WARNING

[Readers should please note that, due to technical problems, the page numbering and/or paragraph numbering appearing in the electronic version of this study may not match that of the original. We apologise by any inconvenience this may cause. **]**

Foreword

Price Waterhouse was contracted by the EU Commission in March 1996 to undertake a study of Employment Trends in the EU Postal Sector. The EU commissioned the study primarily to obtain information to help the Commission formulate and implement policy aimed at improving the economic and competitive position of the postal sector within the European Union.

We have undertaken the study in accordance with our terms of reference and written proposal. During the course of the study we consulted widely with public and private postal operators, postal regulators, interest organisations, postal associations, trade unions, customers, user organisations, suppliers, private and public postal operator organisations, and postal experts. We have received a high level of co-operation from all parties in a very short time-frame, and we would like to formally express our gratitude to all those who contributed to the study.

In this report we record our findings a and number of recommendations concerning employment in the EU postal sector, which we sincerely hope will contribute to the future development and success of the sector.

At this point in time, the challenges facing postal operators world-wide are numerous, and those that take steps to protect and grow their business, taking account of these challenges, will emerge as successful, robust, competitive, and flexible customer-oriented companies in the future.

We would also like to take this opportunity to thank the EU Commission, firstly for giving us the opportunity to undertake this challenging and interesting study, and secondly, for their time, views and input, which were of great value.

Summary of findings and key recommendations

Introduction

This section presents a summary of the findings and key recommendations resulting from the Price Waterhouse study on Employment Trends in the European Postal Sector, which was conducted on behalf of the EU Commission from March to August 1996.

Objectives of the study

Following a competitive tender in 1995, the EU Commission contracted Price Waterhouse to undertake this study to analyse employment trends in the European postal sector. The primary motivation behind the commissioning of the study was to provide the EU Commission with information that would help them to formulate and implement policy aimed at improving the economic and competitive position of the postal sector within the European Union. The specific objectives of the study were:

- To permit an evaluation of the future evolution of the postal labour market in order to facilitate relevant discussion within the Joint Committee on Postal Services;
- To assess the present situation within the EU postal labour market, while at the same time making reference to non-EU and non-postal labour markets, in order to provide a basis for the forecasting of possible future scenarios with regard to the evolution of the postal labour market in the EU;
- To pinpoint the major factors impacting on the evolution of the postal labour market within the EU, and in this connection, produce a qualitative and quantitative assessment of their likely impact over the next five to ten years; and,
- To assess the potential impact of future policy measures within this sector.

Despite the fact that the main focus of the study appears to be on analysing quantitative trends in EU postal employment, the final underlying objective of the study was that all aspects of employment were to be considered when identifying trends. This meant that the study also considered the social aspects (working conditions and quality of employment), sociological aspects (role of postal services), evolutional aspects (quantitative employment trends), and other qualitative aspects such as skill standards, training needs and industrial relations.

Methodology

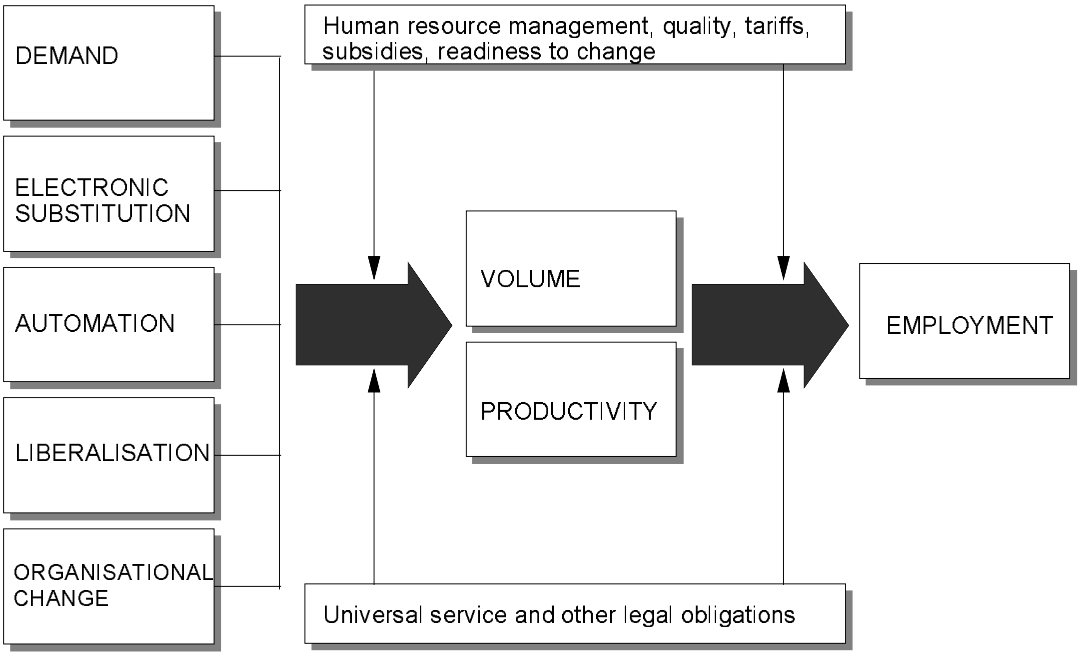
The study began by defining the components of the EU postal sector in a way that would best facilitate the collection of data and the presentation of meaningful conclusions and recommendations. The following definition was put forward:

The components of the postal sector or "postal operators" are companies that have their core business in the collection, sorting, transportation and delivery of physical mail items weighing up to 20 kilograms either on an expedited or on a normal basis. These companies tend to be differentiated into public postal operators (PPOs) and private postal operators (PrOs).

Once the definition had been agreed, an extensive data collection and consultation programme was put into action. This programme included the collection of all available secondary data of relevance to the study as well as broad consultation with as many postal operators, interest organisations, unions and regulators as possible. Consultation was carried out using written questionnaires, telephone interviews and face to face interviews.

The data from the research and consultation were used to generate as concise a picture of the EU postal sector as possible, and also to develop the model shown in the figure below, which shows the relationship between relevant change drivers and employment in the EU postal sector.

Model showing the relationship between relevant change drivers and postal employment



Source: Price Waterhouse survey, 1996.

Following the development of the model shown in the figure above, several scenarios were developed regarding the evolution of the individual change drivers in the future, and the effect these are likely to have on employment in the EU postal sector were discussed.

The following paragraphs contain a summary of the main findings and recommendations that are described in detail in the various sections of the report.

Employment in the EU postal sector

Below we outline the developments that have taken place in the level and structure of employment in the EU postal sector over the past five years, and the changes postal operators expect up to the year 2000.

Total level of employment

In general employment in the EU has changed during the last two decades. The services sector has become the largest employer, while public sector employment appears to be stagnating partly due to budgetary restraints. Staying competitive and efficient while maintaining employment is one of the key challenges facing all sectors in the economy.

Our research shows that employment in the 15 EU PPOs declined by almost 112300 employees, or just over seven percent, between 1990 and 1995. The number of people employed by 15 EU PPOs in 1995 was just under 1.41 million, which equates to approximately one percent of total employment in the European Union, with individual PPOs being among the biggest single employers in many member states. Employment tends to be concentrated among the larger PPOs, with the largest four - Germany, France, UK and Italy - accounting for just over three quarters of total EU PPO employment in 1995.

With regard to PrOs, due to a lack of comprehensive data, any attempt at calculating total PrO employment can only be regarded as an estimate. Our own research supports previous estimates made by the EU Commission and DHL that somewhere between 350000 and 400000 people are employed by private postal operators in the EU.

The majority of EU postal sector employees were engaged in the provision of mail services in 1995 (73.6%), with the remainder being employed in the provision of financial and retail services. Despite the fact that the actual number of people employed in the provision of mail services and financial / retail services fell between 1990 and 1995, the proportion of postal sector employees employed in the provision of financial and retail services grew.

Expected changes in employment levels

In general, it is expected that employment in most EU PPOs will decrease up to the year 2000, with those PPOs that have seen the most marked employment reductions between 1990 and 1995 being the ones that are expecting substantial reductions up to the year 2000.

On the other hand, with regard to PrOs, the global integrators expect to increase employment in all EU countries between 1995 and the year 2000, and in most countries these increases are expected to be significant (between five and twenty percent) or very significant (over twenty percent).

The changing composition of employment

In general the proportion of civil servants employed in the postal sector decreased between 1990 and 1995, and this trend is expected to continue up to the year 2000.

The share of total employment accounted for by full-time, part-time and temporary employees does not appear to have changed significantly over the past five years. However, there does appear to be a trend towards increased utilisation of part-time and temporary employees among the PPOs that have been subject to the most extensive liberalisation and organisational change. In general, employment in PrOs tends to be less permanent than in PPOs.

There are significant differences in the extent to which the various categories of staff are utilised between the different EU member states, although in the individual countries they tend to be broadly in line with the level of utilisation in the overall labour market.

Working hours and flexibility

In general, the average number of hours worked by PPO employees tends to have declined between 1990 and 1995, and currently they range from 35 to 41.5 hours across the different countries. The length of the working week tends to be longer for PrO employees.

Due to the nature of the tasks being undertaken, overtime working is used extensively by both PPOs and PrOs, and night and weekend working are also commonly used throughout the sector.

Both public and private operators expect employees to increase the flexibility with which they are willing to respond to unforeseen changes in demand, which in fact means that they expect formal contractual arrangements to become less important while work on demand will become more prevalent.

The gender distribution of employment

The proportion of total PPO employees that were female increased from 18.9 percent in 1990 to 24.6 percent in 1995. The corresponding proportion appears to have been higher for the global integrators but lower for the national and local PrOs. Continuing demographic change, increasing use of part-time and temporary employees, and more equal opportunity measures are likely to result in a continued increase in the level of female employment in the sector.

The functional distribution of employment

The functional distribution of employment in the provision of both mail services and financial / retail services did not change significantly between 1990 and 1995, and is not expected to change much up to the year 2000. The majority of mail services employees (58 percent) were employed in the delivery function, while the proportion of staff employed in the management and administration functions was approximately 12 percent, just one percent below the corresponding proportion for financial / retail services.

Human resource management

Employment reductions are expected in most PPOs up to the year 2000, and in general PPOs expect to manage reductions without resorting to compulsory redundancies. Although, in some PPOs it will not be possible to avoid compulsory redundancies completely, PPOs expect to rely on natural wastage, early retirement schemes, voluntary redundancies, functional and regional redeployment, and reductions in the length of the working week to achieve the necessary reductions.

PPOs and PrOs have emphasised the need for continuous staff training and development, and many have taken considerable steps to achieving their goals in this regard. Commonly identified training needs include customer service skills, leadership skills and people management skills. Training is expected to play an increasingly important role in the future, especially in supporting and sustaining organisational and customer focused change.

The level of trade union membership remains high in PPOs, and all PPOs recognise trade unions for the purpose of collective bargaining. Good relations between the social partners is recognised as an important component of managing change, and joint employee / management working groups are successfully being used to facilitate change. Overall trade union density is considerably lower among the PrOs.

Labour costs among PPOs constitute in excess of 70 percent of their total costs, and as a result there is ever increasing determination among PPOs that wage increases are productivity based. Established payment systems are coming under increasing pressure due to increased commercialisation and changing labour market expectations.

PrOs appear to make greater use of flexible payment systems, using a combination of time and output based payment systems. Basic wages tend to be lower in the smaller PrOs that place a high emphasis on commission or output based pay.

Evolution of change drivers affecting postal employment

Below we describe the change drivers that impact on the level and structure of employment in the EU postal sector.

It should be noted that our research on the inter-relationship between the five change drivers concludes that some of the change drivers function as initiators of change within the sphere of other change drivers. For example, the increase, or the anticipation of an increase, in the degree of competition in the postal sector (liberalisation) has encouraged some postal operators to implement automation programmes and organisational change in order to improve their competitiveness.

Demand for postal services

In the 1980's GDP was the most common (dominant) factor used to determine the demand for postal services (mail volumes). In the 1990's the determination of demand has become increasingly complex primarily due to the increasing complexity of the marketplace.

If we use linear regression to extrapolate the likely volume of domestic letter items we can see that they are likely to increase by 16 percent between 1994 and the year 2000. The PPOs expect the total number of mail items they will handle to increase by 10.4 percent between 1995 and the year 2000, and in general they expect to handle an increasing number of the following items: second class letters, printed matter, parcels, direct mail items, unaddressed items, courier/express items, newspapers & magazines, hybrid mail and electronic end-to-end mail.

On the other hand, PPOs expect to handle reducing volumes of first class letters, flats and width AO letters over the next five years. They also expect the importance of the business to private segment of the market to increase relative to all the other market segments, which they anticipate will become less important in relative terms.

In addition to the expected increase in the physical demand for services, customers are becoming increasingly complex and demanding from a qualitative point of view. To this end, postal operators will have to provide transparency in terms of quality of service, predictability and timeliness, as well as offering increasingly specialised and flexible services.

Electronic substitution

Keeping the expected changes in demand identified above in mind, it is expected that electronic substitution will impact on the physical mail volume, and even possibly lead to a stagnation in the overall level of demand for such services.

Although not yet statistically defined, it is obvious that there is a relationship between electronic substitution and physical mail volume. The continuing growth in electronic communication services, combined with their ever improving price / quality competitiveness, will undoubtedly affect the demand for physical mail services in a negative manner.

Automation

The proportion of mail being sorted using mechanised procedures has increased over the past five years, and is expected to continue to grow up to the year 2000. Part of this continued growth will be due to increased penetration / adoption of standard letter sorting machines, however, part of it will also be due to increases in the number of categories of mail that can be sorted automatically. This will be facilitated by the development of cost effective mechanised procedures for sorting parcels, flats and width AO letters.

The most technologically advanced PPOs will begin to reach the limit with regard to automation of the outward sorting by the year 2000, and as a result the emphasis is already shifting to the automation of other parts of the sorting process, and particularly inward sorting.

Resulting from the increased use of automated mail sorting procedures, many PPOs have been able to reduce the number of outward and inward sorting locations they have to operate. This is a trend which is expected to continue up to the year 2000.

The utilisation of information technology has increased dramatically among the PPOs over the past five years, and its use is expected to continue to grow up to the year 2000.

Liberalisation

It is widely agreed that the effect of liberalisation varies according to which part of the postal service you look at and the individual country in question. In EU countries where liberalisation has already taken place, the concept of a universal service at uniform prices still applies. Reserved services are granted in all but two of the EU countries, however the extent of the reserved area varies significantly between the individual countries.

Experts tend to agree that any effect on employment in the postal sector of the new weight and price limits for the reserved service, as suggested in the EU directive, will only be very limited. Postal items weighing more than 350 grammes represent less than two percent of letter volume and three percent of the receipts of the PPO's.

The liberalisation of direct mail will only have an impact on employment in the countries where direct mail is not currently liberalised. The effects of liberalising incoming cross border mail is also likely to be very limited due to the relatively low proportion of all mail accounted for by such items in most PPOs. However, liberalisation of this area could have an effect on total PPO mail volumes if it resulted in the movement of mail from the domestic to the international marketplace.

Competition is already prevalent in areas such as express delivery services, parcel distribution and to lesser degree in newspaper distribution. It is felt that private operators could possibly enter newly liberalised markets, however their market shares could be minimised if the PPOs committed themselves to competing strongly in these market segments by competing on the basis of price and strengthening their focus on high value added services.

Organisational change

Many EU PPOs are currently in the process of changing their organisations with the primary objective of making them more customer oriented. For most of the PPOs concerned, these organisational change activities typically involve some rationalisation of activities and as a result some improvement in efficiency.

The more customer focused PPOs are developing new products and services, and at the same time attempting to improve quality, reliability and value of traditional services.

The use of franchising and outsourcing is increasing among PPOs, and will continue to do so well into the future.

Many of the PrOs are undergoing on-going organisational change due to the fact that they are continuously expanding, increasing the number of services they offer and their geographical scope.

Impact of change drivers on postal employment

Below we attempt to describe the impact that the change drivers described above are likely to have on the level and structure of employment in the EU postal sector. It should be noted that the relationship between the change drivers and postal sector employment is complex.

Demand for postal services

An increase (decrease) in the demand for postal services tends to lead to an increase (decrease) in mail volumes, and as a result the derived demand for labour increases (decreases). The net effect of the change in demand on employment depends on a host of interdependent factors, such as the degree to which the handling of mail is automated, the flexibility of the labour market, political pressure to maintain employment, and the incumbent style of human resource management .

The evolution of demand will also have an effect on the structure of employment and the skills that employees need. The ability of PPOs to provide new services will be much more directly shaped by new technology, both in relation to products (such as hybrid mail) and links with customers. Basic IT skills will become a prerequisite for all employees at the same time as there will be an increasing need for IT specialists. Future growth in demand is likely to be more focused on niche markets, requiring customer service and marketing skills from a broader range of employees.

The future of employment in the provision of financial / retail services will depend on the ability of PPOs to respond to customer needs for new services, and also on their ability to equip employees with the skills to provide these services.

Demand is the change driver that impacts most on employment among the PrOs. Many of them feel that the increase in demand for express services will continue and that this will have a positive impact on employment in terms of number of employees. They also feel that this will impact the required skill level of employees, with customer service and IT skills increasing in importance.

Electronic substitution

Electronic communications services tend to effect the demand for postal services (and employment) through two mechanisms, substitution (which typically leads to a decrease in mail volumes) and mail creation.

In the first case, electronic communications services will be substituted for existing postal services, which has already occurred in the business-to-business market. In the second, the move towards increasing use of hybrid mail services and other similar electronic communications services will generate new demands for postal services. For example, increased use of home shopping is expected to result in an increase in parcel volumes.

The overall impact of electronic substitution on employment in the PPOs is expected to be negative, as the negative impact of the substitution mechanism is likely to outweigh the positive impact of the mail creation mechanism.

For PrOs the impact of electronic substitution on employment is likely to vary depending on the market in question. Private operators whose activities are concentrated in the parcel market are unlikely to have to reduce employment as a result of electronic substitution, however PrOs operating in the letter, document and newspaper distribution markets are more likely to have employment impacted negatively.

Automation

The individual PPOs in the EU have automated their mail processing procedures to varying degrees. The automation of outward and inward sorting procedures tends to have a negative impact on employment. Currently, the outward sorting of mail tends to be more automated than inward sorting, which means that larger reductions in employment will be possible in the latter area than in the former in the future.

Since the majority of people employed in the provision of mail services work in the delivery area, labour saving developments in this area have the potential to have the largest negative impact on overall employment.

Automation in the provision of financial / retail services is likely to have a negative impact on the number of employees required in both the front and back office.

Due to the nature and size of most PrOs, it is felt that automation will not impact significantly on employment over the next number of years.

Liberalisation

The effect of liberalisation on employment in a country depends on a variety of factors such as: the structure of the regulation in place; the scope and detailed design of liberalisation; the extent of competition within the postal market and from other means of communications that are already present; the quality of service currently provided by the PPO; current levels of productivity of the PPO; demographic and geographic factors which influence the costs of providing a universal service. Therefore general statements about the effect of liberalisation must be treated with caution, particularly since it is also closely related to the other change drivers, and in particular with organisational change.

In the short term, liberalisation tends to have a reducing effect on employment in the PPOs as it puts pressure on them to become more business-oriented and to re-engineer their business processes in order to improve efficiency and to reduce costs, thereby making them more competitive. Therefore it can be argued that liberalisation often initiates the implementation of organisation change and automation programmes, which in turn impact on employment.

In the longer term, liberalisation may have a positive effect on employment in the PPOs as it improves their competitive position relative to private operators and enables them to limit the market share lost to electronic communications services.

The effect of liberalisation on overall employment in the postal sector is difficult to ascertain precisely. On one hand it increases pressure on the PPOs to increase productivity which tends to have a negative effect on employment. On the other hand, it leads to the setting up of new and/or additional operators which will employ postal workers, and it improves the competitive position of the postal sector in general against electronic substitutes. This has a positive effect on employment.

With regard to the EU draft directive, the majority of PPOs expect that it will have a reducing effect on the level of employment in their organisations, and will also lead to a reduction in their market shares and sales revenues.

However, our analysis of data shows that employment levels in the EU PPOs are on a downward trend, and as a result are likely to decrease even if liberalisation does not go ahead due to the influence of other change drivers such as electronic substitution and automation.

Organisational change

The effects of internal organisational changes on employment in the postal sector have been mixed. On the one hand, new organisational structures and human resource management practices policies have led to culture changes and improved working structures which are welcomed by many employees. On the other hand, in some PPOs these positive aspects have been overshadowed by the loss of job security and the ongoing reduction of the work force.

Subcontracting and franchising of post offices in particular have had, and will continue to have, negative effects on employment levels within PPOs, due to the fact that the number of post offices under the direct control of the PPOs will continue to decrease up to the year 2000.

The shift towards more market focused product development and management has also had a predominantly positive net effect on employment within the PPOs, and definitely within the postal sector overall. The move into the provision of new services and the improvement of the quality and value of existing services are opportunities for PPOs to cushion the employment reducing effects of organisational change, and in some instances to use them to actually increase employment.

Summary

The evolution and impact of the change drivers on employment can be summarised as follows:

- Anticipation of increased competition has encouraged organisational change in the form of corporatisation among the PPOs;
- Corporatisation implying profit orientation has resulted in a focus on efficiency and productivity;
- The focus on efficiency and productivity has lead to automation and internal restructuring;
- Automation and internal restructuring have affected employment level and structure directly;
- Demand has a direct effect on employment;
- Electronic substitution currently has had no major effect on employment;

- Electronic substitution is seen as the major future threat to physical mail volume and thus an implied threat to employment;
- The short term direct effect on employment (everything else kept constant) is positive for the demand of postal services;
- The short term direct effect on employment (everything else kept constant) is negative for the other change drivers, i.e. liberalisation, automation, organisational change, and electronic substitution; and,
- On one hand the impact of change drivers on employment depends on universal service and other legal obligations, and on the other hand on "filters" such as human resource management, readiness to change.

Future employment outlook for the EU postal sector

Below we describe the most likely future outlook regarding the volume and structure of employment in the EU postal sector. This outlook should be treated with caution in the light of the limitations that are typically attached to any study that attempts to predict employment in a sector with an uncertain future, and in which historical data are not complete.

We have developed multiple scenarios for the future, which should not be regarded as forecasts, but as possible future situations, involving the identification of uncertainties, the determination of causal factors that drive them, and the formation of a range of possible assumptions about each.

The most likely future outlook for the sector corresponds to our baseline scenario, which predicts what is likely to happen under a set of reasonable assumptions on the future evolution of change drivers and on the relationships between employment and the factors influencing it. We hope this outlook will serve as a guide in helping anticipate, understand, and address the growing complexity in the postal sector.

Baseline scenario - future employment outlook for the EU postal sector

Employment levels 1996-2000:

Total employment in EU PPOs is likely to decrease by about 104000, or 7.4, over the next five years from approximately 1.41 million in 1995 to just over 1.30 million in the year 2000.

A small number of the less developed EU PPOs may experience actual increases in employment up to the year 2000, which will be mainly due to continued increases in mail volumes.

If employment in PrOs increases by ten percent over the next five years, which is quite a realistic estimate taking past trends into account, total PrO employment will increase from approximately 400000 in 1995 to 440000 in the year 2000.

This means that net job losses in the postal sector as a whole are likely to be in the region of 64000, or just over 3.5 percent, over the next five years.

Employment levels 2001-2005:

Total employment in the EU PPOs is expected to continue to decrease after the year 2000, and between 2001 and 2005 it is likely to decrease by approximately seven percent. Therefore, in the year 2005 total employment among the EU PPOs will be approximately 1.21 million, which will be about 14 percent less than it was in 1995.

In the most advanced postal administrations employment will stabilise or at least decline much slower after the year 2000, while employment in the middle range PPOs will continue to fall due to increasing productivity and declining market share. Employment in the least advanced PPOs will start to decline due to slower growth in mail volumes, increasing productivity, and increased threat from PrOs and electronic communications services.

If employment among the PrOs increased by a further five percent between 2001 and 2005 (which again is quite a realistic estimate), total PrO employment would increase to approximately 462000 by the year 2005.

This increase would compensate slightly for the loss of employment in the PPOs, meaning that total employment in the sector would be likely to fall by a further 70000, or just four percent over the period.

Employment structure 1996-2000 and 2001-2005:

The structure of employment and the working patterns are also likely to change over the next five years. Centralisation of activities into fewer locations is likely to require that employees become more regionally mobile. The increased use of information technology is giving rise to the need for new skills among both private and public operators. New technologies will enable more detailed monitoring of individual employee performances, and thus tighter scheduling and intensification of work are likely.

The predominance of civil servant and full time contracts appears to be reducing, and the use of part time and temporary employment increasing. There also appears to be increasing pressure on the terms and conditions of employment.

Reductions in employment in the postal operators are expected to be concentrated among operational, sorting and delivery staff, while new jobs are expected to be concentrated on the areas of hybrid and electronic mail systems and new value-added services.

Key recommendations

Below we outline the key recommendations that are contained in this report with regard to: controlling the effects of the change drivers on employment in the EU postal sector. The recommendations are in line with the EU Commission's strategy for reducing unemployment while ensuring social protection, and take account of the specific changes in employment and human resource management that are foreseen in the sector. These recommendations should be treated with caution and should not be considered out of context.

Controlling the effects of the change drivers

- The successful postal operators of the future will be those that can minimise the negative impact of the change drivers on their organisations. We believe that for postal operators to do this successfully, they will have to fit with the following "vision" of progressive postal operators of the future;
- Progressive postal operators will be market-driven organisations with market-oriented employees at all levels. They will market both standard and customised products and services at competitive prices that represent value for money;
- They will invest heavily in the training, re-training and education of their workforce in order to ensure that they are able to meet the requirements of a market oriented company that uses information technology and automation extensively;
- Customer focused quality of service standards are set for all services and actual quality of service is closely monitored on an on-going basis. Management and employees take an active role in maintaining and improving quality of service and the price quality ratio of all services;
- Postal operators are continuously looking for new business opportunities to increase turnover and profitability by capitalising on the exiting infrastructure and workforce; and,
- Post offices will be turned into communication centres, which offer all the traditional postal services in addition to banking and insurance products, ticket and stationary sales, etc.

Continuation of the EU Commission's strategy for reducing unemployment and ensuring social protection

The key challenge facing most sectors in the EU, including the postal sector, is to undertake structural adjustment while at the same time providing social protection in order to alleviate negative social effects of unemployment. The five priorities that have been identified by the EU for tackling the problem of unemployment are as follows:

- Improving employment opportunities for the labour force in general;

- Promoting greater flexibility in relation to the organisation of work in order to help employees achieve efficiencies but also to respond to employee wishes for more individual and diversified working;
- Employment supporting wage policies through moderate overall wage agreement and reduction in non-wage costs;
- Encouragement of active labour market policies as well as the promotion of job creation initiatives which respond to new social and environmental needs; and,
- Particular focus on measures to help groups that are hard hit by unemployment.

Employment, human resource management and organisational changes

Changing social expectations combined with the need for greater flexibility and efficiency are pushing postal operators towards the use of more flexible working practices. This is likely to decrease the need for full-time employees and increase the need for part-time and temporary employees in the sector.

Currently postal operators tend to respond to upward fluctuations in mail volume by using overtime. In addition to the use of non full-time employees, we suggest the use of annualised hours contracts as another way of dealing with predictable variations in work load. Such arrangements can provide significant savings on overtime payments and can enhance the quality of work for employees.

Postal operators should aim towards achieving a balanced workforce, reflecting the gender, age and background of the general population. This will assist them in strengthening their customer focus by enabling employees to better anticipate the diversified needs of customers.

As the quality of the services provided by service companies depends to a large extent on the quality of the staff that are employed to provide those services, we recommend that postal operators ensure they are perceived as good and welcoming employers in order to ensure that they can attract the most talented and skilled employees.

We recommend that employment reductions be planned as far in advance as possible in consultation with the social partners at national, regional and local levels.

Human resource management policies in the area of employment reduction should focus on two areas. Firstly, employment reductions should be kept as low as possible and compulsory redundancies should be avoided if at all possible. Secondly, where reductions in employment are unavoidable, the "marketability" of employees should be maximised through the provision of training and the transfer of recognised skills.

Training should be encouraged for all employees in order to improve the ability of both the organisation and the individuals to effectively respond to the challenges presented by the marketplace.

Organisational change typically requires employees to acquire new management and supervisory skills. Managers and supervisors need to be supported in their functions on an ongoing basis through extensive training and development programs.

In order to avoid skill shortages and recruitment problems in technology intensive areas, postal operators need to continuously review their recruitment, training, and remuneration practices for the relevant technology experts.

Ongoing communication between management, employees and their representatives will enhance the understanding of, and the commitment to, developing a successful and profitable market focused business.

In order to ensure a cost effective and affordable postal sector, wage increases should be balanced by productivity increases, thereby ensuring that labour costs as a share of total costs should remain stable.

PPOs need full commercial freedom to design pay policies and, if appropriate, share financial success with employees. The establishment of effective performance management systems is one of the key challenges facing the sector.

Section 1 – Introduction

1.1 Background and context of the study

In 1995 the European Commission concluded that a study analysing employment trends in the European postal sector would help it formulate and implement Community policy, aimed at improving the economic and competitive position of the European postal sector.

The importance of European postal sector employment was underlined by the Green Paper on the development of the Single Market for Postal Services. It was estimated that in the 12 member states of the European Union (EU), the Public Postal operators employed about 1.35 million people, while the private postal operators employed approximately 350000 people. These figures combined indicate that total employment in the European postal sector was 1.7 million in 1988. (European Commission, 1992a).

The Green Paper also pointed out that the postal sector is very labour intensive. Employment levels are often directly affected by overall changes in business conditions, such as the level of competition and the demand for postal services. Having labour as the primary input to providing postal services, the sector is sensitive to changes in the workforce demographics and skill levels. Furthermore, the labour function is most often the target for efficiency improvement measures among postal operators.

In the Commission's effort to create an open and dynamic market for postal services in Europe, the interest of postal sector employees must also be kept in mind. This is laid down together with other objectives for postal services in Europe, such as universal service obligations, reserved services, and gradual liberalisation, in the Council Resolution on the development of Community postal services: "[ensuring that] the needs of users, including consumers, the interests of postal sector employees as well as the contribution of the postal sector to economic, cultural and social development in the Community are taken into account, when regulating this sector" (Council of the European Union, 1994).

On July 27 1994, the Commission of the European Union established a Joint Committee on Postal Services with reference to Articles 118 and 118 b of the Treaty. The Postal Authorities of the Member States, the sector's operators, labour representatives, users and the Commission, acknowledged the need for dialogue between employers and employees regarding the means of providing the Community with the efficient postal service it needs (European Commission, 1994).

This required the two sides of the postal sector to participate actively in discussions concerning the improvement of both the economic and competitive position of the European postal administrations and the living and working conditions in the sector. A Joint Committee attached to the Commission was the most appropriate means of ensuring such participation by creating a representative forum for the socio-economic interests involved at the Community level.

1.2 Our terms of reference

The objectives of the study are outlined in the following terms of reference:

- the study should permit an evaluation of the future evolution of the postal labour market in order to facilitate relevant discussion within the Postal Joint Committee and to assess the potential impact of future policy measures within this sector;
- the study should assess the present situation within the European postal labour market and make reference to other non-EU and non-postal labour markets, thereby providing a basis for the forecasting of possible future scenarios. In performing this part of the study the social (working conditions and employment situation), sociological (role of postal services) and evolutional aspects (employment trends), and the general changes in standards of skills, training needs and industrial relations should be considered; and,
- the study should pinpoint the major factors having essential impact on the evolution of the labour market for postal workers within the European Union and in this connection, produce a qualitative and quantitative assessment of this impact. In undertaking this aspect of the study in particular the following issues should be taken into consideration:
  - the impact of new technologies, including increasing automation as well as those having substitutional effects;
  - future organisational changes of postal administrations, particularly the privatisation of operators; and,
  - the possible potential impact of liberalisation of certain market segments.

The methodology used to carry out the study included the following:

- analysis of existing studies;
- gathering facts by interviewing and analysing the policies of the various industry regulatory bodies, public and private postal operators, the industry trade unions and postal users;
- analysis of the present postal labour market situation and the provision of forecasts through a set of alternative scenarios of possible liberalisation measures;
- a synthesis of the key points to produce a clear statement that can serve as a basis for a distinction between fundamental and secondary issues in relation to the European postal labour market; and,
- a final concluding phase to provide the Commission and other interested European entities, with a clear and objective set of recommendations regarding the social elements of their new postal policies.

1.3 Scope of the study

The scope of this study is very broad, and is described below with regard to its key determinants.

Focus of the study

The study focuses on postal employment especially in relation to the level and structure of employment, and human resource management.

Employment change drivers

Regarding factors having an effect on postal employment, we consider five broad change drivers: demand for postal services, electronic substitution, automation, liberalisation, and organisational change.

Time frame

We examine employment in the European postal sector as it has developed since the 1960s. The key part of the study focuses on the situation in the 1990s, its main focal point being 1995. Furthermore the study constructs future scenarios of the likely developments of the postal labour market in the years 2000 (December 31) and 2005 (December 31).

Geographical scope

The study covers the 15 EU member states and makes reference to general employment trends in the European Union as well as to significant developments in the postal sector outside the EU.

Types of operators

Our study considers both public and private providers of postal services. As the privately owned part of the sector is ambiguously defined and diverse, the analysis of this part of the postal sector has faced certain limitations in terms of data collection thereby limiting further assessment of the evolution that has occurred. In addition, this part of the sector has been analysed differently than the public postal operator part.

Market segments

Throughout the study, the emphasis is on employment in the provision of mail services, as this is the area most notably affected by regulatory initiatives. Ideally, the study would have established a distinction between parcel and letter delivery within mail services, however, due to the limited availability of data, this has not been feasible to the extent that we would have preferred.

We also consider the development of retail and financial services to the extent that information on this segment has been provided independently from mail services. However, as is often the case, data for separate service areas may not be available.

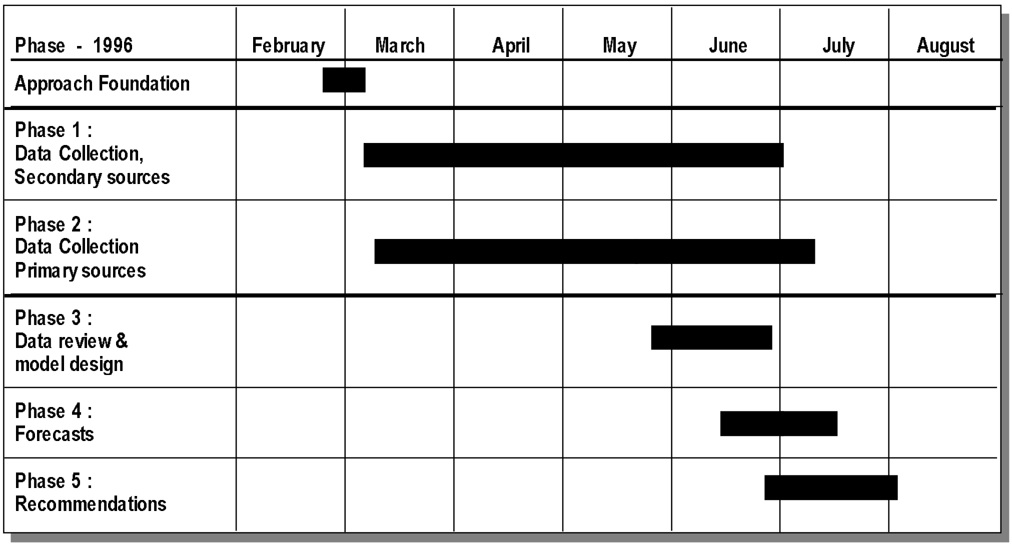
The broad scope of the study has had implications for the nature of data and findings.

As indicated in the report, we have identified a number of areas where information is very limited and where further research is necessary, including the cost of universal service obligation and empirical analysis of liberalising various segments of the postal market. In addition, in a number of instances we have encountered comparative difficulties due to variations in definitions and the availability of data between different countries and components of the sector.

1.4 Methodology and programme of work

In accordance with our proposal we conducted the study in five phases. We started with an approach foundation to detail our work plan. Phases one and two consisted of data collection where we consulted primary and secondary sources. In phase three we reviewed the data collected in the two initial phases and designed scenario models. During phase four we conducted the analysis and forecasting based on the scenarios. The last phase of the project (phase five) consisted of formulating conclusions and recommendations and included a presentation at a workshop with the Postal Joint Committee on July 25. Figure 1.1. details our workplan.

Figure 1.1 Work plan



Taking into consideration the scarcity of resources on the part of many respondents, we have focused our primary data collection efforts on employment issues. Thus, with regard to the evaluation of change drivers such as electronic substitution, demand, liberalisation, and organisational change, we have relied relatively more on secondary data. The data collection methods used are shown in figure 1.2.

Figure 1.2 Data collection methods

Target group	Secondary data	Written questionnaire	Telephone interview	Face-to-face interview	Case study
Public Postal Operators	Yes	Yes	Yes		Yes
Postal Operator Associations	Yes			Yes	
Trade Unions	Yes			Yes	Yes
Trade Union Associations	Yes			Yes	
Postal Regulators	Yes	Yes	Yes		
Private Postal Operators	Yes	Yes		Yes	Yes
Postal Users	Yes		Yes		
Postal User Organisations	Yes			Yes	
Suppliers to Postal Industry	Yes		Yes		

We describe the phases of the project in more detail below:

Phase one

Phase one was marked by a data search of libraries, databases, newspapers, etc., and an evaluation of the data. The methodology applied is described in further detail in appendix 1.

During the search of secondary sources we found that there is a lack of specific data on employment practices and human resource management in the postal sector. We also found that limited research was done to estimate the impact of change drivers on postal operators in general and on postal employment in particular. The written questionnaire to the Public Postal operators and the subsequent interviews became very important sources of statistical data.

Phase two

During phase two we collected data from primary sources. We prepared and distributed written questionnaires to the postal regulators and Public Postal operators in each of the 15 EU member states. Our primary research methodology included:

- identification and selection of key postal sector stake holders in co-operation with local Price Waterhouse offices and the EU Commission;
- preparation of draft questionnaires which were pilot tested in co-operation with selected respondents;
- distribution of questionnaires to all respondents;
- receipt and follow-up on non-respondents;
- qualitative follow-up in the form of telephone interviews in areas where data were missing; and,

- obtaining verification of key questions and clarification of confidentiality issues when reporting on a country by country basis.

Private postal operators on the other hand are not directly comparable with PPOs in terms of size, services offered, geographical scope etc. Therefore, our primary research of private postal operators varies slightly from that of PPOs and includes surveys of the global integrators, supported by in-depth interviews; interviews with a selection of large national private operators across the EU; and, telephone interviews with smaller national private operators in a number of EU countries. As part of the survey a questionnaire, comparable to that sent to public operators was developed and sent to four international private operators, and three large national private operators. Finally we conducted detailed case studies of selected countries to support the primary data.

In addition to the questionnaires sent to regulators and public and private operators, we conducted face to face and telephone interviews with a selection of respondents representing operators, users, unions, suppliers, and postal associations. For each type of respondent a structured guide of questions was developed. The interview guides for operators and regulators have also been used for interviews conducted with postal associations such as UPU. Appendix 2 contains a full list of interviews conducted. Phase two also included the development of the methodological framework guiding the study.

Phases three and four

In phases three and four we initiated the validation of data received through the questionnaires. The purpose of the questionnaires was to obtain information about key aspects of employment and the change drivers.

In order to maximise the validity of our measurements we constructed indices for both employment and the five change drivers. Each index was further divided into indicators. For example, one index of automation is mechanisation. Examples of mechanisation are the use of letter sorting machines, automatic tray handling systems, etc. A full list of indices and indicators is shown in appendix 3.

Reliable data-collection methods are also crucial. Reliability means that applying the same procedure the same way will produce the same result. Reliability can be checked by measuring the same quantity twice and seeing whether the measures are the same. In order to get independent measures of the same quantity we would ask the same question in different ways.

Additionally responses to key questions from the questionnaire were presented to the respective respondents for confirmation of the contents either by telephone or by fax. This served to clear misunderstandings and fill gaps in the returned questionnaires.

The data from secondary sources, questionnaires and interviews were used to establish a picture of postal employment and determine what factors have an effect on the level and structure of employment and how these factors shape employment. The collected data served as a basis for the trend analysis conducted for each factor thereby enabling the development of projections of future employment trends.

To collect additional data we used interviews, case studies of EU and non-EU countries, and a Delphi survey of postal sector experts. The latter involved asking the group of experts to reply to a number of questions related to the key factors affecting future postal employment. Further details of the Delphi survey are contained in appendix 7.

All data served as input to our investigation of future postal sector employment, which was examined using the extrapolation of trends, generation of scenarios and a scenario based numerical model supporting and validating the qualitative scenarios.

Phase five

In phase five the synthesis of data gathered in the previous phases served as input to the production of recommendations to the Commission.

1.5 Structure of the report

The remainder of this report is structured in the following manner.

Section two presents a brief overview of the European postal sector. This section provides a definition of the sector and its constituent parts, and introduces the postal value chain that is used as an overall structure for analysing employment trends in this study.

Section three analyses the level and structure of employment in the postal sector and identifies postal human resource management issues. It describes general employment trends in the European Union as well as an analysis of long term trends in postal sector employment. In section three we study the current employment situation by examining the employment level in terms of changes in total employment; the employment structure by means of examining the functional distribution; and, human resources management by considering the management of employment reductions, training and development, remuneration practices, industrial relations, working practices and flexibility.

Section four presents the evolution of the five change drivers: demand; electronic substitution; automation; liberalisation; and, organisational change. We define the change drivers and review their past evolution and current trends throughout the EU. Furthermore we describe the future outlook for each change driver. Section four serves as preparation to the analysis of the effect of each change driver on employment.

Section five lays out a detailed investigation of the effects of the change drivers on employment. We examine the impact of each change driver on employment separately, drawing on the analysis in section four. We also discuss the inter-relationship between the change drivers and their respective effect on employment.

Section six provides scenarios for the European Union postal sector employment situation in the years 2000 and 2005. We use the scenarios to set up a logical sequence of events to indicate how the employment situation may evolve in the future.

Section seven presents our recommendations focusing on organisational change, social protection, and human resource management.

Section 2 – Overview of the European postal industry

2.1 Introduction

During this century, mail services in Europe have largely been provided by publicly owned operators. This was not always the case. In the middle ages for example mail services providers throughout Europe were exclusively privately owned. Many of these providers often operated at the same time, sometimes competing and sometimes complementing each other. Often governments even relied on privately owned carriers to deliver their mail.

Gradually governments began to develop and use their own delivery services. The reasons for this were: firstly to protect national security; secondly, it was a good business; thirdly, postal services promoted nation-building through a number of functions including the provision of a reliable communications system; and finally, it helped the diffusion of knowledge by delivering newspapers and books and facilitated infrastructure development by encouraging the building of stagecoaches, railroads, steamships, highways and later air planes.

Infrastructure construction aided the development of land masses in remote regions and helped strengthen regional economies thereby improving national cohesion. Nation-building and the strengthening of economic and social cohesion have remained important aspects of the postal sector and continue to be of important societal value (Adie, 1990).

Our purpose in this section is to present the main analytical concepts by which postal employment will be analysed. In section 2.2 we discuss the definition of the postal sector and postal services, present the postal value chain, and present a segmentation of the postal industry. In section 2.3 we describe the framework we use to analyse postal employment.

2.2 Definitions

Definition of the postal sector

Historically, the postal sector has been defined according to a variety of criteria. Some definitions focus on the nature of the activity, others distinguish between types of operator. Many definitions require an operator to have a minimum percentage of the turnover in the postal market in order to be acknowledged as a postal operator.

Most definitions also contain some reference to the characteristics of the postal item, its weight, content, whether it is addressed or not. Often their justification stems from the purpose of the definition and the practicability - which is often determined by the availability of information.

An activity-based definition of postal employment includes all activities associated with the collection, sorting, transportation, and delivery of postal items. A broad definition would also include postal activities carried out by pre-sorters, freight forwarders, and airlines, etc.

A more narrow sector-specific definition includes only services provided by operators with the provision of postal services as their primary activity. Thus this definition would also include for example financial and retail services carried out by Public Postal operators.

Our definition includes the above, and is as follows:

"Postal operators are companies that have their core business in the collection, sorting, transportation and delivery of physical mail items weighing up to 20 kilograms either on an expedited or on a normal basis".

In common language this implies the inclusion of letter, courier, parcel, messenger, express, document exchange, direct mail, unaddressed items, newspaper, magazine, and postcard services.

We have primarily chosen this definition for practical reasons. The amount of information and data that is available, even with this scope, is very limited. In some cases though, we do consider postal activities at large, e.g. when discussing outsourcing and franchising of post offices.

The inclusion and activity criteria are also applied in the NACE classification system. This is a system to group all business activities in the EU. The system was decided upon by the European Union in 1993 with the intention of providing common statistical definitions across the EU.

NACE code 64.11 is defined as activities conducted by the Public Postal operators, excluding bank and giro activities (European Commission, 1995d). NACE code 64.12 is defined as collection, transport and distribution of letters and parcels conducted by private companies. Among others this code includes courier companies, messenger services, and companies that distribute newspapers.

Types of operators

Throughout the report we use the term public postal operator (PPO) to refer to those companies that were/are originally part of the public sector in each EU member country and which are charged with fulfilling the universal service obligation.

We use the term private operator (PrO) to refer to those companies in the sector that are privately owned, and that do not have any universal service obligations in the provision of postal services.

Types of services

The study divides services provided by postal operators into two categories:

Mail services: This category consists of letter, express mail and parcel services. Letter and express services are primarily for communication items (letters, postcards and printed papers), while parcel services are primarily for goods-bearing items.

