider the European market to be the only one comparable with that of the United States, since it is tending towards a standardized regulatory system and has a sound economic basis. In time it should become larger than the United States market. The Asian market, however, does not seem to have the same development potential.

According to the Round Table participants, these markets will be influenced by developments in industrial technology. One example is the increased volume of inter-industry just-in-time flows as a result of production unit specialisation, leading to greater demand for express transport services. The Round Table participants went further in their discussion of industrial organisation. In this view, a possible scenario is one with more industrial sites close to markets, which would reduce the need for transport. But this advantage is only apparent, since consumer demand is diversified and a standard product without a range of derivatives is scarcely conceivable. A single plant near its markets could not produce all the variants required and plant specialisation would be necessary. Transport services from a production site to the various markets would therefore have to be set up again. There is in fact nothing new in the debate about highly decentralised production sites, and conflicting trends exist. In Italy, where a very large number of microenterprises are located all over the country, it is in fact very difficult to streamline transport flows.

It is quite obvious that the average distance in international transport has increased in Europe, reflecting the growing integration of economies and specialisation based on differences in wages. Just-in-time transport services are the outcome of these developments, which leads us once again to the concept of rapid transport with guaranteed times.

Another important aspect is the reduction of stocks and the elimination of warehouses. These developments are being offset -- in order to maintain regular supplies -- by an increase in rapid transport services for goods which are being transferred to express delivery services as a result of the downtrend in consignment weights. At the same time, final consumers are becoming more demanding. They expect their goods to be delivered rapidly, if necessary to their premises, which can only be to the advantage of express transport. The organisation of the logistical chain is obviously determined by the final customer's requirements.

It is frequently said that ours is an information society and, this being so, there will probably still be just as many documents to be carried even if information technologies have reduced the need for such documents to be presented in printed form. Another marked trend is the growing propensity of industrial and commercial firms to subcontract activities, such as packaging, storage, etc., that are secondary to their main activity. In an age of specialisation, everybody tends to be extremely proficient in a limited field.

By and large, there is a trend towards dispersion and internationalisation. The pattern of consignment flows is less certain than in the past since consumers have increasingly specific needs and require customised products which are no longer delivered via the traditional distribution channels.

Owing to all these developments, the express market could, according to the Round Table participants, continue to expand.

Carriers are not immune to specialisation aimed at securing productivity gains; however, the result of such specialisation is that a forwarder who carries out activities ranging from maritime transport to physical distribution is obliged to compete on every market with extremely efficient specialists. Accordingly, it is reasonable to assume that the restructuring of activities is inevitable in the transport sector in the broad sense. There is also the fact that profit margins may vary greatly from one country to another. The Round Table discussed this aspect in connection with the profitability of transport operations in Europe.

There is a tendency to criticise overcapacity in the transport sector, although it is generally not realised that overcapacity is an intrinsic feature of transport operations in that there are imbalances in the transport flows from one region to another (for example, between northern and southern Europe), and flows are also cyclical with seasonal peaks in certain markets. Capacity thus always tends to be too high, since the surplus is not absorbed because it is temporary or inevitable. Transport prices therefore tend to be low and it cannot be denied that transport profit margins in Europe are not very high. It has been suggested that operators could improve their profitability by providing extra services in addition to transport. Experience shows, however, that industrial and commercial firms increasingly expect such additional services to be provided free of charge.

This being the case, operating profits are in fact low in the transport field and will remain so, according to the Round Table participants. Productivity increases are and will be solely to the benefit of consignors, and the only case in which transport prices might rise is if environmental taxes were to be levied on road and air transport.

Even if express delivery services expand, this activity will probably be no exception to the rule that transport prices cannot go up, since competition is keen among the integrators themselves and between the integrators and rapid delivery operators. At the same time customers are pressing for higher levels of efficiency to become the norm, as their aim is to obtain better quality service without paying the price for it. And, as has already been said, there will always be specialised operators whose high productivity levels will tend to drive prices down. Even if operators manage to develop new specialities, they never remain alone for any length of time in a buoyant market and their advantage is only short-lived.

These constraints affect the employment situation in the express delivery sector. Although jobs have been and will continue to be created in this sector, they will probably not offset those lost in the warehousing and stock management activities of industrial and commercial firms which farm out these operations, since express delivery services are a kind of logistical system which is often a trade-off for the decrease in stocks. In any case the efforts by operators to improve productivity will not create a number of jobs proportional to growth in activity. Constant downward pressure on prices does not help to boost job creation.