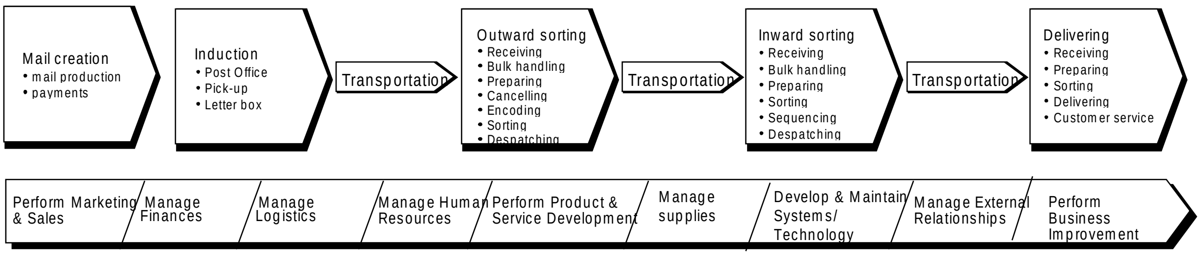
Financial/retail services: This category consists of mail facilitating services, carrying out financial transactions for the government and the public, and selling kiosk products such as tickets, stationary etc.

The postal value chain

In order to systematically describe the postal sector, we will apply the concept of a value chain. Generally speaking a value chain provides a tool for the examination of discrete activities within a sector or industry, hence going into more detail than if the sector is viewed as a whole.

The activities performed can be divided into primary activities involved in the creation of the product/service, and support activities with cross functional benefits. The value chain is a system of interdependent activities related and linked to each other.

Figure 2.1 : The postal value chain



Source: Price Waterhouse, 1996

The primary activities are made up of six operations: mail creation, collection/induction, outward sorting, transportation, inward sorting and delivering. Postal operators differ in the extent to which they carry out the specific activities. Throughout the report we will apply different parts of the value chain to our analysis.

The support functions for these activities are shown at the bottom of the figure and include such functional areas as marketing and sales, finance, logistics and human resources.

Segmentation of the postal sector

The postal sector can be segmented using various criteria. There is no simple way of segmenting the sector since more than one criteria has to be used to get a realistic picture of this complex sector.

The following criteria are used in our segmentation of the sector:

- reserved or non-reserved
- the geographical area in which the companies are operating
- the specific type of products (parcels, letters etc.).

The criteria are illustrated in the figure below :

Figure 2.2 : Segmentation criteria for the postal sector

Reserved area	Local markets	Letter services
	National markets	Parcel services
Non reserved area	International markets	Financial/retail

Source: Price Waterhouse, 1996

2.3 Our approach to analysing postal sector employment

Public Postal operators

The last decade has been a period of significant change for PPOs in Europe and around the world. Many factors drive this change, including the separation of post and telecommunications, the move to deregulate the telecommunications market, and the increase in competition in delivery and communications markets.

Competition from traditional sources has increased the pressure to reduce the scope of existing monopolies, while competition from new forms of communication has significantly weakened the value to the PPOs of their existing statutory monopolies.

Several of Europe's PPOs are currently at the forefront of a general move towards postal corporatisation and deregulation. In some countries significant legislative change has occurred in recent years, and as a result the Public Postal operators concerned are mandated to earn a profit and are given considerable freedom to conduct financial transactions. Many participate in joint ventures and own subsidiaries which provide non-monopoly services.

In many European countries major postal reorganisations have recently taken place, usually as a result of a combination of wider government reform programmes and strong postal leadership. In most cases corporatisation has not lead to complete privatisation, and there is little public pressure to do so.

One area where a form of privatisation has occurred is in the provision of post office counter services, where many of the retail outlets are now in private hands.

The move to government owned corporate status has brought about changes in the profit goals and structure of many postal administrations. Many now have an explicit goal of profitability with return on investment targets.

Reorganisation is taking place around product lines as opposed to functional areas, and some postal administrations are offering a variety of new services such as electronic messaging and hybrid mail.

All European PPOs have non commercial social obligations to their governments and citizens. Increasingly these obligations are explicitly stated, either in their acts of incorporation or in contracts with government. Recently some PPOs have sought to define their social obligations through negotiated contracts with their governments. Typically, a universal service requirement is an element of a PPO's social responsibility, however, the required frequency and flexibility of delivery varies, as does the requirement to maintain a "universal" retail network.

The majority of Europe's PPOs have some form of monopoly protection, primarily in the letter post area, however in some countries it does extend further. The scope of the monopoly varies from country to country, with some being defined by weight, others by price, and others by a combination of both. Unaddressed advertising mail is usually outside the scope of the monopoly, while addressed advertising mail is generally treated as part of the monopoly. Some PPOs are required to perform services even though they are not protected by a statutory monopoly.

Pricing tends to be regulated to a certain degree, although typically not by an independent regulatory body, and typically only in relation to monopoly services and not to services that face direct competition. Competition is typically subject to commercial antitrust rules that restrict predatory pricing, particularly in the area of hybrid mail and financial services. In most countries rate increases in monopoly services require approval by the government.

Most European PPOs are permitted to purchase goods and services, enter into joint ventures, and establish subsidiaries like private sector firms. Activities include international expedited mail, remail services, transportation services, warehousing and direct mail services.

Work force reductions have been significant in many European PPOs in recent years. In many cases the reductions were achieved through the voluntary action of employees or the use of incentive packages. Most PPOs insist that wage premiums do not exist in their organisations, although they will admit that other types of premiums, such as job security, are present.

Figure 2.3 provides some general statistics relating to European PPOs.

Figure 2.3 Statistics relating to the 15 European PPOs

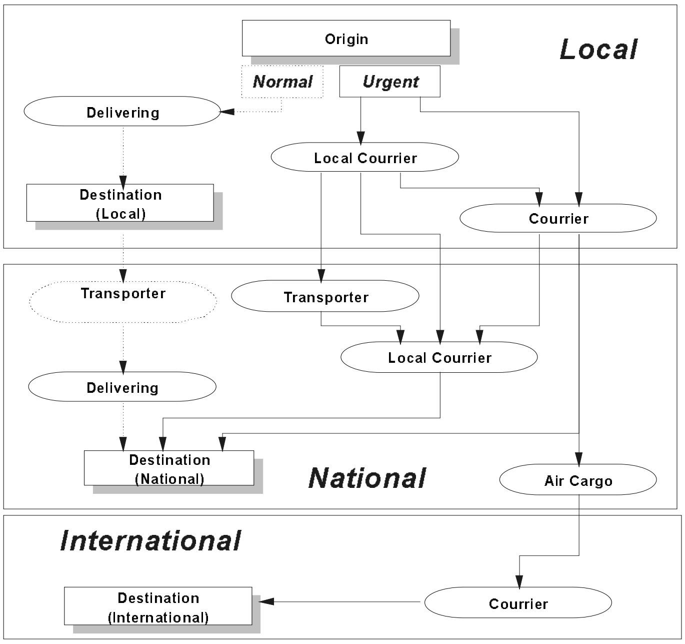
Country	Area of territory (square km) 1994 (UPU)	Population (millions) 1994 (UPU)	Revenue (million ECU) 1995 (*=1994) (EU & PPOs)	Total number of staff 1995 (PW)	Mail volume handled in 1995 (PW & UPU)	Number of permanent post offices 1994 (UPU)
Austria	83853	8031	*1174	36643	3285	2643
Belgium	30519	10080	1663	47017	3560	1639
Denmark	43077	5200	1229	30996	2675	1291
Finland	338127	5090	885	24644	2310	1879
France	551500	57747	13589	320713	21105	16919
Germany	356910	81410	14957	342413	19015	19479
Greece	131900	10430	*192	11451	385	1256
Ireland	70284	3570	375	8250	600	1949
Italy	301268	57070	5511	196776	4390	14377
Luxembourg	2586	0,400	*71	1697	220	106
Netherlands	40844	15370	2860	60649	5976	2200
Portugal	92389	9830	411	14618	1050	7053
Spain	504782	39190	901	65140	4315	4845
Sweden	449964	8790	2587	51507	5005	1786
United Kingdom	244100	58380	7473	196435	18500	19603

Source: Universal Postal Union, 1995, Price Waterhouse survey, 1996, European Union, 1996 and selected PPO annual reports.

Private postal operators

Private postal operators can be classified by the geographic area they service - local, national, international - and by type of service they provide - urgent / non urgent, which is illustrated in the figure below. Many local companies work together with other local companies and with national companies.

Figure 2.4 : Private postal operator industry overview



Source: Price Waterhouse survey in Spain, 1994

The private postal operator industry has undergone a period of significant change which began in the 1960s, and which has peaked in the 1980s and 1990s. As trade has grown increasingly international, the demand for more expedited, efficient and therefore less expensive forms of cross border communication particularly within the business to business market has grown.

Large business customers have centralised their inventory, production and distribution facilities, thus creating a growing demand for "just in time" expedited delivery. Many companies were willing to pay high prices for express services and these high prices were then compensated by lower stock costs. Furthermore, the growth in home shopping underlined the increased need for express services.

The Global Integrators such as FedEx, DHL, UPS, and GD Express/TNT offer services which go beyond postal services and integrate various forms of transportation and distribution services. They all operate in the three main international markets of North America, Europe and Asia, having invested large amounts on highly automated hubs, fleets of aircraft and ground vehicles.

Below the growth in items handled by three of the global integrators from 1990 to 1995 is illustrated. They have experienced an increase of about 100% for domestic and international items combined over the five year period.

Figure 2.5: Number of items handled by three of the global integrators

Year	Domestic	International	Total
1990	96m	17m	113m
1995	167m	58m	225m

Source: Price Waterhouse survey, 1996

The strong growth in the market for express services has attracted companies active in other fields of transportation. Airline companies such as KLM, Lufthansa, British Airways support the services offered to the market by providing cargo space to the freight forwarders. Also, niche players have also been attracted within areas such as Document Exchange Services. Yet another area for new entrants is distribution of newspapers and magazines.

At the national and local levels a number of small companies have been set up in the 1990s. They typically offer express services. In Spain more than 1800 privately owned firms were operating in the postal sector in 1992. The local courier companies are small while the activities of the national courier companies are more concentrated. Also on the Spanish market, delivery firms have created networks and alliances to work at a national level. In a country such as Denmark, 1170 companies were operating within courier and express services and distribution of newspapers and magazines in 1995. Some small messenger companies have started business with only a few bicycles, focusing on a specific geographic area, and on specific industries. Figure 2.6 shows available statistics on the number of postal operators in four EU countries.

Figure 2.6 : Number of private postal operators in selected countries.

Country	Number of PrOs	Year
Denmark	1170	1995
Spain	1800	1992
The Netherlands	1810	1996
United Kingdom	1550	1996

Source: National statistical offices, 1996

Model for analysing postal sector employment

The postal sector is part of the communication, transportation and financial services sectors in the economy and as such it will be heavily influenced by the developments towards what is known as the information society. The main drivers of this development are generally accepted to be:

- technology;
- changes in the overall economy;
- policy/ ideology; and,
- reorganisation.

Examples of hypotheses presented by postal sector participants in relation to the effects of these four drivers are:

The effects from new information and communications technology is assumed to have two major impacts on employment: substitution and automation. Substitution will mainly influence employment via effects on mail creation and thereby mail volumes (effects are mostly assumed to be negative); substitution will also affect transportation and sorting as hybrid forms automate or internalise elements of the value chain. Automation will mainly influence sorting and administrative procedures.

From the traditional postal sector perspective the technology effect is rationalisation and maybe relocation, both implying a negative effect on employment. There are also new opportunities in the substitution processes - e.g. in the development of new products.

Changes in the overall economy are as diverse as increased homeshopping and working from home, internationalisation of trade, more demanding and individualised consumer expectations for improved services and products. These lead to expectations for better customer service, flexibility in product range and services, and new communication and transportation patterns - again leading to changes in working patterns.

Policy/ideology is typically associated with liberalisation, which will influence employment through productivity, composition of the industry and the quality of the products. The influence on productivity is assumed to be a general increase via increased competition. Liberalisation will shift parts of postal activities to niches and new players in the sector. It is also assumed to open up for improved services such as delivery on Sundays and 'second delivery' influencing the demand for services and increasing productivity in production of, for example, hybrid mailing.

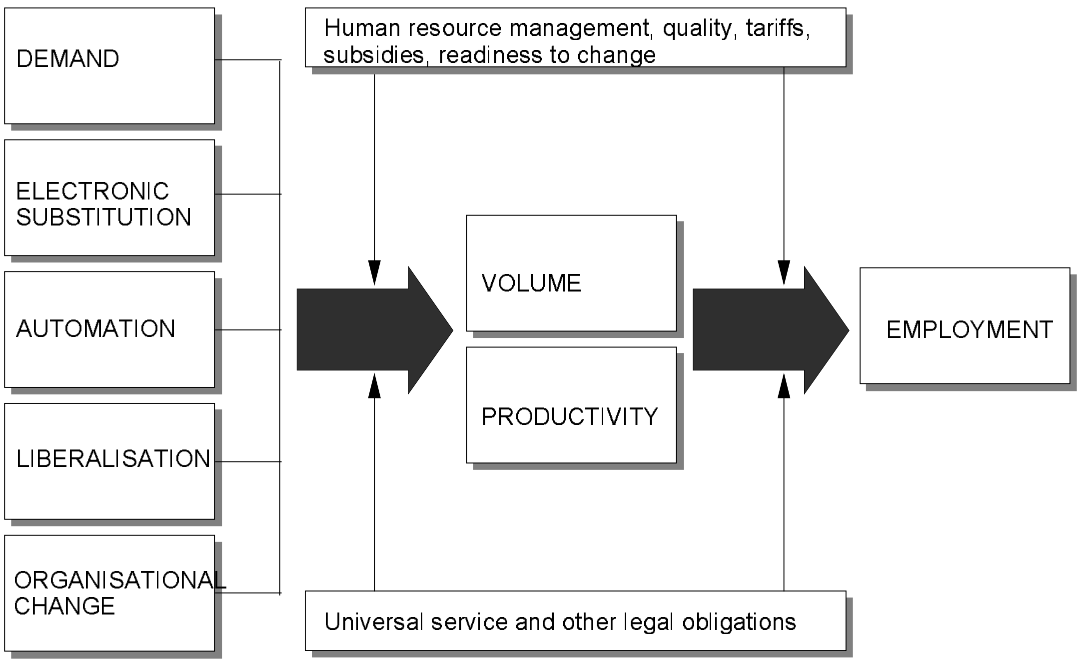
The liberalisation process is typically seen as having a negative effect on employment in the traditional postal sector via rationalisation and relocation, part of which is mirrored as new opportunities for new players.

Reorganisation is linked to liberalisation as increasingly open markets emphasise requirements for efficiency and competitiveness. It is also linked to new information technology - IT enables flatter organisational structures and places increased focus on business processes. Besides reorganisation itself, such changes also lead to demand for new types of skills among employees.

Figure 2.7 shows how we have chosen to analyse the impact of the most important change drivers on postal sector employment. There are five main change drivers: demand for postal services, electronic substitution, automation, liberalisation and organisational change. The change drivers will be the main determinants of mail volumes and productivity levels, which in turn will determine the level and structure of employment.

There are also a number of other important factors that must be brought into the picture, such as the definition of the universal service obligation, tariff levels and structures, levels of government subsidy, political pressures, social aspects (labour laws, union density, human resource management). We describe this framework in detail in section five of the report.

Figure 2.7. Framework for analysing postal sector employment



Source: Price Waterhouse, 1996.

Section 3 – Employment and human resource management in the postal sector

3.1 Introduction

The purpose of this section is to provide an overall “picture” of postal sector employment in the European Union.

We begin section 3.2 by providing an overview of the trends that have taken place with regard to employment in the European Union in recent years. Following this we examine in sections 3.3-3.5 the current level of employment in the EU postal sector, and provide a description of how total employment in the sector has changed in recent years.

In sections 3.6-3.10 we examine the changing composition of employment. Civil service employment, once the predominant contractual form of employment in the industry, has declined considerably. At the same time the distribution of employment between full-time and part-time contracts has changed, as has the distribution between permanent and temporary employment. The PrOs in particular have changed from direct to indirect employment and subcontracting. All of these changes affect both PPOs and PrOs. Our analysis includes: issues related to civil service status; shifts between full-time, part-time and temporary employment; changes in working hours and shift patterns; issues related to the changing gender distribution of postal employment; and finally, changes in the functional distribution of employment.

Human resource management issues are dealt with in section 3.11. In situations where postal operators have reduced employment, we analyse the methods they have used to achieve and manage these reductions. We then outline the skill and education structure in the sector and examine how postal employers are using training and development to respond to the increasing pressure for competitiveness and efficiency in the sector and to enhance employee skills. In section 3.12 we consider the industrial relations climate and its impact on both private and public operators. In section 3.13 we consider differences concerning remuneration practices between the companies that comprise the sector. Finally, we present our conclusions in section 3.14. In each section we begin by considering trends among PPOs and then turn to discuss developments among PrOs.

3.2 Overall employment trends in the European Union

Below we briefly provide, as background for the study, the general trends that have taken place with regard to employment in the European Union. These trends have had an impact on almost all sectors, including the postal sector.

Changes in the structure of employment

The structure of employment has undergone substantial change in the European Union in the last two decades. Employment in traditional manufacturing has declined. By 1994 the private service sector had become the largest employer in the European Union with 55 million employees, compared to 46 million employed in manufacturing. Another 28 million were employed in public services (European Commission, 1995c).

The new employment structure results in occupational changes and demands for higher skills and qualifications. Technology for example has reduced the absolute demand for intermediate craft occupations and lower skilled jobs in industry and manufacturing are either being replaced by automation or being performed more cheaply in lower wage countries.

The new jobs in the service sector tend to be more polarised between lower paid and higher paid employment. Successful competition increasingly depends on rapid adjustment and constant innovation and adaptation, for both companies and employees, hence increasing the demand for more educated and professional employees. At the same time much of new service sector employment tends to be at the lower skilled and lower paid end (European Commission, 1995c).

Public service sector employment has not been immune to change either. Budgetary pressures limit the continued expansion of employment in public sector services and administration while much of employment in public enterprises has moved out of direct public sector control as a result of liberalisation and privatisation policies.

Changes in industrial structure and technology have led to a change in the demand for labour. In addition, labour supply has also changed as a result of demographic and social factors compared to twenty years ago, and as a result the average working person in the 1990s is more likely to be better educated, older and female than they were in the 70s and 80s.

Unemployment

Sectoral and technological changes have resulted in large scale structural unemployment. In 1995 almost 18 million people were out of work in the European Union which is about 11 percent of the work force (European Commission, 1995c). Unemployment in general has increased since 1973, and there are no indications that it will decline in the near future. Staying competitive while at the same time maintaining employment is one of the key challenges facing all sectors of the economy.

Young people tend to be relatively hard hit by unemployment. Unemployment rates among people with no educational or vocational training qualifications tend to be higher than among those with additional qualifications and/or third level educational qualifications. The problem of growing levels of unemployment among unskilled workers presents a challenge for the postal sector, particularly due to the fact that many postal workers are comparatively unskilled.

Long term unemployment is becoming more and more prevalent. In 1994 almost half of those who were unemployed had been out of work for a year or more. Older members of the workforce are most hurt by long term unemployment. For example of those people between the ages of 55 and 59 who were unemployed in the European Union in 1994, almost sixty percent of them had been unemployed for a year or more (European Commission, 1995c).

We conclude, that

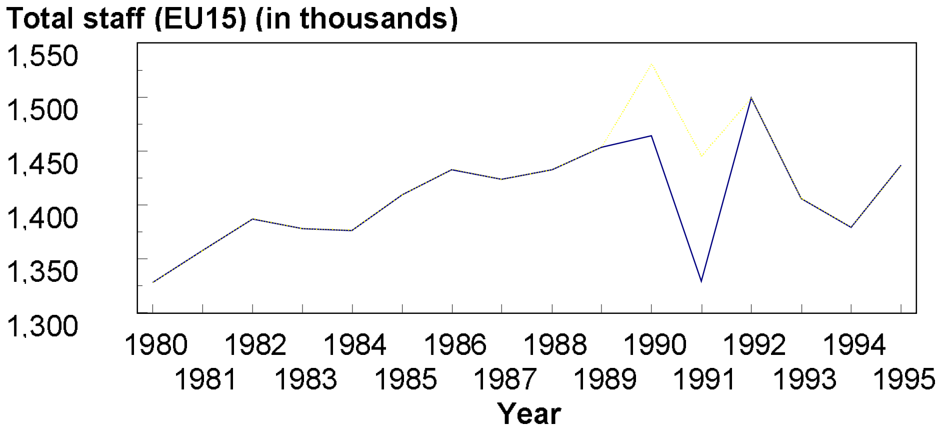
- profound changes in employment have taken place in the EU in the last two decades. The changes include a more diversified workforce, a growing need for well qualified employees but also a low-skilled and low paid sector, as well as persistent levels of unemployment; and,

- staying competitive and efficient while at the same time maintaining employment is one of the key challenges facing all sectors in the economy. These developments have profound implications for the individual, employing organisations, and policy makers alike, requiring both new skills and new institutional and organisational approaches to work.

3.3 Long term employment trends in the postal sector

During the 1980s technological developments, such as the mechanisation of sorting centres, tended to reduce the need for employees. In most cases these developments were counterbalanced by the expansion of the postal market, whereby increasing mail volumes needed more employees. Employment in the twelve EU Public Postal operators increased in overall terms by about thirteen percent during the 1980s. Between 1990 and 1995 employment in the 15 EU PPOs has declined by just over seven percent. The employment trend can be seen in figure 3.1.

Figure 3.1 Employment in EU PPOs between 1980 and 1995



The change in employment among private postal operators tends to have followed general economic developments in society. The internationalisation of trade in the 1970s led to a growth in demand for more expedited postal services which in turn resulted in an increase in the opportunities for PrOs to expand their businesses and the number of people they employed.

Since the 1970s PrOs have continued to expand their activities and employment. At first employment was mainly created within the area of parcel and express document services. During the 1990s jobs have also been created in areas as diverse as logistics management.

3.4 Employment in Public Postal operators (PPOs)

Total employment

Figure 3.2 shows that just over 1.4 million people were employed in the fifteen EU PPOs in 1995. This equates to approximately one percent of total employment in the European Union, with individual PPOs being among the biggest single employers in many member states. Employment is concentrated among the larger PPOs, with the largest four - Germany, France, the UK and Italy - accounting for just over three quarters of total EU PPO employment in 1995.

Figure 3.2 Employment in the fifteen Public Postal operators 1990 - 1995

Country	Total number of employees in 1990	Total number of employees in 1995	Percentage change between 1990 and 1995
Austria	37351	36643	-1.90%
Belgium	48762	47017	-3.58%
Denmark	36353	30996	-14.74%
Finland	31354	24644	-21.40%
France*	301571	320713	6.35%
Germany**	399177	342413	-14.22%
Greece	12084	11451	-5.24%
Ireland	8091	8250	1.97%
Italy	230811	196776	-14.75%
Luxembourg	1685	1697	0.71%
Portugal	15408	14618	-5.13%
Spain	68032	65140	-4.25%
Sweden	64223	51507	-19.80%
The Netherlands	64535	60649	-6.02%
United Kingdom	201800	196435	-2.66%
Total EU	**1521237**	**1408949**	**-7.38%**

* Figure for 1990 taken from La Poste Rapport D'Activité 1993.
** Figure for 1990 taken from Postdienst Annual Report 1991.
** Figure for 1995 corresponds to employment in 1994 taken from Postdienst Annual Report 1994.
Source: All data taken from Price Waterhouse survey, 1996 except where indicated above.

Overall employment in PPOs declined by almost 112300 people, or just over seven percent, between 1990 and 1995. Three national PPOs expanded employment, while the remaining twelve decreased employment. The decreases were concentrated in the PPOs in five countries: Denmark, Finland, Germany, Italy and Sweden, where they exceed ten percent of 1990 employment (this is illustrated in figure 3.2).

If we examine the number of full-time equivalent jobs in 1990 and 1995 we see that in 11 EU countries the number of full-time equivalent jobs has declined by 10.81 percent. These changes are illustrated in figure 3.3. On an aggregate level figure 3.3 is not comparable to figure 3.2, particularly due to the lack of full-time equivalent numbers from the large operators in Germany and France. On a country-to-country level figure 3.3 shows that from 1990 to 1995:

- decreases in employment in Portugal, Sweden, and Denmark are less when measured in full-time equivalents as compared to the total number of employees;
- decreases in employment in Finland and the Netherlands are larger when measured in full-time equivalents as compared to the total number of employees; and,
- a decrease in the total number of employees in Belgium is turned into an increase when measured in full-time equivalents.

Figure 3.3 The total number of full-time equivalents employed during 1990 and 1995 is shown below for the 15 EU PPOs.

Country	FTEs 1990	FTEs 1995	Change from 1990 to 1995
Austria	34959	34303	-1.88%
Belgium	36566	37487	2.52%
Denmark	20366	17835	-12.43%
Finland	28400	21540	-24.15%
France	N/A	285300	N/A
Germany	N/A	N/A	N/A
Greece	11900	11359	-4.55%
Ireland	N/A	N/A	N/A
Italy	230111	196776	-14.49%
Luxembourg	1570	1585	0.96%
Portugal	16380	16069	-1.90%
Spain	66400	63518	-4.34%
Sweden	48000	40000	-16.67%
The Netherlands	44184	40106	-9.23%
United Kingdom	N/A	171506	N/A
Total EU (11)	**538836**	**480578**	**-10.81%**
Total EU (13)	**N/A**	**937384**	**N/A**

Source: Price Waterhouse Survey, 1996.

Employment change in mail services and financial/retail services

Figure 3.4 shows the proportion of employees that was engaged in the provision of mail services and financial/retail services in each of the EU PPOs in 1990 and 1995.

Figure 3.4 Split of PPO employment between mail services and financial/retail services in 1990 and 1995

Country	Mail Services (1990)	Mail Services (1995)	Financial / Retail Services (1990)*	Financial / Retail Services (1995)*
Austria	N/A	92.80%	N/A	7.20%
Belgium	93.70%	96.20%	6.30%	3.80%
Denmark	87.90%	85.30%	12.10%	14.70%
Finland	73.50%	80.10%	26.50%	19.90%
France	N/A	57.70%	N/A	42.30%
Germany	N/A	N/A	N/A	N/A
Greece	70.00%	70.00%	30.00%	30.00%
Ireland	75.10%	76.40%	24.90%	23.60%
Italy	70.00%	60.00%	30.00%	40.00%
Luxembourg	95.20%	95.10%	4.80%	4.90%
Portugal	66.00%	74.00%	34.00%	26.00%
Spain	96.00%	96.00%	4.00%	4.00%
Sweden	64.40%	68.80%	35.60%	31.20%
The Netherlands	89.80%	89.80%	10.20%	10.20%
United Kingdom	93.52%	90.11%	6.48%	9.89%
Total EU (weighted)	**81.90%**	**73.58%**	**18.10%**	**26.42%**

*Financial services do not include girobank operations where they are a separate unit.
Source: Price Waterhouse survey, 1996.

The majority of postal sector employees are engaged in the provision of mail services (73.58 percent in 1995). For the EU as a whole the proportion of postal sector employees engaged in mail services has declined between 1990 and 1995 while the proportion engaged in financial and retail services has grown.

In 1995 financial/retail service employees accounted for slightly over one quarter of total employment in the fifteen EU PPOs. The proportion varied by country, ranging from over 40 percent to under ten percent depending on the individual country concerned.

Employment in both financial/retail and mail services has declined in the majority of PPOs. Eight of the twelve PPOs who provided data on the change in employment between 1990 and 1995 experienced a reduction in their number of financial/retail service employees. Eight PPOs also experienced a decrease in the number employed in mail services.

Reductions in PPO employment in financial/retail services are sometimes a direct result of changing ownership status of financial/retail services outlets (post offices) from company or PPO owned to franchised or subcontracted. Therefore these reductions in employment do not necessarily constitute job losses in absolute terms, but rather the transfer of employment to the private sector. We discuss the subject of franchising and subcontracting in more detail in section four of this report in connection with the discussion of organisational change.

Unlike in the financial/retail services area, subcontracting and franchising of mail services activities are still uncommon, and as a result, employment reductions in this area are likely to represent actual job losses aimed at achieving productivity savings rather than the transferring of employment to the private sector.

The unavailability of reliable data prevents any comprehensive reporting about the split of employment between letter and parcel services in PPOs. We do have detailed information from one operator about parcel volumes, parcel revenue, and the operator's estimation of the number of employees in parcel services for the year 1995. For this operator the total number of parcels as a percentage of total number of letters was 2.2 percent. Revenue from parcel services as a percentage of revenues from letter services was 13.9 percent. The operator estimated that approximately 4 percent of the workforce measured in full-time equivalents was working with parcels throughout the postal value chain.

Expected changes in employment levels

Reduction of employment in most EU PPOs is expected to continue at least up to the year 2000. Figure 3.5 shows the results from our survey where we asked PPOs to estimate the broad change in employment levels they expect between 1995 and the year 2000, differentiating between mail services and financial/retail services.

Figure 3.5 Expected change in PPO employment between 1995 and the year 2000

	Very significant decrease (over 20%)	Significant decrease (5-20%)	Slight decrease (0-5%)	No change	Slight increase (0-5%)	Significant increase (5-20%)	Very significant increase (over 20%)
Mail Services	0	4	6	1	2	0	0
Financial / Retail Services	2	2	2	2	0	0	0

Source: Price Waterhouse survey, 1996.

Only two PPOs expect an increase in the number of people they employ in mail services up to the year 2000. Ten PPOs predict that the number of people they employ in this area will fall over the next five years.

None of the PPOs expect to increase the number of people they employ in financial/retail services up to the year 2000. The franchising and subcontracting of post offices will continue to be one of the main contributors to the decreasing level of employment. However, a number of PPOs are currently undertaking major investment programmes in office and transaction automation, which is also expected to have an impact on employment.

Overall those PPOs that have seen the most marked employment reductions over the past five years are the ones that are expecting further substantial reductions in the future. Those with moderate changes between 1990 and 1995 only expect further moderate changes over the next five years.

3.5 Employment in private postal operators (PrOs)

It is difficult to establish the exact number of people employed in private postal operators in the EU when compared to PPOs because there are currently no detailed employment data published for PrOs. Other factors which make the establishment of the level of employment in this part of the sector difficult are:

- there is no commonly agreed definition across the EU for identifying the companies that should be considered private postal operators;
- there is no single organisation or industry federation which collects information on all the companies in this part of the postal sector so there is no organised collection of statistical data; and,
- there are substantial differences in the development and organisation of PrOs between the different member states of the EU;

Finally, there is a multitude of small companies in the industry, most of which employ only one or two people but draw on a large number of "self-employed" associates. Entry into the sector is also relatively easy. Therefore new companies are created and others close down very often.

An estimation put forward by the EU Commission in the 1992 Green Paper was 350000 employees while an estimate made by DHL in 1995 was 372000 employees.

With the current available data, any estimate of PrO employment can only be based on very rough assumptions. Our own data support the estimates by the Commission and DHL that approximately 350000-400000 people are employed in the private postal sector. A more thorough explanation of the methodologies applied by us to arrive at such figures can be found in appendix 3.

In summary, the approach we have used to reach our estimate is as follows:

- We first adopted a common definition of the PrO part of the postal sector, which approximately coincided with NACE code 64.12. This code is defined as collection, transport and distribution of letters and parcels conducted by private companies such as courier companies or messenger companies.

- Next we collected secondary data on PrO employment from Eurostat and the various national statistical offices. Data were only available for Sweden, Denmark, the United Kingdom and Spain. The figures are the following (national statistical offices):

Denmark (1993)	7800 PrO employees
Sweden (1995)	11500 PrO employees
Spain (1995)	23900 PrO employees
United Kingdom (1995)	45700 PrO employees

  Based on data from these four countries we made a simple extrapolation for all the 15 EU countries, ending up with the range mentioned earlier.

- We then conducted a survey of the global integrators in each member state supplemented by in-depth interviews with selected large national PrOs throughout the EU, and a number of telephone interviews with smaller PrOs in several countries. Telephone interviews were primarily used to gather qualitative information about employment practices in the industry and also provided valuable quantitative data.

Change in total PrO employment between 1990 and 1995

PrO employment has grown in the last five years. In the UK for example where official labour market surveys provide an indication of growth, overall employment among PrOs increased by 17 percent between 1994 and 1995, from 39000 to 45700 people. Similar data are not available from other EU member states. Instead estimates for individual industry segments indicate significant growth. We consider in turn employment trends in global integrators, large national companies, and small local companies.

Employment growth among the Global Integrators

According to the European Express Organisation (EEO), which represents fourteen express and courier service companies that operate in most of the EU countries, employment among its members increased by 230 percent between 1989 and 1995, going from 18000 to 60000 in just six years. It is important to notice, that these figures also include European countries outside the EU. While some of this growth was due to an increase in the relative market shares of the companies concerned, the EEO estimates that about 70 percent of the increase in employment is due to organic growth, while the remaining 30 percent is due to mergers and acquisitions.

As part of our survey of private postal operators, we collected detailed data on the number of people working with parcels and document express services in the five global integrators operating in the EU, namely DHL, FedEx, GD Express, TNT and UPS.

The data shows that the global integrators experienced a significant increase (46 percent) in total employment from 35500 in 1990 to 52000 in 1995. In total the global integrators estimate that once the growth in employment due to acquisitions is excluded, their net employment grew by approximately 23 percent between 1990 and 1995.

It is difficult to estimate growth by product area (parcels and documents) because the same employees are typically used for collecting and delivering both products (Interview AEEC, 1996). Furthermore, it was not possible to get volume and employment data divided into parcels and documents from the integrators for confidentiality reasons. Therefore estimates of employment growth are not specified into product segments.

Figure 3.6 Development in the number of people employed by four global integrators between 1990 and 1995 and expected change in employment up to the year 2000

Country	Change in employment between 1990 and 1995	Expected change in employment up to the year 2000
Austria	+371%	Significant (5-20%) to very significant (20%+) increase
Belgium	-6%	Significant (5-20%) to very significant (20%+) increase
Denmark	+798%	Significant (5-20%) to very significant (20%+) increase
Finland	+133%	Significant (5-20%) increase
France	+75%	Slight (0-5%) increase
Germany	+40%	Very significant (20%+) increase
Greece	+117%	Significant (5-20%) to very significant (20%+) increase
Ireland	+255%	Significant (5-20%) to very significant (20%+) increase
Italy	+341%	Significant (5-20%) to very significant (20%+) increase
Luxembourg	+100%	Significant (5-20%) increase
Portugal	+112%	Slight (0-5%) to significant (5-20%) increase
Spain	+1533%	Very significant (20%+) increase
Sweden	+74%	Slight (0-5%) increase
The Netherlands	+77%	Significant (5-20%) increase
United Kingdom	+13%	Very significant (20%+) increase

*The survey covered UPS, FedEx, GD Express and DHL.
Source: Price Waterhouse survey, 1996.

As can be seen in figure 3.6, data on the change in employment between 1990 and 1995 are available on a country by country basis for four of the global integrators.

Although employment growth has not been equally significant in all EU member states, in almost all countries global integrators have experienced a substantial increase in employment.

In relative terms, the greatest increase in global integrator employment has taken place in Italy, Spain, Ireland, Denmark and Austria.

In absolute terms the United Kingdom, Germany, and France are the countries where the global integrators experienced the largest increases in employment between 1990 and 1995.

National employment growth rates differ between the individual global integrators. Some experienced growth over the whole period, while employment in others fluctuated from year to year, typically decreasing the year after the acquisition of a large national company.

Expected employment growth among global integrators between 1995 and the year 2000

As shown in figure 3.6, the global integrators in all EU countries expect to increase employment over the next five years, and in most countries these increases are expected to be significant (between five and twenty percent) or very significant (over twenty percent). The growth in employment is expected as a result of a growing market for express services and an increase in market share among the global integrators.

Employment growth in national and local PrOs

We carried out a number of in-depth face to face and telephone interviews with national and local companies in France, Denmark, Sweden, Portugal, Luxembourg, the Netherlands, UK and Spain. The companies surveyed were selected at random from lists of companies engaged in the provision of letter services, parcel services, and express courier services. The 23 companies that gave us detailed information employed about 9000 in 1995. Our survey cannot give an extensive picture of total employment among national and local private postal operators but it points to some trends and indicators regarding the development of employment in the private part of the postal sector. Our survey showed that:

France is the only country where the companies surveyed had not seen significant employment growth over the past five years. This was due to the fact that one of the French respondents had reduced its employment level by over twenty percent between 1990 and 1995. The remaining three companies in France increased employment by 47 percent over the period. All companies in other countries increased employment between 1990 and 1995, although growth levels varied considerably by country. In many instances, the companies that were surveyed had only been established after 1990, which accounts for the very high percentage increase in employment in some countries.

Companies in messenger services form a subsegment of courier & express services. They have experienced the steepest growth because they have created new markets.

Companies offering document and parcel services have seen much less growth, which is probably due to the fact that in some countries PPOs have successfully fought back against PrOs to regain some of their existing market share in the parcel market (Bolton, 1995).

Figure 3.7 shows the development of employment among the national and local PrOs by country.

Figure 3.7 Employment in a sample of national and local companies

Country	Sample size	Employment in 1990	Employment in 1995	Change in employment between 1990 and 1995
France	4	4735	4128	-13%
The Netherlands	2	600	2016	236%
Denmark	5	322	809	151%
Sweden	5	16	379	2269%
Portugal	3	326	498	53%
Luxembourg	3	158	190	20%
Spain	1	900	1000	11%

Source: Price Waterhouse survey, 1996

With the regard to employment among the postal operators, we conclude that:

- the postal sector is a major employer in the EU, and that employment is concentrated in PPOs which employ 1.41 million people in total. PrO employment is estimated to be in the range of 350000 - 400000;
- up to 1990 there was an almost continuous growth in employment in the sector. Since 1990 overall employment has declined. PPOs in some member states have seen substantial reductions in employment while others have experienced a small growth in employment over the past five years;
- mail services have seen the greatest absolute loss in employment. In retail and financial services a transfer of employment from PPOs to franchising has taken place; and,
- total employment in the private sector has grown rapidly.

Direct and indirect postal employment in the EU

Like other sectors the postal sector also generates indirect employment. The focus of our study is to analyse direct employment, but below we outline a few reflections concerning indirect employment.

The postal sector generally has a very high degree of vertical integration. However, indirect employment is generated by aspects of the postal value chain, and upstream and downstream activities related to the value chain.

Secondary sources and our survey show that:

- suppliers to the postal operators have seen growth and expect to see continued growth in the production and use of postal equipment (on a world-wide scale);
- postal operators are outsourcing their transportation to airlines, railways and other means;
- postal operators increasingly use outsourcing and franchising of post office functions;
- in recent years there has been an upsurge in the number of mail preparing companies, mail order companies and direct mail companies; and,
- other types of operators that have their main business in areas outside the postal sector, such as freight forwarders, railways, and airline companies are increasingly beginning to transport postal items.

These tendencies indicate a growth in indirect postal employment.

3.6 Civil servants

Public Postal operators traditionally employed mostly civil servants. While the precise definition varies between countries, employment contracts for civil servants, including rules governing regional and functional mobility and wage increases, have been subject to detailed legislative regulation. This slows down adjustments in contractual rights and working practices. Civil servants are distinguished from other employees under non-civil servant employment contracts in the following manner:

- civil servants generally are better protected against redundancy and dismissal;
- occupational pensions were traditionally provided from central government funds, with no direct financial contributions required from either the employees or the PPO; and,
- in several countries civil servants pay lower rates of social insurance taxation;

The percentage of PPO employees that are civil servants in each member state is described in figure 3.8.

Figure 3.8 The level of civil service employment among EU PPOs in 1995

Country	Civil Servants as a percentage of total PPO employment in 1995
Austria	65.0%
Belgium	0.0%
Denmark	49.8%
Finland	0.0%
France	79.4%
Germany	N/A
Greece	89.4%
Ireland	0.0%
Italy	100.0%
Luxembourg	68.0%
Portugal	98.3%
Spain	70.3%
Sweden	0.0%
The Netherlands	0.0%
United Kingdom	0.0%
Total EU (weighted)	**52.7%**

Source: Price Waterhouse survey, 1996.

Six of the fourteen PPOs who provided data on the subject did not employ any civil servants in 1995. The status of civil servants in Sweden and Finland changed to ordinary employment contracts as a result of corporatisation in 1994.

In the remaining eight PPOs, the majority of employees are still civil servants, and in total civil servants still account for almost 53 percent of total employment in fourteen of the EU PPOs.

Some PPOs have increased the proportion of civil servants in the workforce in the past five years because full-time employment has increased and civil servant employment remains the predominant form of permanent full-time employment. For example, in Spain the proportion of civil servants in the workforce increased from 63 percent in 1990 to 70 percent in 1995, mainly due to a conversion of temporary jobs into permanent jobs.

Several PPOs expect a reduction in their proportion of civil servants up to the year 2000 including a complete end to civil servant status in some PPOs. Civil servant employment contracts are likely to be converted into ordinary employment contracts. For example Post Denmark expects to phase out civil servant employment status by 1998. In Austria, a new law was passed in 1996, decreeing that all future PPO employees would be employed under ordinary contracts.

3.7 Full-time, part-time and temporary employment in the postal sector

Traditionally, employment in the postal sector has been organised on a full-time basis, primarily as a result of the predominance of civil servant employment. The reorganisation and growth of PrOs is leading to a greater diversity in working patterns in many countries. Below we discuss trends in full-time, part-time and temporary employment providing a detailed review of the evidence for both PPOs and PrOs.

Full-time employment in PPOs

Permanent full-time employees, whether civil servants or not, accounted for about three quarters of total employees in PPOs in 1995. The remainder was divided between part-time, temporary and casual employees. These proportions have remained relatively stable between 1990 and 1995.

As shown in figure 3.9 there is considerable diversity in the level of full-time employment between the individual PPOs. For example, in the Netherlands full-time permanent employees accounted for less than half of the workforce in 1995, while in Italy, Greece and Portugal, they accounted for over 95 percent of the workforce.

Figure 3.9 Contractual basis of employment in the PPOs in 1995

Country	Full-time employees	Part-time employees	Temporary and casual employees	Other employees
Austria	81.60%	10.00%	7.40%	1.00%
Belgium	80.20%	6.10%	10.30%	3.40%
Denmark	66.00%	30.50%	0.70%	2.80%
Finland	68.70%	22.80%	8.50%	0.00%
France	74.40%	16.20%	8.90%	0.50%
Germany	N/A	N/A	N/A	N/A
Greece	99.20%	0.60%	0.00%	0.20%
Ireland	78.90%	4.00%	17.10%	0.00%
Italy	96.95%	0.00%	2.80%	0.25%
Luxembourg	72.10%	26.90%	1.00%	0.00%
Portugal*	98.30%	1.70%	0.00%	0.00%
Spain	73.10%	8.30%	18.60%	0.00%
Sweden	71.70%	14.80%	13.50%	0.00%
The Netherlands	49.50%	47.50%	3.00%	0.00%
United Kingdom*	83.95%	14.32%	1.73%	0.00%
Total EU (weighted)	**79.45%**	**13.56%**	**6.53%**	**0.46%**

*The figures for temporary employees for Portugal and the UK were not available.
Source: Price Waterhouse survey, 1996.

The composition of full-time employment broken down between mail services and financial/retail services has changed in the following manner:

- the share of full-time permanent employment in mail services has remained stable in only two PPOs between 1990 and 1995. The remaining ones are split equally between increasing and decreasing proportions of permanent full-time employment; and,
- changes in the proportion of full-time employees are more marginal in relation to financial/retail services, with the exception of two PPOs, one of which experienced an increase in the relative importance of full-time employees, and the other one a decrease.

Part-time employment in the EU

Part-time employment accounts for approximately 15.5 percent of total employment in the EU and is increasing.

Part-time employment is particularly dominant in the service sector, with employment in the retail sector and public administration accounting for the majority of all part-time employees. The growth of part-time employment has been closely linked with the growing participation of women in the active workforce.

While the increase in part-time employment has been a common occurrence across the EU, the level of part-time employment varies widely between the individual member states. A north-south divide exists, with higher levels of part-time employment in the Netherlands, the United Kingdom and Scandinavia, and lower levels in the southern states, France and Belgium.

Part-time employment in PPOs

Traditionally part-time employment has played a relatively minor role in postal employment. Most of the people employed to carry out the sorting and delivery of mail were employed on a full-time basis. An important exception, however, were small rural post offices.

Our survey shows that in 1995, just under 13.6 percent of the people employed by PPOs were employed on a part-time basis, which was just slightly below the EU average. The proportion of total employment accounted for by part-time employees varies dramatically between individual PPOs, ranging from less than one percent in Greece to almost 50 percent in the Netherlands.

As can be seen from figure 3.10, these differences in the level of PPO part-time employment broadly follow the national part-time employment patterns in each of the EU member states. In half of the PPOs, the level of part-time employment is higher than the national average, while in the remaining half it is lower.

Figure 3.10 The share of part-time employment in PPOs and the EU

Country	Part-time employment among PPOs in 1995	Part-time employment in 1994 from employment observatory
Austria	10.00%	9.10%
Belgium	6.10%	12.80%
Denmark	30.50%	21.20%
Finland	22.80%	8.30%
France	16.20%	14.90%
Germany	N/A	15.80%
Greece	0.60%	4.80%
Ireland	4.00%	10.80%
Italy	0.00%	6.20%
Luxembourg	26.90%	8.00%
Portugal	1.70%	8.00%
Spain	8.30%	6.90%
Sweden	14.80%	24.90%
The Netherlands	47.50%	36.40%
United Kingdom	14.32%	23.80%
Total EU (weighted)	**13.56%**	**15.40%**

Source: Price Waterhouse survey, 1996 and European Commission, 1996b.

The proportion of part-time employees in mail services does not correlate with the proportion of part-time employees in financial/retail services. For six of the PPOs it has been possible to compare the proportion of part-time employees in mail services and financial/retail services. Only one of these PPOs had similar levels of part-time employment in both areas.

This data also showed that there was no definite change in the level of part-time employment in the individual PPOs between 1990 and 1995.

The length of the part-time working week

In order to analyse the nature of part-time employment in different EU PPOs, we asked for information regarding the average number of hours worked by part-time employees. This information is of particular interest to trade unions as they have been concerned with the growth in the number of part-time contracts of short duration among PPOs.

Eight PPOs were able to provide information about the average number of hours that part-time employees worked per week, and the figures they gave ranged from 12 to 26 hours. The average number of hours worked by part-time employees in all eight PPOs was just over 20 hours.

Reasons for different part-time employment trends in PPOs

Efficiency gains, particularly as a result of automation in the mail sorting area, increase the potential scope for the introduction of part-time employment and enable PPOs to reduce overall labour costs. The potential for increasing the level of part-time employment is mitigated by emerging employee preferences for and willingness to shift to part-time working. Below we examine part-time employment in three member states.

Case: Sweden

Posten has shifted away from part-time working in the past five years. This shift reflects a general trend in Sweden, the only EU country where the number of companies that decreased part-time employment outnumbers those that increased it over the last few years (Brewster et al, 1996). During the early 1990s, when the Swedish economy was booming and demand for labour was high, many part-time employees had the opportunity to move to full-time employment. This 'natural wastage' of part-time employees contributed to the reduction of part-time employment and helped Posten make adjustments in overall employment levels.

Case: the Netherlands

PTT Post has the highest level of part-time employment in the EU. This reflects the situation in the Dutch labour market as a whole since the Netherlands has the highest level of part-time employment in Europe. Unlike in Sweden, there continues to be considerable demand for further part-time employment in the Netherlands. Part-time employment in PTT Post has increased in sorting and Saturday deliveries. These two areas attract different types of part-time employees. Part of the sorting work is now being performed in the late afternoon and early evening and these working hours tend to be most convenient for women with caring responsibilities. Saturday deliveries tend to mainly attract students. In order to allay the fears of the current workforce in this regard, PTT Post and the unions have made an agreement that all changes in part-time employment will be voluntary, and that weekly part-time hours are high enough to ensure that part-time employees earn above the tax limits for national insurance.

Case: The United Kingdom

In the UK the proportion of part-time employment is high although this is not the case in the Post Office. Although part-time employment in the Post Office has increased substantially over the last five years, in absolute terms the number of part-time workers remains relatively low. One area where the number of part-time employees has increased is in the Post Office Counters division, the retail arm of the Post Office. Post offices are one of the outlets for the recently introduced National Lottery. In order to compete with other outlets, many post offices have extended their Saturday opening hours from lunch time to the early evening. This in turn resulted in the need for additional part-time employment.

The sorting of the early morning mail is a contentious issue (Royal Mail, 1995). Royal Mail, the mail arm of the Post Office, operates two morning deliveries, with first class mail being delivered prior to 9:30 am and less urgent mail being delivered later in the morning. Currently about 60 percent of sorting and delivery takes place prior to 9:30 am. According to Royal Mail, technological changes will allow a much larger share of mail to be sorted in the early mornings, and as a result shift patterns could be changed in order to accommodate likely efficiency gains. The trade unions challenge this interpretation and are particularly concerned about the impact such changes might have on service standards. While this issue remains contested, the employer and the union have made an agreement ensuring that (as in the Netherlands) employees will not be forced to change from full-time to part-time contracts. In any case Royal Mail expects to continue to work with a predominantly full-time workforce for the foreseeable future.

Part-time employment in the private sector

Only the Central Statistics Office in the United Kingdom was able to provide comprehensive figures for part-time employment in companies that are contained within the NACE 64.12 (for the purpose of this study we consider these companies as the key PrOs). The figures show that approximately 18 percent of total PrO employment was part-time in 1995. This is slightly higher than the level of part-time employment in the Post Office.

The figures for the United Kingdom show considerable growth in part-time employment among PrOs between 1994 and 1995 from 13 percent to 18 percent in just one year.

As comparable data is not available for other countries, we have relied on the information we collected in our survey from the global integrators and on our interviews with national and local private postal operators. Information about PrO part-time employment is reported in figure 3.11. Clearly this cannot be treated as a comprehensive estimation of part-time employment among PrOs but it does provide some indication of differences between EU member states:

- Three of the four global integrators were able to provide part-time employment data on a country by country basis. Like the PPOs, the level of part-time employment among the global integrators varies considerably between countries from three percent in France to a high of 40 percent in Germany.

- The global integrators expect the level of part-time employment to grow significantly, by between five and 20 percent over the next five years in almost all EU countries.

Figure 3.11 Level of part-time employment among different types of PrO in 1995

Country	Global integrators	National and local PrOs
Austria	13%	N/A
Belgium	11 - 35%	N/A
Denmark	10 - 20%	10 - 60%
Finland	10 - 33%	N/A
France	3%	5 - 10%
Germany	30 - 40%	N/A
Greece	5 - 12%	N/A
Ireland	7 - 33%	N/A
Italy	6 - 20%	N/A
Luxembourg	6%	4%
Portugal	10%	0%
Netherlands	25%	15 - 25%
Spain	8 - 28%	15%
Sweden	20 - 36%	10 - 20%
UK	10 - 39%	18%

Source: Price Waterhouse survey, 1996, and UK National Statistics Office, 1996.

The interviews with national and local PrOs represent a broader range of market segments than those covered by the survey of the global integrators:

The diverse market is reflected in variations in the level of part-time employment in some countries. For example, one of the companies interviewed in Denmark employed 10 percent of its workforce on a part-time basis, while in another company, 60 percent of employees were part-time.

The strongest determinant of the level of part-time employment appears to be country rather than the type of company, with the general trend in part-time employment among the national and local PrOs in each country following the national trends.

Case: The United Kingdom

A case study from the United Kingdom illustrates the use of part-time employment among national and local PrOs. One of the large national operators has recently combined all its customer service functions into two new call centres. The majority of people working in the centres are employed on a full-time basis. In order to deal with peaks in activity during the late morning and late afternoon, the company employs a number of part-time staff. The company appears to have been able to accommodate the preferences of part-time employees for working hours that fit with their other responsibilities, and in this sense both the company and part-time employees benefit from the arrangement. Apart from the flexibility to respond to regular variations in activity in a cost effective manner, the company also argues that this arrangement allows it to recruit dedicated and motivated employees who otherwise would not have been able to work for them.

Non-permanent employment in the European Union

During the last decade governments have increased the legal scope for non-permanent or temporary employment, particularly in view of high and rising levels of unemployment. This is seen as one way to encourage employers to increase employment levels.

Temporary employees account for approximately nine percent of total employment in the European Union (European Commission, 1995c).

As with full and part-time employment, the actual levels of temporary employment vary considerably between the different member states of the EU. Temporary employment tends to be highest in those countries where part-time employment is comparatively low.

One factor explaining the variations between countries is the level of employment protection. Non-permanent employment tends to be higher in those countries where employment protection is highly developed and where employment termination is comparatively expensive.

While the majority of employees continue to be permanently employed, non-permanent employment has become the predominant experience for a growing segment of the workforce that moves from temporary job to temporary job on a regular basis (especially young people entering the labour market for the first time and other groups trying to re-enter the active workforce).

Non-permanent employment in PPOs

Temporary and casual employment are an established part of traditional human resource management practices in PPOs. Demand for postal services is subject to fairly predictable peaks and troughs. Mail volumes increase dramatically during the Christmas period and they tend to fall during the summer period. Increases in demand have traditionally been accommodated by employing extra people on either a temporary or casual basis. Universal service obligations typically require a steady level of basic service provision, and therefore during the summer months, despite the fall off in volume, PPOs typically have to hire temporary or casual staff to cover for permanent staff on vacation.

In order to estimate non-permanent employment in PPOs, data was collected for two categories of non-permanent employees: casual employees (those that are employed for less than one month) and temporary employees (those that are employed for a limited duration of at least one month). Legislative and regulatory definitions of temporary and casual employment differ between the various EU member states, and therefore the definitions we have used were adopted after consultations with PPOs at the piloting stage of our survey questionnaire.

Data was provided by 12 PPOs. This data is less accurate than the data on permanent employment, as manpower planning conventions typically mean that employment data are kept centrally by headcount, without distinguishing between types of employee. This means that the figures for temporary and casual employment are often approximations based on aggregated data. In addition, frequently decisions pertaining to the use of temporary and casual employment are delegated to departmental or even line manager levels. As a result, centrally held data may not always accurately reflect the non-permanent employment situation.

For the purpose of comparison with Eurostat, data on temporary and casual employment in PPOs from our survey have been combined. In the figure below we show that temporary and casual employment accounts for approximately 6.5 percent of total employment in the EU PPOs, which is broadly in line with the level of non-permanent employment in the EU as a whole.

Figure 3.12 Non-permanent employment as a share of permanent employment in PPOs and the EU

Country	Non-permanent employment in the PPOs in 1995	Non-permanent employment in the EU in 1994 from the employment observatory
Austria	7.40%	3.50%
Belgium	10.30%	4.20%
Denmark	0.70%	10.80%
Finland	8.50%	13.50%
France	8.90%	9.40%
Germany	N/A	9.10%
Greece	0.00%	5.50%
Ireland	17.10%	7.20%
Italy	2.80%	5.20%
Luxembourg	1.00%	2.40%
Portugal*	0.0%	6.70%
Spain	18.60%	24.70%
Sweden	13.50%	12.00%
The Netherlands	3.00%	9.50%
United Kingdom*	1.73%	5.40%
Total EU (weighted)	**6.53%**	**8.90%**

*The figures for the temporary employees for Portugal and the UK were not available.
Source: Price Waterhouse survey, 1996 and European Commission, 1996b.

Figure 3.12 shows that:

- National variations in non-permanent employment are less pronounced than those in part-time employment. Nevertheless, there are considerable differences between the different member states, both in terms of PPO non-permanent employment and overall levels of non-permanent employment.
- The variation in non-permanent employment in PPOs ranges from 0 percent of total employment in Greece to over 18 percent in Spain. The level of non-permanent employment in the EU ranges from 2.4 percent in Luxembourg to 24.7 percent in Spain. In most countries the level of non-permanent employment in the PPO differs from the national average, and in some cases this variation is considerable.
- Non-permanent employment is concentrated in mail services in all PPOs. Financial/retail services account for less than two percent of total employment in the PPOs for which data were available.
- According to our survey, the overall level of temporary and casual employees in PPOs appears to have declined. Of the eight PPOs who provided data on the subject, five of them experienced both absolute and relative decreases in the number of non-permanent employees between 1990 and 1995, while only two saw an increase. The majority of PPOs do not expect any changes in the current level of non-permanent employment up to the year 2000.

Reasons for changes in non-permanent employment in the PPOs

Changes in non-permanent employment are generally due to the technological and/or organisational advancement of individual PPOs.

Non-permanent employment has traditionally been used as a facilitator for making planned downward adjustments in employment levels when it is clear that organisational or technological change is likely to require job reductions in the near future. In the period leading up to a planned restructuring, vacancies are no longer filled with permanent employees, but rather with non-permanent employees. An end to non-permanent employment often has a negative effect on total employment.

In some countries, most notably Greece and Portugal, the decline in non-permanent employment has been at least partly matched by an increase in permanent employment.

Non-permanent employment in PrOs

Circumstantial evidence suggests that the PrO workforce is much more fluid than the PPO workforce, particularly in the smaller local companies. Employment conditions in the global integrators tend to be more in line with those in PPOs.

One of the few surveys on temporary employment among PrOs suggestes that non-permanent employment in Spain is between 40 and 50 percent of total PrO employment (Price Waterhouse, 1994).

Self employment in the PrOs

Many PrOs make substantial use of self-employed people such as via subcontracting or independent staff. PrOs may use subcontractors when they do not find it economically viable to service particular locations directly. On-call contracts are another possibility. Employees have a contract with the PrO but not for a guaranteed number of hours per week. On-call employees typically ring the PrO in the morning to find out whether work will be available in the afternoon of the same day.

Self employment can offer substantial benefits to employers, as remuneration is generally dependent on the volume of work undertaken, and employers no longer have to pay indirect labour costs or support workers during times of sickness, etc. Savings can also be made with regard to training costs, as although training is provided for free, self employed workers are usually not paid for the time they spend training.

The shift to such employment practices offers considerable benefits to PrOs, both in terms of productivity increases and savings in the overall cost of manpower. The benefits are less obvious for the workers. On the whole, they shift the cost of fluctuations in demand onto the workforce.

In addition, the use of such employment practices by some PrOs puts considerable pressure on other postal operators to follow suit.

We conclude that:

- levels of full-time, part-time and temporary employment in the postal sector vary across the EU. Variations are broadly in line with overall labour market trends. This is true for both PPO and PrO employment;
- the greatest shift towards part-time or temporary employment has been observed among the groups of countries that have undertaken the most extensive liberalisation and organisational changes. PrOs tend to employ a larger proportion of part-timer employees than PPOs;
- temporary employment has been used in PPOs to deal with workforce adjustments due to technical and organisational changes; and,
- employment in PrOs on the whole is less permanent than in PPOs because of the extensive use of self-employment and high levels of labour turnover in some parts of the industry. These characteristics provide considerable labour cost advantages to some PrOs.

3.8 Working hours and flexibility

Pressure for increased efficiency and reorganisation also effects contractual working hours and shift patterns. Longer opening hours in other sectors such as the retail sector have contributed to the demand for an extension of opening hours in the postal sector. Within the industry, competition increasingly centres around speed and immediacy of service leading to a need for work outside of the standard working day and a closer match between labour costs and variations in demand.

At the same time trade unions push for a reduction in the contractual working week to redistribute work between the employed and the unemployed, and to achieve a balance between the rights of the individual to a social and family life and the needs of the employer for efficiency.

Working hours in the provision of mail services in PPOs

The average working week has declined in most EU member states over the past few years. The typical length of the working week and the contractual arrangements surrounding working hours continues to vary greatly between countries:

- the length of the contractual working week ranges from 35 hours per week for La Poste (France) sorting staff to 41.5 hours per week for Royal Mail employees in the UK (12 PPOs provided information about the length of the contractual working week in the provision of mail services);
- within PPOs there are very often differential contractual arrangements for different staff groups. For example, in Portugal, administrative staff have a 36 hour working week while operational and delivery staff are contracted for 40 hours; and,
- in many PPOs the contractual working week is less relevant for postmen than the actual time taken to deliver their rounds. In the last few years the Dutch PTT and the Swedish Post changed their “a walk a day” arrangement to a full eight hour day. In recognition of the heavy physical work involved in mail delivery, in the Netherlands delivery work is limited to five hours per day. During the remaining three hours postmen perform sorting duties.

Most PPOs do not expect the length of the contractual working week to change by the year 2000. The exceptions are Denmark where the working week will be reduced from 37 to 35 hours per week, and the Netherlands where it will be reduced from 38 to 37 hours per week. In the Netherlands the normal working week will continue to be 38 hours, and the cut in working time will be made by giving employees time off during less busy periods.

A reduction in the contractual working week is also part of the agenda for negotiation in the current industrial dispute in the Royal Mail in the UK.

Contractual working hours in the PrOs

Working hours in a considerable number of global integrators as well as national and local companies exceed working hours in PPOs. In some cases, average working hours currently surpass the limits set by the 1993 EU Working Time Directive. Figure 3.13 shows the range of hours worked in the PrOs (as well as projections for the year 2000 for the global integrators).

Perhaps more important than the actual contractual working week is the different attitude towards working time in PrOs. On the whole there is a higher expectation of flexibility in working hours. The length of the contractual working week is also less relevant in an industry where many people are self employed and where wages to a large extent are based on output and commission.

Figure 3.13 Contractual weekly working hours for full-time employees among four global integrators and various national/local companies.

Country	Global Integrators 1995	Global Integrators 2000 (expected)	National / local PrOs 1995
Austria	36-52	38-58	N/A
Belgium	38-40	38-39	N/A

Denmark	37-40	36-37	37-37.5
Finland	37.5-40	35-37.5	N/A
France	39	39	35-40
Germany	36-40	37.5-38	N/A
Greece	38-40	40-46	N/A
Ireland	37.5-40	37.5-40	N/A
Italy	40	39-40	N/A
Luxembourg	38-40	38-40	40
Netherlands	40	40	37-40
Portugal	35-40	35	37.5-50
Spain	39-40	37.5-40	40
Sweden	40	35	40
UK	37.5-40	37.5-40	N/A

Source: Price Waterhouse survey, 1996

Overtime working in the PrOs

PPOs traditionally respond to variations in demand by utilising overtime. Employees often support overtime work because it provides additional earnings. Basic wages for delivery and sorting staff in some PPOs are low and employees have come to rely on regular overtime earnings as part of their standard remuneration.

Regular overtime working is neither in the long term interest of the employer or the employee because it may lead to a decline in productivity and to health problems. Given traditional overtime remuneration rates it is also an expensive option. One of the postal services making extensive use of overtime working is Royal Mail, however, arrangements to reduce overtime working are part of the current negotiating agenda.

As can be seen from table 3.14 PPOs rely on overtime working. In order to reduce the cost of extra hours during times of peak demand. The Danish Post for example has an “annual hours arrangement”, where the length of the working week varies according to the level of demand, with longer hours during the busy Christmas period and shorter hours during less busy periods.

Table 3.14 also illustrates that the distribution of working time (overtime, nights, Saturdays and Sundays) varies greatly between PPOs.

Figure 3.14 the distribution of working time between PPOs

Table: Mail services Overtime working; night working; Saturday and Sunday working: proportion of employees who regularly work under these arrangements in 1995			
	Range (%)	Average	Expected change to year 2000
Overtime	1 - 100	48%	No change
Nightworking	5 - 66	20%	No change
Saturday working	2 - 61	48%	No change
Sunday working	1 - 31	7%	Slight decrease

Source: Price Waterhouse survey, 1996

Overtime working in the PrOs

Our survey shows that express and courier service providers traditionally rely on evening and night work as overnight delivery has become an important segment of the market. Night work is only undertaken by a small proportion of staff while overtime arrangements are common and resemble those in PPOs.

Both private and public operators do not foresee a formal shift in working time arrangements. Instead, in general employees are expected to increase the flexibility with which they are willing to respond to unforeseen changes in demand. In other words, formal contractual arrangements are expected to become less important while work on demand will become more prevalent.

Small companies which operate through a network of self employed people compete both from a lower cost base and without the same constraints on standard working hours as larger companies.

We conclude that:

- average working hours in PPOs have declined. In many PPOs the contractual working week is less relevant for postmen than the time it takes to deliver their rounds. Working hours in PrOs are often longer; and,
- overtime working is used extensively in both PPOs and PrOs.

3.9 The distribution of employment between men and women

Trends in the European Union

During the last two decades all European Union member states have seen an increase in the share of women in the active workforce. This is a reflection of both changing social expectations and of the general movement in employment from manufacturing to services.

While women's overall share of employment is increasing, women are still under-represented in managerial, professional and technical jobs. They are more likely to work in services than men, and are more likely to be unemployed or work part-time. Equality in employment between men and women is an important component of European Union social policy.

Most studies on the subject show that the reason the unequal distribution still exists is due to a combination of factors such as women's domestic and family roles, and employers human resource policies and procedures.

During the last decade some employers have begun to address the gender imbalance in the workforce, encouraged by general demographic changes and legislative requirements.

The distribution of PPO employment between men and women

In 1995 over 75 percent of the total number of people employed in the EU PPOs were male. This figure is slightly higher than the average proportion in the EU as a whole (see figure 3.5).

Women's share of employment has increased in PPOs from 18.9 percent in 1990 to 24.6 percent in 1995. Except for Finland where women's share of employment has remained unchanged, it has increased in the PPOs in all other countries.

Figure 3.15 The proportion of women and men employed in EU PPOs in 1990 and 1995

Country	Women 1990	Women 1995	Men 1990	Men 1995
Austria	12.0 %	14.0 %	78.0 %	76.0 %
Belgium	28.8 %	30.4 %	71.2 %	69.6 %
Denmark	32.7 %	41.1 %	67.3 %	58.9 %
Finland	37.8 %	37.7 %	62.2 %	62.3 %
France	31.3 %	34.7 %	66.8 %	65.3 %
Germany	N/A	N/A	N/A	N/A
Greece	16.0 %	23.4 %	84.0 %	76.6 %
Ireland	3.8 %	5.2 %	96.2 %	94.8 %
Italy	13.0 %	15.5 %	87.0 %	84.5 %
Luxembourg	35.0 %	40.0 %	65.0 %	60.0 %
Portugal	30.0 %	32.1 %	70.0 %	67.9 %
Spain	13.0 %	17.0 %	87.0 %	83.0 %
Sweden	35.0 %	38.0 %	65.0 %	62.0 %

The Netherlands	20.0 %	25.0 %	80.0 %	75.0 %
United Kingdom	15.0 %	15.0 %	85.0 %	85.0 %
Total EU (weighted)	**18.9 %**	**24.6 %**	**81.1 %**	**75.4 %**

Source: Price Waterhouse survey, 1996.

Equal opportunity measures

Some PPOs focus on equality of opportunity measures as a matter of priority. Efforts in this area have focused on increasing the representation of women at supervisory and managerial levels, rather than changing the balance at lower levels where future employment opportunities are likely to diminish:

- the proportion of women managers has increased in the Swedish PPO, where equal opportunity legislation is quite extensive;
- in the United Kingdom, the Post Office focuses on the management of diversity, including gender. The belief is that a diversified workforce will improve the response to diverse customer needs and a more flexible and adaptable workforce; and,
- in Ireland, An Post has implemented various equal opportunity measures and policies utilising EU funds to train female employees and equal opportunity officers.

The distribution of PrO employment between men and women

Data for gender distribution within PrOs as a whole is only available for the United Kingdom. In 1995 women accounted for approximately 25 percent of total PrO employment, which was an increase of one percent compared to the previous year. This figure is substantially higher than the figure for the Post Office but still considerably lower than the overall proportion of women in the service sector.

A comparison of the share of female employees among the global integrators across the different EU countries reveals a more balanced picture than the one that emerged for the PPOs (see figure 3.16). One explanation of this difference might be that the higher growth rates experienced among the global integrators in recent years have resulted in the recruitment of staff from a more balanced background than in the more traditional PPOs.

Figure 3.16 Male employment as a share of total employment among the global integrators in 1990 and 1995

Country	Males 1990	Males 1995
Austria	64.0 %	56.0 %
Belgium	65.0 %	65.0 %
Denmark	72.0 %	66.0 %
Finland	60.0 %	58.0 %
France	67.0 %	67.0 %
Germany	77.0 %	76.0 %
Greece	67.0 %	74.0 %
Ireland	69.0 %	65.0 %
Italy	66.0 %	68.0 %
Luxembourg	75.0 %	70.0 %
Portugal	72.0 %	64.0 %
Spain	68.0 %	64.0 %
Sweden	63.0 %	65.0 %
The Netherlands	76.0 %	74.0 %
United Kingdom	71.0 %	69.0 %

Source: Price Waterhouse survey, 1996.

From our interviews with national and local PrOs, the results of which are illustrated in figure 3.17, we can conclude that:

- employment in these companies was predominantly male, and that the heavy physical nature of some of the work involved might be part of the reason for this; and,
- the image of this type of work as being more suited to males is likely to be just as significant as the actual nature of the work. According to some PrOs this image is one of the biggest barriers to increasing the proportion of women in their workforce.

Figure 3.17 The percentage of male employees in national and local PrOs in six EU countries

Country	Males 1995
France	80%
Netherlands	84%
Portugal	80%
Spain	94%
Sweden	73%
Luxembourg	83%

Source: Price Waterhouse survey, 1996.

Equal opportunity measures in practice - PPO case studies

Examples of the ways in which Royal Mail in the United Kingdom and An Post in Ireland have implemented equal opportunity measures have recently been published as case studies (Brew and Garavan, 1995). The case studies are briefly described on the following page.

Case: The United Kingdom

Policy change was stimulated in Royal Mail in the late 1980s following criticism by the trade unions and the Equal Opportunities Commission. New assertiveness and management training courses for women initially had little impact and met some resistance. Efforts were therefore made to put the equality strategy on a more formal basis and to communicate it more effectively throughout the organisation.

The programme has included a series of career awareness workshops which were cascaded down the organisation, starting with senior management. Issues include new policy guidelines and counselling on sexual harassment, training and confidence building courses, and improved access to management training for women, as well as various initiatives linked to childcare responsibilities.
Results have been encouraging. The proportion of women employees has increased, especially in middle management.

Case: Ireland

The first equal opportunities policy was agreed jointly between the company and trade unions in 1988, and in 1989 a full-time equality manager was appointed to work closely with the joint equality subcommittee.

The successful initiative at An Post was the New Opportunities for Women (NOW) training programme set up in 1993, funded by the ESF (European Social Fund), to provide training for women at lower levels in personnel and managerial skills. Of the 51 women who took part, 30 percent have subsequently been promoted and a further 20 percent are currently increasing their skills levels 'on the job' and organising the new Women's Network set up across An Post as a result. The programme was also helpful in influencing the attitudes and awareness of the managers contributing to it.

Positive results are visible through an increase in the number of women supervisors and the total share of women in the workforce. The programme also contributes to a more supportive workplace between men and women, and between employees and managers generally.

We conclude that:

- employment in the postal sector is predominantly male. Women's share of employment is higher among the global integrators. All parts of the sector have seen a growth in the number of women working in them;
- demographic changes and the move to part-time employment in the sector are likely to increase the share of women working in the postal sector; and,
- some PPOs and PrOs have introduced equal opportunity measures to achieve a more balanced workforce and facilitate future changes in workforce composition.

3.10 The functional distribution of employment in PPOs

The distribution of employees by function in PPOs does not appear to have changed significantly over the past five years. Below we look at the functional distribution of employment separately for mail services and financial/retail services.

The figure below shows the functional distribution of employees engaged in the provision of mail services among ten of the fifteen EU PPOs in 1995. The functions that are identified in the figure correspond roughly with the different parts of the simplified mail services value chain, and therefore the functional distribution can, to a certain extent, also be regarded as a value chain distribution.

Figure 3.18 The functional distribution of employees engaged in the provision of mail services in the PPOs in 1995

Country	Management	Administration	Operations	Delivery	Other
Austria	5.50%	12.20%	38.60%	43.70%	0.00%
Belgium	1.10%	29.30%	6.70%	62.00%	0.90%
Denmark	3.30%	12.00%	25.90%	56.20%	2.60%
Finland	0.30%	8.70%	29.50%	56.60%	4.90%
France	N/A	N/A	N/A	N/A	N/A
Germany	N/A	N/A	N/A	N/A	N/A
Greece	1.80%	1.00%	53.60%	41.60%	2.00%
Ireland	N/A	N/A	N/A	N/A	N/A
Italy	0.33%	8.70%	32.95%	52.52%	5.50%
Luxembourg	0.80%	12.70%	34.70%	51.80%	0.00%
Portugal	0.40%	15.30%	9.10%	75.20%	0.00%
Spain	0.40%	4.50%	31.70%	63.40%	0.00%
Sweden	2.00%	4.00%	30.00%	64.00%	0.00%
The Netherlands	4.00%	7.00%	17.00%	66.00%	6.00%
United Kingdom	N/A	N/A	N/A	N/A	N/A
Total EU (weighted)	**1.69%**	**10.22%**	**27.21%**	**58.00%**	**2.88%**

Source: Price Waterhouse survey, 1996.

As can be seen in figure 3.18, employment in the provision of mail services is heavily concentrated in the operations and delivery functions, with these functions combined accounting for just over 85 percent of total PPO mail services employment in 1995. The delivery function accounts for 58 percent of total employment in mail services.

The functional distribution of employment is also relatively similar between the individual PPOs. The exceptions are Belgium, which has a higher proportion of staff employed in management and administrative functions, and Greece, which has a higher proportion of staff employed in operations and delivery functions than any other PPO that we have obtained data from.

The functional distribution of mail services employment does not appear to have changed significantly over the past five years.

Financial/retail services

Due to the relatively simple value chain for financial/retail services, the functional distribution of financial/retail services employees tends to be somewhat easier to describe than it is for mail services employees. Based on information provided by eight of the fifteen EU PPOs, which is shown in the figure below, approximately 13 percent of financial/retail services employees were involved in management and administration functions in 1995, while the remaining 81 percent were employed in the operational area.

Figure 3.19 The functional distribution of employees engaged in the provision of financial/retail services in the PPOs in 1995

Country	General management & administration	Operations	Other
Austria	6.00%	94.00%	0.00%
Belgium	N/A	N/A	N/A
Denmark	10.00%	90.00%	0.00%
Finland	7.00%	93.00%	0.00%
France	N/A	N/A	N/A
Germany	N/A	N/A	N/A
Greece	N/A	N/A	N/A
Ireland	15.00%	85.00%	0.00%
Italy	13.55%	78.20%	8.25%
Luxembourg	8.00%	92.00%	0.00%
Portugal	13.00%	87.00%	0.00%
Spain	15.00%	80.00%	5.00%
Sweden	14.00%	83.00%	3.00%
The Netherlands	11.00%	84.00%	5.00%
United Kingdom	N/A	N/A	N/A
Total EU (weighted)	**12.95%**	**80.95%**	**6.10%**

Source: Price Waterhouse survey, 1996.

The functional distribution of financial/retail services employees is very similar to the proportional breakdown we identified above for mail services. In addition, the functional distribution of financial/retail employees is even more similar between the individual PPOs in the various EU member states than it was for mail services.

The functional distribution of financial/retail services employment does not appear to have changed significantly between 1990 and 1995.

We conclude that:

- the functional distribution of employment has not changed significantly since 1990 and is not expected to change much in the next five years.

3.11 Human resource management

As outlined above, postal sector employment is undergoing substantial changes. The postal sector therefore faces substantial challenges in order to stay competitive while maintaining employment. In this section we analyse how human resource management tools have been used to cope with these changes. We focus on the management of employment reductions and training and development.

The management of employment reductions

Technological and economic change is predicted to lead to employment reductions in most PPOs over the next five years. On the whole PPOs expect to manage this change without resorting extensively to compulsory redundancies. The following measures are those that the PPOs prefer to use:

- natural wastage;
- early retirement and voluntary redundancy schemes;
- functional and regional redeployment; and,
- cuts in working time.

Natural Wastage

PPOs primarily expect to rely on natural wastage to achieve employment reductions, whereby employees leave voluntarily to work elsewhere or retire .

Labour turnover facilitates natural wastage and hence adjustment. During 1995 annual labour turnover among PPOs ranged from three to 12 percent, providing some scope for avoiding redundancies. Labour turnover is cyclical, increasing in times of economic growth. In the UK for example, in the late 1980s when the economy was doing well, labour turnover reached 30 percent per annum in some regions, which lead to considerable recruitment difficulties but also facilitated labour force adjustments.

Another way to adjust employment levels is to use temporary employment. Several PPOs have used this option when reducing employment.

Early retirement and voluntary redundancy schemes

As can be seen from figure 3.20 the proportion of employees over the age of 50 is above 15 percent in at least nine of the EU PPOs.

Figure 3.20 The number of employees aged 51 years and above

Country	**51 and above**
Austria	19.00%
Belgium	17.40%
Denmark	26.50%
Finland	16.40%
France	15.88%
Germany	N/A
Greece	11.60%
Ireland	20.50%
Italy	14.25%
Luxembourg	18.00%
Portugal	22.80%
Spain	13.00%
Sweden	9.70%
The Netherlands	11.00%
United Kingdom	19.71%
Total EU (weighted)	**16.34%**

Source: Price Waterhouse survey, 1996.

This table also shows the impact of past attempts to use early retirement schemes to reduce the workforce.

The Swedish Post for example made extensive use of early retirement schemes in the early 1990s with the help of government funding.

The Dutch Post also made extensive use of an early retirement scheme. As a result of these measures the Swedish and the Dutch Posts now have the lowest share of older workers.

The Portuguese Post also introduced an early retirement scheme in the early 1990s. Correios is unlikely to use this option in the future because of the expense of early retirement. Correios also found that it had too little control over who went and who stayed.

Functional and regional redeployment

Functional redeployment is an important complement to natural wastage as people who lose their jobs move into jobs which have become vacant. Redeployment requires a high level of training and support to ensure that employees can fulfil their new functions.

Redeployment is limited by the mismatch between skill requirements in the jobs that have become redundant and skills required in the new jobs “because you cannot necessarily convert a counter clerk into a policy consultant”, according to one PPO human resource management director.

The centralisation of sorting centres leads to a reduction and relocation of jobs. Five PPOs are planning to move people between regions in order to safeguard employment.

Cuts in working time

Trade unions are particularly concerned that efforts are made to avoid job reductions. PTTI demands a 35 hour working week in order to maintain jobs. Reductions in working hours are only planned by the PPOs in Denmark and the Netherlands. The Dutch scheme is part of an overall attempt to make employment reductions and is designed to meet both the needs of the employer for flexibility as well as offering more leisure time to employees.

Compulsory redundancies

Compulsory redundancies are the least desirable option for staff reductions and the majority of PPOs do not anticipate using compulsory redundancies. The UK Post Office has publicly made a commitment not to use compulsory redundancies until the year 2000. At least five PPOs believe that they cannot completely avoid redundancies.

In conclusion:

PPOs expect to primarily manage employment reductions without resorting to compulsory redundancies, although in some PPOs this option may not be completely avoidable; and,

- PPOs rely on natural wastage, early retirement and voluntary redundancy schemes, functional and regional redeployment, as well as cuts in working time, to reduce employment.

Training and development

Background

Investment in training is a key part of the European Union's strategy for employment intensive growth and reduced unemployment. The conclusions from the Essen Summit state: "As many people as possible must receive initial and further training which enables them through life-long learning to adapt to changes brought about by technological progress, in order to reduce the risk of losing their employment." This policy is particularly aimed at people who are less skilled (European Commission, 1995c).

Recent economic and technical changes, particularly the growth of service industries based on knowledge and high technology in Europe, redefine the need for training and development. These changes simultaneously lead to increased demand for people with professional qualifications, to de-skilling, and to a replacement of operational jobs. The increasing complexity of production and administration systems requires new skills and knowledge about information technology and planning. Furthermore, interpersonal relations are important, especially in service oriented organisations where the behaviour of employees constitutes a competitive factor.

Training and development in the postal sector

Our study examines two areas of training and development in the postal sector: the distribution of skills and qualifications as well as investment in training and development by postal employers.

Skills and qualifications in PPOs

Traditionally employees become employed in the postal sector upon leaving school and they receive on-the-job training. In some countries, especially in the Nordic countries and Spain, PPOs operate their own postal training and education systems. PPOs in other countries such as in the UK also provide on-the-job training but this training is less formally recognised. While apprenticeship systems are important in telecommunications, none of the PPOs operate such systems.

According to the data collected from PPOs only a minority of postal employees have external vocational qualifications. The percentage of employees with external vocational qualifications in the postal sectors that we examined range from one to 34 percent across the various PPOs.

Whether formally recognised through educational qualifications or not, much of postal employment requires a considerable level of experience and geographical knowledge which has to be acquired over time. Employment in delivery also necessitates a high level of personal integrity and responsibility.

Skills are relatively particular to the job and are not easily transferable. In view of the overall employment reductions planned in the postal sector, the comparative absence of externally recognised vocational qualifications makes postal employees particularly vulnerable.

At the other end of the spectrum, the number of people with university degrees or tertiary education is comparably low. The proportion of people with higher education is five percent or less of the work force in all of the PPOs that provided data.

Postal employers do not foresee major changes in the overall educational structure of postal employees but they emphasise a need for a change in the contents of training and qualifications. There is a growing need for improved customer service and business orientation among all levels of staff. Information technology requires basic keyboard skills for example, and furthermore PPOs stress the need for complementary skills such as flexibility, initiative, and the ability to work in teams. This analysis of the skills and qualification profile was also shared by the PrOs.

Expenditure on training and development in PPOs

Changing skill requirements place considerable demands on the training provided by PPOs.

In order to assess the basic level of expenditure on training and development, employers were asked to provide figures for “the proportion of the wages and salary bill annually taken up by training and development costs”. This measure is used in France where companies are obliged to spend at least 1.5 percent of payroll costs on training and development.

Information about training expenditure is hard to obtain. Decentralisation of training budgets to local levels and lack of common European conventions for costing and evaluating training (for example in relation to on-the-job training) limit the extent to which comparisons between countries can be undertaken.

Our analysis of training in PPOs shows that:

- training expenditure varies substantially between different PPOs, ranging from under half a percent to over four percent (11 PPOs provided data). The range of the distribution of training expenditure (as a proportion of payroll) is illustrated in figure 3.21. As mentioned above this variation in training expenditure partly reflects different conventions of costing and training provision; and,

- comparisons with the national average training expenditure in both the private and public sector in each country shows the expenditure of most PPOs to be comparatively low (data for overall average training expenditure was provided by the Cranfield School of Management 1995).

Figure 3.21 The distribution of training expenditure (as a proportion of payroll) in PPOs in 1995

Training expenditure as a % of payroll	Number of PPOs
Less than 1%	3
1 % to less than 2%	4
2% to less than 3%	1
3% and more	3

Source: Price Waterhouse survey, 1996.

The type of training in PPOs

Several PPOs have undertaken extensive training programmes during 1995. Organisational change has increased the need for training, particularly in relation to customer service and people management skills. In 1995 training efforts focused particularly on managers, supervisors as well as technical and professional staff. Operators and postmen received less training than other staff groups in all PPOs where data were available. However, two PPOs are planning extensive training programmes for postmen during 1996.

The focus on training for managers and supervisors is a result of a move from an operational to a commercial orientation in the provision of mail services. Commercialisation has been accompanied by decentralisation and a partial granting of decision making powers to lower levels of management. Many of the managers working in PPOs need to acquire more business skills. People management skills are also crucial as organisations move towards more participatory and less hierarchical forms of management. Several PPOs have developed programmes to respond to these changes. Below we present three examples of training programmes in the UK, Sweden and Portugal.

Case: The United Kingdom

In the UK in 1995 all managers received basic training for at least five days during the year concerning customer service and business management. Currently a new programme is being introduced to develop the leadership and strategic capabilities of managers. The programme is offered in four tiers, covering all levels of management from line management to Board level. A separate programme, focusing more strongly on people management skills, has been developed for supervisors.

Case: Sweden

The Swedish Post has introduced a new training programme which covers 1000 managers, including 90 members from SEKO which is the main union. An important objective of the programme is to increase understanding and co-operation across the different business units in the Swedish Post. The Swedish Post also provides considerable training programmes for other staff groups as part of its aim to become a "learning organisation". It has made a commitment to provide five days of training per year for each employee. The UK Post Office is currently negotiating the introduction of a similar policy.

Case: Portugal

The Portuguese post is conducting a major training programme as part of an attempt to create a more customer focused outlook among its employees. During 1995 half of all managers received extensive training. The main emphasis was on post office managers, front line personnel and postmen. The Portuguese Post is currently evaluating the effectiveness of this training approach and is considering new forms of training in order to maximise the impact on working practices and attitudes.

Training and development in the PrOs

Information about training costs as a proportion of payroll expenditure among PrOs is only available for three global integrators.

- Two integrators have made a commitment to spend a minimum amount in each of their European operations: five percent of total payroll costs in one case and six-eight percent in the other.
- For the third integrator training expenditure varies between its European operations and spending is lower than the national average in each country.

Concerning national and local PrOs we found that:

- like the global integrators, the national and local companies also emphasise training and development, partly due to extensive labour turnover which requires higher initial training costs for new employees;
- managers are trained in basic functional skills, business and leadership skills, team building, etc. For example one of the large national companies is currently in the middle of a three year programme of reorganisation at the supervisory level. The intention of the programme is to turn supervisors into first level managers with greater co-ordinating and back up functions for departmental managers; and,
- as part of this programme all supervisors attend assessment centres to determine whether they possess the necessary abilities to undertake the new functions. Those who do not meet the requirements are offered a voluntary redundancy scheme or a return to a position on the shopfloor. Those who pass are offered training courses to develop their business and people management skills.

Given the greater staff turnover and higher levels of employment expansion which is characteristic among the PrOs, induction training plays a greater role than in PPOs. Given part-time work, shift-work, self-employment, etc., companies experiment with new ways of delivering basic training. One example is self-teaching using CDs and videos.

We conclude that:

- both private and public postal operators emphasise the need for continuous training and development and some have taken considerable steps towards achieving this goal;

- both PPOs and PrOs have similar training needs: a focus on customer service skills (including new technology), leadership, and people management skills. The composition of the workforce differs, however, as employees in PPOs typically have been out of formal education for a longer period; and,
- the role of training in supporting and sustaining organisational change towards business and customer focused operations is likely to be even stronger in the future.

3.12 Industrial relations

Co-operation between employers and employees is crucial in order to achieve successful implementation of change. Successful change it is not just a matter of management or government decision. Change also depends on reaching a joint understanding between management and employees that the benefits outweigh the disadvantages. If such an understanding cannot be reached, reactions may range from overt hostility and strike action to covert lack of co-operation and other signs of low morale. All of these factors can delay change and negatively affect the efficiency and effectiveness of services.

Industrial Relations and organisational change in PPOs

While trade union membership has generally declined in recent years, it has remained high in the public sector in most countries. The postal sector has retained a high level of membership, even when deregulated or privatised, and trade union density in PPOs is higher than the national average. It covers at least 60 percent of the work force in all countries (with the exception of one country where union density is 25 percent) and all PPOs recognise trade unions for the purpose of collective bargaining.

Postal services have experienced considerable organisational change during the last few years. The changing status of employment due to corporatisation or privatisation has led to a renegotiation of terms and conditions of work. Managerial policies aimed at improving services have often posed a challenge to traditional working methods and required a reassertion of managerial control. Therefore, they have sometimes resulted in strike action before agreement could be reached.

Interviews with unions suggest that there is normally a considerable intensification of working conditions as a result of cost cutting measures. They also suggest that there is a hardening of managerial controls as a result of liberalisation and the introduction of tough and decentralised performance targets for managers. Employers on the other hand point to growing competition from PrOs and electronic substitution as the factors which force them to implement change. In spite of some tension, on the whole the commitment to negotiation and joint problem solving in the sector can be seen as high, almost as part of a joint commitment to provide high quality service.

Trade union membership is only one indicator of trade union strength. Legislation and other institutional mechanisms can also be significant. Tripartite systems of “national concertation”, as in Portugal, Ireland and Austria, as well as works councils and regulations about codetermination and participation in Germany and the Netherlands, in different ways, reinforce employee representation rights.

An effective method of consulting employees over proposed changes to working practices is to do so through specially set up joint committees or other similar problem solving groups. The table below shows the number of PPOs that report the existence of various joint employee and management working groups.

Figure 3.22 Number of PPOs with joint employee and management working groups in mail services

Focus of group	No. of PPOs	Focus of group	No. of PPOs
New product development	4	Health and safety	10
Quality of service	7	Training	7
Task flexibility	9	Equal opportunity programme	8

Source: Price Waterhouse survey, 1996

Figure 3.22 shows that the level of activity is quite extensive across a wide range of issues. Joint working groups concerning developmental and commercial factors have been used successfully in the Scandinavian countries to increase the level of understanding of the nature of competition faced by industry and have contributed to a greater acceptance of organisational changes.

Industrial relations in PrOs

Industrial relations are generally less developed within private postal operators. Overall union density is considerably lower than in PPOs, especially in the smaller local companies. For example, trade union membership in one of the Danish companies was 10 to 15 percent, a figure which is typical for that part of the sector. Private postal operators are characterised by a transitory work force, high levels of self-employment, and flexible working conditions which make it difficult to establish effective trade union organisations.

However, trade unions are recognised by a number of the large PrO. FedEx for example is known in the US as a non-union company, however, in Europe FedEx works with unionised workforces in several countries. Other large national companies have similar patterns of industrial relations as the PPOs with long traditions of collective bargaining and consultation.

We conclude that:

- trade union membership has remained high in PPOs and all PPOs recognise trade unions for the purpose of collective bargaining; and,
- good relations between the social partners is an important component of managing change. Joint employee and management working groups are successfully used to facilitate change.

3.13 Remuneration

European developments

During the last decade remuneration systems in Europe have undergone considerable changes. Centralised national bargaining systems have become more decentralised with individual pay setting. This change has gone hand in hand with the growth in variable and performance related payment systems as employers attempt to reinforce organisational change and increase performance.

These changes have not been limited to the private sector. Public sector performance has come under increasing scrutiny concerning performance standards and cost effectiveness. Policy makers have looked to private sector trends and theories when undertaking public sector reforms. As a result, public sector standardised systems of pay and benefits have been amended in some countries.

Concepts of fairness and equitable distribution of rewards vary considerably between countries as do notions of decision-making about pay and benefits. Pay systems differ across countries as well as between the public and the private sector.

Like the other changes in employment practices discussed in this report, the growing level of structural unemployment explains some of these trends. Within the European Union policy makers increasingly see moderate productivity related wage increases and lower indirect wage costs as important contributory factors towards achieving employment intensive growth.

Labour costs in PPOs

Labour costs in PPOs on average constitute 71 percent of total costs. This figure has not changed from the earlier estimate provided in the Green Paper published by the Commission. In fact, according to our survey of Public Postal operators, three countries have labour costs which total more than 80 percent of total costs. The labour intensive nature of the work is a limiting factor for wage increases and results in strong pressure for wage increases to be productivity based.

Decisions about wage increases and wage levels in PPOs traditionally were made as part of general public sector pay decisions. While corporatisation has led to greater autonomy in pay determination, general public sector pay policy considerations for moderate wage increases continue to exert considerable influence.

Labour costs in PrOs

Pay policies among the larger PrOs vary. Among the global integrators for example one large company has a policy of paying at the top end of the market whereas another company offers the market average wage. A large national company which is fully unionised pays the collectively agreed national rate. Supplementary payments for overtime or nightworking are similar to those paid in PPOs and reflect national practices.

Private postal operators make greater use of flexible payment systems and use a combination of time and output based payments. This is particularly the case for the smaller local companies and hence it is difficult to make comparisons. Basic wages tend to be low in the smaller companies that place a high emphasis on commission or output based pay.

A comparison between entry level pay in PPOs and PrOs shows that

- the average annual wage for PPO delivery personnel is 13961 ECU and for clerical/administrative personnel it is 15157 ECU;
- the average annual wage is higher among global integrators, where the average wage for drivers/delivery personnel ranges from 15462 ECU - 18371 ECU. For clerical/administrative personnel the annual wage ranges from 16436 ECU - 22101 ECU; and,
- average annual wages in national and local companies vary between companies. Some messenger companies guarantee their delivery personnel working on commission that they will receive the minimum wage.