These falling prices, however, may not be applicable to express delivery services in that the investment required is very high, which is a barrier to entry, and a limited number of investors could influence the market to their own benefit. It would seem that this is what is happening in the United States. In Europe, however, there are enough express operators for keen competition to remain the rule, at least in the short and medium term. In addition to the conventional operators, there are also public enterprises such as the Post Offices, which means that the position of these various participants is not yet established in a market where, despite strong growth, returns on very high investment are low. Changes in the position of operators will be speeded up by their own strategies, a point that was also discussed by the Round Table.

4. OPERATORS' STRATEGIES

The operators on the express market are the integrators, conventional carriers -- which are few in number -- public enterprises such as Post Offices and in some countries even the railways. As has already been said, strategic choices are inevitable in the future, and all types of agreements among operators are conceivable since they all consider that their networks have to be internationalised or even globalised. This may mean that operators will be competing in some markets although they have concluded co-operative agreements in others.

In new markets such as those in central and eastern European countries, which are still hampered by customs formalities, integrators are or will be forming associations with local operators, so that all the scenarios are possible, depending on current opportunities and needs.

In practice, agreements may result in competition in the marketing of services, while co-operative arrangements may be made for the operation of these services. One operator may use another's network for the main transport operation. But, in any case, the express sector like other activities is subject to the law of diminishing returns, which means, for example, that it is no longer possible to manage a loading bay or a sorting centre above a certain size.

In its discussion on the part played by the various operators, the Round Table noted that, apart from the air freight carried directly by the integrators, i.e. with the use of their own equipment, almost 95 per cent of this traffic is in the hands of the forwarders, who participate in express operations. These forwarders play a commercial role for their customers, i.e. for the consignors. It could reasonably be argued, however, that in future forwarders' freight might not well be carried by integrators -- which would result in considerable changes in the structure of the sector -- given that the integrators may be tempted to extend the range of their services in order to make the most of their technical equipment. The airlines which carry the forwarders' freight would thus be deprived of a profitable activity. In the United States, integrators have in fact taken over air freight by providing door-to-door services. It should be pointed out, however, that in Europe the main part of an air freight operation consists of road transport. But European forwarders are mainly active on the growing intercontinental transport market. For the time being, the situation is complex in that the integrators also rely on the forwarders, through the spot

market, to provide the capacity needed to meet exceptional demand. Conversely, the integrators also have excess capacity available for forwarders and act simply as a carrier for them on links between airports.

So far forwarders have not been able to organise themselves as efficiently as the integrators have for express delivery services. Even if forwarders provide door-to-door services and use IT systems, they have not taken the initiative in the express sector and they may lose most of this growing market, which will affect airline activity. In addition, as a large number of customs operations have been abolished, one specific forwarding activity -- which, like conventional parcel services, was also profitable -- has disappeared. A considerable proportion of the forwarders' traditional freight will be upgraded to express -- as consignors become more demanding -- but it is quite conceivable that consignors will turn to the integrators, who have an established reputation in the express sector. It is therefore quite possible that the major forwarders and carriers will have to restructure their activities in coming years. They usually have several different activities, but are under attack in the various market segments in which they are present. Their general attitude will also probably have to change, since specific niches will have to be selected. The decision recently taken by Panalpina to specialise in sea and air transport operations is worth noting in this respect.

The strategy to be adopted is also crucial in the case of the airlines used by the forwarders to provide express or intercontinental transport services, for the airlines have not decided exactly what attitude to take to the forwarders. The airlines need the forwarders, who use their transport capacity, although at the same time they are trying to shake them off so that they can deal directly with the customer and thus avoid the fee charged by the forwarder on operations. In this respect Lufthansa's policy is clear since the airline has joined forces with the main forwarders in Germany so that it can work directly with customers.

Where possible, forwarders tend to make airlines compete for their business even if partnerships are developed at the same time. It must not be forgotten that this competitive process is feasible since about two-thirds of air freight is carried on passenger aircraft. However, owing to the decrease in aircraft size and in the number of stops, it may be asked whether all-cargo fleets are not justified, even if most airlines are not in favour of them. Air freight fluctuates greatly, which may explain why the majority of airlines do not wish to develop an all-cargo fleet.

Coming back to air freight's various roles, it cannot be denied that some major consignors are trying to deal directly with the airlines to avoid the fees charged by middlemen. Other consignors, such as Kodak, prefer to use a forwarder, for it allows better flexibility. Forwarders certainly provide an important service to small and medium firms since they pool traffic flows and can thus offer advantageous prices. The chain is understandably complex, as all the participants may be competing despite their interdependence. Commercial life also requires trust and co-operation. A forwarder who forms special co-operative ties with an airline can probably obtain more flexible terms than otherwise would be the case.