Figure 3.23 shows wage levels in global integrators for delivery personnel and clerical and administrative staff.

Figure 3.23 The basic entry level wage in annual terms in ECU - global integrators

Range for global integrator by country	Driver/delivery entry level wage (ECU)	Clerical/administrative entry level wage (ECU)
Austria	14636	13955-20152
Belgium	17248-18938	18938-23514
Denmark	21350-23967	20661-25482
Finland	13929	13714-16071
France	16250-18750	15938-19157
Germany	11811-25494	15600-25494
Greece	N/A	N/A
Ireland	14285	10000-13750
Italy	N/A	N/A
Luxembourg	17248-19760	22208
Portugal	N/A	N/A
Spain	12508-15366	13759-15636
Sweden	16941	16941-20471
The Netherlands	15890	19083
United Kingdom	13450-22500	N/A
Calculation of average	15462-18371	16436-22101

Source: Price Waterhouse survey, 1996

Pension payments

Pension payments present a problem when undertaking the transition from governmental to independent corporate status. Corporatisation requires a renegotiation of pension provisions and as a result PPOs have become responsible for pension payments for retired staff without previously having set up pension funds. Government departments, as employers, did not make independent provisions for pension payments to retired staff. In some countries pension payments accruing to past employees are seen as a major financial liability.

Our survey shows that in 1995 indirect wage costs such as pensions, unemployment insurance, etc., on average accounted for about 20 percent of total labour costs among EU PPOs with a range from 10 to 50 percent. This is an area which is notoriously difficult to compare across countries as different measures and conventions are used.

Information about pension costs was provided by six PPOs. While the average proportion of total labour costs taken up by pension payments is 14.7 percent, there is considerable variation ranging from six - 27.2 percent. There are also considerable variations in the expected annual growth rate of pension payments.

Occupational pension schemes are in operation in five of the PPOs. In each case all employee groups are covered but several countries have different schemes for different grades of employee. Employer contributions to the schemes range from 1.4 - ten percent of pay.

Pensions do not constitute a problem in all PPOs. The UK Post Office has run an independent pension fund since 1969. In other countries pension schemes were set up as part of the process of corporatisation. The Swedish Post, for example, received additional governmental funding for an early retirement scheme in the early 1990s. In Greece, Italy, France, Spain and Luxembourg, pensions are still paid directly by the state while Denmark operates a mixed system with the state being responsible for payments but the Post paying a salary levy.

In the Netherlands the move towards company based pension schemes was accompanied by a renegotiation of pension terms. The automatic right to a pension after 40 years of work has been abolished. A new system has been introduced to partially replace the old system. This provides an early retirement option in exchange for enhanced voluntary contributions to the occupational pension scheme.

Among the PrOs we found that occupational pension schemes are generally part of the remuneration scheme in the large national and international companies.

In the smaller local companies this is much less common. One reason is the high level of self employment where pension arrangements are the sole responsibility of the individual worker. The typical profile of the workforce provides a reason. Employees are young and change jobs often, particularly in the courier and messenger services. Pension payments in this age group are a low priority and workers prefer to be paid the full wage. Furthermore, most workers only stay employed in the same job for a short time. Few pension schemes - not just in this industry- are set up to deal with high labour turnover.

Variable pay and performance management in PPOs

Payment and employment systems in PPOs reflect civil servant traditions. Pay and grading systems are shaped by public sector practices which typically have a detailed hierarchical grading system, at least for non-manual workers, and an emphasis on seniority based increments. Some systems contain elements of merit or performance related pay where rewards are paid based on extraordinary performance or on the achievement of predetermined merit criteria. These systems of performance-related pay were often introduced some time ago and are rarely linked to active performance management and individual target setting.

Our survey shows that incentive payments are not widely used within PPOs. That said, only one PPO does not use any incentive schemes at all. Where schemes are in operation they focus mostly on managers and technical and professional staff, while schemes for supervisors, postmen, sorting and operational staff are not widespread (see figure 3.24).

Figure 3.24 Bonus and performance related payments in PPOs by employee category. (The figures in the table relate to the number of PPOs who offer the benefit/incentive to each category of employee).

Benefit/Incentive	Category of Employee						
	Manager	Technical / Professional	Clerical / Admini-strative	Super-visor	Postmen/ Delivery	Manual / Operator	Other
Individual bonus	8	6	3	3	2	2	2
Team bonus	2	1	2	2	2	3	2
Performance related pay	7	6	4	3	3	3	2
Occupational/company pension	5	5	5	5	5	5	2
Transport subsidy	6	6	5	5	7	5	3
Meal subsidy	4	4	5	5	7	4	2

Source: Price Waterhouse survey, 1996

Some PPOs have made far-reaching changes in payment systems. They have gone hand in hand with organisational changes, particularly restructuring into business units. Schemes have been introduced to provide a greater focus on productivity and attention to customer service:

- the Swedish Post has abolished all automatic progression and salary increases since corporatisation. Employees now negotiate their salary increases on an individual basis every year. Those employees who can demonstrate "high customer focus" may obtain more rapid salary increases than they would have under the previous scheme;
- the Dutch PTT managers have been given individual productivity and quality targets which are partly linked to their pay. An annual performance appraisal-based bonus scheme is also in operation in Belgium for management;
- in Luxembourg, a pilot performance appraisal scheme is being introduced and evaluated to test reactions; and,

- in Portugal a performance related pay scheme has been in operation for some time but it is expected to increasingly focus on more commercial and service oriented criteria in the near future.

The introduction of variable and performance related pay schemes is clearly an area of contention for trade unions in many countries. The Swedish Union, SEKO, for example reports that many employees find individual salary negotiation difficult because there is a lack of clarity on the criteria for making awards. The Dutch union, Abva Kabo, says that work relations have hardened and that the introduction of performance-based criteria has led to undue intensification of work as some managers have overreacted to the new targets. Abva Kabo is also opposed to an extension of incentive payments to other staff groups because it believes that such schemes lead to less commitment from staff.

These problems are perhaps to be expected and are also commonly encountered in other industries. The introduction of variable and performance related pay presents a big change from previous practice. Such a shift requires considerable adjustments, not least from managers who have to pay greater attention to clear and consistent target setting and performance evaluation. This is an area that has traditionally been underdeveloped in management education in the public sector and in many private sector organisations.

Performance management need not be linked to pay. Many scholars and practitioners argue that the two are best kept apart. Some PPOs are reforming existing appraisal processes to provide greater emphasis on quality business targets. The UK Post Office sees employee satisfaction as an important measure of how well it manages the organisation and conducts regular employee attitude surveys in order to provide feedback to managers.

Variable and performance related pay in PrOs

Global integrators as well as national and local PrOs tend to place a high emphasis on performance management, with frequent and regular monitoring of individual and team performance. In some cases this emphasis is reinforced by linking performance assessment to performance related pay and individual or team bonuses.

The national variations reflect different pay practices and customs. They are also due to policy differences between the companies. UPS for example favours individual bonuses and rewards while FedEx places a greater emphasis on team based working and rewards. Whatever incentive scheme is used, however, the integrators generally have well developed systems of appraisal and performance management, particularly for managers.

Performance management in the smaller local companies tends to be much more focused on pay. With a high level of self employment, the earnings of workers depend on output. For permanent employees basic pay tends to be low but with an emphasis on commissions and bonuses.

In conclusion,

- Established payment systems have come under pressure in PPOs. This change is not solely a result of commercialisation and organisational change but also reflects changing expectations in the labour market in many countries. Changes in payment systems may help to reinforce and reward flexible implementation of change programs.

- The restructuring of long established pay systems in postal operators is not easy. Change needs to be carefully monitored in relation to the effect on overall wage costs, productivity, motivation and gender related pay differences (keeping in mind several recent decisions by the European Court of Justice).

3.14 Conclusions

Our examination of developments in postal sector employment in the EU has focused on three broad areas: employment level, employment structure, and human resource management.

The level of total employment in PPOs has decreased since the beginning of this decade and is expected to decline further over the next five to ten years. Employment reductions have been most marked among the group of countries where commercialisation and deregulation are most advanced.

Approximately 1.4 million people were employed by the public postal operators in the EU in 1995. Overall PPO employment declined between 1990 and 1995 by almost 112300 people. During this period the proportion of postal sector employees in mail services declined relative to the proportion employed in financial and retail services.

The evolution of employment levels among PrOs has been different. Global as well as national and local private operators have increased employment between 1990 and 1995. This growth is expected to continue. Today PrO employment is expected to be between 350,000 and 400,000 in the EU.

We examined the current and future structure of employment by focusing on the following areas: civil servant status; full-time, part-time and temporary employment; working hours and flexibility; the distribution of employment between men and women; and, the functional distribution of employment.

Some PPOs have increased the proportion of civil servants in the workforce in the past five years. Several other PPOs expect a reduction in the proportion of employees with civil servant status in the future, including a complete end to civil servant status in some countries.

The share of full-time employment in mail services remains stable only in two PPOs. The remaining ones are split between increasing and decreasing proportions of full-time employment. The level of part-time employment in PPOs and PrOs varies significantly between countries, broadly following national patterns for part-time employment. Part-time employment is expected to increase by the year 2000. Temporary employment appears to have declined but is not expected to change. PrOs are more likely to use temporary employees than PPOs.

Average working hours in PPOs have declined. In many Public Postal operators the contractual working week is less relevant for postmen than the time it takes to deliver their rounds. Working hours in private postal operators are often longer. Overtime working is used in both PPOs and PrOs.

In 1995 over 75 percent of all PPO employees in the EU were men. Since 1990 women's share of PPO employment has increased from 18.9 percent to 24.6 percent. The proportion of women employed in the global integrators appears to be higher than the proportion employed in PPOs.

The functional distribution of employment has not changed significantly since 1990 and is not expected to change much over the next five years.

Finally, we also surveyed human resource management strategies. In particular, we focused on: the management of work reductions, training and development strategies, industrial relations and remuneration.

PPOs expect to primarily manage employment reductions in the future without resorting to compulsory redundancies, although in some PPOs this option may not be avoidable. PPOs rely on natural wastage, early retirement and voluntary redundancy schemes, functional and regional redeployment, as well as cuts in working hours to reduce employment.

PPOs and PrOs emphasise the need for continuos training and development and some have taken considerable steps to achieving this goal. Training needs include improved customer and leadership skills as well as people management skills. Training is expected to play an increasing role in the future.

Trade union membership has remained high in PPOs, and all of them recognise trade unions for the purpose of collective bargaining. Good relations between the social partners is an important component of managing change. Joint employee and management working groups are successfully used to facilitate change.

The labour intensive nature of the work is a limiting factor for wage increases and results in strong pressures for wage increases to be productivity based.

Section 4 – Evolution of the change drivers

4.1 Introduction

A number of underlying processes or forces impact on employment in the postal sector, which we call change drivers. A change driver can be internal, (e.g. high operating costs), or external, e.g. competitive pressures, force acting on an organisation (or sector) causing it to change.

At the outset of the study, we identified the main change drivers. We then reviewed them to determine the relative potential impact of each change driver on employment and produced a prioritised list. In this section, we analyse the evolution of the five primary change drivers. These are:

- the demand for postal services, including communication services, transportation services and other related services;
- the evolution of competing technologies, in particular the threat from electronic substitution;
- the trends in automation, which cover the mechanisation of business processes and information technology (IT);
- the process of liberalisation which takes place at national levels and at the EU level (e.g. Draft Directive); and,
- the process of organisational change which takes place within the postal operators.

Each sub-section below examines one of the change drivers, and the sub-sections follow a similar structure. Firstly, we define the change driver and describe, where relevant, the technologies involved. Secondly, we identify the main factors influencing the evolution of the change driver, and we discuss their relative influence on the change driver. We then review past evolution and the current situation. Finally, we describe the future outlook for the change driver, and of the main underlying variables.

The impact of the change drivers on employment is analysed in the next section (section five), while section six contains the main uncertainties attached to each change driver and presents our scenarios for the future.

4.2 Demand for postal services

Definition

Demand for postal services can be defined in terms of three different types of demand:

- demand for postal communication covers physical mail such as letters, post cards, newspapers, hybrid mail and electronic mail;
- demand for postal transportation covers the demand for parcels; and,
- demand for other postal services covers the demand for mail facilitating services, financial services and retail services.

The data from our survey shows that communication and transportation services account for the largest portion of demand, representing 78 percent of the turnover in 1995 among 6 PPOs, while financial and retail services represented 22 percented (Price Waterhouse survey, 1996).

Knowledge about development in demand is important for postal operators because:

- such knowledge enables them to cater their services to customers to maintain and increase volumes;
- demand affects the planning of capacity and manpower levels; and,
- high volumes as a result of increased demand is crucial for operators in order to realise benefits from the scope of their postal networks and thus the benefits from economies of scale (Nankervis, 1995).

The following measures can be used to determine the demand for postal services:

- the customers purchasing power, expressed by GDP;
- customer trends/customer expectations; and,
- postal volumes.

The methodology used to forecast demand incorporates quantitative data from primary and secondary sources to analyse the development in mail/parcel volumes. When analysing the qualitative issues on customer expectations/trends, data from face-to-face interviews is used, where the main focus is on demand for postal communication and demand for postal transportation.

Factors influencing the demand for postal services

Examples of factors that influence the demand for postal services are the customers' purchasing power and needs. How much are customers able to spend on postal services and which types of services do they need? Purchasing power can, to a certain degree, be expressed by Gross Domestic Product (GDP), while needs can be expressed by changes in customer trends and expectations.

Other factors effecting demand include:

- trends in the population number of households and companies;
- letter prices relative to prices in general;
- average letter prices compared to average prices of telephone calls; and,
- quality of service - predictability and timeliness.

It is generally accepted by many economists that the overall economic development or the purchasing power of customers, expressed by GDP, is a fairly robust factor when estimating the demand for communication services. This is the case for total demand for communication services as well as for subcategories such as demand for postal services.

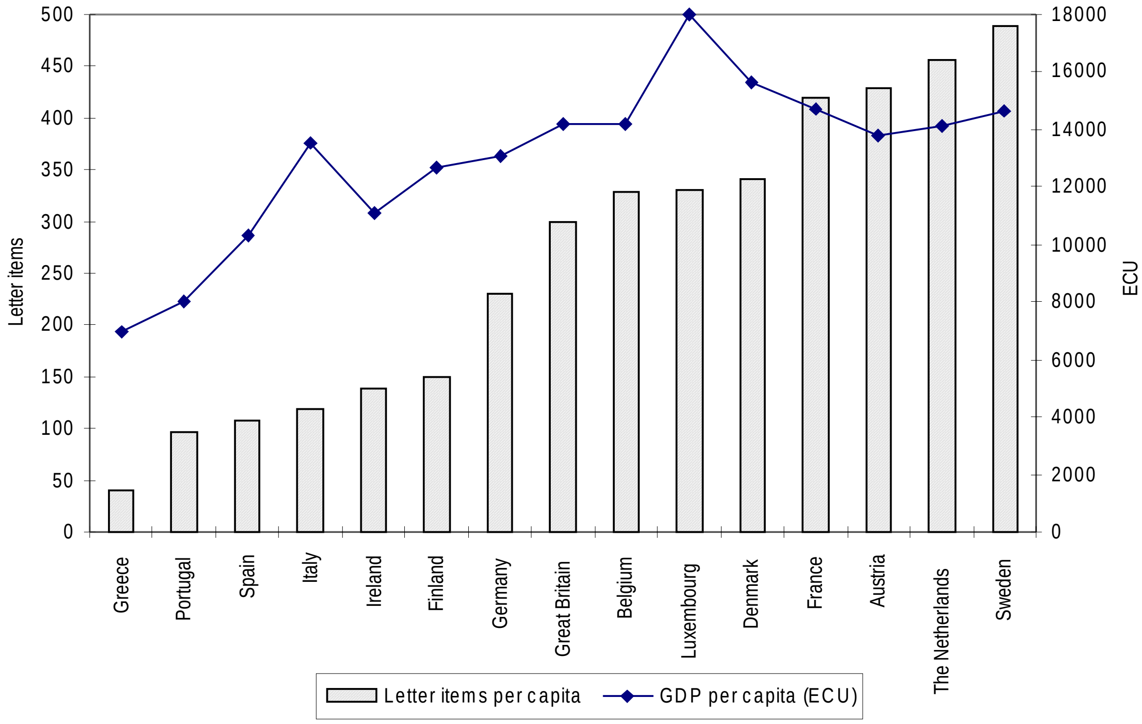
GDP was regarded as a central explanatory factor, as there were correlations between the development in GDP and domestic letter volumes, (which includes letters, postcards, printed matter and small packets). Per capita or per household mail volumes tended to be highest in countries where economic activity per capita (GDP) was high. It has been proven in the UK that the development in GDP closely follows the development in mail volumes between 1976 and 1992 (Nankervis, 1995).

In Finland, although demand for all types of communication grew rapidly in the 1980´s, domestic letter volumes increased at the same speed as Finland's GDP. Most recent predictions indicate that postal volumes are about to decline, with the steepness of the trend being dependent on the GDP (Nikali, 1995).

This is in line with overall findings from other sources, which indicate that the very robust relationship between GDP and mail volumes is changing primarily because of the complex interplay of technology, economics and liberalisation. It has proven difficult to establish a new well-behaved relationship, primarily due to the fact that upcoming electronic based services influencing total demand and the weighting of industry sectors through different rates of growth and substitution. Substitution of postal services by electronic means is discussed further in section 4.3 on electronic substitution.

Figure 4.1 shows letter items and GDP per capita in 14 EU countries for the year 1994. Letter items per capita were highest in countries with the highest GDP per capita.

Figure 4.1 Letter items per capita and GDP per capita, 1994



Source: Letter items: Universal Postal Union, 1995; EU Commission, 1996; GDP: CIA World Factbook, Internet.

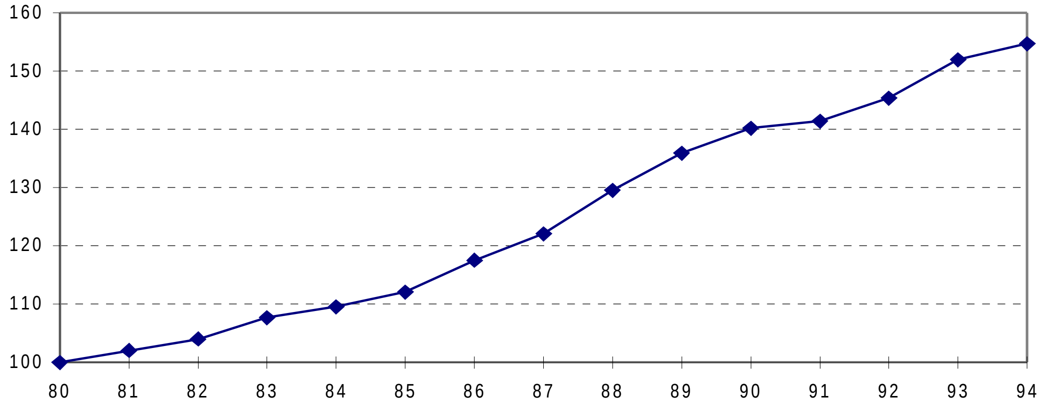
Past evolution and current situation

Demand for postal communication services

Total mail volumes

Figure 4.2 shows the development in the demand for domestic letter items in the 15 EU countries between 1980 and 1994, where 1980 is index 100.

Figure 4.2 Development in the demand for domestic letter items for the 15 EU countries, 1980 is indexed to 100



Note: Sweden is included with a high probability of uncertainty because of irregularities in the dataset. When actual data was missing or "not available", values were extrapolated using basic linear regression. Domestic letter items include letters, postcards, printed matter and small packets and represent PPO volume only. (Domestic letter items accounted for 97 percent of total letter items in 1993). Source: Universal Postal Union, 1996; Eurostat, 1996.

Domestic letter volumes increased by 55 percent in the 15 EU countries between 1980 and 1994, and the actual volume totalled 92 billion items in 1994.

The development in domestic letter item volume in each EU country is shown in figure 4.3. The figure shows the percentage change in volume between 1980 and 1994.

Figure 4.3 Development in the demand for domestic letter items by country, percentage growth, 1980 - 1994

Country	% Growth 1980 - 1994	% Growth 1980 - 1990	% Growth 1990 - 1994
Austria	72,5%	58,0%	9,2%
Belgium	3,3%	-2,1%	5,5%
Denmark	21,1%	21,7%	-0,5%
Finland	52,2%	74,1%	-12,6%
France	89,6%	59,8%	18,6%
Germany	38,5%	15,8%	19,6%
Greece	13,2%	6,1%	6,6%
Holland	46,6%	31,4%	11,6%
Ireland	45,6%	24,7%	16,8%
Italy	41,5%	46,3%	-3,3%
Luxembourg	84,7%	68,0%	10,0%
Portugal	105,9%	45,2%	41,8%
Spain	-4,7%	17,9%	-19,2%
Sweden	52,3%	36,5%	11,6%
UK	87,5%	71,3%	9,4%
Total	54,5%	38,9%	11,3%

Note: Sweden is included with a high probability of uncertainty because of irregularities in the dataset. When actual data was missing or "not available", values were extrapolated using basic linear regression. Domestic letter items include letters, postcards, printed matter and small packets and represent PPO volume only.
Source: Universal Postal Union, 1995; Eurostat, 1996.

The figure shows the following:

- the demand for domestic letter items has decreased by five percent over the period;
- France and Portugal had increases of 90 and 107 percent respectively;
- increases between 30 and 80 percent for the period are identified in Austria, Finland, Germany, Netherlands, Ireland and Italy;
- increases below 30 percent are identified in Belgium, Greece and Denmark;
- the development in demand for domestic letter items varies between the two different subperiods shown in the table, with growth being less significant between 1990 and 1994 than it was between 1980 and 1990;
- four countries have seen a decrease in mail volumes between 1990 and 1994. These include Denmark, Finland, Italy and Spain; and,
- Finland and Spain experienced the largest decreases of 13 and 19 percent respectively between 1990 and 1994.

Other sources show that the influence of fax and electronic messaging (e-mail and EDI) has not yet effected the demand for domestic letter items in terms of lower growth rates. Between 1980 and 1994 there was an increase in the use of telecommunications media. Domestic telecom traffic is estimated to have increased by 100 percent between 1980 and 1994, while international telecom traffic is estimated to have increased by 350-400 percent over the same period, (Eurostat/OECD/International Telecommunications Union, 1996).

Composition of mail

In our survey we asked PPOs about the development in demand for the different postal products:

The largest product group - first class letters - decreased from 43 percent of total volume in 1990 to 40 percent in 1995. Second class letters represented 21 percent of total volume in 1990 and increased to 23 percent in 1995. Printed matter increased from eight percent of total volume to 12 percent between 1990 and 1995. Direct mail, which is already included in the categories described above, increased from 17 percent of total volume in 1990 to 22 percent in 1995 (Price Waterhouse survey, 1996, based on responses from 14 PPOs).

In terms of actual numbers of letters, second class letters, printed matter and direct mail grew by 25 percent, 60 percent and 47 percent respectively between 1990 and 1995 (Price Waterhouse survey, 1996).

Case: USA

The average US household receives between eight and nine pieces of mail everyday. The majority of this mail is direct advertising. Advertising mail in the US, both First and Third Class, has been increasing at a rate well above ten percent annually in recent years. This increase in advertising mail has continued to support flat or declining volumes in the traditional correspondence and transaction market.

As shown in figure 4.4 below, the sender-receiver relationship is also an important characteristic of postal markets. About 51 percent of all PPO mail originates from businesses and is destined for domestic households, about 31 percent is "business to business" while the remaining 18 percent is “private mail” (Price Waterhouse survey, 1996). For parcel services the distribution is different, whereby, business and organisations send about 85 percent of all parcel items, and the majority (about 70 percent) is received by individuals. About two-thirds of the parcels that are sent by individuals are destined for other individuals (Eurostat 1996).

Figure 4.4 Sender-receiver relationships in the EU

Sender - Receiver Category	1995	1990	2000
Sent from private sender to private receiver	8.9%	7.1%	6.1%

Sent from private sender to business/public receiver	6.0%	7.6%	5.0%
Sent from business/public sender to business/public receiver	31.4%	38.0%	29.5%
Sent from business/public sender to private receiver	50.9%	44.1%	56.1%
Other	2.8%	3.2%	3.3%

Source : Price Waterhouse survey, 1996.

Customer needs and expectations

For the description of customer trends and expectations we have used secondary data supplemented with qualitative data obtained from interviews.

The following four areas are of most relevance when discussing customer needs and expectations:
- universal service;
- quality of service;
- predictability and timeliness; and,
- flexibility.

The general requirement for universal service is underlined by BEUC who emphasise the importance of defining and guaranteeing the provision of universal services while ensuring affordability and compliance with minimum quality standards (Interview BEUC). EMESUA points to the need for more competition in order to maintain an affordable universal service at affordable prices (Interview EMESUA).

The need for quality of service covers both increased customer service in all parts of the value chain as well reliability with regards to actual performance. BEUC believes that future customer needs are crucial in determining the structure of postal services in the future (Interview BEUC).

Predictability is closely related to reliability and is a crucial factor, especially for large mailers. Therefore, postal operators are required to take responsibility for mail from receipt to delivery (Interview EMESUA). Another important criterion is timeliness, i.e. how long it takes for mail to reach its destination. One large European user called for delivery times being less than three to four days, and to this end regularly tested other means of delivery (User interview). Thus improvements of timeliness are an important means of increasing competitiveness.

In addition customers increasingly expect flexibility and specialised services tailored to specific customer needs. For instance customers have required early delivery of newspapers in order to receive them before leaving home (Interview ENPA). This has resulted in publishers creating their own distribution networks. One such alternative distribution network in the Netherlands distributes publications to local news stands, where subscribers can pick them up, and has a market share of 60 percent (Interview FAEP).

Demand for postal transportation services

Total parcel volumes

The demand for postal transportation services is met by PPOs as well as by PrOs. As parcel markets are liberalised PrOs play a more important role in this market compared to the market for communication services. PPOs and PrOs are also in competition with other parcel transporters such as freight forwarders and railway companies. Especially the market for express service has become very competitive through the entrance of both integrators and national/local companies.

The overall volume for domestic parcel services was steady throughout the 1980's, but in the 1990's there was an increase in volume (Eurostat, 1996). This might, to a certain degree, be explained by the increase in GDP, but can also be attributed to factors such as increased dispersion of economic activities (teleworking etc.).

Also, electronic homeshopping may increase the demand for parcel transportation services. The PPOs do not forecast that this type of home shopping will boost postal transportation services. There is some expectation relating to paper based home shopping, but no high expectations regarding electronic homeshopping (Price Waterhouse survey, 1996).

Mail order has developed over the past few decades as a competitor of store retailing services. Mail order can influence the growth in demand for postal transportation services. An indication is the growth in turnover of mail order companies in ten EU countries. The mail order companies increased their turnover by 36 percent between 1989 and 1994, partly due to increased homeshopping (EMOTA/AEVPC, 1996).

One area where PPOs have seen a decline in recent years is in the area of international parcels. An index for 11 EU countries shows that international parcel volume (dispatch) from 1990 to 1994 decreased about 18 percent (Universal Postal Union, 1995; Eurostat 1996). The reason for this decline is mainly that the private ex

press service operators are taking over a growing share of the international parcel market.

Customer needs and expectations

The express market has been created based on customer needs for express services as a result of the following trends:

- "Just In Time" has become a key issue in the logistic management of many industries;
- still more production facilities and warehouses have been centrally placed, resulting in an increased need for central express delivery; and,
- the production time cycles from raw material to final product have become shorter in many industries.

Express delivery services has primarily been offered by the global integrators and national/local private operators. They have covered different types of demand on the express market. The integrators have focused on the need for international express services by addressing customer demand for value added services. An example is providing package location information to customers within 30 minutes or it is delivered free of charge. The local companies have focused on specific geographic areas and in some cases on specific industries, e.g. some messenger companies operating in the Danish market have focused on servicing marketing agencies and their need for urgent deliveries.

On the express market GDP and internationalisation of trade are important factors. It was mainly through the internationalisation of trade in the 1960's that demand grew for express and therefore expensive services. Since then demand has grown during the 1980's and the early 1990's. Growth rates around 30 percent per year were normal during these years. Especially demand for next day delivery has increased, while lately there has been a drop in the demand for second and third day deliveries. Next day delivery now accounts for approximately two-thirds of the courier/express market (Bolton, 1995).

The global integrators and the local and national private operators that we have interviewed, see demand as the most important change driver for the development of their businesses.

This development is supported by the questionnaire responses of three of the global integrators. They have increased their handled items within parcel and document express services (domestic and international in total) by 100 percent between 1990 and 1995 (Price Waterhouse survey, 1996).

Demand for other postal services

The market for financial/retail services has a much more complex structure than the markets for communications services and parcels. In financial/retail services PPOs are in direct competition with many different types of companies such as banks and private suppliers of electronic services.

Financial/retail services continue to be a smaller business area compared to mail services for PPOs. Of the total turnover of the six PPOs who answered the question in our questionnaire, financial/retail services accounted for only 25 percent in 1990. This share decreased to 22 percent in 1995 (Price Waterhouse survey, 1996).

Postal financial service is divided into the following categories by UPU:

- money orders;
- giro; and,
- postal savings.

The amount of financial transactions involved is significant in all three of the above mentioned areas. The trend is that only the amount of Giro accounts increased slightly between 1990 and 1994 in the majority of EU countries. The amount of postal savings accounts in most of the EU countries remained the same, while the amount of money orders decreased slightly in most of the EU members states (Universal Postal Union, 1995).

The Giro account is a service which meets customer requirements with regard to ease of use and flexibility within financial services. In many countries banks have realised these needs, resulting in strong competition in the Giro market.

According to the European Information Technology Observatory ‘96 (EITO, 1996), the European banking business is reducing its branch network and is in the process of developing alternative delivery channels. New delivery channels such as PC/home banking are becoming more popular especially for clients willing to use the alternative service delivery channels. A study done in the US shows that 52 percent of the surveyed households would use telephone banking and that 18 percent would use PC banking (PSI Management Information Consulting group, 1996).

Trends and forecasts

Postal communication and transportation services

The forecasts for postal communication and transportation services varies between different postal products and between countries.

Figure 4.5 Change between 1995 and the year 2000 in expected turnover/income by 13 PPOs from the listed services (figures indicate the number of PPOs expecting increase, decrease and no change respectively)

Service	Increase	Decrease	No Change
First class letters	5	4	3
Second class letters	4	1	3
Printed matter	4	3	1
Postcards	3	1	3
Small packages	5	0	4
Parcels	11	0	1
Direct mail	10	1	0
Unaddressed items	8	1	2
Newspapers and magazines	4	3	5
Courier/express items	11	1	0
Electronic hybrid mail	9	0	0
Electronic End-to-End mail	7	0	0
Financial/Retail transactions	4	3	0

Source: Price Waterhouse survey, 1996.

Figure 4.5 shows that:

- there is no clear forecast as to whether the demand for traditional postal communications and transportation services such as first and second class letters, printed matter, postcards, small packages, newspapers and magazines will increase or decrease over the next five years;

- it is clear that the PPOs expect an increase in the demand for parcels, direct mail, unaddressed items, courier/express items, electronic hybrid mail, mail electronic end-to-end mail up to the year 2000; and,

- there is no clear forecast as to whether the demand for financial/retail services will increase or decrease over the next five years.

The predicted increase in turnover/income from parcels between now and the year 2000 might partially be ascribed to the increased globalisation, but also the increased centralisation of many organisations as well as the increased networking.

The global integrators expect that the demand for express services will increase in the future. They expect their handled volume within parcel and document express services (domestic and international in total) will increase by approximately 50 percent by the year 2000. The same trend was indicated in the interviews with the local and national companies (Price Waterhouse survey, 1996).

As can be seen from figure 4.6 the PPOs, of which nine gave forecasts, predict that the number of items they expect to handle in the year 2000 will be 10.4 percent higher than the number they handled in 1995.

Figure 4.6 Breakdown of the items handled by the PPOs in 1995 and the items they expect to handle in the year 2000.

Type of item	Percent of volume in 1990	Percent of volume in 1995	Percent of volume in 2000	Percent change in volume 1990 - 1995	Percent change in volume

					1995 - 2000
First class letters	43,4%	40,3%	35,7%	7,7%	-2,0%
Second class letters	20,9%	22,5%	26,4%	24,8%	29,7%
Printed matter	8,4%	11,6%	10,9%	60,2%	4,1%
Postcards	2,1%	1,6%	1,6%	-10,7%	5,2%
Flats and width AO letters	0,7%	0,5%	0,4%	-16,2%	-6,0%
Parcels and small packages	0,8%	0,6%	0,6%	-20,7%	7,0%
Unaddressed items	9,0%	12,3%	13,9%	57,1%	25,8%
Newspapers and magazines	14,4%	9,9%	9,2%	-20,4%	2,5%
Courier/express items	0,2%	0,1%	0,2%	-5,6%	34,4%
Hybrid mail	0,0%	0,6%	1,2%	200+%	128,7%
Electronic end-to-end mail	0,0%	0,0%	0,0%		23,4%
Total	**100**	**16,5%**	**100**	**10,4%**	**100**
(Direct mail)	(17,4%)	(22,0%)	(22,5%)	(46,7%)	(13,5%)

Note: Direct mail is included in the total, as it is counted under headings such as printed matter and second class letters.
Source: Price Waterhouse survey, 1996.

The figure shows that:

- more than 60 percent of the mail items were first and second class letters in 1995 which is also expected will be the case in the year 2000, however regarding the composition of the two letter types:
    - the volume of first class letters is expected to drop by two percent by the year 2000;
    - the volume of second class letters is expected to increase by 29.7 percent by the year 2000;
- other major categories include unaddressed items and printed matters, with expected volume shares of 13.8 percent and 10.9 percent respectively; and,
- although currently small in terms of volume, categories such as courier/express items, hybrid mail and electronic end-to-end mail are forecasted to increase significantly by the year 2000.

Figure 4.7 shows that GDP is expected to grow steadily until the year 2000, by an average of 2.6 percent per year.

Figure 4.7 Expected annual percent change in GDP in the 15 EU countries until the year 2000

	1994	1995	1996	1997	1998	1999	2000
GDP growth (constant prices)	2.8%	2.5%	1.5%	2.4%	2.8%	3.0%	3.1%

Source: European Commission, 1996c.

This expected growth in GDP should have a positive effect on the demand for postal communication and transportation services. It is important to note that this development may change from country to country, as for example forecasts show in Finland, where first and second class letter volume is expected to drop between 1994 and 2000, after which point it is expected to pick up again. This is despite an expected average GDP increase of 3.0 percent per year (Nikali,1995).

There are also changes expected in the significance of various sender-receiver segments.

Figure 4.8 The current and expected future significance of various sender-receiver segments

Sender - Receiver segment	1995	2000

Sent from private sender to private receiver	8.9%	6.1%
Sent from private sender to business/public receiver	6.0%	5.0%
Sent from business/public sender to business/public receiver	31.4%	29.5%
Sent from business/public sender to private receiver	50.9%	56.1%
Other	2.8%	3.3%

Source: Price Waterhouse survey, 1996.

As can be seen from figure 4.8 the PPOs, of which eight gave figures for 1995 and four for the year 2000, forecast that:

- the share of business-to-business mail volumes will decrease from 31.4 percent to 29.5 percent; and,
- the share of business-to-private mail volumes will increase from 50.9 percent to 56.1 percent.

This corresponds to the expectation that electronic communications will primarily take place between business enterprises, while business-to-private messages will continue to rely on postal delivery, because far from all private households will have possibilities to receive electronic messages by the year 2000.

The fact that the significance of business-to-business mail is predicted to decrease is also supported by our Delphi study of postal experts. According to the results from this study the decrease in this segment will be especially strong in the period 2001-2005. This prediction was also supported by the following comment: ”business-to-business is more likely to move to other carriers/facilities first”, implying that electronic substitution will have the highest impact in this sector, because of the availability of information technology.

The more qualitative customer trends are difficult to forecast, but the following issues presented themselves in most of the user interviews we conducted.

Customers will have an increased need for communication and transportation services, and they will choose the suppliers giving the best value for money. They will put PPOs as well as PrOs under pressure in order to:

- continuously develop their new services;
- improve the quality level of existing services; and,
- give price benefits to large mailers/senders.

Other postal services

Financial/retail services are facing increasing competition from competitors and are therefore under heavy cost pressures. Striving to achieve economies of scale, merger activities have increased and have resulted in a number of branch closings, staff reductions and operation consolidations. Further consolidation of operations could be seen as a way to cut costs and create the correct environment to make large scale automation and information technology investments worthwhile.

Regarding new delivery channels, further cost reductions through automation and re-engineering will become more difficult without using new processing technologies such as EDI and home banking.

PPOs expect that financial/retail services will drop from 22 percent to 20 percent of total financial turnover by the year 2000 (Source: Price Waterhouse survey, 1996).

Conclusions

The conclusions regarding the future demand for postal services are that:

- GDP is considered by some to be a robust determinant of the demand for postal services;

- others consider the situation to be more complex, taking into account factors such as electronic substitution - see section 4.3;

- other factors influencing the demand for postal services are: developments in number of households and companies; letter prices relative to the general prices; the average letter price compared to the average price of telephone calls; quality of service - predictability and timeliness;
- linear regression extrapolations of domestic letter volumes, based on Eurostat and UPU data, predicts a likely increase of 16 percent between 1994 and the year 2000. This figure will vary from country to country;
- the PPOs expect the total number of items they handle to grow by 10.4 percent between 1995 and the year 2000, which is less than the growth expected in domestic letter volumes;
- it is clear that the PPOs expect an increase in the demand for parcels, direct mail, unaddressed items, courier/express items, electronic hybrid mail, mail electronic end-to-end mail up to the year 2000;
- according to the PPOs the business/public sender to private receiver segment is expected to increase in significance;
- there is no clear forecast as to whether the demand for traditional postal communications and transportation services such as first and second class letters, printed matter, postcards, small packages, newspapers and magazines will increase or decrease over the next five years;
- the PPOs expect the following segments to decrease in signifiance: private sender to private receiver, private sender to business/public receiver and business/public sender to business/public receiver;
- future customer requirements include: universal service, transparency in terms of quality of service, predictability and timeliness, specialised and flexible services; and,
- PPOs expect the significance of financial/retail services to decrease to 20 of the total turnover by the year 2000, from 22 percent in 1995.

4.3 Electronic substitution

Definition

Telecommunications services offer a number of new ways to communicate such as facsimile (fax), electronic mail, and electronic data interchange. Usage of these services may in the future substitute more traditional ways of communicating, including the use of postal services. We consider substitution to be "the use of electronic services for communication which otherwise could have been made using postal services."

The potential threat to postal services from competing, electronic alternatives is described in the figure below. The grey boxes indicate which competing electronic alternatives constitute a threat to traditional, paper based postal services. Some services could be substituted by more than one alternative, as in the example of bills, where the competing alternatives are: hybrid mail, on-line services and interactive TV.

Figure 4.9 The potential threat from electronic substitution on traditional postal services

Traditional postal services (Applications)	Competing Alternatives					
	e-mail	EDI	Hybrid mail	On-line services	Intra-net	Interactive TV
Greeting card						
Social mail						
Cheque payments						
Bank statements						
Acknowledgements						
Insurance/Legal						

Requested advertising						
Unrequested advertising						
Orders						
Newspapers						
Bills						

Source: Pang, 1996, Other confidential sources.

Electronic mail (e-mail) is the transmission of computer-generated messages between a sender and receiver(s) by means of telecommunications links. Electronic Data Interchange (EDI) is the electronic transfer, from computer to computer, of commercial or administrative transactions using an agreed standard to structure the transactions or messages data (EITO, 1996).

The scope of the analysis in this section is to evaluate how new electronic services will affect the overall demand for postal services. The analysis will concentrate on services, which include delivery of data and written communication and therefore provide immediate alternatives to postal services. This includes e-mail, EDI and hybrid mail, voice mail, video-conferencing etc. In addition to this the impact of tele or home shopping is considered, as this will have an impact on demand for postal transportation, as described in section 4.2.

The methodology is to assess the future use of these services on the basis of a number of indicators collected through our survey and interviews with users and postal operators. These data is supplemented by secondary data taken from the literature on both postal and electronic services.

The analysis is confined to looking at the direct impact on these services on the demand for postal services. The impact of internationalisation and other changes at the macro level following the development of an information society will not be taken into account in relation to this change driver.

Factors influencing the evolution of electronic substitution

In section five we discuss the impact of electronic substitution on employment in more detail. In brief, electronic services will effect employment levels via the impact they will have on the quantity of demand for postal services (mail substitution, but also mail creation) and via migration towards increasing use of hybrid mail services.

The evolution of electronic substitution is determined by five factors:

- the penetration of electronic terminals among customer groups. In the business sector, terminals will most probably be computers (such as personal computers, PCs, or Network computers, NCs), while residential customers may use other appliances such as interactive TV or dedicated terminals;
- the cost of electronic services compared to paper-based services. This includes prices of hardware, software and telecommunication tariffs on the one side, and postal tariffs on the other side;
- the quality of services, that is, user friendliness, speed, reliability, inter-operability and degree of international standardisation of electronic services, and speed and reliability of postal letter services;
- legal factors, such as the legal status of electronic information (e.g. copyright); and,
- other institutional and cultural factors influencing the development of electronic services, such as the traditions for paper-based work procedures.

The relative importance of these factors varies between services. Overall, the reasons for using electronic services are speed and cost, but for certain types of messages, such as marketing and delivery of journals, costs are more essential than speed. For other types of mail, such as cheque payments, speed is essential.

Everything else kept equal, the threat of electronic substitution will be highest when postal services are, in relative terms, expensive and of low quality.

The evolution of electronic substitution also depends on other change drivers. Trends in liberalisation, organisational change and automation will effect the pace of substitution through their impact on the quality and price of postal services. Lower postal tariffs and improved quality of postal services will tend to slow down the rate of substitution, but will not stop the process itself. With electronic substitution, new delivery services will emerge. This will blur the boundaries between postal services and other delivery services and complicate the regulation of the industry.

The growth of electronic substitution will also have an impact on automation. Indeed, widespread use of hybrid mail could create a critical mass of letters with a standardised format and with bar codes, and so promote the introduction of advanced sorting technologies.

Although the relationship between electronic substitution and organisational change is not apparent, electronic substitution on a large scale could change the composition of mail types and imply needs for reallocation of resources and thus require organisational changes.

Past evolution and current situation

Development in electronic services

Of the factors influencing electronic substitution, the penetration of terminals and the quality of postal services are the most important country specific indicators.

Figure 4.10 gives a ranking of countries according to the penetration of telephones, fax machines and PCs (an indicator of possible terminals for E-mail and EDI). Based on this figure, EU countries can be grouped into the most advanced countries (Sweden, Denmark, Finland and Netherlands) a middle group (United Kingdom, Austria, France, Belgium, Germany, Luxembourg) and the least advanced countries (Ireland, Italy, Spain, Greece and Portugal), when it comes to penetration of electronic services.

Figure 4.10 Penetration of telephones, fax machines and PCs in the EU

	Tele-phones per 100 inhabitants (1994)	Ranking	Fax machines per 100 inhabitants (1993)	Ranking	PCs per 100 inhabitants (1994)	Ranking
Austria	46.5	10	2.7	3	10.7	10
Belgium	44.9	11	1.6	9	12.9	8
Denmark	60.4	2	3.6	2	19.3	1
Finland	54.7	5	2.3	5	15.9	3
France	54.7	4	1.7	8	14.0	7
Germany	48.3	8	1.6	10	14.4	6
United Kingdom	48.9	7	2.2	7	15.1	5
Greece	47.8	9	0.1	15	2.9	14
Ireland	35.0	15	2.3	6	13.8	9
Italy	42.9	12	0.4	14	7.2	11
Luxembourg	55.4	3	1.2	11	na	-
Netherlands	50.9	6	2.6	4	15.6	4
Portugal	35.0	14	0.4	13	5.0	13
Spain	37.1	13	0.5	12	7.0	12
Sweden	68.3	1	3.7	1	17.2	2
EU average	47.6		1.5		9.7*	

* 1993 figures.
Sources: Eurostat, 1996; OECD, 1995, International Telecommunications Union, 1994; Other confidential sources.

Information technology spending as a percentage of total GDP was above two percent in the Nordic countries, the UK, Benelux, Germany and France, while it was below 1.4 percent for Italy, Greece, Spain, Portugal and Ireland. Among the EU countries, the number of PCs per 100 white collar workers was highest in the Netherlands (80), lowest in Greece (42), with a EU average of 72.

In figure 4.11 the growth in telecommunications services is expressed in the number of main telephone lines and fax machines in the EU.

Figure 4.11 Main telephone lines and fax machines in the EU, 1985-1994, in thousands

	1985	1990	1991	1992	1993	1994
Main telephone lines	123,265	153,742	159,280	165,214	170,325	176,206
Fax machines	N/A	3,094	4,007	4,731	5,549	N/A

Source: Eurostat/OECD/International Telecommunications Union, 1995.

The growth in the number of fax machines is considerable, but still very much confined to business users. This also applies to Internet connections which have become a major network connection for e-mail world-wide. Internet connections have also been taken up at considerable speed by residential users more recently. As of December 1995, EMMS (Electronic Mail & Messaging Systems) estimated that there were approximately 90 million e-mail boxes globally, as figure 4.11 shows.

Figure 4.12 World-wide E-mail installed base, estimates as of December 1995, in thousands

Local Area Network (LAN)	47300
Host	29710
Public	13950
Total number of mailboxes	90960

Source: Computer Resellers News, 1996.

These figures are an expression of the phenomenal growth of computer-to-computer communications during the past five years. In 1990, the number of hosts dedicated to the Internet was counted to be 56000 world-wide.

Case: USA

First class mail volumes in the US continue to increase, but at a much slower rate. For example, growth in the business to household portion of the first class correspondence and transaction market, historically one of the fastest growing segments, is expected to drop by over six percent between 1994 and 2000 (PSI Management Information Consulting Group, 1996). Most of the volume growth can be attributed to a continued growth in first class advertising mail of about ten percent a year. Many industry experts seem to agree that first class mail volumes will peak or become flat before the year 2000, and that perhaps we will se a real overall decline after the turn of the century (The American Institute for the Future and Pitney Bowes, 1994).

studies show that an increasing number of both businesses and consumers are turning to electronic options instead of physical mail for some activities. The following is a list of just a few of the statistics concerning electronic substitution in the US:

- almost 100 percent of all business with over 100 employees and over 80 percent of businesses with between five and 100 employees use facsimile machines (Postal Service Market Research, 1996);
- approximately 43 percent of the 11 billion fax messages in 1993 represented diversion from mail;
- 80 percent of home computers have software capable of on-line access (Electronic Access, 1995);
- banks are aggressively pushing PC banking, even going so far as to make the service free and/or pay customers to switch to the service (Gemini McKenna, 1996);
- approximately 40 percent of households say that they pay one or more of their bills each month through some electronic service rather than the mail (Market Facts Inc., 1995); and,
- the US Treasury Department indicates that approximately 55 percent of all Federal government payments

are currently made electronically, and its stated goal is 100 percent by 2006 (United States Postal Service, 1996).

The threat of electronic substitution has been one of the primary impetus for postal reform in the US.

Substitution

The potential for electronic substitution of postal services is largest in the most electronically advanced group of countries (see figure 4.9), but electronic substitution in general is promoted both by availability of electronic services and by a lower quality of postal services.

If the countries in the most advanced group are the countries with a high quality of postal service, and if the countries in the least advanced group are the countries offering a lower quality of postal services, then electronic substitution may be expected to have the most impact in the least advanced group of countries (assuming that the quality of postal services remains unchanged as electronic services develop).

Although telecommunications is experiencing continued growth, especially in newer areas like fax, e-mail and EDI, postal communications have not decreased, as evidenced in figure 4.13 which indicates the average number of letter-post items posted per inhabitant. This does not necessarily indicate that telecommunications substitute some postal services, but that the total demand for communications outweighs the substitutional effects.

For example, research has shown that the Minitel, the national videotext service introduced in France in the 1980s, has created enough new flows of mail (such as payments and follow-up marketing letters) to produce a net increase in mail volume (New Industry Research, 1993).

Figure 4.13 Number of letter-post items per capita in the EU

Country	1990	1991	1992	1993	1994	Change from 1990 to 1994
Austria	405.9	401.9	382.6	403.0	428.5	5.6%
Belgium	317.6	326.9	330.0	322.2	328.1	3.3%
Denmark	335.4	336.4	352.4	342.6	341.4	1.8%
Finland	N/A	153.3	152.9	149.8	N/A	N/A
France	354.8	374.9	384.0	436.6	419.2	18.2%
Germany	249.0	257.5	220.4	229.2	230.2	-7.5%
Great Britain	276.3	227.4	282.1	286.2	299.2	8.3%
Greece	39.1	38.8	39.9	N/A	N/A	N/A
Ireland	N/A	123.3	121.1	130.3	138.8	N/A
Italy	148.4	139.4	126.2	118.5	N/A	N/A
Luxembourg	353.9	371.8	312.6	326.3	331.0	-6.5%
Portugal	69.5	78.5	85.1	91.8	96.5	38.8%
Spain	135.5	N/A	N/A	106.9	108.2	N/A
Sweden	N/A	N/A	N/A	N/A	489.5	N/A
Canada	357.5	349.8	360.6	370.2	N/A	N/A
USA	660.4	651.1	645.7	655.0	670.5	1.5%

Note: Letter-post items include letters, postcards, printed matter and small packets and represent PPO volume only.
Source: Universal Postal Union, 1995.

The developments of telephone density and calls, and the developments of postal items transported during the 20th century, have increased in parallel. This points to the conclusion that the aggregate demand for communication is increasing at a pace allowing for postal services to stabilise while telecommunications grow and, furthermore, that the different modes of communication, to a certain extent, supplement each other. In the information society age where communications is becoming increasingly important, this conclusion will probably continue to be true.

However, as an indication of the growing importance of electronic communication, the International Post Corporation (IPC) estimates that the share of electronic messaging of overall communication has gone up from 58 percent in 1992 to 62 percent in 1995 (Interview).

Although many factors influence mail volumes such as the relative economic recession in the beginning of the 1990s and the obvious variance between countries, it may be concluded that electronic forms of communication, to a certain extent, have stalled the growth in mail volumes.

Trends and forecasts

The potential threat to traditional postal services from telecommunications has long been discussed by PPOs and is backed by one PPO, who believes that electronic substitution will be the main threat in the future, especially in the business-to-business market (Interview).

On the other hand one user organisation and one PrO are of the opinion that telecommunication does not substitute postal communications. Rather they are two different modes of communication that supplement each other and as in the postal transportation area where communication may lead to more transportation, telecommunications may lead to increased demand for postal services (Interview).

Figure 4.14 gives our classification of the elements influencing the future of electronic substitution. In section six we discuss in more detail the uncertainties affecting the future evolution of the factors determining the future evolution of electronic substitution. The main insight is that we expect an overall increase in the threat from electronic services.

Figure 4.14 Classification of the factors underlying the evolution of electronic substitution

Element	Classification			Expected evolution*	If uncertain, degree of uncertainty **
	Constant	Pre-determined	Uncertain		
Tradition for paper-based work procedures				-	M
Penetration of electronic terminals				++	
Cost of electronic terminals				--	
Cost of electronic services				--	
Inter-operability of electronic services				+	L
International standardisation of electronic communication				+	M
Legal status of electronic substitution				Solved	L
Cost of postal services				-	H
Quality of postal services				+	M

* Scale goes from -- (strong decline) to ++ (strong increase).** Scale: H: High, M: Medium, L: Low.
Source: Price Waterhouse survey, 1996.

Traditions for paper based working routines have so far been a major obstacle to a wider usage of electronic services both for internal and external business communications. If the potential advantages of using electronic services shall be obtained, major reorganisations will often be necessary. The speed of this reorganisation will affect the timing of substitution of paper-based delivery services with electronic communication.

It is almost certain that the penetration of terminals will increase. In the last couple of years the residential market for PCs has almost exploded - in Denmark, which has the highest penetration of terminals in the EU, every second household is reported to have a computer (Danish Ministry of Research, 1996). A similar development can be expected in other countries as well. A stand-alone PC does not allow electronic communication, but an increasing share of PCs are equipped with a modem.

Also lower costs of both terminals and transmissions and development of more user-friendly systems are anticipated. All these three elements will contribute to a wider usage of electronic communication services.

It is more uncertain how interoperability and international standards will develop. Substantial work is done to agree on international standards, but agreeing internationally on new standards is often a slow process. At the same time new services and applications are constantly being developed and create new problems of compatibility and interoperability with existing applications already in use.

Lack of interoperability is one of the major barriers to the application of electronic communication services particularly in small and medium sized enterprises. Many small enterprises refrain from using EDI, because of lack of interoperability with their accounting systems (Danish EDI Council, 1995). Among the PrOs it was mentioned that EDI might be a future threat, as the express document business will stop growing when EDI is more readily available (Interview).

Another class of elements are related to the development of postal services. The rate of substitution depends on the cost and quality of postal services, and what type of initiatives the PPOs will take in order to meet the challenges of new electronic communication services. These could be creation of new types of hybrid services or provision of full electronic services such as e-mail.

As an indication of the future impact of electronic services, the following figure gives expected growth rates for major European countries and totals for the remaining part of western Europe.

Figure 4.15 Compound annual growth rate for a selection of key indicators for the period 1995 - 2000

	France	Ger-many	Italy	Spain	UK	Rest of Western Europe
Telephone main lines ('000), installed base	2.7%	2.6%	3.7%	3.5%	2.4%	3.5%
ISDN* equivalent lines ('000), installed base	28.5%	32.3%	58.0%	32.2%	24.0%	42.6%
Cable TV subscribers ('000 homes connected)	13.8%	4.8%	N/A	44.7%	33.3%	2.8%
E-mail* market (million ECU), public services only	34.3%	31.6%	36.7%	36.4%	31.3%	32.5%
EDI* market (million ECU), public services only	21.3%	26.7%	25.6%	32.6%	17.3%	16.3%
EFT-POS* market (million ECU), pubis services only	17.2%	29.7%	31.6%	14.9%	34.7%	21.5%
CRS* market (million ECU), public services only	12.9%	7.1%	21.6%	22.1%	7.3%	10.6%

* ISDN = Integrated Services Digital Network; E-mail = Electronic Mail; EDI = Electronic Data Interchange; EFT-POS = Electronic Fund Transfer from Point of Sale; CRS = On-line Computer Reservation Services. Source: EITO, 1996.

Figure 4.15 shows that major growth rates are expected in the following areas:

- e-mail;
- digital networks; and,

- electronic fund transfer from point of sale.

Also the number of Internet connections is rapidly growing in most EU countries. In Europe, the number of computers with an Internet connection is estimated to grow from 3.8 million in 1995 to 8.5 million by the end of 1996 (Ellsworth and Ellsworth, 1995). The number of people using the Internet only for e-mail purposes was even greater, about ten million by the end of 1995 (EITO, 1996).

The same source (EITO, 1996) also gives forecasts for two other electronic based services, interactive home banking and homeshopping:

- home banking: the number of adopters of home banking in 12 EU countries has been estimated at about three million households in the year 2005, i.e. 2.4 percent of the households, generating revenues of about 190 million ECU in the same year; and,

- interactive homeshopping is considered as potentially the service generating the highest revenues among new multimedia services (about five billion ECU in 2005). It is estimated that by 2005 over nine million EU households will be using interactive homeshopping over broadband networks.

Average PC penetration in households in Europe is well below 20 percent, compared with more than 35 percent in the US. A large number of household PCs are not IBM or Apple compatible and country variations in the EU are wide, as supported by figure 4.10. Modems are used regularly by only three percent of households. However, this is a scenario that is changing fast. Estimates show that by the year 2000, at least 50 percent of 148 million European households will have a personal computer and that at least 25 percent of them will be connected to telematic networks. In addition hardware vendors are increasingly bundling modems with PCs in a successful attempt to increase the penetration of network access hardware (EITO, 1996 and Gartner Group, 1996).

Conclusions

Based on the above, electronic substitution is estimated to have the following impact:

- the growth rates in mail volumes might stagnate caused, to a certain extent, by electronic substitution;
- this relationship is not statistically evident, but can be supported by the growth in electronic communication services;
- this trend will continue and might result in stagnating/declining physical mail volumes caused by better price/quality of electronic communication services;
- this will impact the proven and robust relationship of physical mail volumes and GDP;
- the effect of electronic substitution will probably depend on the future price/quality of traditional postal services;
- at first electronic substitution will have an impact in more advanced countries with higher penetration of electronic services; and,

later, in countries with a low penetration of electronic services, if the quality of postal services is low, the growth of electronic substitution will be higher

4.4 Automation

Definition

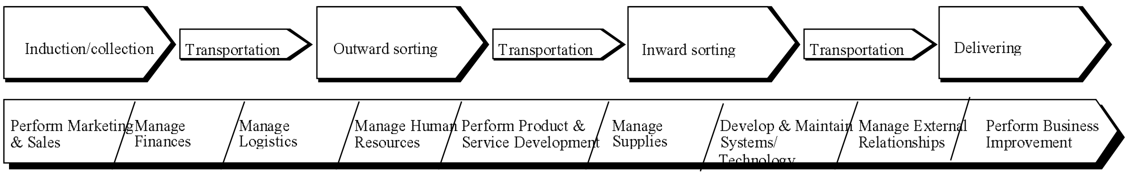
When using the term automation we are referring to the mechanisation of various parts of the mail services value chain (shown below) and the use of Information Technology (IT) in logistical systems. Automation also applies to the use of mechanisation and IT in the provision of financial/retail services and the undertaking of internal administrative functions.

Automation is relevant to our study as a change driver, because mechanisation and information technology are often used to replace or supplement existing work processes in the provision of both mail services and financial/retail services.

Mechanisation is primarily concerned with the provision of mail services and can best be explained in relation to the various stages in the mail services value chain as pictured below.

Information technology can also be described in relation to the mail services value chain. However, it also needs to be considered in relation to the provision of financial/retail services.

Figure 4.16 Mail services value chain



Source: Price Waterhouse, 1996.

Factors influencing the evolution of automation

There are many factors that influence the evolution of automation in the postal sector. Some of the most important include:

- business goals;
- availability of technology;
- availability of financial resources; and,
- industrial relations.

Business goals

The motivation behind automation has traditionally been seen as the reduction of costs or the improvement of productivity. Increasingly manual processes are also being automated to improve working conditions and the quality and reliability of service in response to the demands of increasingly sophisticated customers.

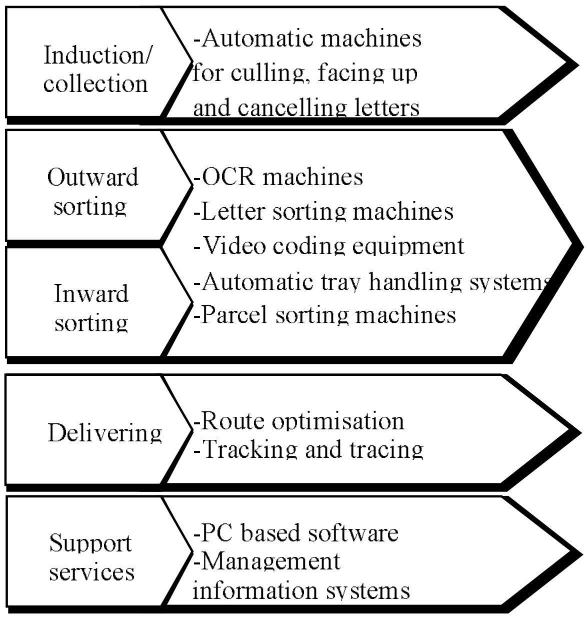
A fact that makes the determination of the relationship between automation and productivity difficult is the extent to which the potential benefits of automation are actually realised in terms of productivity. For example, a postal operator may implement a comprehensive automation programme that has the potential to increase productivity by 20 percent, however they might only realise part of this as a result of conservative productivity deals with trade unions or the fact that work practices are not changed to make optimum use of the new programme. On the other hand, it may not be possible to realise the full potential of an automation programme as doing so might actually impact on the PPOs ability to fulfil its universal service obligation or to meet the service demands of its customers.

This is illustrated by the outcome of the five billion US$ automation programme implemented by the United States Postal Service since the late 1980s to improve productivity. A 1992 report by the US General Accounting Office examined the effect that automation had on postal costs and the prospect for future cost reductions. The report concluded that "while hours worked did decrease in work functions most directly affected by automation, the reduction was just about one percent from the previous year and about 65 percent of the planned amount" and that "reports from fiscal years 1990 and 1991 identified over $187 million in lost savings as a result of ineffective procedures and administration (United States General Accounting Office, 1992).

Availability of technology

In the figure below we identify the machines and information technology that are typically associated with the various stages of the mail services value chain.

Figure 4.17 Automation linked to the mail services value chain



Source: Price Waterhouse, 1996.

The use of machines and IT is particularly important in collection, sorting and support services.

The degree to which postal operations are automated can be described using a number of factors including the extent to which machines and information technology are being used in each of the stages of the value chain. For example, the extent to which optical character reading (OCR) equipment and letter sorting machines (LSM) are used in the outward processing of mail.

Availability of financial resources

The availability of funds for investment in automation among postal operators is rather limited due to many other demands on investment funds from different parts of their organisations. This means that automation has to compete against other potential investments for funds, many of which may be seen as having greater strategic importance in the short term, such as the improvement of quality, the development of products and the improvement of efficiency, which may result in postponement or cancellation of automation investments.

Industrial relations

It is widely believed among postal operators that if you fail to automate you will be left behind by your competitors. At the same time it is crucial for the successful implementation of an automation programme, that there is a shared consensus on the program between management and employees, and that the principles of empowerment and involvement are observed. If this is not the case, as with the other factors mentioned above, it could have implications on the realisation of potential benefits.

Past evolution, current situation, and forecasts

This section is structured according to the different types of organisations that we have studied in relation to automation. We begin with the public postal operators, and move on to the private postal operators. Unlike our descriptions of the other change drivers, we look at past evolution, current situation, and forecasts in the same sub-section.

Public postal operators

We begin this section by looking at the use of mechanisation and information technology in relation to mail services. Then we deal with the situation with regard to financial/retail services separately at the end.

Mechanisation

From our survey of the 15 EU public postal operators we can provide detailed information on the extent to which many of them are using, and plan to use, mechanisation.

In general, we can conclude that by 1995 14 of the 15 EU PPOs had introduced mechanisation to some degree. However, the degree of mechanisation varies greatly between different countries and mail types. It is also evident from the data that further mechanisation is planned in most countries (and for the processing of most types of mail) up to the year 2000.

Within each country, our survey shows that the percentage of all mail processed using mechanised procedures in 1995 ranged from zero to 70 percent. On average 40 percent of all mail was processed automatically. This percentage is predicted to increase to approximately 71 percent by the year 2000 with the percentage of mail being processed using mechanised means by individual countries ranging between 26 and 98 percent.

The following figure shows the number of various types of machines that were used in 1995, by the PPOs who provided information on the subject, and their plans for year 2000.

Figure 4.18 Mechanisation among EU PPOs

Machine description	Number of PPOs who answered the question	Number of machines in 1995	Expected Number of machines in 2000	Change between 1995 and 2000
Automatic machines for facing up and cancelling letters	14	340	430	26.5%
Letter-sorting machines (standard)	14	758	987	30.2%
Letter-sorting machines (large/flats)	12	55	315	472.7%
Letter sorting machines (bulk)	5	15	25	66.7%
OCR machines	14	548	808	47.5%
On-line video coding equipment	12	397	1983	399.5%
Off-line video coding equipment	8	1035	1404	35.6%
Automatic tray handling systems	9	45	55	22.2%
Parcel sorting machines, manual coding	12	111	115	3.6%
Parcel sorting machines, bar- code readers	10	36	63	75.0%

Source: Price Waterhouse survey, 1996.

Below we describe in detail the situation regarding the level of automation that currently exists in the various parts of the mail services value chain.

Automatic machines for culling, facing up and cancelling letters: Nine of the 14 countries represented above utilised Culler/Facer/Canceller (CFC) machines in 1995. The total number of these machines in use by the PPOs represented is expected to grow by over 26 percent between 1995 and 2000, from 340 to 430. Part of this increase will be due to the fact that a further three countries plan to start using these machines by the year 2000, which will bring the total number using them to 12.

Letter-sorting machines (LSM): All of the PPOs who were using mechanisation were utilising standard letter sorting machines in 1995. In total they expect to increase the number of LSM machines by just over 30 percent by the year 2000. The number of large letter sorting machines being used is due to increase significantly between 1995 and 2000. Part of the increase will result from the fact that the number of PPOs using these machines will increase from seven to 11 (of the 12 represented in the table above) by the year 2000. The number of bulk letter sorting machines is also set to increase, however the number of PPOs who use them is set to remain unchanged at three.

Optical Character Reading (OCR) machines: All of the PPOs who were using mechanisation also indicated that they had OCR machines in 1995, and all of them plan to still have them in the year 2000. The number of OCR machines that will be used by these PPOs is predicted to increase by over 47 percent between 1995 and the year 2000.

In addition, our questionnaire showed that the readability percentage of OCR processed letters varied from 55 to 90 percent between the different EU PPOs, with the average figure being approximately 70 percent. Of the 14 PPOs who replied to the question, 13 said that their OCR machines could currently read machine written postal codes and whole addresses, eight said that they could read hand-written postal codes and three said that they could read hand-written whole addresses.

Video coding equipment: Dramatic increases are foreseen in the use of both on-line and off-line video coding equipment up to the year 2000. The number of PPOs using on-line video coding is due to increase from seven to 11, and the number of machines that they will be using is predicted to grow by almost 400 percent up to the year 2000. The number of PPOs using off-line video coding is also due to increase, from five to seven. However, the number of machines being used is only forecast to grow by a comparatively modest 35 percent over the five year period.

Automatic tray handling systems: The number of machines in use by the PPOs represented above is predicted to increase by just over 22 percent, from 45 to 55, up to the year 2000, principally due to the fact that the number of PPOs using them will increase from four to eight over the period.

This will lead to a state where the most technologically advanced countries have nearly reached a maximum with respect to automation of outward sorting.

Parcel sorting machines: The number of manual coding parcel sorting machines and the number of bar code reading parcel sorting machines are both expected to increase up to the year 2000, with the number of the latter type predicted to increase significantly more than the former.

As can be seen from the above figures, the increasing degree of automation to be expected during the next five years will particularly occur within the letter area with an emphasis on on-line video coding equipment and sorting machines for large letters as well as automatic tray handlings systems.

Outward mail sorting infrastructure

According to our survey, the total number of locations doing outward sorting in 14 of the EU PPOs was reduced by 16 percent between 1990 and 1995 (from 531 to 445). The number of outward sorting locations is predicted to decline by almost another 20 percent by the year 2000 (to 357).

The reductions between 1990 and 1995 were concentrated among six PPOs, as three PPOs actually increased the number of outward sorting locations, while the remaining five did not change. The reductions that are forecasted between 1995 and 2000 will be concentrated among seven PPOs, with one predicting an increase and the remaining six predicting no change.

According to data received from 12 PPOs, in 1995 the number of outward sorting locations that did automated outward sorting varied significantly between countries (from zero to 100 percent). On average, 57 percent of locations did automated outward sorting. The proportion of the outward mail volume that was sorted automatically also varied significantly between countries (from zero to 100 percent) with the average being 50 percent. In nine of the 14 PPOs who provided relevant data, bar codes or other electronic data used in outward sorting are reused for inward sorting of domestic mail.

Inward mail sorting infrastructure

The total number of locations doing inward sorting in 14 of the PPOs reduced by almost eight percent between 1990 and 1995 (from 2198 to 2027). The number of inward sorting locations is predicted to decline by just over 11 percent between 1995 and the year 2000 (to 1798).

As was the case with outward sorting, the reductions between 1990 and 1995 were concentrated among six PPOs. Over that time period, three PPOs actually increased their number of inward sorting locations, while the remaining five did not change. The reductions which are forecasted between 1995 and 2000 will be concentrated among eight PPOs, with one predicting an increase and the remaining six predicting no change.

According to data received from 14 PPOs, in 1995 the number of inward sorting locations that did automated inward sorting varied significantly between countries (from zero to 100 percent). On average only 13 percent of locations did automated inward sorting, which shows that the mechanisation of inward sorting has not reached as high a level of penetration as outward sorting. The proportion of the inward mail volume sorted automatically also varied significantly between countries (from zero to 90 percent), with the average being 43 percent.

Of the 14 PPOs who provided relevant data, all of them did mechanised inward sorting to the delivery office level, 13 did it to the level of the postman's district, while only two sorted inward mail to the pigeon hole/delivery bin level using mechanised means. It is believed that none of the PPOs in the EU have yet developed/implemented mechanised means that enable them to sort mail mechanically to the level of the postman's walk (carrier walk sequence sorting). In the US bulk mail is sorted to the carrier route in walk sequence.

Conclusively, it seems reasonable that electronic data from the outward sorting process will, to an increasing degree, be reused in the inward sorting process. Furthermore, it seems most likely that the most technologically advanced PPOs will succeed in mechanically sorting mail to the postman's walk level within the next five years.

Route optimisation

Many PPOs have used route optimisation software to assist them in optimising the efficiency of their mail delivery function. It is likely that the use of such systems, in combination with geographical mapping systems, will increase up to the year 2000.

IT based tracking and tracing systems

In total 14 PPOs gave details on which mail services use IT based tracking and tracing systems. The results are shown in the figure below.

Figure 4.19 The use of IT based tracking and tracing systems

Mail Service	**Yes**	**No**
Registered mail	6	7
Insured mail	5	8
Express mail	5	9
Parcels	6	7
EMS	13	1

Source: Price Waterhouse survey, 1996.

As tracking and tracing technology develops, it is likely that its use among PPOs will increase in terms of the number of products that it will be applied to, and also in terms of the reason for which it is being used, as we have seen with the international CAPE (Computer Aided Post in Europe) system for example.

Information technology strategy

13 of the 14 PPOs who provided data on the subject indicated that they have an overall information technology strategy.

The extent to which information technology (computer systems) were being utilised in 1995, in various functional areas involved in the provision of mail services can be seen in the following figure.

Figure 4.20 The use of information technology in various functional areas among the EU PPOs in 1995. The figures in the table represent the number of PPOs.

Functional area	No utilisation	Little utilisation	Some utilisation	Heavy utilisation	Utilised to the greatest extent possible
Finance	0	0	2	10	0
Personnel	0	2	7	3	0
Payroll	0	0	3	6	3
Labour scheduling	1	5	5	1	0
Marketing/sales	2	4	7	0	0
Production planning	1	3	7	2	0
Office systems	0	2	5	5	0
Management information system	1	4	4	4	0
Internal communications	2	3	5	2	0
Front office	1	0	5	3	1

Source: Price Waterhouse survey, 1996.

The extent to which information technology (computer systems) are expected to be utilised by the year 2000, in various functional areas involved in the provision of mail services is shown in figure 4.20.

Figure 4.21 The likely use of information technology in various functional areas among the EU PPOs in the year 2000. The figures in the table represent the number of PPOs.

Functional area	No utilisation	Little utilisation	Some utilisation	Heavy utilisation	Utilised to the greatest extent possible
Finance	0	0	0	3	9
Personnel	0	0	1	6	5
Payroll	0	0	0	4	8
Labour scheduling	0	0	3	5	4
Marketing/sales	0	1	4	8	0
Production planning	0	0	3	4	6
Office systems	0	0	2	4	6
Management information system	0	0	1	8	4
Internal communications	0	0	1	8	3
Front office	0	0	1	3	6

Source: Price Waterhouse survey, 1996.

Not surprisingly, the tables above clearly show that the PPOs intend to increase their utilisation of information technology in virtually all functional areas by the year 2000.

Overall trends include moving IT in the finance and payroll areas from “heavy utilisation” in 1995 to “utilised to the greatest extent possible” in year 2000. IT in areas such as marketing/sales, management information systems, internal communications, and personnel is expected to be heavily utilised in many PPOs by the year 2000.

Electronic counter terminals

From the information received through the questionnaire we can see that all of the 11 PPOs who provided data on the subject had equipped company owned post offices with electronic counter terminals to some extent. The proportion of company owned post offices that were equipped varied from one to 100 percent, and in total approximately 67 percent were equipped. This proportion is expected to increase to about 82 percent by the year 2000, with eight having 100 percent of their company owned post offices equipped compared with only three in 1995.

Only five of the PPOs who had sub-contracted or franchised post offices gave information on the number that were equipped with electronic counter terminals. In general, it can be concluded that the proportion is not as high as it is for company owned post offices, however it is due to increase up to the year 2000.

The ten PPOs that indicated that they had ATM (Automatic Teller Machines) or self service machines had a total of 9641 of them, and expect this number to increase by about 35 percent up to the year 2000.

Overall strategies regarding automation in PPOs

From analysing the trends in the use of automation among the individual PPOs, it is apparent that three separate groups emerge in terms of degree of automation. First there are the PPOs who could be regarded as both technically and productivity focused and who, as a result, are far down the road with regard to automation. Secondly, there are the PPOs who could be categorised as customer focused, and have automated to the extent necessary to meet changing customer needs, but who still have plenty of scope for further use of automation.

Finally, there are the PPOs who have made minimal use of automation, and are the ones most likely to automate in the next five to ten years.

When considering automation, the most common strategy among the public postal operators in Europe seems to be an implicit program to automate one product line at a time. This process usually begins with machinable light-weight letters proceeding to flats and then to parcels. The reason for doing so is first and foremost that the best pay-back tends to be from products with the largest volumes, but it is also done to keep the process manageable, to spread out the costs, and, because it is easier to automate light-weight letters, learning from other PPOs who have already gone through the process (Postal Technology International 1996).

Some of the smaller PPOs have put great effort into extending automation further and upgrading their equipment. Priority is placed on inward sorting and sorting in delivery sequence is in focus. These tendencies are illustrated by the following case-studies:

Case: Denmark

In the period from August 1991 to June 1993 Post Danmark established nation-wide mechanical sorting. Provided that the OCR system is able to recognise sufficient information the sorting is carried out to pigeonhole level in the postman's sorting frame. The total letter volume in Denmark is on average about 4.5 million pieces per day, of which about 2.2 million are processed mechanically.

The nation-wide system was installed in eight sorting centres with 18 new multiple-line OCR readers/sorters and 5 upgraded OCR readers/sorters of an old design. The mail is collected unsorted at the local post offices, and is then sorted roughly into the sorting centres' area for distribution (or retaining) of the mail for further sorting.

At the same time the mail for the largest cities is sorted directly by post codes to the largest extent possible, and the total letter volume is then exchanged between the sorting centres. At the inward sorting centres the letters, which have been processed by the machines in outward sorting, are sorted to pigeonhole level, and the remaining letters are sorted by post code ready for local inward sorting at the delivery post office. On-line video encoding has been introduced to enable further sorting to the postman's pigeonhole In 1996. (Annual reports, 1991-1993).

Yearly savings amount to about 29 percent of the total investment required for the development of the letter sorting system (Interview).

Case: The Netherlands

In the Netherlands a major project has been launched under the name "Briefpost 2000" to improve efficiency by automating and restructuring the letter and parcel sorting process.

By the end of the century a total transformation of the mail sorting and transportation infrastructure should be achieved so that: 98 percent of mail items will be sorted automatically by dividing letters into three categories according to required method of machine-sorting (standard, non-standard, and non machine-sortable letters); as many addresses as possible will be read automatically using OCR-systems (over 90 percent of all items are expected to be read in this way); sorting will be done to the individual postman's delivery route with the option of more detailed sorting in the future; parcels will be handled in a separate infrastructure in four dedicated hubs using other types of sorting machines; the number of hubs for letter mail will be reduced from twelve to six; all hubs will be constructed according to a standardised design; all sorting activities will be carried out by PTT Post, i.e. customers will not perform pre-sorting activities.

The benefits of restructuring the mail-handling processes are expected to include increased efficiency, increased sorting accuracy and simplification (no pre-sorting by customers, no bundles and bags, but trays and containers consisting of mail sorted to size only).

The project involves huge investments and far-reaching staff reorganisations, estimated to a reduction of staff of about 5000 full-time equivalents. (Material received from PTT Post and Postal Technology International, 1996)

Private postal operators

In relation to private postal operators automation can be considered under the following headings:

- mechanisation of processing and sorting in hubs, for instance introduction of sophisticated sorting machines with integrated technology;
- the use of information technology in internal processes, which includes such things as the introduction of internal route planning systems. Sophisticated route planning systems are linked to mobile telephone technology. The purpose of these systems is to optimise the routes of drivers, thus saving time;
- the use of technology to facilitate the needs of customers. Most used are tracking and tracing systems. The purpose of these systems is to give customers the possibility to see the exact position of a parcel at any time. These systems are often used to achieve a closer relationship between the company and the customer; and,
- the use of technology in relation to management information systems covers broad and company-wide information needs, from sales and marketing data to financial data.

Global integrators

It seems, that the global integrators have succeeded in realising the benefits of certain aspects of mechanisation and the use of information technology in their operations.

Concerning mechanisation of processing and sorting facilities in hubs / sub-hubs, some of the large integrators have already invested in automation facilities. This is primarily the largest integrators, since sophisticated sorting technology requires a very high mail / parcel volume to become financially viable. One of the integrators estimates that the volume in the European express market simply is not high enough to justify these sophisticated investments for any other than the largest integrators (Interview).

The global integrators have invested heavily in highly automated hubs, fleets of aircraft and ground vehicles, as shown in the figure below, which illustrates the number of hubs, stations, vehicles and planes for three of the integrators in 1995.

Figure 4.22 Hubs, stations, vehicles and planes for three of the global integrators in 1995

Number of hubs	49
Number of stations	948
Number of vehicles	16.958
Number of planes	96

Source: Price Waterhouse survey, 1996.

The global integrators do not expect to increase investment in mechanisation of processing and sorting activities significantly, and they do not expect the number of hubs or the number of sub-hubs to change in Europe in the next five to ten years. This might be explained by the fact that many global integrators focus more on Asia than they do on Europe.

The global integrators expect significant increases in the number of vehicles and in the number of planes they operate. This might result in increased requirements for IT and thus further investments. Furthermore, they expect to invest more in IT especially externally since they view this area as very important to the development of new services of added value.

National and local PrOs expect to invest more in IT systems in the future. Their investments will cover external and internal Management Information Systems.

With regard to the use of IT in tracking and tracing systems, the global integrators see this as a very important benefit for their customers. Three of them currently use tracking and tracing systems. Two of them use private as well as public systems, and one uses only a public system (Price Waterhouse survey, 1996).

Our research shows that in general PrOs are currently investing heavily in information technology systems. The type and size of these investments vary between the different parts of the industry, and between differently sized companies.

One of the global integrators has invested approximately two billion US$ to date in high-technology, enabling every package to be scanned eight to twelve times during its journey, thus ensuring they are continually tracked and traced, and information on their whereabouts is relayed through a world-wide computer network. This company has also established a telephone re-routing system that enables someone to ring from anywhere in the US and be put through to the local centre, where the progress of the package can be presented within 30 minutes, or it is delivered free of charge. The integrator has identified technology and electronic commerce as a way to do more than just transportation.

Another global integrator said that their highest priority over the next five years will be to deploy technology that will allow them to continue introducing new services, in order to provide customers with comprehensive information about their shipments, as well as providing training so all employees will clearly understand the services, and be able to communicate professionally with customers.

For national and local PrOs, the most important type of technology is the use of Management Information Systems, as many of them do not have the resources to invest in mechanised sorting facilities. Some of the messenger companies we have interviewed have integrated IT in their measurement systems, measuring waiting and call time for inbound telephone calls. Also the use of mobile telephone systems is considered an important element in the continuous contact between the telephone operator in the headquarters and the messenger.

Future outlook for automation

PPOs

The following tendencies are expected for PPO automation in the near future:

- the percentage of mail processed using mechanised procedures is going to increase considerably;
- especially the number of letter sorting machines for large letters will grow;
- the technologically most advanced countries will nearly reach a maximum with respect to automation of outward sorting;
- the number of outward and inward sorting locations will decrease; and,
- utilisation of IT in various functions in the provision of mail services will increase heavily.

The longer terms prospects for automation in PPOs might be illustrated by the views of suppliers and a simple ideal-type model for future mail handling.

Suppliers to the postal sector are of the opinion that the postal process is changing from a mass production process to a client-oriented process with more individualised treatment of mail items. The main challenges for providers of postal services will be to improve performance of the existing services, create new services with high growth potential (e.g. e-mail and hybrid mail), offer value-added services (e.g. business reply mail processing) and to increase and enlarge the automation of mail processing (e.g. flats processing and material handling).

Suppliers believe that the needs of postal operators are evolving in three different directions:

- the need for more powerful cell automation systems;

- the need for an enlarged automation focus from the cell level to the plant and network levels, providing materials handling, logistics and IT-based functions to integrate and co-operate with cell automation solutions; and,

- the need for new value-added services that allow postal operators to offer better tailored solutions to customers.

One supplier to the postal sector is currently working with an EU PPO on a five to seven year development programme aimed at integrating the sorting and processing of mail. At the moment mail is sorted, stamped and coded on separate machines. The plan is to develop and implement equipment which can do all the three in one.

Most suppliers feel that the main areas of growth will be in the development of systems for automatic inward sorting and delivery sorting. The newest technology enables mail to be sorted for individual postmen in delivery sequence, so that no manual sorting is required at the delivery office. This technology is already being applied in the United States and pilots are on the way in Europe.

Although most of the systems developed and supplied to individual PPOs tend to be tailor made, suppliers are of the opinion that the PPOs could benefit greatly from co-operating more in this area, and from sharing resources in the development of new technology (Materials received and Postal Technology International 1996).

The simple model for future mail handling includes:

- attempting to limit the number of delivery points;
- concentrating all sorting (pick up sorting in the case of outward mail and spread sorting in the case of inward mail) as far as this is possible without compromising quality standards;
- utilising sorting machines as much as possible;
- inward sorting is done to the postman's district or pigeon hole; and,
- in the long run, inward sorting will be done in delivery sequence at the postman’s walk level.

PrOs

PrOs are expected to focus on:

- maximum utilisation of IT in route planning systems;
- tracking and tracing systems; and,
- management information systems.

4.5 Liberalisation

Definition

Liberalisation is defined as changes in the regulatory framework which encourage competition. In brief, liberalisation is relevant to the study of employment in the postal sector because increased competition puts pressure on operators to improve productivity and hence has an effect on employment levels and structure.

Postal markets have been, and in most countries in the world still are, regulated in the sense that the public postal operator is obliged to provide a universal service to the public and in turn some postal services are reserved for them.

Furthermore, regulators have applied various forms of price regulation covering at least the reserved services. When profits made in the reserved service have not been sufficient to finance the universal service obligation governments have intervened and provided various forms of subsidies.

The scope of this examination of liberalisation is to evaluate the present state of liberalisation on a national level. Furthermore, we will examine the contents and potential effects of steps taken to liberalise on an international level. This primarily covers the EU draft directive and draft notice. The analysis will focus on the main indicators which are:

- *universal service:* The definition of universal service across countries varies in specificity and content. Some countries require a specific number of deliveries at specific service standards while others require more loosely defined services and some have no formal definition at all. Keeping this in mind we analyse the universal service obligation by means of minimum number of deliveries and collections, quality targets, catchment areas, and number of inhabitants per post office;
- *reserved services:* Services being subject to monopoly. These services are not always comparably defined across countries, but along the lines of the draft directive, we have examined the reserved services in terms of weight, price and type of mail; and,
- *subsidies:* Both direct subsidies, exemption from taxes/VAT, and cross subsidies from other services.

The data used throughout the section were first of all obtained through the questionnaires sent to regulators and thus give a consistent picture of the national regulatory frameworks. The uniformity of definition is a result of adaptation of local peculiarities to our method and therefore comparisons should be made with caution.

Main factors influencing the evolution of liberalisation

Discussions on the impact of regulatory change focus on the impact of the abolition or reduction of the reserved area and what this implies for the commitment to a universal service. The common explanation for the need for a reserved service is the requirement of a secured revenue stream in order to finance the universal service. To underpin this argument two characteristics of the postal sector are highlighted:

- significant elements of the value chain are characterised by economies of scale. This implies that the unit costs of delivering a postal item fall with an increase in the number of items handled. If the universal service provider loses volume the unit costs of production go up; and,
- the costs of providing postal services vary significantly between regions and type of customer. If the universal service provider is required to provide the services at a uniform price in an open market there might be room for competitors to selectively provide the low cost services only at a lower price than the universal service provider (even if overall volumes are (initially) lower).

These characteristics imply that a reduction of the reserved service may lead to "cream skimming", leaving the universal service provider with the cost intensive mail volume only. Even if the universal service provider would be capable of providing the service at lower costs than its competitors it can not compete on price because of the universal service obligation. As a result, the universal service provider may find that it loses the most profitable businesses to the competitors and that the unit costs of providing the postal service goes up as mail volume decreases.

At a given price for the universal service this implies a more difficult financial position for the universal service provider. However, it also implies that, other things being equal, the total costs of providing an equivalent service are higher in a competitive situation than in a liberalised environment (Reay, 1995; Bradley and Colvin, 1995).

However, the conclusion that the objective of maintaining a universal service at a uniform tariff requires a reserved service has been challenged.

Even if the arguments listed above are acknowledged it is possible to favour liberalisation if one argues that the benefits in terms of cost reductions and increased efficiency that result from an increase in competition outweigh the negative effects like the increased costs of providing the service;

Others argue that there is empirical evidence and theoretical arguments which show that a reduction in the reserved service will not destroy the universal service as the economies of scale and scope provide some protection, the scope for selective entry is limited and there are considerable benefits in connecting all households and businesses at a uniform tariff (for example Stumpf, 1995). Proposed German legislation seems to build on these arguments as it provides for a universal service obligation only if it will not be sustained voluntarily in a competitive market;

It has also been pointed out that in the United States private courier firms have adopted uniform pricing for delivery anywhere in the 48 contiguous states even though they are not obliged to do so (Haldi, 1995); and,

It is likely, however, that without regulation the universal service will be subject to some change (shifting the debate to "what is a universal service") and there is strong resistance against such change, both by customers who might be required to walk to central pick up points or pay a higher price and by employees who fear losses of jobs (Motley, 1996; Cooper and Johri, 1995).

The diversity of the arguments shows that there is no common understanding as to whether complete liberalisation would lead to a relevant competitive threat to the universal service provider and, if so, whether this would undermine the financial position of the universal service provider. To date the majority of regulators, including the European Commission, have adopted a cautious, gradual approach, arguing that a reserved service should be maintained in order to secure the provision of a universal service.

A more cautious, gradual opening of the market can take several forms. The thresholds that define the reserved service in terms of price and weight can be reduced. Certain parts of the value chain can be opened to competition or specific mail segments can be liberalised. Although there is intense debate even about the costs and benefits of reducing the reserved service in such a way, there is much more support for a gradual liberalisation process than for a complete deregulation.

Past evolution and current situation

National regulation

In order to analyse the effects of competition on postal operators it is helpful to identify some characteristics of the major market segments in which PPOs operate. The nature of competition varies with the type of mail delivered and the type of service provided.

Parcel services, for example, are not threatened by the increasing availability of electronic means of communications whereas letter services are (indeed parcel services may benefit as a result of the growth in home shopping). The retail divisions of postal operators increasingly supply a whole range of goods and services and therefore face a completely different type of competition.

Parcel and financial services providers are, in all EU countries, operating in competitive environments. The success of counter services providers in a liberalised environment will very much depend on their ability to attract new non-postal business. Counter services providers may also co-operate with various postal operators (as some private postal retail firms already do). The effect of liberalisation will have a much stronger effect on letter services which is the primary subject of the following section.

A review of new and proposed legislation in the EU-member states shows a general trend towards liberalisation of the postal sector. Almost all regulators have recently changed the regulatory framework of the postal sector or envisage to do so in the near future.

The exceptions are Spain, the United Kingdom, and the Netherlands which have traditionally been fairly liberalised. Indeed, the regulatory framework in the Netherlands has not been changed for decades, and the Spanish and UK Post Offices operate in relatively competitive environments. Luxembourg not having changed their regulatory framework recently is another exception.

Beneath we will illustrate the present situation with regard to national variations in universal service obligation, reserved services, and subsidies.

Universal service obligation

Keeping in mind the difficulties of definition mentioned earlier, the following figure 4.23 shows the obligation the PPOs have in terms of number of collections and deliveries in each of the EU countries. In cases where the regulator does not provide a formal definition of the universal service we have presented the actual service provided by the PPO.

Figure 4.23 Universal service obligation

Country	Minimum number of door to door deliveries per working day in urban areas	Minimum number of door to door deliveries per working day in rural areas	Minimum number of collections per week in urban areas	Minimum number of collections per week in rural areas
Austria*	1	1	5	5
Belgium	1	1	5	5
Denmark	1	1	6	6
Finland	1	1	5	5
France	1	1	6	6
Germany	1	1	6	6
Greece	1	1	5	5
Ireland	1	1	5	5
Italy*	1	1	5	5
Luxembourg	1	1	6	6
Portugal*	1	1	5	5
Spain	1	1	5	5
Sweden	1	1	6	6
The Netherlands	1	1	6	6
United Kingdom*	1	1	6	6

*No formal definition of universal service obligation. Current comparable services of PPO according to Universal Postal Union, 1995 and Price Waterhouse survey, 1996 are considered universal service.
Source: Price Waterhouse survey, 1996.

Evidently the requirements in terms of number of deliveries are quite uniform throughout the EU. Some countries operate with loosely formulated service obligations while others have more precise requirements in place.

Sweden Post is obliged to enable letters and parcels to reach everyone at uniform rates throughout Sweden and Finland Post must assure the delivery of addressed items weighing less than 2 kg, excluding periodicals, newspapers, and express services. In the Netherlands PTT Post has a statutory obligation to deliver items of up to 10 kg at uniform rates, and with respect to the United Kingdom the Post Office management decides on the service criteria. We will discuss whether or not liberalisation leads to increased competition in section five.

Case: Sweden

Sweden is one of only two fully liberalised PPOs in the EU. The liberalisation process was carried out in four major steps : In 1985 the Swedish government decided that the objectives of Posten should be quality of service and economic objectives. In 1987 Posten was allowed more freedom in the capital markets and measurement of customer satisfaction began. In 1992 Posten was given the freedom to set prices within certain limits. In 1993 the letter monopoly was abolished and special working hour agreements with delivery personnel ended. Albeit the abolition of the letter monopoly Posten has agreed with the state of Sweden to provide a universal service. As part of the agreement Posten must apply a geographically uniform tariff to a single or a few items.

Figure 4.24 shows the quality of service obligations of the EU PPOs in terms of the minimum percentage of letters that should be delivered next day (J+1). As some countries have not specified any quality of service requirements and others use local standards, that is J+2 or J+3 rather than J+1 the data are not immediately comparable.

If one considers the percentages alone, countries like Denmark, Ireland, Luxembourg, Portugal, Sweden and the Netherlands belong to the group of countries with relatively high quality targets, while Belgium, France, Germany, and Spain have medium targets. Italy as the only country with a requirement of less than 80 percent must be considered a low target country, as could be the remaining countries that have not even set formal targets.

Figure 4.24 Quality target in terms of minimum % of letters delivered next day (J+1)

Country	Minimum % of letters delivered next day (J+1)
Austria*	**

Belgium	80
Denmark	97
Finland	94
France	80
Germany	80
Greece	**
Ireland	90
Italy*	75
Luxembourg*	95
Portugal	95***
Spain	80***
Sweden	96.7
The Netherlands	95
United Kingdom	**

*No formal definition of universal service obligation.
**Not applicable, no formal definition and no information provided to the UPU.
*** Percentage given is for the local service standard which is more than J+1.
Source: Price Waterhouse survey, 1996.

From figure 4.24 it is evident that some countries operate with formally defined target while others do not. It is important to keep in mind that the numbers given are targets which may not necessarily reflect actual performance.