That airlines are not in a position to market services directly is understandable. Neither do they have the necessary IT systems or a network large enough to propose door-to-door services and cover every region. They would have to achieve a certain critical mass in terms of the volume of freight transported in order to obtain a return on very costly investment if they wished to become completely independent. A sceptical view must therefore be taken of attempts by airlines to dispense with the services of forwarders. By comparison, the integrators provide better services, especially since the airlines do not necessarily have a good reputation with customers. Perhaps the forwarders are in the habit of blaming the airlines for any hitches or damage occurring during transport. Integrators also have the advantage of knowing the final customer, unlike the airlines which have to go through forwarders, unless they are to run the risk of serious reprisals for bypassing the forwarders on whom they depend. Integrators provide an alternative service to that provided by forwarders, and their air freight activity should increase even if the various integrators do not adopt the same strategy in this respect. Basically, the Round Table participants considered that the airlines are not, by comparison, sufficiently close to industrial customers to understand their needs and keep pace with them.

It is also true that the main investment in express delivery services concerns information and communication technologies. Any operator must be able to track a parcel, which, apart from technology, requires properly trained personnel, and integrators allocate a very high proportion of the wage bill to training. In other words the investment in the human and technical resources required is very high. Some specialised markets (geographical areas, types of products) will probably remain open to the operators which do not have the required resources, but the basic issue is still whether the major forwarders will have the means to stand up to the integrators as they extend the range of their services.

Integrators use airlines when the available services are good enough. The strategy of the various integrators in Europe or at world level is not the same with regard to air freight, as has already been said. Some of them team up with airlines and others with forwarders, or an integrator may develop its own air transport capability. It would seem that there is one strategy per integrator; TNT's alliance with the postal authorities is to be noted in this connection.

The information provided at the Round Table on the strategies adopted by public enterprises and particularly by Post Offices shows precisely that the facts concerning Post Offices differ from one country to another. Some Post Offices are to be privatised (as in Finland, in 1996, and in Germany), others are semi-public enterprises (Ireland, the Netherlands) and some are having their monopolies reduced by legislation, while others wish to penetrate the express deliveries market (France). Even if the Post Office system has been modernised in a country like Spain, for example, the Round Table participants acknowledged that Post Offices are still at a disadvantage owing to the high costs and lack of flexibility that characterise public enterprises, even if their losses are covered by public funds. Accordingly the intention of some of them to penetrate the express market is questionable since, as was recalled by the Round Table participants, the Post Office as a public enterprise is not subject to the same constraints as a private enterprise -- an argument which also applies to the railways which may also enter the express market.

Public enterprises have a special tax system, their financial costs are often not comparable with those of private enterprises and they have no dividends to pay to shareholders. Moreover, since they benefit from government aid, they can use cross-subsidisation techniques to strengthen their hand in some markets, particularly those where competition is keenest, without having to face competition in the same way as any private enterprise in their other markets. It is therefore not surprising that public enterprises in some countries have directly contributed to or even triggered the fall in transport prices. It is difficult for private enterprises, which are under attack on all their markets, to spread their losses over different sectors of activity since they have no protected market to draw on. Public enterprises are not penalised either in the event of setbacks, since their losses are covered. Unless the authorities are vigilant, the entire sector may suffer from the presence of public enterprises that are not subject to the same requirements as private operators. Accordingly reservations were expressed at the Round Table concerning a role for public enterprises in the express delivery market. Whatever the market, discriminatory operational advantages must be ruled out and greater transparency in the operating conditions of public enterprises is desirable.

Public enterprises are, however, required to provide standard services throughout the country in the public interest. But here again the authorities must be vigilant and ensure that the remuneration of such services is not so high that they conceal weaknesses at management or decision level. Regional disparities must obviously not be made worse by the kind of services provided for disadvantaged regions. Rules must be laid down for this purpose, but they must not prevent services from being operated at the lowest cost to the community. In the express delivery field, private operators have managed to provide services that are comparable in quality at practically every point in the regions served without using pricing systems that unduly reflect disparities. The authorities should, however, be expected to define the public service requirements to be met by operators, even if it means selecting operators on a competitive basis -- if necessary by putting services up for tender -- where the aim is to obtain services at the least cost. In any case it must not be left to public enterprises to define public service as this is a government prerogative.