A measure of actual quality is indicated in figure 4.25. Figure 4.25 gives the maximum catchment area of post offices with a minimum of postal services offered at the counter and the number of inhabitants per post office. These figures are relevant when evaluating the customers access to postal service as well as the availability of information on services offered to customers.

Figure 4.25 Average area and average number of inhabitants served by permanent post offices with a minimum of postal services offered at the counter

Country	Average area covered by a permanent post office in sq. km	Average number of inhabitants served by a permanent post office
Austria	31.7	3039
Belgium	18.6	6150
Denmark	33.4	4028
Finland	180.0	2709
France	32.6	3413
Germany	18.3	4179
Greece	105.1	8304
Ireland	36.1	1832
Italy	21.0	3970
Luxembourg	24.4	3774
Portugal	13.1	1394
Spain	104.2	8089
Sweden	251.9	4922
The Netherlands	18.6	6986
United Kingdom	12.5	2978

**EU Commission Estimate
Source: Universal Postal Union, 1995.

Figure 4.25 clearly illustrates the difficulties of comparing the figures because of variations in geographical relations and density of population.

Countries that are significantly high on maximum catchment area in terms of square kilometres are Finland, Greece, Spain and Sweden, while Austria, Denmark, France, Ireland and Luxembourg all are in the medium group. Belgium, Germany, Portugal, the Netherlands and United Kingdom all have maximum catchment areas below 20 square kilometres.

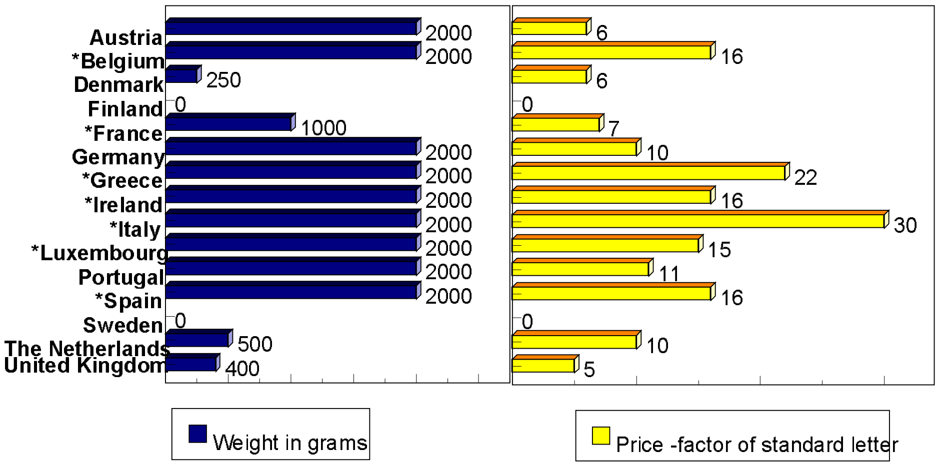
When comparing the average number of inhabitants served by a permanent post office it is evident that Greece and Spain are significantly higher than other EU countries. Other countries in the high end are Belgium and the Netherlands, both countries which are among the countries having the lowest catchment area in terms of square kilometres.

Austria, Denmark, France, Germany, Luxembourg and Sweden have a medium number of inhabitants served by a permanent post office. It is particularly interesting to note that Sweden belongs to this group seeing that Sweden is one of the countries demonstrating a significantly high catchment area in terms of square kilometres. Austria, Finland, Ireland, Portugal and United Kingdom all have a relatively low average number of inhabitants per post office. In summary only Greece and Spain stick out as having significantly high catchment areas and high average number of inhabitants per post office.

Reserved service

Figure 4.26 provides an overview of the definition of the reserved service in each of the 15 EU member states. It shows the extent to which liberalisation has already taken place in terms of limitation of the reserved service. The reserved service is measured by weight and price as a factor of tariff of a standard letter, i.e. up to what weight limit, for instance 350 grams, and up to what price limit, for instance five times the price of a standard letter, services are reserved.

Figure 4.26 Definition of the reserved service in terms of weight and price



*=Luxembourg and France do not provide an explicit price limit while United Kingdom and Germany do not provide an explicit weight limit. Belgium, Greece, Ireland, Italy and Spain do not provide either price or weight limits. Prices and weights given equal price and weight of the otherwise defined reserved standard service.
Source: Price Waterhouse survey, 1996.

Figure 4.26. shows that the (implied) price and weight limits of the reserved service in the majority of countries are much higher than the ones proposed in the draft directive covering mail up to 350 grams priced at less than five times the standard tariff.

It should be noted that the price and weight limits described above are in relation to the standard service. Therefore, other services, such as courier services, may be subject to regulation differing to the above, for example, Germany does not have a weight limit for courier services.

Six regulators do not explicitly define price limits and six regulators do not explicitly define weight limits. In these cases we have taken the alternative definition of the reserved service and identified the highest price within that service as an indicator for the boundary of the reserved service. In seven countries a reform of the concept of the reserved service is envisaged.

Only Sweden and Finland are fully liberalised with no weight or price limits. Also special note must be made of Spain where only interurban and international ordinary (non-urgent) letter and post card services are included in the reserved service, i.e. Spain has a relatively liberalised market.

Case: Spain

The Spanish postal market is one of the most competitive markets in the European Union. The PPO, Correos y Telégrafos, has a monopoly with regard to ordinary letters and postcards that are interurban or international. Put differently, small packages and parcels, newspapers and magazines, printed matter, urgent letters and postcards, and ordinary urban letters and postcards are all open to competition and have been so for decades.

The reserved area is illustrated in the figure below.

Scope	**Products**				
	Ordinary letters and postcards	Urgent letters and postcards	Printed matter	Newspaper/ Magazines	Small packages & Parcels
Urban	Non-reserved	Non-reserved	Non-reserved	Non-reserved	Non-reserved
Interurban	Reserved	Non-reserved	Non-reserved	Non-reserved	Non-reserved
International	Reserved	Non-reserved	Non-reserved	Non-reserved	Non-reserved

The reserved service is granted in return for a universal service obligation to deliver mail once a day five/six days a week. The universal service obligation is by some private operators considered too broad and extensive acknowledging the fact that daily delivery to small towns is quite costly.

Denmark, France and the Netherlands have reserved services significantly below the common two kilograms weight limit. The Netherlands are considered particularly liberalised because the reserved service does not include postcards and because the Netherlands has been operating with a limited reserved services for several decades.

Case: New Zealand

Since 1987 the postal monopoly provisions have been lowered progressively. However, as of July 1996, New Zealand Post has a statutory monopoly over letters weighing less than 200 grams and priced at under 80 cents. In addition, New Zealand Post has social obligations requiring universal price-equalised service, price control on standard letters, six day delivery and a minimum number of retail outlets.

It is noteworthy that complete deregulation has been proposed by the government and that the management supports abolition of the letter monopoly even if New Zealand Post retains its universal service obligation. However, the most significant change derived from corporatisation was that New Zealand Post's objective became one of profitability (interview).

The types of services included in the reserved area are indicated in the following figure 4.27. As for the definition of the reserved service in terms of weight and price, definitions in terms of services vary between countries and the specification of services may be more detailed than indicated in the figure.

In general, services indicated as being part of the reserved services in figure 4.27 are included in the reserved area provided that the respective service falls under the price and weight limits.

Figure 4.27 Services other than ordinary letter mail under reserved services

Country	Direct mail	Printed matter	News papers	Document exchange services	Outgoing crossborder letters	Incoming crossborder letters	The selling of stamps
Austria				*			
Belgium				*			
Denmark				*			
Finland							
France							
Germany							
Greece				*			
Ireland				*			
Italy				*			
Luxembourg							
Portugal				*			
Spain				*			
Sweden							
Netherlands							
UK							

Yes, reserved service
No, not reserved service
Not applicable

Source: Price Waterhouse survey, 1996.

The liberalisation of direct mail is of particular significance because direct mail accounts for a relatively large part of PPOs' mail volume and is generally a growing market segment. The group of countries being very liberalised in terms of weight and price, Finland, Sweden, and Spain, is also marked by liberalisation of direct mail. In addition, direct mail is open to competition in the Netherlands making it the only country among the relatively liberalised countries in terms of weight and price limits, like Denmark, France, and United Kingdom, where direct mail is liberalised.

Germany represents a special case because direct mail is part of the standard reserved services, but allows for several licensees. Thus, in Germany there is de facto competition as a number of operators have a licence to compete in the direct mail market.

The group of countries with relatively high definitions of weight and price limits display great variation with Austria, Italy and Luxembourg having liberalised direct mail while Belgium, Greece, Ireland and Portugal have not.

Of the eight countries that still include direct mail among the reserved services, two envisage to liberalise direct mail in the future. All member states, except the United Kingdom, have liberalised newspaper and magazine services.

With regard to cross-border letters the situation differs. Most member states have not yet formally liberalised outgoing or incoming cross-border letter services. However, it is widely acknowledged that outgoing cross-border letter services is de-facto liberalised (European Commission, 1995e).

Subsidies

While in most countries revenues from the reserved services are meant to finance the universal service obligation, subsidies are often being justified as a means to this end too. We have applied a broad definition of subsidies: Subsidies can take various forms including cross subsidies from telecommunications and covering of losses.

Subsidy levels are difficult to measure and compare. Therefore we have not attempted to measure the *level* of subsidy but only looked at the *type* of subsidy in place. Figure 4.28 below indicates the types of subsidies in place in each of the 15 EU countries.

Figure 4.28 Types of subsidies in place

Country	Exempt from VAT	Exempt from corporate tax	Losses covered by state	Govern-ment provides direct subsidies	Funding of investment (a)	Cross subsidies from other services	Press subsidies (books, newspapers periodicals)	Other
Austria								*
Belgium								*
Denmark								*
Finland								*
France								*
Germany								*
Greece								*
Ireland								
Italy								
Luxembourg								
Portugal								
Spain								
Sweden								
Netherlands								
UK								

Yes, subsidy in place
No, subsidy not in place
Not applicable

(a) Investment that would not have been funded under the same terms by a private investor operating under normal market economy conditions.
Source: Price Waterhouse survey, 1996.

In most member states the postal services are still exempt from VAT, only Denmark, Finland, Luxembourg and Sweden are not exempt from VAT.

The opposite occurs with regard to corporate tax where only three PPOs, namely Belgium, Greece and Spain, are still exempt. Only in Belgium and Spain does the government still cover losses of the PPO. Five governments still provide direct subsidies, namely the governments in Belgium, Denmark, Italy, Luxembourg and Sweden.

Although these results have to be read with care, as it is very difficult to clearly define a subsidy and the interpretation of this definition varies from country to country, the answers, when compared to the situation in each member state a few years ago, show that in recent years governments have attempted to reduce the types of subsidies they provide to PPOs.

The experience from our case studies shows that in countries with a relatively high degree of liberalisation, PPOs are to some extent subsidised by the government in order to maintain universal services at uniform prices. In Sweden, where the PPO no longer has any reserved services, they receive remuneration for maintaining counter services in rural areas where such a service cannot be operated on a commercial basis alone.

The relationship between tariffs and subsidies is not clear. Some of the most subsidised PPOs provide a very cheap service as do some of the least subsidised. One explanation of the ambiguous effect of subsidies on tariffs may be that in the past many PPOs had de facto a soft budget constraint which had a detrimental effect to their commercial orientation and the resulting quality of service. Hence, when judging the impact of subsidies, the way in which they are provided might have a significant impact on their overall effect on profitability.

International regulation

The Universal Postal Union (UPU) is a world wide organisation which, as part of the UN, facilitates the co-operation of PPOs and supports PPOs. Currently, the members of the UPU are the governments (or regulators) rather than the PPOs themselves. The UPU is restructuring itself in order to reflect the separation of the regulatory function and the operation of postal services which is taking place in the postal sector.

Key areas which are affected by the UPU convention are, among other things, the standardisation of services and the organisation of cross border services including an international terminal dues system. However, the UPU does not directly affect national legislation in the way the EU directive will. Hence, we will focus on the potential effects of the EU directive rather than UPU legislation.

Trends and Forecasts

National regulation

As is evident from the tables above, a general trend towards reviewing the regulatory framework has occurred throughout the EU member states.

Figure 4.29 Reform activity in each of the EU member states

Country	Reserved service	Network access	Price regulation	Subsidies	Universal obligation	Legal status
Austria	EN	EN	EN	EN	EN	PU & EN
Belgium	EN	EN	PU & EN	EN	EN	PU
Denmark	PU	NR	PU	PU	PU	PU
Finland	PU	N/A	N/A	N/A	PU	PU
France	NR	PU	PU	PU	PU	PU
Germany	PU & EN	EN	EN	PU & EN	EN	PU & EN
Greece	EN	NR	PU & EN	PU & EN	EN	N/A
Ireland	NR	NR	NR	NR	N/A	NR
Italy	EN	EN	EN	N/A	EN	EN
Luxembourg	NR	NR	NR	PU	NR	NR
Portugal	EN	EN	PU	N/A	EN	PU
Spain	EN	PU	PU	EN	EN	PU
Sweden	PU	N/A	PU	PU	PU	PU
The Netherlands	NR	NR	NR	NR	NR	PU
United Kingdom	EN	NR	NR	NR	NR	EN

EN: Reform envisaged before year 2000
PU: Reform pursued since 1990
NR: No reform
Source: Price Waterhouse survey, 1996.

Figure 4.29 shows that countries like Austria, Belgium, Germany, Greece, Italy, Portugal and Spain envisage and/or have pursued reform of the majority of the areas discussed above.

Denmark, Finland, France and Sweden have all pursued reform in most parts of the regulatory framework since 1990 while Ireland, Luxembourg and the Netherlands are not considering reform for the majority of the areas.

International regulation

The EU directive

Postal services are subject to harmonisation efforts undertaken by the European Commission. In 1992 the Commission published a Green Paper on Postal Services proposing measures to liberalise and harmonise Postal Services in the Member states.

In February 1994 a Council Resolution on the development of Community postal services was published which supported the general approach of the Green Paper and took note of consultation. After three years of consultation, in December 1995, the Commission came forward with a draft directive on Postal Services (European Commission, 1995e).

Below we analyse the impact of the proposed measures in the draft directive. Not all measures proposed in the directive are "liberalisation" measures but they are attempts to harmonise and ensure the quality of the services provided. We will discuss the impact of these measures too.

Content of the directive

The document establishes the principle that in order to finance universal service some postal services may remain reserved to the universal service provider.

Reserved Service

<u>Step 1</u> - The reserved service should encompass the collection, transport, sorting and delivery of "domestic postal items" weighing less than 350 gr. and costing less than 5 times the standard tariff (A "postal item" is defined as any addressed item whose technical specifications allow it to be carried in the postal network. Such items include books, catalogues, newspapers, periodicals and postal packages containing merchandise with or without commercial value.).

The following services cannot be included in the reserved area:

Express mail service, delivery of postal packages (even with accompanying postal items) and delivery of brochures, catalogues, newspapers, magazines etc.

<u>Step 2</u> - The distribution of incoming cross-border and direct mail, a segment of the market with a high growth rate, where a large majority of public postal operators already apply specific tariffs. This category will continue to be reserved until 31 December 2000, in so far as reservation is necessary for the financial equilibrium of the universal service provider.

<u>Step 3</u> - A general re-examination of the extent of the reserved area will take place during the first half of the year 2000, at the latest.

Universal service

The draft directive also attempts to define a universal service. According to the directive, member states shall take steps to ensure that the universal service provider guarantees, as a minimum every working day, and not less than 5 days a week other than in exceptional circumstances or geographical conditions, the following:

- one collection a day from clearance points;
- one door to door delivery for every natural or legal person;
- each Member state shall take the measures necessary to ensure that the universal service includes the following minimum facilities:
    - the collection, transport and distribution of addressed mail items and addressed books, catalogues, newspapers and periodicals up to 2 kilograms and addressed postal packages up to 20 kilograms; and,
    - services for registered items and insured items.
- the universal service should cover both national and cross-border services; and,
- furthermore, the universal service providers shall offer an identical service to users under similar conditions. In order to finance the universal service, member states may apply authorisation procedures for non reserved services and make the granting of the license subject to a financial contribution to a compensation fund.

Subsidies

The universal service providers shall keep separate accounts, within their internal accounting system, on the one hand for each of the relevant reserved services within the reserved sector (distinguishing between collection, transport, sorting and delivery) and, on the other hand, for the non-reserved services, in the same way as would be required if the services in question were provided by separate undertakings.

Other measures

Further liberalisation measures proposed in the draft directive include open network access and measures to increase transparency and reduce cross subsidies. Other measures proposed include attempts to standardise postal services and increase the quality of service to the benefit of customers.

Users and the universal service providers should have access to the public postal network under conditions that are transparent and non-discriminatory. This includes "...the various stages preceding the final distribution of postal items".

Content of the draft notice

Together with the publication of the draft directive, the European Commission published a draft notice dealing with competition law (European Commission, 1995b).

The draft notice basically follows the ideas laid out in the draft directive and explains how the existing competition law should be applied in the postal sector. Three aspects of the draft notice are particularly worth noting:

- The definition of relevant markets, which is important when anti-competitive behaviour is analysed, is relatively narrow. Collection, sorting, transport, and distribution are considered distinct markets as are the general letter service, direct mail, express courier, document exchange and hybrid services;
- the draft notice also clarifies that operators should not use income from the reserved service to cross-subsidise activities in areas open to competition; and,

- furthermore, subsidies have to be made transparent, i.e. the source of subsidy (tax exemption, provision of capital, subsidies from other public undertakings, etc.) and the use of the subsidy must be made explicit.

Reactions to the draft notice and draft directive

As it represents an effort to harmonise the internal market, the directive has to be approved under the co-decision procedure by the European Parliament and the EU Council of Ministers (Article 100a of the EU-Treaty). The European Parliament has given its opinion and the Council now has to reach a "Common Position".

Despite criticism and suggestions regarding single issues addressed in the draft directive, the general thrust of the draft directive to gradually liberalise the postal market but define a reserved service that ensures the financial viability of the universal service was welcomed by most interest groups (EMESUA 1996, BEUC 1995, PTTI 1996, FAEP 1996b, PostEurop 1996, European Union Joint Postal Committee 1996).

The draft directive was criticised by some of the PPOs that already operate in a liberalised environment. This is exemplified by the comment of Sweden Post:

> "It is our firm belief [...] that subjecting public postal services to competition is in the long run the best way of operating the business on a rational footing, thereby giving customers the best possible services at the lowest price. Against this background we are extremely doubtful about whether the proposed directive and the draft notice will be able, within a reasonable time, to produce a similar effect as far as postal customers in Europe are concerned" (Sweden Post 1996, p. 2).

The European Parliament on the other hand felt that the proposed timetable for deciding whether to liberalise further should be changed in order to guarantee a more extensive reserved service for a longer time (Simpson, 1996).

While the draft directive was generally well received, the draft notice attracted significant criticism from many public postal operators and their trade unions. This criticism is exemplified by PTTI's and PostEurop's comments on the draft notice:

- "the draft notice in its present form could be immensely damaging to postal operations throughout Europe" (PTTI, 1996); and,
- "PostEurop is strongly opposed to this normative text which contradicts the draft directive on fundamental matters, at the risk of creating serious legal insecurity for the postal operators, their staff, sub-contractors, suppliers and customers" (PostEurop, 1996, p. 3).

The European Union Joint Postal Committee asked for the draft notice to be withdrawn (European Union Joint Postal Committee, 1996). The concrete criticism focused on the concept of distinct markets and the statement that only distribution should be reserved for the public postal operators, and that operators should be forced to provide non-discriminatory access to the postal network. It was argued that this would undermine the principle of uniform tariffs.

Some of the criticisms of the draft notice have been of procedural nature. PostEurop, for example, argued that the notice had no legal basis and that it interprets the Treaty and case law incorrectly, and that the notice should not be approved before the directive (Anonymous, 1996). Due to the political pressure the latter plan was abolished by the Competition Commissioner (Anonymous, 1995). The draft notice also attracted criticism from the European Parliament. Its Rapporteur said that it would exceed the competencies of the Commission as defined in the Treaty.

PrOs, and some PPOs, supported the draft notice's and draft directive's efforts to reduce the scope for cross-subsidy from the reserved to competitive services by introducing more transparent accounting rules and by creating independent regulatory agencies (Merkel-Sobotta, 1996; Anonymous, 1995). Sweden Post, for example, encouraged the Commission to publish and adopt the notice as soon as possible (Sweden Post ,1996).

Conclusions

Our study of the regulatory framework has shown considerable variations with regard to both the present state of regulation and the planned changes in regulation. The key uncertainties being when, and in what form, national and international regulation will be adopted. Because of the difficulty in judging the effect of full liberalisation and resulting competition because there are no well established examples, we will present the potential effects of liberalisation deducted from the analysis above:

- in liberalised countries the concept of universal services at uniform prices still applies;
- reserved services are granted in all but two countries although the extent of the reserved area varies;
- the effect of liberalisation varies with the degree of competition within specific services and geographical areas;
- the weight and price limits suggested in the EU directive will only have limited effect as the mail volume above the suggested weight limit amounts to less than 2% of total mail volume;
- although direct mail constitutes approximately 17% of total mail volume (EU Commission, 1995e), liberalisation of this segment will only have a direct impact in Belgium, Denmark, France, Greece, Ireland, Portugal and the UK as these represent the only countries where there is no competition in the provision of direct mail services;
- the effect of the liberalisation of incoming cross border mail will be limited due to its limited volume. Incoming cross border mail represents on average 4% of the total mail volume in the Community;
- liberalisation of the above mentioned areas will, however, provide a broader scope of competitive areas for private postal operators to enter. Thus PrOs may be able to obtain synergetic effects if entering multiple areas, e.g. remail/relocations of mail based on liberalisation of the incoming cross broder mail market, and distribution of direct mail in urban areas;
- PrOs could possibly enter newly liberalised markets but could be dissuaded by the following three factors:
    - the expectation of fierce competition from PPOs and hence limited economic gain;
    - the fact that entering a new market segment may require large investments in infrastructure and technology; and,
    - a current focus on other services which may not benefit from a broader focus.
- competition is prevalent in the provision of services such as express services, parcel services and to a lesser degree in newspaper distribution.

We will elaborate on the effects of liberalisation in further detail in section five.

4.6 Organisational change

Definition

Within the past decade many of the European public postal operators (PPOs) have been corporatised and given greater commercial freedoms. The pace of change in this area has been striking in recent years, resulting in a situation where the majority of PPOs in Europe now have a legal status comparable to that of private postal operators .

Part of this reform has typically included the splitting of regulatory and operational functions, and the organisational separation of other services like telecommunications and banking from postal services. These measures have generally been designed to increase transparency and avoid conflicts of interest, however, most governments have so far either not decided to, or not succeeded in, privatising their PPOs, with the exception of the Netherlands where the PPO has been partly privatised since 1994.

The term “organisational change” comprises "external" changes which are introduced by the government and “internal” changes introduced by the postal operator itself. Indicators of external changes are:

- changes in the legal status of the public postal operator;
- the status of relationships with operators in other sectors, like telecommunications and postbank; and,
- the degree of managerial freedom granted to the PPO.

External changes most often relate to PPOs and therefore this part of section four will almost exclusively deal with PPOs.

Internal changes on the other hand are equally relevant to both PPOs and PrOs. This type of change will be examined through changes in organisational structures, products offered, and the use of outsourcing and franchising. As internal changes are often commercially sensitive we treat the subject on a general level.

Factors influencing the evolution of organisational change

There is a considerable amount of theoretical discussion about the benefits and disadvantages of certain organisational structures. The corporatisation of PPOs implies that they become subject to standard commercial and tax laws (except VAT in most countries), accounting criteria, competition rules, and labour law, and that they become less susceptible to government interference.

The latter in particular is intended to be achieved by the institutional separation of control (by the shareholder and the regulator) and management functions. This is usually accompanied by a clearer goal structure, i.e. more emphasis on commercial goals for the management.

As debt financing is shifted to banks, managers face an additional monitoring agency that puts them under scrutiny. These measures intend to improve economic performance by increasing transparency, providing a clearer goal structure for management, setting the right incentives and enforcing policy objectives more effectively.

Additionally, proponents of privatisation argue that control via the capital markets and the threat of a take over provide the best incentive structure for management, even though the private arrangement may not be perfect itself.

Furthermore, the evolution of organisational change is influenced by the social obligation of PPOs, which also influences their decision making process.

As indicated, organisational change among PrOs derives from other factors than those affecting PPOs. During the last five to ten years, PrOs, global integrators as well as national and local companies, have carried out organisational changes in response to:

- changed needs, for instance increased need for next day delivery;
- new needs, for example the need for getting a quick answer about the position of a certain parcel;
- new entrants, for example local messenger companies; and,

- changed strategies among competitors, such as some of the integrators deciding to focus on heavy parcels.

Past evolution and currents trends of organisational change

External changes

Organisational status

The current status of organisation reform of the EU PPOs is shown in figure 4.30 below, where we distinguish between four categories:

- public organisation: part of the state administration, but with a separate budget;
- state owned corporation: corporation with financial and administrative autonomy, but with possible rights that differ from privately owned companies, for instance within the areas of tax structure, customer relations or employee relations;
- state owned PLC (public limited company): state owned company subject to the same legal framework as privately owned companies; and,
- privatised PLC: PLC of which part of the shares have been sold.

It is difficult to make an unambiguous distinction between a state owned corporation and a state owned PLC, and the placing of individual organisations is therefore a matter of degree. However, this grouping is an attempt to show the trend of organisational reform in the EU member states.

The present picture varies considerably to that of a couple of years ago when almost half of the PPOs were public organisations and therefore part of the state administration. There is a common trend towards the transformation of PPOs into more market oriented independent business units with more commercial freedom to achieve their aims.

Figure 4.30 Status of organisational reform of the EU PPOs

Status of organisational reform	Countries
Public Organisation	Spain
State Owned Corporation	France, Greece, Ireland, Italy, United Kingdom
State Owned PLC	Austria, Belgium, Denmark, Finland, Germany, Luxembourg , Portugal, Sweden
Privatised PLC	The Netherlands

Source: Price Waterhouse survey, 1996.

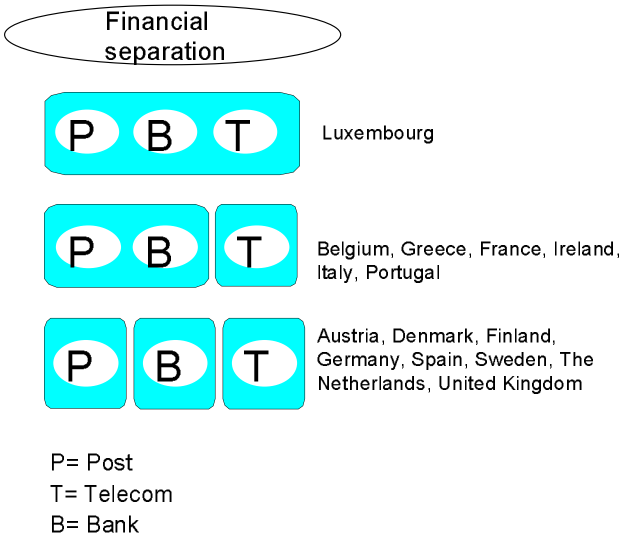
Today almost all PPOs can be considered as operating under commercial conditions similar to privately owned firms. As stated earlier, they are subject to standard commercial and tax law (except VAT in most countries) and accounting criteria.

It must be kept in mind that, for most PPOs, the transformation from public organisations to alternative organisational forms does not end with the approval of the relevant legislation granting them a new organisational status. Many of them still employ civil servants, who often have special pension arrangements, and the transformation / conversion of accounting systems is a complex and lengthy procedure. Furthermore, the degree of managerial freedom may not match that of a private operator.

Relationship to telecommunications and postbank

In a number of countries postal, telecommunications and postbank operations have traditionally been run from one single organisational entity. Figure 4.31 indicates the present status of this relationship in terms of whether or not separate financial statements are provided for postal, telecommunication and postbank activities.

Figure 4.31 Status of financial separation of post, telecommunications and banking



Source: Price Waterhouse survey, 1996.

With the exception of Luxembourg, where separation of accounting systems has not yet taken place, all PPOs have been split financially from the telecommunications part of the traditional P&T organisations. Luxembourg is also the only country in which the legal status of the PPO is not planned to be reformed.

In the Netherlands, telecommunications and post are incorporated as separate companies but ownership has been retained in a combined holding company. As a result of the split of telecommunications and postal operations, cross subsidies from the telecommunications operations have been eliminated.

A subject which is even more controversial than the separation of post and telecommunications, is the separation of post and banking. Banking contributes significantly to the economic viability of the post office infrastructure in many EU countries. To date, five governments have avoided incorporating the banking arm of their PPO as independent companies, and as a result have avoided separation.

In Germany, a separation of post and banking was instigated as part of the reform of the PPO. Yet, Deutsche Post AG has recently bid for a significant stake in the banking operation, Deutsche Postbank, claiming that it needed to have more influence over the strategy of the banking operation in order to improve co-operation and ensure the viability of the number of non-franchised retail outlets which has been requested by the minister. The government, which still owns both companies, decided to allow Deutsche Post AG to take only a minority stake in Deutsche Postbank.

Managerial freedom

In many cases organisational restructuring coincides with a change in managerial roles. Figure 4.32 below reflects the extent to which corporatisation and organisational change have brought considerable autonomy to the management of PPOs.

Figure 4.32 Autonomy of the PPOs with regard to current budget setting processes

Measure of autonomy	Yes	No
Are there limits on investment?	3	9
Are you allowed to issue bonds?	5	7

Are you allowed to take out loans?	10	2
Are you allowed to develop new products?	12	1
Are you allowed to set new tariffs?	9	4
Are you allowed to market new services?	13	0

Source: Price Waterhouse survey, 1996.

Only a few of the PPOs have limits on the investments they can make, while most PPOs can take out loans, develop and price new products, and market new services with autonomy.

The increased freedom to make commercial decisions has been used in some countries to step up investment programmes in order to prepare for competition and to increase competitive procurement, as well as form strategic alliances with other PPOs and private postal operators. Figure 4.33 shows the number of PPOs engaged in various types of joint ventures.

Figure 4.33 Joint ventures among the EU PPOs

Type of joint venture	Number of PPOs who are involved	Number of PPOs who are not involved
Involved in joint ventures with other PPOs	4	10
Involved in joint ventures with PrOs	5	8
Involved in joint ventures with mailers	2	9

Source: Price Waterhouse survey, 1996.

The figure above shows that joint ventures with other PPOs and with PrOs are more common among the EU PPOs than joint ventures with mailers (customers). It is likely that in a more liberalised environment strategic alliances and selective co-operation will become increasingly important and widespread.

Internal changes

Having been provided with greater commercial freedom and a clear commercial mandate, the management of some PPOs have been keen to address some of the shortcomings of their traditional organisational settings. A review of the change in business administration terms among PPOs shows this has typically resulted in the organisational changes described below.

Organisational structures

Many PPOs have either introduced, or are introducing, new business units that focus more on products and functions than the previous structures that were driven by the needs and traditions of a public administration.

A common approach is to distinguish letter, parcel, retail and international services, in addition to which many operators have special units for direct mail, new services and courier services.

The new structures reflect the different competitive situations, customer needs and the requirement to have smaller, more flexible, units that have the relevant information about their products readily available. Increased customer orientation is underpinned by clear internal responsibilities for the relevant units and a more focused marketing approach.

These changes are usually accompanied by the introduction of more effective information and accounting systems providing the basis for performance measurement and effective decision making. Many PPOs have also reduced the number of management levels to increase transparency and enhance effective and quick decision making.

Often organisational restructuring serves as a means of rationalising and increasing efficiency. One illustrative example is that of Sweden Post's Letternet project.

Case : Sweden

Recently Posten invested large amounts in new technology for the logistics/mail handling and sorting areas. The new investments are part of a project referred to as the “Letternet” project. The main thrust of the project is a reduction of sorting centres from 56 to 19, in short a drastic reduction, which will have a pronounced impact on employment. The effects will tend to be felt in the countryside more so than in Stockholm, as it is mainly the rural sorting centres which will be affected. The Letternet project will result in more transport of mail, however, this will not create any jobs within transportation, as most of the mail is transported by air. The whole reduction process is handled in the best possible way, choosing from what was considered “the best, out of all the daunting scenarios”. Some employees were fired, some were given the opportunity to go on early retirement, but most of the Letternet project is handled through the use of temporary employees, as a result there has been a high percentage of temporary employees in Posten.

With regard to private postal operators, organisational changes have occurred as a response to various changes in the competitive environment. Many organisational changes among PrOs over the past five to ten years can be classified as follows:

- changes resulting from mergers and acquisitions;
- changes derived form geographical expansion; and,
- changes resulting from urgent problems.

During the 1990s some of the global integrators have followed strategies involving acquisitions of companies in various countries. These acquired companies have been integrated into the overall organisation by means of new structures, new systems and new cultures.

Geographical expansion by local and national companies, as well as by global integrators throughout the 1980s and 1990s have resulted in a need for continuous fine-tuning of organisational structures. For example geographical expansion has resulted in the creation of new departments and recruitment of new people.

Organisational changes as a response to urgent problems are particularly significant among smaller PrOs who have the flexibility to adapt quickly, often on a day to day basis. Urgent problems to be solved can be illness among employees, extraordinary delivery requirements or other sudden changes in customer requirements.

Changes among private postal operators vary with the size of the company. An organisational change in a global integrator can have a big effect on overall working conditions, while it, as mentioned, can be a part of the day-to-day work in smaller local companies.

Products and services

Range of products and services offered at postal retail outlets

Many PPOs have identified the business potential of their extensive networks of retail outlets (post offices), and as a result have significantly expanded the range of services they offer through such outlets.

Other PPOs have increased the range of services they provide in order to improve the utilisation and economic viability of their retail infrastructure. In addition, co-operation with business partners is becoming increasingly important, with the most important partners in most countries being the government and financial services companies.

Case: The Netherlands

The PPO in the Netherlands, PTT Post BV, is a wholly owned subsidiary of holding company Koninkijke PTT Nederland NV (KPN), which also owns PTT Telecom BV. KPN has been listed on the Amsterdam Stock Exchange since mid 1994 and on the New York Stock Exchange since October 1995. The Dutch state owns slightly less than 45 percent of the outstanding ordinary shares.

In meeting competition, PTT Post pursues new service areas. In 1995 PTT Post introduced a Print & Mail service where customers can contract out printing and enveloping of invoices and statements of accounts. Further PTT Post offers a service for scanning and processing of hand-written business reply cards.

PTT Post is currently increasing its activities in the areas of electronic and hybrid services and multimedia services. For international mail services PTT Post has developed new services. DM logistics offers display, sale, storage, posting, delivery of goods, and handling of the financial side of transactions to mail-order companies.

Previously, in most countries, the services that could be offered through the post office network was restricted to savings bank services and some government services like pension and social welfare payments. In recent years the range of services offered through postal retail outlets has widened significantly.

Many PPOs seem to be eager to offer a full fledged banking service including a wide range of insurance products. This move is intended to counter the downward trend in the number of traditional banking transactions in most countries. This fact reflects the increasing acceptance and use of automated teller machines and direct debit facilities.

Most PPOs are also increasing the range of non banking services they offer, and the list of services now offered by postal retail outlets in Europe ranges from stationary products to lottery tickets. The variety of services that are currently on offer through postal retail outlets is shown in figure 4.32.

Figure 4.34 Products and services available through the PPO network of post offices.

Services	Available Electronically	Available Manually	Not Available
Mail:			
Mailings (13)	6	10	1
Sale of stamps (13)	10	8	0
Postal orders (13)	9	7	0
Money orders (13)	9	9	0
Post cheques (13)	7	6	2
Financial services:			
Giro banking (11)	8	3	2
Savings bank (11)	9	4	1
Full range of bank services (11)	8	4	3
Social security payments (12)	7	5	2
Lottery sales (11)	6	5	2
Pension payments (12)	8	6	1
Tax collection (12)	6	3	4
Sale of vehicle licences (11)	4	2	6
Sale of prize bonds (11)	6	4	3
Foreign exchange (12)	6	4	4
Renewal of passports (11)	1	1	8
Insurance (11)	7	7	1
Retail sales:			
Stationary (12)	6	4	3
Office supplies (12)	3	3	6
Packaging materials (13)	6	8	0
Tickets cultural / sporting events (12)	4	1	5
Railway tickets (12)	2	1	7

The figures in parenthesis indicate the number of PPOs who responded to each question.
Source : Price Waterhouse survey, 1996.

Improvement of traditional products and services

Another strategy among PPOs has been to expand and/or improve the core products and services they offer in response to customer needs.

To date no comparable system for the measurement of the quality of service of domestic mail exists. Yet, for international mail a uniform system named UNEX is in operation, run by Price Waterhouse on behalf of IPC Unipost and its 21 member PPOs.

Figure 4.35 below shows the performance of international first class mail travelling between the EU member states in 1994 and 1995 according to the UNEX quality of service monitoring system. Please note that Austria is excluded from the tables below as Austria did not participate in the program in 1994 and 1995.

The numbers refer to the percentage of international first class mail that was delivered within the service standard, which is J+3 within the EU. For example, it is shown that in 1994, 89.5 percent of the international first class mail that was sent from Belgium (BE) to Germany (DE) was delivered within J+3, while this percentage increased to 91.3 percent in 1995.

Figure 4.35 Quality of service of international first class mail travelling between the 15 EU countries in 1994 and 1995 (the numbers in the table represent the percentage of test letters that were delivered in J+3).

1994														
OUT	INBOUND													
BOUND	BE	DE	DK	ES	FI	FR	GB	GR	IE	IT	LU	NL	PT	SE
BE		89.5	89.7	45.9	74.5	86.7	92.0	35.0	52.5	20.3	96.2	91.9	71.0	86.7
DE	91.9		94.5	51.9	91.1	86.5	88.4	41.1	67.4	25.8	95.7	94.3	75.6	92.7
DK	87.3	96.1		40.9	96.9	82.5	83.3	41.7	75.2	28.3	94.7	94.9	58.8	98.9
ES	50.6	44.6	71.5		37.8	51.6	30.6	14.7	30.9	5.1	49.7	63.9	57.1	45.1
FI	70.1	88.5	94.7	20.5		63.9	90.2	16.8	28.9	7.4	77.1	86.8	38.7	96.0
FR	86.9	86.5	84.8	43.0	60.6		89.0	17.3	47.5	20.0	79.9	82.7	68.7	75.0
GB	89.4	80.8	93.5	49.4	88.4	80.9		34.9	86.2	22.5	87.2	85.5	69.3	90.2
GR	23.7	33.0	47.6	7.0	24.5	22.5	47.4		6.8	3.2	35.1	38.0	12.3	48.9
IE	67.8	79.1	90.3	26.5	63.2	70.1	90.0	21.6		7.8	76.2	77.2	50.6	78.8
IT	35.9	36.1	53.3	13.9	31.3	38.9	52.7	12.8	18.1		50.6	41.5	33.9	42.7
LU	98.1	95.6	87.9	41.8	83.5	94.8	93.5	33.7	57.7	14.9		91.8	66.4	89.4
NL	91.1	93.1	96.0	41.7	89.2	83.2	94.1	39.0	69.8	23.0	92.9		69.7	84.4
PT	56.1	55.6	74.8	38.3	55.8	62.7	77.3	16.9	25.8	12.5	69.9	70.5		54.6
SE	76.2	87.9	97.4	44.4	95.5	67.7	91.8	31.7	40.9	8.8	83.1	92.0	68.4	

1995														
OUT	INBOUND													
BOUND	BE	DE	DK	ES	FI	FR	GB	GR	IE	IT	LU	NL	PT	SE
BE		91.3	90.0	75.3	73.3	83.2	93.6	37.7	71.1	24.5	96.7	94.1	83.7	72.7
DE	93.3		92.0	73.6	91.2	79.9	91.6	41.6	73.2	17.3	93.7	94.2	86.1	91.3
DK	91.8	96.4		65.8	95.9	80.4	95.5	41.7	79.9	15.9	96.7	94.3	72.2	97.9
ES	81.4	63.2	84.1		66.6	70.2	52.2	31.7	57.0	8.0	68.5	83.0	84.8	74.0
FI	87.4	87.7	93.7	51.0		70.3	89.0	32.9	57.9	12.3	84.9	89.6	72.0	94.0
FR	87.4	85.1	85.7	71.2	70.8		87.3	30.0	73.2	28.9	88.8	85.8	84.4	78.4
GB	91.4	85.0	94.1	71.9	92.3	81.4		40.0	89.2	25.7	89.6	92.8	84.7	89.0
GR	33.7	31.4	47.1	25.2	28.2	29.9	46.2		12.3	2.7	44.5	47.1	19.8	31.2
IE	89.8	91.8	93.5	63.3	77.0	84.3	90.7	31.3		11.9	89.6	92.3	78.9	85.0
IT	50.2	40.8	56.9	33.0	36.1	46.2	54.8	19.6	23.6		47.8	48.0	42.8	38.5
LU	96.6	95.9	93.4	71.6	94.1	88.9	91.4	46.9	77.6	14.8		96.5	89.6	87.8
NL	95.2	93.1	96.6	74.3	94.6	85.1	94.9	43.0	84.0	32.9	96.5		87.6	93.1
PT	75.1	60.7	77.7	64.7	63.6	71.2	75.9	23.9	36.4	6.4	77.4	75.9		50.8
SE	86.0	89.0	97.7	62.5	96.4	76.7	92.2	34.5	64.8	12.5	88.9	91.6	80.0	

Source: International Post Corporation, 1996.

In general the results show that the quality of service of international first class mail travelling between the EU member states (excluding Austria) improved between 1994 and 1995. The overall performance improvement averaged 8,5 percentage points from 1994 to 1995.

In an attempt to offer an integrated service, PPOs have started to develop and integrate other products serving the communication needs of clients. In some countries PPOs have formed alliances with Internet access providers to offer electronic communication services competing with other service providers which may include the telecommunications incumbent.

Many PPOs have developed facilities to handle hybrid mail, the greatest share of which is bulk mail that is sent to the post office electronically, then forwarded to the nearest downstream postal retail outlet, where it is printed, sorted and delivered through the normal delivery network.

As part of the attempt to provide an integrated communication service and to improve their contact with their most valuable business customers, some PPOs have started to provide mail room services.

In response to the quality of service provided by the integrators many PPOs have upgraded their parcel and express mail services to include value added services such as: guaranteed delivery times, track and trace facilities, and insurance to compensate customers in cases of damage or loss.

Direct mail services, which is a growing market segment for many PPOs, have been subject to significant changes, especially in countries where direct mail has been liberalised. In response to competition PPOs have developed direct marketing centres and trained sales staff in order to assist companies to develop their marketing strategies and use the postal services available. There is a significant market potential and some PPOs like Deutsche Post have targeted new market segments like small and medium size companies which have not used direct marketing before.

These changes have been accompanied by efforts to improve the branding and marketing of products and the development of key account management. Many PPOs have restructured their product ranges in order to provide a simple and distinguishable range of products designed to serve the needs of specific customer groups.

Private postal operators have changed their products in response to:

- the emergence of new business areas; and,
- organisational changes among customers affecting the PrO's product portfolio.

Some PrOs have identified new business areas, or have developed existing business areas. One example is logistics services, which involves giving advice to companies on management of their entire logistics function including inventory and transportation. Such new services are often organised in separate divisions within the supplier's organisation.

Changes among customers often result in new business areas for PrOs. Currently many of the customers of the global integrators view outsourcing as a key issue, and subcontracting of transportation, mailroom activities, and the entire logistics function have become important and growing business areas.

A development in value added services, such as the ability to track down mail throughout its journey from sender to receiver, or the provision of various insurances for mail, can be noted, both for PPOs and PrOs.

Pricing structure

Changes regarding the range and quality of products have often been accompanied by a price review process in order to improve the competitiveness of products.

The increase in competition (both existing and projected) has resulted in many PPOs adopting a more flexible pricing structure, and discounts are increasingly being offered in competitive services to protect market share.

As a result of large discounts given in relation to services open to competition, some PPOs have been subject to challenges in European and domestic courts, having been accused of cross subsidising between competitive services and those within the reserved service area.

Reduction of cost intensive services

The more commercial attitude and tighter financial control of some PPOs has led to an increasing resistance to bear the costs of fulfilling the universal service obligation, which in turn has lead to a reduction in the scope of cost intensive services.

Indeed, in some countries the number of postal outlets has been reduced and a second daily delivery or Saturday delivery abandoned. While almost all PPOs offer extended weekday opening and Saturday opening, the number of deliveries per day and the availability of Saturday deliveries vary between the different PPOs. None of the EU PPOs deliver mail on Sunday.

Outsourcing and franchising

Generally speaking the use of outsourcing and franchising has been increasing. In 1995 the proportion of postal outlets that were franchised or managed by agents accounted for 37 percent of all postal retail outlets in the EU. The proportion of franchised outlets is expected to increase to 46 percent by year 2000 (Price Waterhouse survey, 1996).

On one hand, this reflects a move towards concentration on the core business, while on the other hand, it demonstrates a focus on diminishing costs, as subcontractors tend to be able to provide certain services cheaper than they can be performed internally by PPOs.

Some of the savings made from subcontracting/franchising are derived from lower labour costs, but as retail subcontractors/franchisees often run the postal retail outlet in conjunction with their traditional retail business (ranging from petrol stations to grocery shops and kiosks), franchisees in addition significantly reduce the share of overhead costs allocated directly to the provision of postal services. Thus subcontracting often provides a possibility to maintain postal outlets in rural area

Figure 4.36 indicates the use of franchising by PPOs.

Figure 4.36 Use of franchising and outsourcing among EU PPOs

Step in the mail services value chain	Number of PPOs who did subcontract/franchise a significant percentage of this part in 1995	Number of PPOs who did **not** subcontract/franchise a significant percentage of this part in 1995
Collection	0	13
Sorting	0	13
Transport	9	4
Delivery	1	12
Retail	6	6

Source: Price Waterhouse survey, 1996.

Figure 4.36 shows that subcontracting/franchising was only used in some parts of the mail services value chain in 1995, namely transport and retail. None of the EU PPOs used subcontractors/franchisees for the collection or sorting of mail, while only one PPO used them for delivery.

Case: New Zealand

In 1987, the year of corporatisation of New Zealand Post, all post shops were owned by New Zealand Post. In 1996 only a minority of post shops are owned by New Zealand Post. When outsourcing the post shops employees go through a voluntary redundancy process and instead become employees of the franchisee. The number of outlets, excluding stamp retailers has been stable since 1990, whereas the number of stamp retailers has seen a sharp increase from approximately 600 in 1990 to more than 3000 in 1995.

Trends and forecast

Currently PPOs are trying to transform their large businesses into more flexible businesses, capable of responding to rapidly changing market conditions. There is a move towards increased customer focus and more managerial freedom, and this move is expected to continue.

PPOs are beginning to offer a wider range of services as well as more value added services. At the same time, they have made an effort to improve quality and pricing and have become more market oriented, although the market orientation largely depends on what is allowed for in the regulatory framework.

Furthermore, we have found that franchising and outsourcing by PPOs has increased and will continue to do so in the future. Interestingly, the number of PPOs using outsourcing/franchising is not expected to change significantly up to the year 2000. However, in the areas where subcontracting is used extensively today, (transport and retail), substantial increases in the actual volume of these activities that will be subcontracted/franchised out is expected. For example, the proportion of franchised postal outlets is expected to increase to 46.5 percent by year 2000 from the 1995 level of 37.2 percent (Price Waterhouse survey, 1996). These predictions are not surprising if one considers that some PPOs estimate that the costs of running franchised retail outlets is up to sixty percent lower than the costs of running retail outlets within the PPO.

While these changes have been observed for the PPOs, the PrOs do not explicitly state that they are planning to enter the traditional PPO areas. Yet, PrOs are preparing to move into the increasingly liberalised postal market place, with some expanding their operations significantly in order to offer their services on a global scale. Furthermore, PrOs have expanded their range of services. One example of a PrO that is offering new services and at the same time expanding into the European market is Mail Boxes Etc, a company which franchises shops that accept mail for various express and courier services as well as for the public postal operator.

The key uncertainties with respect to organisational change are first and foremost the development of national and international regulation. Future liberalisation will have a big impact on whether or not PPOs choose to restructure their organisations and how they do it. Also the amount of freedom that regulators are prepared to grant management, which affects the extent to which managers can in fact initiate organisational change, is an area of great uncertainty.

With regard to organisational change as such, the main uncertainties cover the speed and scope that PPOs and PrOs will adopt when changing their organisations. Furthermore, the postal operators' ability to develop new services in open competition and the question of the degree to which there will actually be competition in the traditional reserved service areas are key uncertainties.

In conclusion:

- PPOs are currently changing their organisations to become more customer oriented entities;
- organisational changes serve as a means of rationalising and improving efficiency;
- PPOs are developing new products and services, while at the same time attempting to improve quality of traditional services;
- the use of franchising and outsourcing is increasing and will continue to do so in areas currently benefiting from franchising;
- PrOs do not explicitly state that they want to enter a potentially liberalised market; and,
- a number of PrOs are expanding the range of services they offer as well as their geographical scope.

Section 5 – The impact of the change drivers on employment

5.1 Introduction

In this section, which is divided into ten subsections, we describe and analyse the relationship between employment and the five change drivers. Section 5.2 details our approach by first describing the methodological issues and how we addressed them, and then by presenting our analytical model of the relationships between employment, the change drivers, and other factors. In Sections 5.3 to 5.7, we discuss the influence of each of the five change drivers on employment, and present a summary of the evidence gathered. Section 5.8 presents the views of the industry participants on the relative importance of the factors influencing employment. We examine the empirical evidence in section 5.9 and give our conclusions in section 5.10.

5.2 Approach

Methodological issues

An analysis of the impact of the change drivers on employment is challenging because the relationship between the change drivers and employment is complex, and because there is a lack of research in this area. Below we describe the methodological difficulties we faced and how we addressed them.

The first difficulty is how to separate the effects of the different change drivers on employment, i.e. how to single out the impact of each individual change driver. For example, it is difficult to separate the influence on employment of an increase in the degree of competition in the postal sector (liberalisation) from the influence of electronic substitution. In addition, changes in one change driver will lead to changes in other change drivers. For example, by increasing the degree of competition, liberalisation may encourage postal operators to step up automation programmes and organisational change in order to improve their competitiveness.

There are also measurement problems. The full effects of changes such as liberalisation, organisational change and automation appear only gradually and can be measured only in the long term. Certain effects are direct, others indirect. For example, liberalisation will increase competitive pressure and lead to organisational changes and automation. However, other aspects of the liberalisation process, such as reduced subsidies or changes in universal service obligation, may have a direct effect on other factors such as tariffs, volume and costs of postal services which will also have an impact on employment.

A related issue is how to determine the counterfactual, i.e. what would happen in the absence of liberalisation. In order to make a full assessment of the effect of automation and organisational change that have been introduced as a result of liberalisation the relevant question to ask is "how would the competitive position of the postal operators in relation to other means of communication be if they had not improved efficiency and what does this imply for employment levels and conditions?"

Lastly, measures having an effect on employment are initiated at different levels, by the postal operators, regulators in each of the Member States, the European Commission, or other organisations. For example, EU Member States have adopted different liberalisation measures and each liberalisation package has a different impact on postal services and, ultimately, on employment. Even in situations where similar measures are taken the effects of these measures are likely to vary according to the differences in market structure and institutional setting.

The approach we adopted enabled us to address these methodological difficulties and to provide robust and credible results. The key aspects of our approach are reiterated below.

We used a detailed questionnaire to capture the main differences in the planned liberalisation process and a tabulated description of current broad regulatory setting in each country.

We used postal questionnaires to ask PrOs, PPOs and postal regulators about their opinion on the potential effect of the different change drivers on employment. Certain questions focused on the potential impact of the measures proposed in the draft EU directive.

We also asked experts, postal regulators, employee representatives, user organisations and postal operators about the likely effects of the change drivers and of the other factors at play.

We collected, and critically reviewed, a large number of studies to take into account the main findings of past and current theoretical and empirical research, including the studies launched by the EU Commission on the impact of the liberalisation of direct mail and inward cross-border mail.

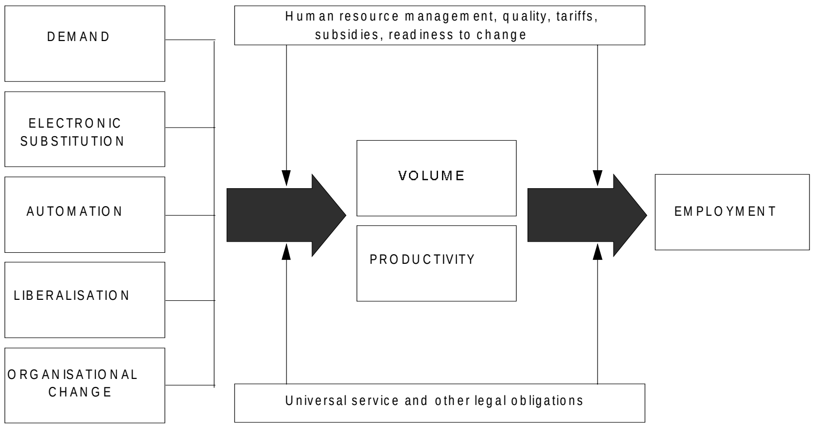
We also carried out a number of case studies to identify the effects of the change drivers on employment.

Analytical model

Figure 5.1 shows the relationship between the change drivers, employment and other factors or "filters”. There are five main change drivers: demand, electronic substitution, automation, organisational changes and liberalisation. The change drivers are considered to be the main determinants of volume and productivity, which in turn will determine the level and structure of employment.

There are also a number of other important factors that must be brought into the picture, such as definition of the universal service obligation, tariff levels and structures, levels of government subsidy, political pressures, and social aspects (labour laws, union density, human resource management). We call these factors "filters", because the influence of the change drivers, volume and productivity on employment will be filtered and thus modified, possibly to a large extent, by these factors.

Figure 5.1 Relationship between the change drivers, employment and other factors



Source: Price Waterhouse, 1996.

5.3 Demand for postal services

Impact on level of employment

PPOs

An increase (decrease) in the demand for postal services leads to increases (decreases) in mail volumes, and the derived demand for labour increases (decreases).The net effect on employment depends on a host of factors, such as degree of automation, flexibility of the labour market, political pressure to maintain employment and human resource management (i.e. the "filters" in our model).

It is difficult to compile long term time series on employment and mail volume which are consistent across time and between countries. In addition, "the measurement of mail is a difficult exercise for the public operators as they offer a wide variety of services and receive and process mail in a variety of ways" (Eurostat, 1996).

The data presented in figure 5.2 shows the evolution of mail volumes, employment in PPOs (total number of employees, not full time equivalent) and productivity for the 15 Member States between 1980 and 1993. The two sources used, Eurostat and UPU, show only minor differences. The main insight is that the growth in mail volumes has off-set the increases in productivity. This is unlikely to happen in the coming years in the most developed countries because growth in mail volumes are not expected to be as large as in the past.

Figure 5.2 Evolution of mail volumes, total employment and productivity between 1980 and 1993 (EUR15)

Variable	Eurostat	UPU
Total employment		
% change 1980-93	8.6%	4.9%
Annual % change 1980-93	0.6%	0.4%
Total number of mail items handled		
% change 1980-93	41.6%	43.5%
Annual % change 1980-93	2.7%	2.8%
Total domestic mail items		
% change 1980-93	44.3%	46.5%
Annual % change 1980-93	2.9%	3.0%
Productivity measures		

Mail items per employee 1980	50299	47406
Mail items per employee 1993	65580	64861
% change 1980-93	30.4%	36.8%
Annual % change 1980-93	2.1%	2.4%
Domestic mail items per employee 1980	47668	44903
Domestic mail items per employee 1993	63351	62737
% change 1980-93	32.9%	39.7%
Annual % change 1980-93	2.2%	2.6%

Sources: Eurostat, 1996; Universal Postal Union, 1995.

Figure 5.2 shows that:

- productivity, measured by total mail items per employee, increased by 30.4 percent between 1980 and 1993 according to Eurostat and by 36.8 percent according to UPU; and,
- this translates to an annual percentage improvement of 2.1 percent according to Eurostat and 2.4 according to UPU.

There are significant differences between the 15 Member States regarding evolution of mail volumes and levels of employment, as indicated in figure 5.3, which is based on Eurostat covering nine Member States for 1980-1993. In the first three columns we give the rate of growth in employment (total number of staff employed in postal services, not in full time equivalents) and in mail volumes (letter post items, domestic service) for the whole period 1980-1993 and for two sub-periods, 1980-90 and 1990-93, to isolate the effects of the economic recession of the early 90s. The next two columns indicate in which year employment and mail volumes reached their peak value (maximum year) and their minimum value (minimum year). We then give the correlation coefficient between volume and employment for the whole 1980-93 period and for the two sub-periods. In order to take into account the possible bias in the numbers for Germany introduced by its re-unification, we give two totals, with and without Germany.

Figure 5.3 The evolution of mail volumes* and employment levels for selected** EU countries, 1980-93

Country		% growth 1980-93	% growth 1980-90	% growth 1990-93	Max. year	Min year	Corr.*** 1980-93	Corr.*** 1980-90	Corr.*** 1990-93
Belgium	Volume	1.6	-2.1	3.8	1993	1983	-0.11	0.29	0.99
	Empl	-11.4	-12.8	1.6	1980	1990			
Denmark	Volume	30.9	21.7	7.6	1993	1984	-0.12	0.60	-0.98
	Empl	-18.3	-8.5	-10.7	1986	1993			
Germany	Volume	37.7	15.8	18.9	1993	1980	0.84	-0.29	0.97
	Empl	29.4	-0.9	30.6	1993	1989			
Finland	Volume	51.6	74.1	-12.9	1990	1980	-0.16	-0.01	0.91
	Empl	-43.7	-2.2	-42.4	1985	1993			
France	Volume	97.8	59.8	23.7	1993	1980	-0.13	0.14	-0.99
	Empl	2.7	5.2	-2.3	1984	1980			
Italy	Volume	18.1	46.3	-19.3	1989	1980	0.75	0.74	0.97
	Empl	21.6	30.0	-6.5	1988	1980			
Luxembourg	Volume	84.4	68.0	9.7	1993	1980	0.89	0.81	0.82
	Empl	24.5	19.4	4.2	1993	1980			
Portugal	Volume	93.6	45.2	33.4	1993	1981	-0.90	-0.69	-0.81
	Empl	-24.7	-17.5	-8.8	1980	1992			
Spain	Volume	-1.7	17.9	-16.6	1988	1984	0.68	0.80	0.92
	Empl	32.2	41.5	-6.6	1989	1980			
Total	Volume	47.3	33.9	10.0	1993	1980	0.87	0.79	0.90
	Empl	11.6	7.9	3.5	1993	1980			
Total****	Volume	51.9	42.4	6.6	1993	1980	0.42	0.76	-0.85
	Empl	4.1	11.6	-6.6	1986	1980			

* Letter post items, domestic service.
** The nine countries represented are those that had successive annual data from 1980 to 1993.
*** Coefficient of correlation between mail volume and employment.
**** Germany was taken out because of the bias introduced by its re-unification.
Source: Price Waterhouse calculations based on Eurostat data..

The main insights from figure 5.3 are that:

- mail volumes increased significantly (by more than 47 percent in the nine countries) between 1980 and 1993 while employment also increased but by a much smaller proportion (11.6 percent);
- mail volumes have been declining in three countries, in Spain (since 1988), Italy (since 1989) and Finland (since 1990). In the case of Finland, the collapse of the Soviet Union, an important trading partner, was a major factor in the decline in mail volumes; and,
- the correlation coefficients indicate that employment and volume are positively related (0.87 when we pool the nine countries). However, this conclusion must be strongly qualified for two main reasons: first, the correlation drops to 0.42 when Germany is excluded from the sample; second, the positive relationship between volume and employment is not robust since it does not hold in every country and for every period.

PrOs

Demand is the main change driver of employment among PrOs. They have been able to meet increased demand for communication and distribution services by developing high value-added services, such as expedited deliveries, and providing services such as track and trace systems.

The global integrators as well as the local and national PrOs expect that the increase in demand for express services will continue and that this will have a positive impact on employment, in terms of number of employees.

Impact on structure of employment

PPOs

The evolution of demand will also have an effect on the structure of employment and skills. New services will be much more directly shaped by new technology, both in relation to products (such as hybrid mail) and links with customers. Basic IT skills will become a prerequisite for all employees, and at the same time as there will be an increasing need for IT specialists. Future growth in demand is likely to be more focused on niche markets, requiring customer service and marketing skills from a broader range of employees.

The future of employment in the provision of financial/retail services will depend on the ability of public postal operators to respond to demands for new services and equip employees to provide these. Apart from IT and customer service skills, general business and entrepreneurial capabilities are likely to be particularly important to foster and maintain demand. If demand continues to develop along current lines, working patterns will have to change in response to the increased market expectations for flexibility and speed of service.

Case: The United Kingdom

Customer demand is a major driver in terms of the need to change working practices towards greater flexibility. For example, consumer pressure for flexibility has led to post offices extending opening hours on Saturdays. As a direct response to the launch of the National Lottery, post offices now stay open until the deadline for accepting lottery slips. The focus on flexibility has led to an increase in part time employment.

In order to respond to future customer demands of specialisation and flexibility, especially in the case of uncommon requests, PPOs will potentially have to make increasing use of subcontractors.

PrOs

Changes in demand will also impact the required skill level among private postal operators. Employees will need more skills in customer service and IT. The increased demand for new services such as logistics management is also expected to have an impact on employment, in terms of new jobs and changed skill requirements.

5.4 Electronic substitution

Impact on level of employment

In previous studies on the impact of electronic substitution on employment, no elaborate methodology stands out. Some of the studies (especially Iversen and Pedersen, 1995) introduce a broad framework for analysis, however, most studies mainly consist of reviews of previous studies and of correlations of statistical data regarding mail volumes and the penetration of electronic means of communication.

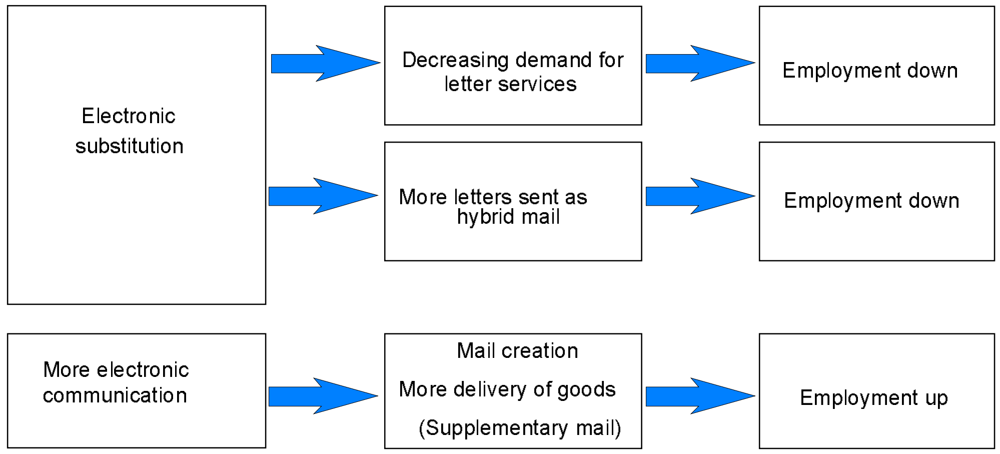
There seems to be a general agreement that the main factor effecting the rate of electronic substitution is the degree of penetration of modem connections and fax machines, while the effect of price-elasticities is seen to be moderate. However, the price-differential between E-mail and other types of communication (including postal services) is so large that costs must be expected to play a role in the choice of communication channels.

The studies described in appendix 5, tend to agree that other studies often exaggerate the substitutional effects of telecommunications. However, one study (Information Week, 1995) estimated that the US Postal Service (USPS) has, in the period from 1988 to 1995, lost one third of its business-to-business market because of electronic substitution.

When looking at the impacts of electronic substitution on employment, it is, in reality, only the studies of Clot, 1991; Henten and Skouby, 1992; and Iversen and Pedersen, 1995 that address this question - and they do so primarily in a qualitative fashion and only tentatively in a quantitative way. The relationship between mail volumes and employment figures are not one-to-one, and the effects of telecommunications must be mediated by other change drivers, such as liberalisation, creating a competitive market and the reorganisation of postal operators.

Therefore, there is no general consensus on the strength of the substitutional effects of telecommunications on postal services. There is an agreement that, ceteris paribus, the deployment of electronic services will effect the volume of postal services in a downward direction. The flow chart in figure 5.4 describes the relationship between electronic communication services and employment in the postal sector as it can be summarised from the literature.

Figure 5.4 Relationship between electronic communication services and employment



Source : Price Waterhouse, 1996.

Electronic services affect the level of employment through two mechanisms, the first being electronic substitution which leads to a decrease in employment caused by decreasing demand for letter services and by an increase in the volume of hybrid mail. Decreasing demand for letter services is likely to first hit the business to business segment and later the business to household segment for e-mail and EDI. Hybrid mail services demand less input of labour, and therefore the impact on the overall employment level will be negative. However, the impact on certain work functions (for example, printing and enveloping) will be positive.

The second mechanism is that more electronic communication, leads to more employment through mail creation and delivery of goods. Home shopping can be expected to increase due to electronic ordering systems and will generate more delivery of parcels.

As the figure indicates electronic substitution will have an overall negative effect on employment. Although an increase in electronic communication has a positive effect on employment caused by added mail creation, over time the negative effect of electronic substitution on employment is expected to outweigh the positive.

Electronic services will substitute parts of postal services. Substitution has already taken place especially in the business-to-business market.

For PrOs in particular, the impact of electronic substitution is likely to vary, depending on the market in question. For postal operators, both public and private, who are focused on the parcel market, electronic substitution will have little impact on employment as parcels can not be substituted by electronic communication services. For PrOs operating in the letter, document exchange and newspaper distribution markets, electronic substitution will tend to have a negative impact on employment. For PrOs operating in the express delivery and local messenger markets, there will be less of an impact as electronic substitution is likely to only slow down the growth in these two markets.

Impact on employment structure

Most of the studies that discuss the effects of electronic substitution on employment have primarily been of a qualitative nature. This is probably due to the complexity of the relationship between other change drivers and the effect of electronic substitution. The studies that approach the effects from a qualitative point of view mainly focus on strategic perspectives for operators and employees dealing with the possible take-up of hybrid or end-to-end electronic services by postal operators.

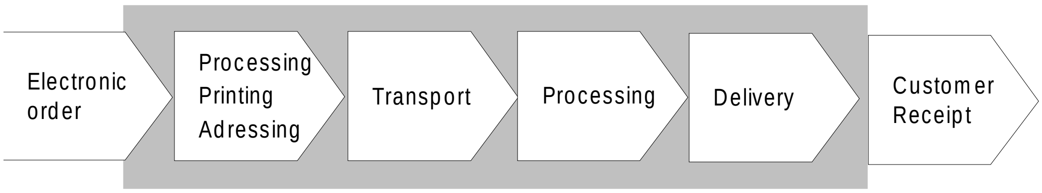
Case: New Zealand

In New Zealand electronic substitution is viewed as being more important in the long run whether or not deregulation happens, as regulation does not protect postal operators from the competition of other message media. The threat from electronic substitution is met by researching opportunities provided by new technology and by developing new products and services as well as by aiming for competitive pricing. The latter is exemplified by the lowering of the price of a standard letter in 1995 and a free post day in 1996. The New Zealand Post position is to fight competition on price and service, and in 1995 more than 95 percent of all mail was delivered within the quality requirements (New Zealand Post, 1996).

A potential consequence of the development of hybrid or fully electronic mail systems, is a change in the postal value chain from the traditional one of: mail creation, collection/induction, outward sorting, transportation, inward sorting and delivering, to various new value chains depending on the level of substitution of physical transport preferred by the customer.

A general value chain for hybrid mail services could therefore be: electronic order - processing (including printing and addressing) - transport - inbound processing - delivery - customer receipt, where the customer is linked to the postal operators activities more closely via the electronic order. An example of a general hybrid mail operational value chain is shown below.

Figure 5.5 A general hybrid mail operational value chain



Source: Price Waterhouse, 1996.

5.5 Automation

Impact on level of employment

Any attempt to establish the precise relationship between automation and employment should be regarded as quite complex, particularly due to the fact that the relationship is not linear, and that there are many other factors which have an influence on the extent to which automation effects employment.

PPOs

Overall effects

In most countries, the negative impact of automation on employment levels has been contained by large increase in physical mail volumes. In the future, however, these increases in mail volumes are expected to stagnate and even decrease in some countries (see section four).

Continued automation is likely to lead to further reductions in the number of people employed by the PPOs, while at the same time the development of hybrid and electronic mail systems, and the introduction of new value-added services will probably have a positive, but limited, impact on the number of people employed.

The suppliers we contacted confirmed that the use of mail processing systems is very likely to result in reductions in head counts. However, they also indicated that the purpose of automation may not be to reduce the number of employees, but to "avoid hiring more people".

Also, the use of new technology generates new business opportunities for the PPOs. For example, new technology allows the PPOs to capture more information about their customers and hence to develop more services for them. This is an area with employment creation potential.

It is not easy to isolate the effect of automation from the effect of the other factors and change drivers, as illustrated by what happened in New Zealand. In the late 80s, the focus was upon automation, and New Zealand Post bought new equipment, created mail centres, etc. At the beginning of 1990, four new OCR machines were bought, and at the same time New Zealand Post was reviewed by a consulting company and new manufacturing and production processes were set up. A period of restructuring followed and a large number of staff were made redundant (mainly through voluntary redundancies), in particular sorting people. The direct effect of automation is reported to have had only "a little bit of impact" on the number of employees.

Specific effects according to the value chain

According to information provided by PPOs in response to our survey, the induction / collection, inward sorting and outward sorting parts of the mail services value chain combined account for about 27 percent of total PPO employment, the delivery part accounts for 58 percent while support services account for about 15 percent. Below we describe the likely effect of automation on employment in each part.

The use of Culler / Facer / Canceller (CFC) machines tends to have a negative impact on the level of employment in PPOs as they dramatically simplify the collection and pre-sorting of mail, replacing many processes with one integrated activity that requires a minimal number of staff to operate. Therefore, due to the expected increase in the use of these machines, we can expect to see a reduction in the number of staff employed in this area. However, this reduction is likely to be relatively small due to the fact that the majority of staff employed in the induction / collection area are actually involved in the physical collection of the mail and as a result will not be directly affected by this type of technology.

The use of OCR, LSM and video coding machines also tend to have a negative impact on the level of employment in PPOs. This impact is typically at its highest when automated sorting equipment is introduced as part of an overall restructuring of the logistical set-up of the mail processing area. As PPOs have indicated that the number of outward sorting locations will continue to decrease over the next five years, in addition to which, the level of automation of these facilities will increase, we can be relatively certain that the level of employment in the outward sorting area will be negatively affected.

As an indicator of this, the Letternet project in Sweden can be mentioned. Sweden Post has invested some 1.8 million ECU in new technology for the logistics/mail handling and sorting areas. The main aim of the project is to reduce the number of sorting centres from 56 to 19, in short a drastic reduction, which will have a pronounced impact on employment. The effects will be felt in the countryside more so than in Stockholm. The Letternet project will result in more transportation of mail, but this in turn will not create any jobs within transportation, as most of the mail is transported by air. The whole reduction process is handled in the most agreeable way, choosing from what was considered “the best, out of all the daunting scenarios”. Some employees were fired, some were given the opportunity to go on early retirement, but most of the reduced staffing required as part of the Letternet project was achieved through the use of temporary employees, which is part of the reason why there is a high percentage of temporary employees in Sweden Post.

The impact of automation on employment in the inward sorting of mail is likely to be somewhat similar to that for outward sorting. However, currently the level of automation is higher in outward sorting than it is in inward sorting, and therefore there is greater potential to automate in the inward sorting area, and as a result greater potential to increase efficiency or decrease employment. PPOs have indicated that they intend to decrease the total number of inward sorting locations they operate by the year 2000, in addition to which, they forecast that the level of automation in the remaining inward sorting facilities will also increase. Therefore, we can also be relatively certain that the level of employment in the inward sorting area will be negatively affected

The delivery area accounts for the vast majority of people employed in the provision of mail services, and as a result is the area that holds the greatest potential for impacting on the overall employment situation. Currently the work carried out by delivery staff tends to be split between preparing mail for delivery (sorting it in the correct order) and actually delivering the mail, with the proportion of time they spend doing each split approximately 20 percent / 80 percent respectively. The application of automation in the inward sorting area is likely to impact on the amount of preparation work that delivery staff will have to do in the future. The developments in OCR and LSM technology will make it possible to automatically sort mail in delivery sequence within each postman's' walk, thereby doing away with the need for delivery staff to prepare the mail before setting out to deliver it. Developments of this nature will potentially lead to a reduction in the number of delivery staff required, however the higher physical workload on individual delivery staff from spending 100 percent of their time out on a route may not be acceptable.

The use of route optimisation systems can also have an impact on the number of people employed in the delivery area, however, the application of this type of technology appears to be concentrated more on the area of delivery efficiency and customer service, than on productivity gain. As a result of this, and due to the fact that the universal service obligation has implications for the delivery area, it is unlikely that route optimisation will have a major impact on the number of people employed in the delivery area. It should also be noted, that in some countries, the introduction of multiple and Saturday deliveries in response to customer demand may actually have a positive impact on employment in this area.

Due to the fact that they represent such a small proportion of employment, and that the developments in use of information technology which are foreseen will probably be used to increase the quality and accuracy of the work, rather than replace staff, the impact of automation on employment in the support functions area is likely to be negligible. However, the introduction of automation may act as a facilitator for some of the other change drivers to impact on employment in this area.

The impact of automation on employment in the provision of financial/retail services is likely to be overshadowed by the impact of the reduction in the number of company owned post offices. PPOs have indicated that they intend to decrease the total number of company owned post offices they operate by the year 2000, in addition to which, they forecast that the level of automation of the services they provide through the remaining offices will increase. These two factors combined lead us to forecast that automation, in combination with changes to the post office infrastructure, will have a negative impact on employment in this area.

PrOs

With regard to the PrOs, the effects of automation on employment in the mail processing area is only really relevant for the global integrators, since most of the smaller PrOs do not carry out such complex or large scale sorting activities that they require the assistance of automation to make them more efficient or effective. The most sophisticated sorting technologies requires a very high volume of mail to make them a viable investment (for example, a major hub in the USA of a global integrator processes 1.5 million packages per hour in a typical night), so much so that even one of the global integrators admitted that their volume in Europe is not high enough to justify such sophisticated investments, and they did not expect this to change in the next five to ten years.

The global integrators themselves expect that the automation of the mail processing area will only have a small impact on employment as most integrators have already implemented automation programmes to the extent that is viable in this area, "new technologies will slow down employment growth but will not lead to a fall in absolute numbers of jobs".

The global integrators expect to increase the size of their infrastructures up to the year 2000, and as a result of these investments and expansions, they expect that the number of people they employ will be increased.

As we have already mentioned, national and local PrOs are likely to invest less in automation of the sorting area than the global integrators, especially since flexibility is more important than economies of scale for them, thus limited investment in automated sorting facilities will have a limited effect on employment.

The global integrators expect to increase employment through the implementation of information technology, in the form of route planning systems and new time saving services, by virtue of the fact that they will result in more added value for customers and therefore growth.

In addition to changes in the number of employees, these developments will give rise to a need for expertise in information technology, and a requirement for a higher knowledge of information technology among employees in general.

The national and local PrOs are also expected to invest in, and expand their use of, information technology, which in turn is expected will have a positive effect on employment.

In summary, we believe that automation will only have limited impact on employment among private postal operators, and that this impact will be positive as far as information technology is concerned, with added value to customers being translated directly into increased business.

Impact on the structure of employment

PPOs

In addition to impacting on the level of employment, automation has an influence on the structure of employment within postal operators. With the introduction of automation, there comes a need for employees with new technical skills, which can be met by recruiting new employees or training existing employees. Supplementary training is also required for staff who are going to work with the new equipment and systems.

The recent automation of post offices in Portugal can be seen as an example of the requirement for new skills within the public postal operators. In CTT automation has taken place within post offices and has resulted in a substantial reduction of back office workloads. This has allowed personnel to focus on front office tasks and hence enhance customer service. Although union sources do not consider automation the primary source of employment reductions, automation of mail processing and improvement of central data processing services are expected to have an impact on the level of employment.

Between 1990 and 1995, total employment at CTT decreased by 5.13 percent (Price Waterhouse survey, 1996). Increased skills levels are needed, for example, the automation process is requiring workers with higher skill levels. The current shortage of specialised staff will most likely be met by external recruiting, although the relatively low remuneration level may become an obstacle to this strategy.

The negative effect of automation on employment will be strongest in the mail processing and delivery areas due to the fact that approximately 84 percent of mail services employees in EU PPOs are actually involved in the physical handling and processing of mail items, and these are the areas where the introduction of automation will have the greatest impact.

The impact of the EU directive on automation varies according to the actual situation in the individual countries. In countries, where mechanisation is at an advanced stage, and the PPO is competitive in terms of quality of service and price, the effect will be lower than in other countries. Although some industry experts expect that automation will have only a limited effect on employment levels in the "leanest" PPOs, others disagree and consider that major productivity gains are still possible (see our discussion of the key uncertainties in section six).

PrOs

In addition to impacting on the level of employment, automation will impact on the skills mix required, making knowledge about information technology systems more and more desirable among employees.

5.6 Liberalisation

Impact on level of employment

Overall effects of liberalisation - theoretical arguments

The effect of liberalisation on employment in a country depends on a variety of factors such as: the structure of the regulation in place; the scope and detailed design of liberalisation; the extent of competition within the postal market and from the other means of communications that are already present; the quality of service currently provided by the PPO; the level of productivity of the PPO; and the demographic and geographic factors which influence the cost of providing a universal service. General statements about the effect of liberalisation must therefore be treated with caution.

Liberalisation is closely related to the other change drivers, and in particular with organisational change. Liberalisation increases the competitive pressure on PPOs, and at the same time regulators have given PPOs greater freedom to change their organisational structure and to adopt market oriented policies. Thus liberalisation has a direct impact on organisational change within PPOs.

The effect of liberalisation, often accompanied by organisational change, on employment levels must be assessed both in the short term and in the long term.

According to standard liberal economic theory, liberalisation tends to reduce employment in the short term as it puts pressure on public postal operators to become more business-oriented, to re-engineer their business processes to improve efficiency, and to cut costs to become more competitive. Thus, liberalisation initiates the implementation of automation programmes and organisational change which in turn effect employment.

In the longer term, liberalisation may have a positive effect on employment because it improves the competitive position of the postal sector and enables postal operators to limit market share losses to electronic substitution. This does not mean that employment levels will increase in absolute terms, but that employment levels may be higher than the hypothetical case of status quo.

The effect of liberalisation on overall employment levels in the postal sector at large is difficult to ascertain precisely. On the one hand, it increases pressure on the PPOs to increase productivity and/or reduce the scope or nature of the universal services provided. This would have a negative effect on employment. On the other hand, it will lead to additional delivery networks which will employ postal workers, which would have a positive effect on employment.

Overall expected impact of the EU draft directive - the view of the PPOs

The view, contained in the conclusions of the studies of the subject commissioned by the EU Commission, that the partial and gradual liberalisation of direct mail and inward cross-border mail will not have a significant impact on employment levels is not shared by all the PPOs and industry experts. For example one PPO estimated the potential loss of market share as a consequence of the EU initiatives at approximately 25 percent (Price Waterhouse survey, 1996).

The views of the PPOs on the impact of the reform of the definition of the reserved service on the number of people they employ vary considerably. Overall, the PPOs operating in the most liberalised environments do not expect the directive to have a significant impact on employment, while the others tend to expect a negative impact on employment. This assessment broadly reflects the expected impact of the directive on market share and sales revenue. Figure 5.6 summarises the assessment by the PPOs of the likely impact of the various elements of the draft directive on common rules for the development of Community postal services and the improvement of quality of service, if this directive comes into force by the first of January 2001.

Figure 5.6 Expected Impact of the proposed EU directive on PPOs. Figures represent the number of PPOs

Impact	Number of employees	Level of skills of employees	Market share	Sales Revenue
Strong reducing effect	3	0	3	3
Reducing effect	6	0	5	5
No effect	4	7	3	3
Increasing effect	0	6	0	0
Strong increasing effect	0	0	0	0

Source: Price Waterhouse survey, 1996.

The figure above shows that the majority of PPOs think that the directive will:

- lead to a reduction in employment (nine out of 13), but only three of them expect a strong reduction;
- have no effect (seven) or an increasing effect (six) on the level of skills; and,
- lead to a reduction in market shares and sales revenue (eight out of 11).

A more detailed analysis of the answers to the questions about specific elements in the draft directive shows that:

- the majority of PPOs expect no significant impact from certain elements of the directive: provision of universal service (Articles three to seven) and transparency of accounts (Article 15);
- the highest negative impact on employment, market shares and sales revenue is expected from Articles eight and nine on the definition of reserved service, although three PPOs expect either no effect or a positive effect from these articles;
- the picture is more mixed as far as the authorisation of provision of competitive services (Article 11) and the harmonisation of access (Article 12) are concerned. A small majority of PPOs expect no effect from Article 11, while most of them expect that the harmonisation of access to the public postal network will lead to a reduction in market shares, sales, and employment;
- PPOs expect the Articles on tariff principles (Articles 13 and 14) to have no significant impact on employment and on skill levels, while they expect them to have a reducing effect on sales and market shares;
- the majority of PPOs expect the setting of minimum quality standards (Articles 16 to 19) to have a positive impact on skills, market shares and sales, but no effect on employment; and,
- Article 15, which suggests the transparency of accounts, is seen by most countries as having no effect on employment.

Chapter six of the directive (Articles 16 to 19) regulates the quality of service and how it could be maintained. It suggests, for instance, a minimum standard for cross border correspondence of an end-to-end transit time of three working days. PPOs expect that this will have either a positive or no impact on employment levels and most operators think it will have a positive effect on the skill level of employees.

The harmonisation of technical standards (Article 20) is expected to have no effect on employment levels but a positive effect on skill levels.

This suggests that postal operators feel they will be able to maintain market share and sales revenue through an increase in productivity resulting from the directive. This is a finding that is generally supported by evidence. The PPOs that operate in more liberalised environments have often pointed out the benefits of liberalisation.

The expected impact of price and weight limits in the EU directive

In Articles eight and nine of the draft directive the harmonisation of the services which may be reserved is proposed. Article eight establishes the basic principle of cross subsidy from the reserved service to services provided to fulfil the universal service obligation: "To the extent necessary to ensure the maintenance of the universal service, the services which may be reserved to the universal service provider(s) in each member state are the collection, sorting, transport and delivery of items of domestic correspondence whose price is less than five times the public tariff for an item of correspondence in the first weight step, provided that they weigh less than 350 grams..."(Article eight, Paragraph one)

According to research done for the EU Commission in preparation for the directive, the impact of these measures will affect varying shares of letter volume and receipts of public postal operators. Postal items weighing more than 350 grams represent less than two percent of letter volume and three percent of the receipts of the PPOs. Therefore any effect of liberalising this segment will be very limited.

The liberalisation within the suggested weight and price limits will, however, provide a broader foundation for competitors to the PPOs. Thus liberalisation of what may appear to be small segments of the market will indeed give PrOs the opportunity to offer a broader product range and hence initiate new entries to the overall market. This in turn may lead to a shift of employment from PPOs to PrOs.

Impact of the liberalisation of inward cross-border mail

Paragraph two of Article eight suggests that the distribution of incoming cross-border mail and direct mail may continue to be reserved until 31 December 2000 if this reservation is required to finance the universal service. However, it is proposed that this should be reviewed by the 30 June 1998 at the latest with a view to further liberalisation.

In most European Union member states inward cross-border mail represents a low proportion of the total mail volume. On average in the community incoming cross-border mail represents four percent of volume and three percent of letter service receipts of public postal operators. However, the Commission identified other factors which might lead to a diversion of traffic from public postal operators to their competitors. This is, first, the possibility that domestic mail will be converted to cross-border mail through electronic transfer of information out of the country and, second, the possibility that private mail delivery networks for inward cross-border mail will accept domestic traffic in violation of the postal administration's reserved area (European Commission, 1995g).

These potential dangers have been stressed by PostEurop: "All the analyses show that the end-to-end liberalisation of incoming cross-border and direct mail would seriously affect the economic viability of the Posts, favour cream-skimming and make it impossible to check compliance with the sole rights granted to the Posts to fulfil their general economic interest mission" (PostEurop, 1996, page two).

However, it has also been argued that there are benefits to cross-border mailers of a single end-to-end service, and that private postal operators should be free to supply such services if there is sufficient demand. Some sector hold the view that the threat posed to the provision of universal service by such liberalisation in most of the countries which have been studied has been exaggerated. PPOs will certainly face increased competition, but the scale of this competition will be limited by the likely volumes of traffic, by the nature of delivery costs to different types of address, and by the advantages which well-run PPOs have because of their existing volumes of traffic, their economies of experience, and the preference of mailers in many circumstances to use a single universal service provider.

If considerable amounts of mail traffic would be transferred to cross border mail in the case of liberalisation of incoming cross border mail, mail volume could move from PPOs to PrOs and thus result in reductions of employment within the PPOs. The degree to which volume would shift from one operator to another would determine the degree to which employment would shift from PPOs to PrOs.

The impact of the liberalisation of direct mail

According to Commission sources direct mail represents on average in the Community 17% of volume and 12% of the revenues of the letter service of the public postal operators. This segment of the market has a high rate of growth.

Direct mail is already heavily exposed to competition in the advertising market. Advertisers have a choice between direct mail, television, radio, newspapers or magazines as alternative means to communicate with potential clients. The delivery of direct mail is already partly or fully liberalised in seven Member States. The experience shows that the public postal operators have been able to maintain their dominant position in the market despite competition.

The Commission opinion holds that the risk of the establishment of alternative networks for the delivery of direct mail is reduced, due to the fact that the public postal operators benefit from very important economies of scale by using the same existing universal network for the delivery of other items of correspondence" and that "...the Commission in Article 10 of the draft directive allows Member States to establish an identification system for direct mail, in order to ensure that this service is properly supervised when liberalised, and it enables Member States to oblige those operators which have been granted an authorisation to provide non-universal services to make a proportional financial contribution to a fund established to compensate any disproportional financial burden of the universal service provider.

Further, according to the Commission the definition of direct mail and control of the market to protect the reserved area are not considered as a problem, in those Member States where direct mail is already liberalised.

It is the opinion of the Commission that the liberalising of direct mail would create an opportunity for new operators to create employment in the sector and for innovation and more flexible tariffs that could boost the present volumes of direct mail. It is proposed in the draft directive to decide by 30 June 1998 at the latest as to the appropriateness of maintaining the reservation for direct mail after 31 December 2000.

As opposed to the opinion of the Commission, some public postal operators fear that liberalisation of direct mail will have a negative effect on their profitability and employment. Competition in the direct mail segment may force public postal operators to adjust their prices in this segment in order to maintain market share. This would increase the need to improve productivity which may in turn affect employment with the public postal operator. Further it has been argued that reserved mail could be transferred to alternative carriers illegally, and thus liberalisation of direct mail would also affect other services.

Thus, as stated by PostEurop in the position on the proposed directive, a majority of member PPOs fear that end-to-end liberalisation of direct mail would favour cream-skimming and seriously affect the economic viability of the Posts.

Yet it should be emphasised that the implications of liberalising direct mail for the public postal operator will vary depending on the environment faced by each operator, the commercial freedoms they have and the price-quality relation of the service provided by the incumbent. Further the employment effect of liberalising direct mail will depend on the share of direct mail in total volume in each country.

Impact from open network access

While it may be difficult for entrants (and small entrants in particular) to compete against the incumbent by offering a fully fledged national end-to-end service for private customers, entry into the postal sector may be easier if the entrant offers competitive services which cover only part of the value chain and rely on the incumbent to provide the missing elements of the chain.

The providers of the public postal network, however, may not be interested in opening the network to competitors as this would increase competitive pressure. It has been argued, therefore, that in order to enhance competition, regulators should provide for open access to the network of the incumbent.

Article 12 of the draft directive proposes that consumers and postal operators should have access to the public postal network during the various stages preceding the final distribution of postal items. The draft notice suggests measures to provide non-discriminatory access to the postal network which should be completed by the beginning of the year 2000. The majority of PPOs expect that the provision for open network access in Article 12 will lead to a reduction in the number of PPO employees.

The literature on the impact of open network access and appropriate pricing regimes draws heavily on work produced in the context of the telecommunications sector. There are however, differences in the character of the two markets. The launch of postal services, for instance, requires typically less specific investment than the launch of a new telecommunications operation (PTT Post, 1996).

There is extensive discussion about the details of the access and the appropriate ways to calculate the access price. While some argue that open network access enhances competition and will therefore improve postal services others have argued that:

- the regulation of open network access would undermine the provision of a universal service at a uniform tariff (European Union Joint Postal Committee, 1996);
- it is very costly to provide the network access as in some cases it would require a restructuring of the accounting and operational system; and,
- the regulation of open network access would require the publication of commercially sensitive information (Sweden Post Ltd, 1996) and would be unnecessary as PPOs would provide it for commercial reasons anyway (PTT Post, 1996).

Private postal operators and users, however, have stressed the importance of open network access as they believe it will enhance competition (e.g. FAEP, 1995b).

Discussion and conclusions on the effect of liberalisation

Our study of the national regulatory frameworks has shown that although definitions vary both in content and accuracy, countries across the EU practice the concept of a universal service. This is also true for countries in which the universal service provider operates in a liberalised environment.

The provision of a universal service is also of importance in relatively liberalised countries outside the EU. For example, New Zealand Post is required to provide a universal service at a uniform price, in addition the social obligation covers price control on standard letters, six day delivery and a minimum number of retail outlets. It is noteworthy that New Zealand Post actually prices its standard letter below the maximum price set by the regulator.

With the exception of France, Ireland and Luxembourg, all EU countries have reviewed the definition of reserved services and have either reformed it or envisage to do so in the future. Some countries which are considered relatively liberalised, such as the Netherlands, still have reserved services although they are limited.

Also, outside Europe, PPOs in countries with a relatively high degree of liberalisation may still have a reserved service. New Zealand Post, who is generally considered to be operating in a relatively competitive market, has a universal service obligation which is compensated for by a statutory monopoly over letters weighing less than 200 grams, and priced at less than 80 cents. The reserved service in New Zealand is currently under review.

As some EU countries have already established weight limits, some of which are below that suggested in the EU directive (350 grams), part of the mail volume above 350 grams is already open to competition. Taking into consideration that the mail volume above 350 grams constitutes less than 2% of total volume of PPOs (European Commission, 1995e) the effect of the directive with regard to the definition of the reserved service in terms of weight will have limited effect. It will, however, provide an opportunity for PrOs to offer a broader range of services.

With respect to the liberalisation of direct mail and incoming cross border mail, both these areas are less certain than the first step of the directive and more open to debate. Yet the judgement of the effect of liberalisation of direct mail is less uncertain than the judgement of the effects of full liberalisation, because there is already a number of cases where liberalisation of direct mail has taken place to compare to.

The volume of direct mail is higher than the volume of incoming cross border mail. Eight of the countries in the EU have de facto liberalised direct mail and generally the PPOs in those countries have been able to maintain market share although profitability has decreased. In those countries the effect of the directive is expected to be limited while countries where there is no liberalisation, or plans for liberalising, would be more strongly effected by the EU directive. The effect of liberalisation will depend on the relative volume of direct mail which varies considerably across countries.

Incoming cross border mail constitutes less mail volume than direct mail, and fewer countries have actually liberalised this area. A study conducted for the European Commission shows that the impact of liberalising incoming cross border mail will not be significant (European Commission, 1995g).