The railways are another possible participant in the express services market, but their performance varies considerably. In France, for instance, the SNCF is losing money in this market, while in Italy the attempt to use rail for express delivery services failed, as the necessary train paths and equipment could not be provided because of very high growth in the combined transport sector. It is to be noted that the results of combined transport are to a large extent due to the fact that many road vehicles with their loads are stolen. Rail transport therefore appears to be all the more advantageous.

Even if railways operate parcel services in some countries, the Round Table participants noted how unsuitable rail usually is when conventional services are upgraded to express. Rail is seldom used as it does not exactly meet the technical requirements for express delivery in terms of door-to-door services, rapid overnight long-distance transport, the fullest possible integration of the various stages in the express operation, customised services, etc. As was mentioned at the Round Table, however, high-speed trains may help to give rail a share of the express services market, and packages can be carried on passenger trains, as is the case with Switzerland's rapid cargo services. Apart from a few routes where express operation is conceivable, express freight will remain the prerogative of road and air transport in Europe. If there is to be any marked change, European railways will have to develop extremely fast direct links, meaning that they will have to be less dependent than in the past on transfers from one network to another at frontiers. Even assuming that the European Directives on interoperability and freedom of access to networks are a step in this direction, opinions at the Round Table on rail's potential for express deliveries were divided.

The authorities -- who are also an important participant in the transport field -- might become worried about the dependence of future operations on road haulage and air transport as they have the highest pollution levels. The collection and delivery operations required for express services in particular mostly take place in urban areas. At present transport is clearly a cheap input, and it cannot be denied that the authorities might have a change of heart as a result of environmentalist pressures. Road transport disamenities (accidents, noise, pollution, congestion) account for up to 5 per cent of GDP in developed countries. Such calculation, however, does not take into account the benefit to the community -- in terms of growth and job creation -- of reliable, reasonably priced transport services. A complete switch in priorities between transport and the environment would have incalculable consequences, and this seems all the less desirable since technological advances suggest that transport and environmental needs can be largely if not fully reconciled, provided that the authorities are intent on incorporating these technological advances in vehicles by defining standards. Technological benefits are limited by the fact that their effects are felt only in the long term when most of the fleet has met the strictest requirements. In the shorter term, it is therefore possible to reduce transport disamenities by organising deliveries for a number of different operators from the same urban logistical centre. But here again the priorities should not be reversed, for private cars are the main cause of pollution and congestion problems. The very difficult working conditions applicable to lorry drivers are another important aspect of urban deliveries. Changes in regulations may be required in this area. The Round Table participants pointed out that driving times are usually respected on long-distance express services, since it would be inconceivable to provide regular services based on the constant infringement of regulations.

CONCLUSIONS

The main impression to emerge from the Round Table proceedings was that the respective roles of the various operators (integrators, parcel carriers, forwarders, airlines and Post Offices) involved in both conventional and express delivery services were about to be reshuffled.

With regard to express services, which are themselves changing and gaining ground on conventional services, the integrators are threatening the position of the traditional operators. This may result in a sharp fall in the volume of freight carried by airlines.

The market may be growing, but prices are not high enough for errors of judgement to be forgiven, owing to the heavy investment involved.

The alliances and agreements needed to form world networks may well be short-lived and accompanied by takeovers. In Europe, where the express delivery sector is growing faster at international than at national level, there is probably no place for all the would-be operators in this market, although some niches will always remain open. In any case, since they are being attacked on many segments, the forwarders -- who have an important, multi-purpose role in parcel services and choose specific niches.

Adjustments to new goals, the demise of operators and agreements with public enterprises, including Post Offices, are to be expected. Except on a few selected routes where rail may have a chance, express operators will still mainly use road and air transport backed up by the powerful IT systems that are also required.

The express market is maturing: as express delivery is no longer a new product, competition is based on prices and users are inclined to switch from operator to operator. The trend is, however, towards services that are increasingly adapted to customer needs and therefore increasingly distinctive and extremely complex.

Public enterprises must obviously not be allowed to distort competition in markets where prices are tending to fall. They can do so if they operate under preferential conditions (particularly when losses are automatically covered without their decisions being challenged), which is often the rule. Public service requirements must be very clearly defined in an economy that is increasingly governed by competition.

In the environmental field, urban delivery services can be streamlined but the main improvements will be achieved as a result of technological advances which can only be introduced gradually.

Apart from carefully assessing the behaviour of public enterprises and taking action to improve the urban logistical system and monitor working conditions within the system (short-distance transport), it does not seem that the authorities are expected to intervene in the express deliveries field. It may be said, however, that customs procedures should be reviewed, particularly in the CEECs, in order to speed up the movement of goods if the aim is to take full economic advantage of express transport.

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