Experience from the case studies shows that PPOs who have been subject to liberalisation have been able to maintain market share. Sweden Post estimates that they have maintained approximately 99% of the domestic letter market (Zillén, 1996), however, this is not the case in all countries, for instance in Spain increasing competition is having a negative effect on the market share of the PPO.

Current competition

Currently private postal operators in the EU are primarily operating in high value added areas such as express services in the business to business segment. Yet in countries where the reserved services have been limited, for instance Sweden and Spain, PrOs have entered the letter market.

As other services become liberalised, the PrOs can enter new areas, for instance by providing direct mail services in the business to private segment. PrOs might also be interested in low value added services such as the distribution of advertising mail and newspapers.

Yet, the experience from our survey and interviews with global integrators indicates that the global integrators are not very keen on entering what has traditionally been the reserved service area for the PPO. The global integrators increasingly focus on parcels and the logistics area. However, some experts doubt that the global integrators would stay out of the traditional PPO market segments if liberalised.

In a number of countries there is already competition for the distribution of newspapers. Companies, who distribute newspapers and magazines, have had to develop logistic systems, and therefore they might also be interested in entering into direct competition with the PPOs in a more liberalised market. They might be particularly interested in the distribution of direct mail, which is a growing and therefore attractive market.

Some local messenger companies have expressed interest in new business areas and in developing their core business, possibly involving entering the traditionally reserved area if liberalised.

However, if they want to cover high volumes, these companies would have to invest in sorting facilities since sorting is not currently a part of their value chain. Sorting facilities would be necessary because messenger companies would have to deliver more than the current one to two parcels or documents they typically deliver per route. Thus to enter the reserved area would require significant investments.

Also the parcels market, which is open to competition in all member states has attracted many PrOs. Some PrOs serve specific customer groups and deliver specialised services to these customers. Furthermore, the remailing market is an example of a competitive market where PPOs and PrOs compete. Some PPOs have entered remailing markets in other countries and thus compete with other PPOs for business from large mailers.

Having said all this, we must emphasise that there is no immediate proof or sign as to when or how private postal operators will in fact enter the currently reserved area if liberalised. Indeed, experience from liberalised markets like Sweden and Finland shows that there is a potential time lag between the liberalisation of markets and PrOs' entrance into that market. Thus, in some cases the PPOs have had de facto monopolies although their markets have been liberalised.

Furthermore, PrOs that have tried to enter liberalised markets have faced fierce competition from the incumbent. This may contribute to the reluctance of PrOs to enter such markets.

Weighing the arguments and the empirical evidence available, we do not believe that the definition of the reserved service proposed in the draft directive will have direct strong negative effects on the number of employees in the postal sector in the European Union, even if further liberalisation of inward cross-border mail and direct mail comes into force. This conclusion is supported by the following elements:

- first, other factors will have an impact even if liberalisation does not take place, or takes place more gradually, such as automation and competition from other means of communication. The mail segments that have been suggested for liberalisation are already subject to significant competitive pressure from other means of communication (including other media);

- the mail volumes that would be affected are significant only in a small number of countries. Direct mail constitutes a significant part of mail volumes in some member states, such as France and Germany (European Commission, 1996a). However, in seven of the member countries, namely Austria, Finland, Italy, Luxembourg, Spain, Sweden and the Netherlands, direct mail is already liberalised. In addition the service threshold for direct mail in Germany has recently been reduced to 100 grams and further deregulation in Germany and other countries is envisaged in the future. Mail over 350 grams and inward cross-border mail accounts for only a small share of overall mail volume and some countries have already liberalised inward cross-border mail;

- the experiences in countries which have already liberalised direct mail shows that PPOs have been able to maintain market shares to a large degree. However, as overall volume grew new employment opportunities have been created among PrOs. These opportunities will be best in countries where the existing quality of service is low; and,

- efficient public postal operators maintain large market shares. In some countries, like Finland and Sweden, where private delivery services are legal the PPOs have been able to maintain large market shares. In some cases this has, however, affected the pricing structure of the PPOs which tried to introduce selective discounts in order to maintain market shares. This happened for example in Sweden and, with regard to direct mail, in Germany.

If selective pricing involves the deliberate acceptance of incremental losses which are financed by cross subsidies from the reserved service to the competitive services, this behaviour could be regarded as predatory and illegal. The evidence from countries that liberalised direct mail shows that the PPOs have been quite successful in maintaining volume and market share. However, competitive pressures have led to large discounts for these services. This has affected profitability and put further pressure on PPOs to increase productivity.

In contrast with the cases of Finland and Sweden, the case of Spain has shown that liberalised markets in certain contexts may result in consequential degrees of competition leading to losses of market share, which in turn may result in reductions of employment within the PPO.

In analysing the importance of the different change drivers it is important not to overemphasise the potential negative effect of liberalisation on employment. Instead, liberalisation should be viewed in relation to other change drivers where changes may occur due to increased competitive pressures derived from liberalisation.

The effects which have been observed in liberalised countries like Finland and Sweden must be considered immediate short term effects. Effects of changes in the change drivers in the longer term may vary considerably from the short term picture depending on the context and the state of the public postal operator at the time of change.

Impact on the structure of employment

Increased competition may also put pressure on PPOs to amend the terms and conditions of employment. This may particularly lead to increased levels of part time/temporary employment in order to enhance flexibility. However, the direct effect of liberalisation on employment structures is very difficult to separate from the effect of organisational change.

With respect to the proposed directive some Articles are expected to impact employment structure :

- the setting of minimum quality standards (Articles 16 to 19) is expected to have a positive impact on employee skills by the majority of PPOs;
- Article 20, which proposes harmonisation of technical standards, is also expected to have a positive effect on skill levels; whereas,
- Articles 13 and 14 on tariff principles are expected to have no significant impact on skill levels.

5.7 Organisational change

Impact on the level and structure of employment

Below we describe the impact on employment of the organisational change strategies the PPOs have been using to adapt to their changing environments. Seeing that level and structure of employment are mutually dependent when discussing organisational change, then will be examined concurrently. We would like to point to the fact that organisational issues are often commercially sensitive and therefore the evidence is limited.

External organisational changes

As the organisational status of PPOs has moved towards being organising in accordance with commercial principles, PPOs have experienced changes in business orientation and in general have become more profit oriented. This may result in increased rationalisation and may thus effect employment levels.

As the provision of banking services contributes significantly to the financial viability of the post office infrastructure, the separation of postal and banking operations may increase the pressure on PPOs in terms of requirements to increase productivity. This may in turn effect employment levels, particularly in the post office infrastructure.

Generally speaking, external changes alone cannot be viewed as having a very significant impact on employment. However, external organisational changes are often crucial for the initiation of internal organisational changes.

Internal organisational changes to become more commercial

The effects of internal organisational changes on employment in the postal sector have been mixed. On one hand, in some PPOs the positive aspects of such changes have been overshadowed by rationalisations, the loss of job security and the ongoing reduction of the work force. Terms and conditions have sometimes been negatively affected by organisational changes, while skills have been affected only slightly.

Case: New Zealand

During the restructuring of New Zealand Post which began in 1990, working hours were changed, with sorting employees being the group of employees most strongly affected. Before the restructuring, mail was processed during the day. Now it is done at night, shifts starting at 4.30 PM. An allowance of 37 percent is paid for night working and training programs for working shift hours have been set up.

The use of part time workers has undergone very big changes. Mostly part time workers are used in processing (sorters), but postmen are becoming part time workers as well. The typical contract is five hours five days a week which can be extended up to full time provided the employee agrees. However, if the notice is less than 24 hours an allowance of 25 percent is to be paid (if not otherwise agreed with the employee). Also the use of temporary/casual workers is high (1500 out of 8500 employees). New Zealand Post will try to introduce what is called a "flexi-worker", which will be casual workers guaranteed 25 hours/month. Such systems work in other industries in New Zealand.

Since 1987 the use of part time employees and temporary employees has increased. The increased level of temporary workers and part time workers has not only been caused by a need for flexibility, but has also been influenced by the development in the overall economy with high unemployment levels in the early 1990s. The level of temporary workers and part time workers is stagnating, instead the mix will become broader and more outsourcing will be used in both post shops, support services, mail centres, etc.

With regard to skills, the largest change has been for managers and supervisors who are now expected to use computers for forecasting mail volume and resource needs. Furthermore, they must be able to use statistical analysis, trends analysis, etc. as part of the overall production planning. In addition the role of the leader has been challenged in general.

On the other hand, new organisational structures and human resource management practices can lead to a culture change which is welcomed by many employees. Increased freedom to take decisions, improved internal communication and new and improved working structures have posed new challenges for employees.

Case: Sweden

In recent years Posten has put significant effort into creating a workplace marked by delegation of responsibility and authority and by motivated employees. These principles are embodied in "Work place of the 21st century", aiming at increasing customer orientation by empowering personnel with the responsibility to solve problems. A part of the project is focusing on job satisfaction measurement in terms of job confidence, motivation, and general well-being.

The 13 criteria upon which ”Work place of the 21st century” is built, are as follows : Customer needs, business minded focus, business plans, private targets, follow ups, responsibility, participation/dialogue, development of competency alongside corporate demands, informational needs, appraisals, remuneration, managerial prerequisites and managerial ability. The project is planned to be implemented by 1997.

Subcontracting and franchising of post offices in particular has had, and will continue to have, negative effects on employment levels within the PPOs, due to the fact that the number of post offices under the direct control of the PPOs will continue to decrease up to the year 2000 while the number of subcontracted/franchised post offices will increase.

Increased outsourcing/franchising will result in changes in employment structures as privately owned outlets will tend to operate with terms and conditions different to those used by the PPOs.

Introduction of more market focused product management and development

The increasing number of services that are being offered through postal retail outlets is a move that is welcomed from the point of view of PPO employees, as it increases the competitiveness of company owned post offices and therefore reduces the need to franchise out retail activities, thereby conserving employment.

The shift towards more market focused product development and management has a predominantly positive net effect on employment within the PPOs, and certainly beneficial effects on employment in the postal sector overall.

The move into the provision of new services and general quality improvements in the provision of existing services are opportunities for PPOs to cushion the effects of organisational change by securing jobs. The increasingly commercial attitude of postal operators, however, puts non commercially viable services under threat unless required by national legislation. Many regulators have responded to this by explicitly specifying the universal service obligation.

Historically, the occurrence of organisational change within PPOs has very often coincided with reductions in the level of employment, as was the case for example in Sweden and New Zealand. However, this does not imply that all reductions were caused by organisational change. Competitive pressures force PPOs to increase productivity, invest in automation, and as a result, reduce the level of employment they require.

As with liberalisation, organisational change initiated by the government is usually highly visible and the initiator of changes in working structures and employment levels. On the other hand, internal organisational change, the focus of which tends to be on the provision of new services and the adoption of a more market oriented approach for many PPOs, has opened new business opportunities and as a result has had positive effects on employment.

Postal operators use a wide variety of innovative responses to the challenges of the rapidly changing business environment. For example, many cross-border public and private postal operators are diversifying into the market for logistics services, such as warehouse management, fleet management, order fulfilment, etc. This is likely to have a positive effect on employment within the sector.

5.8 Expected impact of the change drivers. The view of the industry participants

We asked the PPOs to rate various in terms of the impact they have on the level of employment in mail services and in the postal sector in general. Figure 5.7 shows their responses.

The main insight is that most of the factors are perceived as having a negative impact on employment, although opinions are mixed with regard to the impact of privatisation, price regulation and reduction in levels of subsidy. The majority of PPOs are of the opinion that factors such as increased efficiency and productivity, decreased demand for services, increasing use of technology, pressure to reduce costs, liberalisation of the market place, and increased competition have either a reducing or a strong reducing effect on employment. These factors are inter-related because liberalisation, or the anticipation of liberalisation, and the derived increase of competition have been seen to affect the call for increased productivity sometimes resulting in organisational changes and rationalisations to reduce costs.

Only external organisational changes are not considered as having a reducing or strong reducing effect on employment by the majority of PPOs.

Figure 5.7 Expected impact of various factors on employment in mail services. Assessment by PPOs

	Strong reducing effect	Reducing effect	No effect	Increasing effect	Strong increasing effect	Number of respon-ses
Increased efficiency and productivity	0	11	2	0	0	13
Decreased demand for services	3	9	0	1	0	13
Pressure to reduce costs	1	10	1	1	0	13
Increasing use of technology	3	8	1	1	0	13
Liberalisation of the market place, increased competition	5	5	3	0	0	13
Moving from being a public organisation to being a private organisation	1	6	4	1	0	12

Source: Price Waterhouse survey, 1996.

5.9 Empirical evidence

When we compare the conclusions from each change driver, it is clear that some change drivers have a relatively high effect on employment, while others have a less significant impact. Generally the effects of the various change drivers depends on the contextual setting, and therefore generalised conclusions derived from our case studies are not immediately applicable to other countries but may give an indication as to the direction of the developments.

In line with our discussion of the inter-relationship between the five change drivers, some of the change drivers function as motivators initiating changes within the sphere of other change drivers. Our case studies have proven that two such interrelationships are significant.

The increase, or the anticipation of an increase, in the degree of competition within the postal sector (liberalisation) and from other sectors (electronic substitution) has encouraged some postal operators to implement automation programmes and organisational changes in order to improve their competitiveness.

For example, in the Netherlands, which has not liberalised the postal market, increasing competitive pressures from other communication services such as electronic substitution, has resulted in the significant restructuring at PTT Post. Between 1991 and 1996, the average number of FTEs employed at PTT Post was reduced by approximately 7500, which corresponds to just above 15 percent of the workforce.

Recently, KPN, the holding company owning PTT Post BV and PTT Telecom BV, announced plans which could reduce the total number of employees in the two companies by 9000 FTEs over the next five years, which represents almost 15 percent of the workforce. These plans were made with the prior approval of the company's unions, and can be seen as an attempt to increase the competitiveness of the companies in the face of continuously growing competition.

In addition, competition has led to an emphasis on flexibility within the workforce. Focusing on flexibility, PTT Post has in recent years been hiring more part time staff than full time staff, in spite of the slightly higher administration cost associated with part time employment.

In New Zealand, where the postal monopoly provisions have been lowered progressively since 1987 and where management supports the abolition of the letter monopoly, the Post Office was corporatised in 1987. The most significant change that derived from corporatisation was that New Zealand Post's objective became one of profitability. The orientation towards profitability resulted in an initial focus upon increasing efficiency through automation, buying new equipment, creating mail centres etc.

Subsequently, in 1990, New Zealand Post set up new manufacturing and production plants. This was the beginning of a staff restructuring period making a large number of staff redundant. Although four new OCR machines have been purchased since 1990, automation is viewed as having had only "...a little bit of impact..." on the number of employees. Instead the focus on efficiency and productivity and the resulting internal restructuring is viewed as the factor having had the largest impact on employment.

Similarly, Sweden Post has gone through a combined corporatisation-liberalisation process which began in 1985. Quality of service and economic objectives were followed by more freedom in the capital markets and the measurement of customer satisfaction in 1987, freedom to set prices within certain limits in 1992, and the abolition of the letter monopoly in 1993. The corporatisation of Sweden Post thereby proceeded the coming of full competition, that is, the corporatisation can be viewed as a preparation for competition.

Generally speaking the corporatisation of Sweden Post is viewed as a process of rationalisation focusing on efficiency and productivity. Like New Zealand Post, Sweden Post initiated a programme of implementation of internal organisational changes and automation, thus combining the change drivers. In the case of Sweden Post significant amounts have been invested in technology in the areas of logistics and mail handling/sorting, and a program aiming at substantially reducing the number of sorting centres from 56 to 19 was initiated.

As of today, New Zealand Post and Sweden Post are viewed as being very efficient PPOs,both having been able to maintain market share in increasingly competitive marketplaces. However, the restructuring of New Zealand Post and Sweden Post has impacted employment levels as well as employment structures. Both PPOs have experienced significant declines in employment levels.

At New Zealand Post working hours were changed - with sorting staff being the ones most affected by the reductions. Before the restructuring, mail was processed during the day. Now it is done at night. Also the use of outsourcing and the use of part time and temporary/casual workers increased allowing New Zealand Post a higher degree of flexibility. These factors have implications for the terms and conditions under which workers are employed.

At Sweden Post a postman's job changed from "a walk a day" to eight hours a day, while the information technology skills requirement for counter personnel have increased. Furthermore, there is a general requirement for customer orientation and service mindedness throughout the organisation. Finally, Sweden Post has increased the use of temporary workers in certain areas.

Another change driver inter-relationship that it worth noting is that between electronic substitution and demand. Electronic substitution is related demand in two ways: Increased demand for hybrid mail products has a positive effect on overall demand, whereas the substitutional element clearly effects demand negatively. All in all we have concluded that the net effect will be negative although this has been difficult to prove in our case studies since electronic communications services are still in an introductory phase and are dependent on the general availability of an IT infrastructure.

Of the countries studied, Sweden proved to have one of the most advanced electronic communication services on offer. To date in Sweden, even though the services offered are advanced, there has been no major effects on employment in either direction. The electronic services offered by Sweden Post were not seen as being a response to market demand, they were rather seen as an attempt to create demand. Throughout the case studies, the general consensus was that electronic substitution was seen as the major future threat to physical mail volumes and thus an implied threat to employment.

As an initiator of change, demand has proven to have more of a direct effect on employment both in terms of level and structure. Increased volumes will effect employment positively whereas new customer requirements effect employment structure. For instance, in the UK, post offices now stay open for a longer period of time in order to cater for greater demands in terms of flexibility of opening hours. Thus demand for greater flexibility has directly impacted on the terms and conditions of employment. Catering for this demand has in turn led to an increase in the number of temporary employees.

5.10 Conclusions

The short term direct effect on employment, for all other factors kept constant, is positive with regard to the demand of postal services (old and new).

The short term direct net effect on employment (everything else kept constant) is negative for the other change drivers, i.e. liberalisation, automation, organisational change, and electronic substitution.

The impact of change drivers on employment depends on other "filters" such as: human resource management, socio-political factors, the price and quality of competing services.

The expected effect on employment of a partial or gradual liberalisation (such as the one supported by the EU directive) will be limited in most countries, although a number of PPOs expect large losses of revenue. The effect will be limited in the most liberalised nations, and can even be positive (from a total sector viewpoint) if accompanied by greater commercial freedom.

The effect of other change drivers (such as automation, organisational change and electronic substitution) is more important than liberalisation. In addition, liberalisation measures taken by the member states will have an impact even if the EU directive does not come into force.

Employment levels in the EU PPOs are under pressure from each change driver and a decline in the overall level of employment in the PPOs is very likely. Employment levels will increase among the PrOs, in accordance with their expected increase in demand.

On a more positive note, competitive pressure resulting from liberalisation will, however, put pressure on the PPOs to continuously improve their quality of service and their overall competitiveness.

Section 6 – Scenarios for future postal employment in Europe

6.1 Introduction

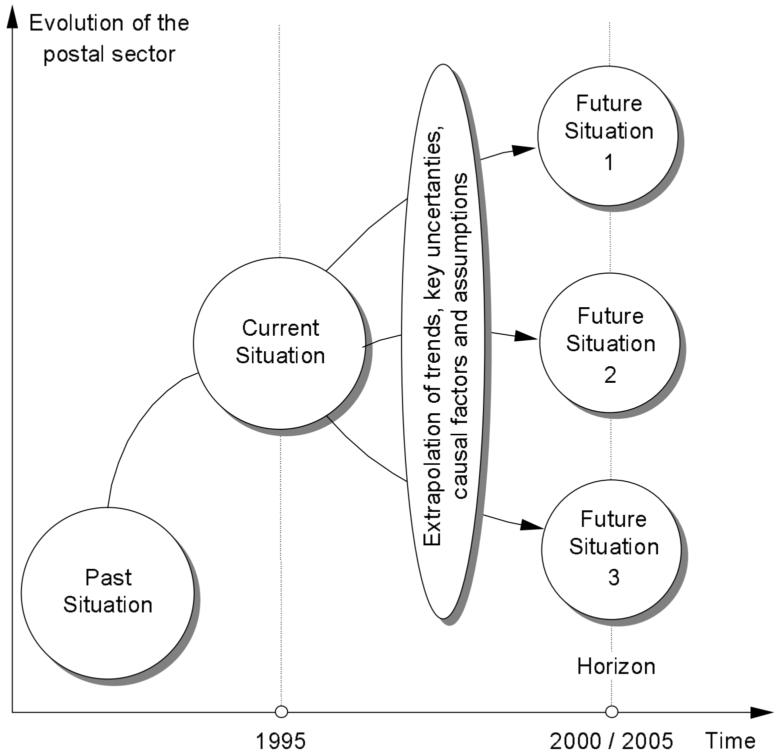
In this section we present different scenarios for employment in the postal sector for the periods 1996-2000 and 2001-2005.

The section begins with a description of the approach we have used to construct the scenarios, and goes on to describe the various trends and uncertainties in the change drivers and employment that have been used to construct, and that impact on, the scenarios. Next we develop and present our scenarios for future postal employment in Europe for the periods 1996-2000 and 2001-2005 respectively, and finally we quantify these scenarios and present our conclusions.

6.2 Approach used to construct scenarios

The approach used to construct the scenarios of future postal sector employment in this section relies on a well-established methodology (Michael E Porter, 1985).

Figure 6.1 Overview of approach used to construct scenarios



Source: Price Waterhouse; 1996.

In summary, the approach builds on the large amount of information that has been gathered on the sector, and which has been presented in previous sections.

Using the extrapolation of trends and the identification of key uncertainties, different qualitative projections (scenarios) of what is likely to happen regarding employment on the sector are developed based on input from our research activities among postal operators, regulators, associations, unions, suppliers, customers and experts.

Finally, a scenario-based numerical model is used to validate the qualitative scenarios and give detailed quantitative projections for each of them.

By using scenarios we have attempted to devise possible alternative futures for the sector rather than probability based forecasts. The set of scenarios has been carefully chosen to satisfy the terms of reference for the study, and at the same time reflect the best range of possible (and credible) alternative futures.

According to Michael E Porter "Constructing industry scenarios begins by analysing current industry structure and identifying all the uncertainties that may affect it. These uncertainties are then translated into a set of different industry futures." (Porter, 1985, page 449)

Keeping this in mind, below we describe how we went about undertaking this study specifically to facilitate the construction of postal sector employment scenarios.

- First, we analysed the current structures and underlying processes at work in the postal sector. We divided these processes into five categories: demand; electronic substitution; automation; liberalisation; and, organisational change which we called "change drivers". The evolution and impact on employment of these change drivers is described in detail in earlier sections of the report. We also took a systematic look at how the technologies in the postal value chain might be affected by developments outside the sector, because, in constructing scenarios, it is important to identify the major discontinuities, such as revolutionary technological changes, that would have a significant impact on structure.
- Second, we analysed the views and opinions of industry participants and postal experts, primarily by means of questionnaires, interviews and a Delphi survey.
- Finally, we wrote industry scenarios and validated them using a scenario-based numerical model.

In order to provide robust and reliable scenarios, we followed "best practice" in scenario construction, which in summary means that throughout the process we maintained objectivity, consistency, reliability, plausibility, robustness and validity.

6.3 Extrapolation of trends and identification of key uncertainties

Below we describe the main trends and key uncertainties in employment and each of the change drivers in the postal sector. We also provide a summary of our expectations for the future evolution of these variables with a low degree of uncertainty for incorporation into our scenarios for the future.

Global trends

There is general consensus among postal sector participants and experts that the pace of change in the sector is increasing. The following global trends are repeatedly put forward:

There is increasing competition on all fronts, which includes increasing competition from PrOs (e.g. pre-sorting by private firms, private parcel delivery services and courier services); from PPOs for physical mail products; and, electronic communications services (e.g. electronic substitution).

The globalisation and internationalisation of the economy, and of the communications industry, is expected to continue into the foreseeable future.

On average EU consumer households will be better educated, more affluent and older. The future evolution of demographic variables, such as, age structure and structure of households, will have an impact on the postal sector. DG II medium term projections 1996-2000 assume that: the growth of the active population will be nearly twice as big as the growth of the number of people in working age groups, i.e. 0.5 percent per year on average. Another trend is the growing proportion of elderly people in the population.

Real GDP will grow at its long run trend of 2.5 percent annually. Although the path and speed of future economic growth is subject to more uncertainty (e.g. the low likelihood of a major supply-side shock such as an oil crisis cannot be ignored) we expect that, on average, the EU economies will grow at an average compound annual rate of 2.5 percent up to the year 2010. This rate corresponds approximately to the long term (secular) GDP growth trend. Medium term projections for 1996-2000 by the Commission (European Commission, 1996c) are that the real GDP annual growth will be 2.5 percent between 1995 and 2000, 3.4 percent in 2001 and 3.5 percent in 2002. There will of course be differences between EU Member States, higher rates being expected for "catching-up" or less developed countries.

We expect labour productivity (at macro-economic level) to grow at its long run (1974-95) trend of 2 percent per year. Given that expected growth in labour supply is 0.5 percent per year and that real GDP is forecast to grow at 2.5 percent per year between 1995 and 2000, the EU unemployment level will probably stay over 10 percent (10.9 percent in 1995).

The extrapolation of postal employment trends

The labour market in developed countries is experiencing a number of changes. These changes include: an increasing proportion of part-time workers and self-employed people, a growing number of people working from home, a decreasing demand for skilled labour, more flexible working hours, and an increase in female participation in the workforce.

In section three on employment in the postal sector, we described the current levels of employment and the expected changes in employment structure. We now build on the data in section three and provide the results of extrapolations based on assumptions about future employment growth for both PPOs and PrOs.

Public postal operators

In our survey of PPOs, we asked about their expectations concerning the number of employees that will be employed in the year 2000. For confidentiality reasons, we cannot show the individual forecasts, however the figure below gives their aggregated responses. It shows that the majority of PPOs expect a decrease in employment and that the expected decrease (in percentage terms) is likely to be larger in financial/retail services than in mail services. The decline in financial/retail services is mainly the result of transfer to other forms of ownership (franchising and sub-contracting), and therefore the net employment reduction is expected to be higher in mail services.

Figure 6.2 - Expected changes in employment levels by year 2000 forecast by the PPOs

Type of services	Very significant decrease (over 20%)	Significant decrease (5-20%)	Slight decrease (0 - 5%)	No change	Slight increase (0-5%)	Significant increase (5-20%)	Very significant increase (over 20%)	Number. of respondents
Mail services	0	4	6	1	2	0	0	13
Financial/ retail services	2	2	2	2	0	0	0	8

Source: Price Waterhouse survey, 1996

The projections of employment change provided by the PPOs are based on the assumption that they will have to maintain their universal service obligation at a uniform rate, and therefore they will be obliged to maintain their own delivery networks.

We have used these expectations to calculate the percentage change in total employment expected by PPOs up to the year 2000. In the figure below we show the results of our calculations using the levels of employment recorded in 1990 and 1995 in the 15 EU PPOs as a baseline.

As stated earlier, these results should be treated as illustrative, as they are based on the following assumptions:

- the level of employment in 2000 is calculated on the assumption that the percentage change in employment experienced by each EU PPOs between 1995 and 2000 will be the same as it was between 1990 and 1995;
- the first projection (A) of the level of employment in 2005 assumes a decrease in employment of 1.5 percent per year between 1995 and 2005; and,
- the second projection (B) of the level of employment in 2005 assumes a decrease in employment of 2.5 percent per annum between 1995 and 2000, and then a decrease of 5 percent per year from 2000 up to 2005.

Figure 6.3 - Future employment trends in the PPOs

Total number of employees in 1995	Projected employment in 2000	Projected employment in 2005 (A)	Projected employment in 2005 (B)
1408949	1304949	1211316	960586
-7.3814% on 1990	-7.3814 on 1995	-7.2783% on 2000 -14.027% on 1995	-11.8904% on 2000 -31.8225% on 1995

Source: Price Waterhouse; 1996

We provide these calculations in order to give an indication of the potential magnitude of employment change in the PPOs under the three possible situations described above.

Private postal operators

In section three, we estimated that the private postal operators employed between 350,000 and 400,000 people in 1995, representing between 20 and 22 percent of postal sector employment. This estimate is based on data from only a number of countries, and it is likely that it is a conservative estimate because of the high level of fluidity in the industry, which typically results in high levels of self employment and the ongoing rapid entry and exit of operators, and as a result, underestimation of employment on official employment surveys. Therefore, in this section we will assume that employment in the PrOs in 1995 was approximately 400,000.

In our survey, global integrators expect a significant (5-20 percent) to very significant (over 20 percent) increase in employment between 1995 and 2000 in most EU countries, while we expect employment by local and national PrOs to grow by between 5 and 10 percent over the period. Therefore, in total we can expect to see an increase of somewhere between five and 15 percent in PrO employment over the next five years.

Assuming that PrO employment will increase by five percent between 1995 and 2000, means that employment will go from 400,000 to about 420,000.

If we assume that PrO employment will increase by 15 percent between 1995 and 2000, this means that total employment will increase from 400,000 to about 460,000.

Growth among the private postal operators is negatively affected by the increasing threat of electronic substitution (e.g. in the document segment as an increasing number of customers will exchange documents on-line). Another factor limiting employment growth could be the saturation of the express market and a growing focus on markets in Asia as well as new business areas with higher growth rates such as logistic services.

The past and future evolution of the change drivers

Below we summarise the conclusions from earlier sections of the report concerning the past and future evolution of the change drivers.

Demand

Customers of the postal operators have increasing alternatives and also rising expectations in terms of timeliness, quality, speed, and reliability of service. Customers (in particular business customers) demand reliable cross-frontier services, and end-to-end quality control.

Linear regression extrapolations of domestic letter item volumes, based on Eurostat and UPU data, predicts that there will be a likely increase from 1994 to the year 2000 of 16 percent in the number of such items. From our survey we have calculated that the PPOs expect overall mail volume to grow by 10.4 percent between 1995 to the year 2000.

There is no clear forecast as to whether the demand for traditional postal communications and transportation services such as first and second class letters, printed matter, postcards, small packages, newspapers and magazines will increase or decrease over the next five years;

It is clear that the PPOs expect an increase in the demand for parcels, direct mail, unaddressed items, courier/express items, electronic hybrid mail, mail electronic end-to-end mail up to the year 2000.

Overall in the EU there will be a sharp increase in the demand for communications services, but in general the share of the postal communication services will decrease. As mentioned above, total demand for postal services will not fall in the near future, however it is highly likely that the level of growth in mail volumes will stabilise and even decrease in a number of countries within the next five years, and few countries will experience growth of the magnitude observed in the 1980s and early 1990s.

The potential for the development of parcel volumes due to homeshopping is good. Parcel delivery can be performed by both PPOs and PrOs, and in the international parcel delivery area, the alternative express operators are very strong competitors to the PPOs.

PPOs expect the importance of the business to private market segment to increase from 50 to 56 percent of the total market over the next five years, while they expect the importance of the private to private, private to business, and business to business market segments to decrease in importance.

The postal experts who took part in our Delphi survey do not expect a significant change in total mail volumes between 1995 and 2000. It was noted that the average volume of mail per capita in the EU is well below that in the US, so there is ample room for growth, particularly for direct mail. The majority of experts expect mail volumes to decrease after the year 2000.

There is disagreement with regard to the opportunities offered by hybrid mail. While certain experts see hybrid mail as a short-lived transition service between ordinary mail and electronic end-to-end mail, others see hybrid mail as a major business opportunity for PPOs.

Earlier in this report we described the forecasts made by a number of PPOs concerning the number of various types of items they expect to handle in the year 2000. We also gave details on the revenue generated by category of product/service.

The forecasts vary considerably between PPOs and the average figures must be treated with caution. It appears that the PPOs in the least developed EU countries give the most optimistic expectations concerning future mail volume growth.

Electronic substitution

Currently there is rapid technological change in the electronic communications area, and as a result a growing threat of electronic substitution from technologies such as E-mail, EDI, and Internet. Rapid technological change undermines the capacity of national postal regulators to shield PPOs from electronic based competition.

Electronic substitution may cause growth in mail volumes to stagnate, but the effect of electronic substitution will depend on the future price/quality ratio of traditional mail services compared to their electronic alternatives.

Despite the fact that absolute mail volumes have increased in recent years, the market share of letter mail compared to other forms of communication has dropped steadily.

The growth of various electronic alternatives in the next few years will achieve substantial penetrations of both household and business markets. The first postal market segment to feel the impact of electronic-based communication services will be the business-to-business segment, followed by the business-to-household and household-to-household segments.

The business-to-business segment has already experienced competition from PrOs in the courier and express delivery areas, as well as from new electronic-based technologies such as fax. Electronic substitution is expected to have the most immediate impact on this segment, and E-mail, EDI and the growth of private computer networks will further increase competitive pressures in this area.

Much more uncertainty surrounds the future outlook of the business-to-household segment. Electronic media may become a radical substitute for traditional paper-based communications. The situation is changing and the threat from electronic substitution is increasing, as indicated by the fact that several companies are developing home printers and smaller fax machines for the home market. Financial institutions are increasingly providing electronic bill-paying facilities, and households are progressively changing the way they pay their bills.

The growth in the total communications market will be absorbed mainly by the electronic media. The threat from electronic communications services will increase because of the increasing penetration of PCs with communication capability. However, mail will remain the communications method of choice for many household applications in the next decade if postal services remain reliable and credible, providing good quality services.

Most of the experts we contacted expect that the impact of electronic substitution on total physical mail volumes, and on employment levels, will be limited up to year 2000, after which it will become more significant.

Potential barriers to the development of electronic substitution - such as the lack of international standards, the legal status of electronic messages and existing traditions for paper-based work procedures - are expected to be progressively removed by year 2000.

Automation

Earlier in this report we described the fundamental changes that are taking place in the way postal operators are operating. There has been, and there will continue to be a steady flow of new mail processing technologies such as optical character readers and delivery point sequencing.

In addition, it is expected that postal operators will focus on the use of information technology for route optimisation, tracking and tracing systems, and management systems.

In our survey of PPOs, we asked about their expectations concerning the number of employees that will be employed in the various functional areas in the year 2000. Their responses show that the majority of the PPOs who replied expect that decrease in employment will primarily affect inward sorting and outward sorting, the areas that are impacted most by automation.

Most postal experts contacted during our Delphi survey shared the view that the automation of inward sorting of letters is at an early stage and that this situation is now changing so that this type of automation will have a major impact on productivity and employment in the most advanced postal administrations over the next five years.

Depending on the stage of evolution that individual PPOs are at, future productivity gains from the automation of outward sorting of letters, will have varying effects.

Liberalisation

There is a general movement towards liberalisation and regulatory reform of the postal sector, leading to a general reduction in trade barriers and in monopoly areas (e.g. postal companies operating in foreign national market, restriction of the letter monopoly).

PPOs will continue to operate under a universal service obligation (USO), but the future scope of the USO is currently uncertain and the operational mechanisms that will be used to provide it may differ between countries.

Liberalisation within the weight and price limits suggested in the EU directive will only have a limited effect on employment. Liberalisation of direct mail will only have an impact in countries where direct mail is not currently liberalised, whereas, the effects of the liberalisation of incoming cross border mail are uncertain, due to the fact that the volume of this type of mail is currently quite low, but liberalisation could change this if it lead to a significant increase in remail activities.

Competition is prevalent in areas such as express services, parcels and to lesser degree in newspaper distribution. In most liberalised countries the traditionally reserved service is not yet marked by a high degree of competition. Private operators are likely to enter newly liberalised markets, however they could be dissuaded from doing so by fierce competition from PPOs who are focused on the provision of high value added services, and who are willing to compete on price.

Most postal experts contacted during our Delphi survey shared the view that the liberalisation proposals contained in the EU Commission's draft directive are likely to lead to a decrease in employment levels in the PPOs, in particular after the year 2000. However, it is recognised that the directive will mainly affect those countries which are the least liberalised, and that historical trends show that PPOs often retained the majority of their market share after liberalisation.

The most likely future scenario is that there will be partial and gradual liberalisation (of direct mail and, less likely, of inward cross-border mail), while the scenarios of full liberalisation and the status quo are considered unlikely.

Organisational change

Overall, PPOs are focusing on the priority areas emphasised in the "Seoul Postal Strategy" adopted by the UPU in 1994, i.e.: gaining greater management autonomy in business operations, developing a more commercial outlook focused on customer needs, improving the quality of mail services, and greater human resource development.

PPOs are currently changing their organisations to more customer oriented entities and focusing on rationalising and improving efficiency. PPOs are also developing new products and services and attempting to improve quality of traditional services and extending the use of franchising and outsourcing.

PrOs do not explicitly state that they want to enter potentially liberalised markets, however a number of PrOs are expanding their services and geographical scope.

There is a broad agreement among postal experts concerning the type of overall strategies the PPOs should follow to respond to likely increase in competitive pressures. These include: the improvement of quality (e.g. faster and guaranteed delivery times) and customer services; the improvement of image, marketing and branding; the development of new services, including tailored services for major corporate customers; the lowering of prices and offering of volume discounts.

The reorganisation of PPOs will result in higher quality of service for postal customers, and the corporatisation of PPOs will lead to a clearer goal structure and better control of activities when compared to the previous institutional setting.

Key Uncertainties

Below we present and discuss, for each change driver, the key uncertainties we identified in the previous sections. Our next step will be to combine these uncertainties with the past and projected future trends in employment in order to develop the most likely future situations or scenarios.

The figure below describes the key uncertainties we identified for employment and each of the five change drivers.

Figure 6.4 - Key uncertainties for employment and each of the change drivers

Employment	The overwhelming majority of industry participants (PPOs, PrOs, regulators) and postal experts contacted during this study agree that the employment levels in PPOs will decrease over the next decade. There is much uncertainty concerning future postal sector employment levels as a whole (PPOs and PrOs combined). The general view is that employment in PrOs will grow, but that this growth will only partially compensate the decrease in the numbers employed by the PPOs. There is also uncertainty concerning the number of jobs that will be generated in the non postal part of the communications sector. It is widely accepted that the telecommunications sector will be the main beneficiary of future growth of total demand for communication services but the number of jobs that will be created in the telecommunications sector is not known.
Demand	Will mail volume continue to grow at a level/rate where it can continue to support the postal infrastructure needed to provide a universal service? What will be the future evolution of mail volumes, by segment and type of mail? To what extent will the PPOs maintain their present market shares? Is hybrid mail a significant market opportunity in the long term, or only a "short-lived transition service"?
Electronic substitution	Will traditions for paper based work procedures in organisations be a barrier to the penetration of electronic services? When will electronic communication services be fully integrated into the organisations' computer systems? To what extent will world-wide standards for electronic communication emerge? Will future tariffs for postal services be lower in real terms? Will the reorganisation of postal operators result in a higher quality of service? Will postal operators enter the market for full electronic delivery services? How will the legal status of electronic messages be in the future? Will electronic services substitute for or complement postal services? What will be the response of postal operators to threats? When will the copyright problem receive a satisfactory solution?
Automation	Will future automation of outward sorting of letters have only a minor impact on employment in the most advanced PPOs? What will be the speed of introduction of automated inward sorting in delivery sequence? Will the PPOs have the financial ability to invest in major automation programmes? Will the concepts and operational structures implemented by innovative PPOs be adopted by other operators?

Liberalisation	How will national regulation/deregulation develop in the future, and when? What will the contents of the EU directive be? When will the draft directive be accepted? How will the private firms behave in a liberalised environment? Are private firms interested in providing traditional mail services? Are governments able/willing to maintain subsidies?
Organisational change	What will the speed and scope of change in least advanced PPOs be? Which aspect(s) of organisational change have the greatest impact on employment? What will the net effect of the movement towards outsourcing and franchising by the PPOs be? Will the PPOs develop internally credible electronic-based services? Are postal operators able to develop new commercially viable services?

Source: Price Waterhouse

We adopted a number of complementary methods to help us understand the likely impact of the above uncertainties on the future employment level and structure in the postal sector, including: postal surveys, face-to-face and telephone interviews with industry participants and experts, and case studies. Our main findings are summarised below.

6.4 Scenarios for 1996-2000 and 2001-2005

Below we describe our baseline (most likely) and alternative (optimistic and pessimistic) scenarios for future employment in the EU postal sector. We begin by presenting a simple typology of national postal industries, and then go on to describe our baseline scenarios for 1996-2000 and 2001-2005. For each baseline scenario we describe the assumed status of the EU directive and the universal service obligation, the expected evolution of the other change drivers and the outlook for postal sector employment. Next we describe the alternative scenarios for each time period in detail. Finally, we use our numerical model to give quantitative forecasts of employment for all scenarios, and present our summary of the future employment outlook in the sector.

Typology of national postal industries

The situation with regard to the postal industries differs a lot between EU countries, however there are also some clear similarities. In order to take these differences and similarities into account in our scenarios, we developed three "generic" groupings for countries, based on our analysis of the individual national postal industries, which we have called A, B, and C.

Our typology (classification) is based on all the information collected during the study, and in particular on the indicators used to describe each change driver. Overall, the composition of each group is similar for each change driver. However, there are cases of countries for which there is some doubt about the group in which they belong. This issue does not impinge upon our conclusions because the analysis deals with "generic" postal industries, not with specific countries or postal operators. We think that this simple typology takes into account, in a pragmatic and manageable way, both the national specificity's and the common trends at EU level. The figure below gives the main characteristics of each type.

Figure 6.5 - Typology of postal industries

Type of national postal industry	Threat from electronic substitution in 1995	Degree of automation in 1995	Degree of liberalisation and organisational change in 1995	Rate of change in mail volume up to 1995
Type A	High	High	High	Low
Type B	Medium	Medium	Medium	Medium
Type C	Low	Low	Low	High

Source: Price Waterhouse, 1996

Although there are significant exceptions, the majority of PPOs of type A and C are mainly of small or medium size while most PPOs of type B are large employers, and what will happen in postal industries of type B is thus of particular importance for the outlook of total employment in the EU postal sector. Postal industries of type C are located primarily, but not only, in southern Europe.

Baseline scenario for 1996-2000

Below we describe our baseline, or most likely, scenario for the future of EU postal sector employment for the period between 1996 and the year 2000.

EU Directive and Universal Service Obligation

For the baseline scenario, we assume that the draft directive will be implemented and that direct mail and inward cross-border mail will be gradually liberalised. It is unlikely that a major de-regulation of the postal sector - similar to the one which will take place by 1998 in the telecommunications industry - will take place at EU level in the next ten years. However, a number of Member States will continue to take measures to increase the degree of competition in the postal sector.

We also assume that the PPOs will continue to operate under a universal service obligation.

Evolution of the change drivers

Overall, while mail volumes increased in the 1980s and stagnated in the first part of the 1990s (Eurostat, 1996), total mail volumes will begin to stagnate and even decrease in the second part of the 1990s in a small number countries.

The capacity of the telecommunications networks will grow considerably, using other cables (coax, fibre, etc.) and new technologies on traditional telephone networks. This will give new possibilities for electronic communications and may be the base for the often mentioned diffusion of network computers (NCs) instead of personal computers (PCs).

The Internet will continue to grow rapidly. It will not fall apart as predicted by some observers. It will become a more integrated part of main stream of telecommunications.

E-mail will virtually explode, primarily among business customers, but also among domestic households. However, the real effect on mail volumes will, first and foremost, be felt in the business-to-business market. The household-to-household market for e-mail is still relatively small. There will also be significant growth in the EDI area.

Barriers to the development of electronic services will gradually be removed. The problem of the legal status of electronic communications will be solved as appropriate encryption methods will be applied. Copyright problems are unlikely not to find a stable solution, and this will limit the development of electronic publishing. Provisions for protection of privacy will not allow the usage of personal data for other purposes than for which it was originally collected, and this will diminish the opportunities for postal operators in this area.

Screen-based home-banking will become widespread and this will limit the large number of letter based banking messages to customers. Screen-based home-shopping will grow starting from a low level and at a slow pace. Increases in employment will, therefore, not be significant in this area.

Although we expect the threat from electronic services to increase rapidly, there are opportunities for the PPOs in the development of new services such as hybrid mail and end-to-end electronic services. The PPOs can also take advantage of their knowledge of potential target groups for direct mail campaigns. It is however unlikely that PPOs will gain significant market shares in the area of electronic-based communications services.

Hybrid mail will become an important area for postal operators. Postal operators have comparative advantages in this area from the experience of handling mail. However, other firms may also enter the market of printing and enveloping.

The extent, scope, and quality of the universal postal services is likely to change in a number of countries. There will be fewer post offices and possibly also fewer deliveries. There will also be a greater diversification of postal services where customers that are willing to pay will have high quality services, but where the general service level will go down.

Between 1996 and the year 2000 automation will continue in the mail services area, with an increasing number of OCR and sorting machines. Some of the more progressive countries will introduce delivery sequence sorting and countries with a low level of mechanisation will begin the development of extensive programmes, possibly partially financed by EU funding. More automation is expected for counter services. The number of company-owned post offices will decrease leading to a reduction in costs for counter services. In other areas the use of IT will increase.

Outlook for postal employment

We expect the level of PPO employment to continue to decrease in the EU although a small number of less developed EU countries (of type C) may experience some increase in employment levels mainly due to large increases in mail volumes.

Our calculations presented earlier in this section indicate that PPO employment is likely to decrease by around 104000 people or approximately 7.4 percent over the next five years, from about 1.41 million in 1995 to just over 1.30 million in the year 2000.

However, if PrO employment increases by 10 percent between 1995 and 2000, from 400000 to about 440000, net job losses in the postal industry will only total approximately 64000 over the next five years.

The structure of employment and the working patterns will also change. With the introduction of automation, a need arises for employees with new technical skills. Information technology is creating demand for new skills for both private and public postal operators.

New technologies will enable a more detailed monitoring of individual performances, and thus a tighter scheduling of work allocations and possibly a significant intensification of work. As part of a negotiated organisation of work new technologies may also enrich work processes.

In order to compete with PrOs and confront competition from electronic communications media, PPOs will increase their business and customer focus. This will require new skills from employees and it is also likely to lead to increased pressure for a more flexible organisation of working hours and job roles. Organisational change is likely to lead to continued redefinition of managerial roles at all levels, with greater emphasis being placed on strategic, communications and leadership skills.

An uncertainty exists regarding the interaction between private and public postal operator employment. The cost advantages arising from the high level of self employment and casual employment in certain parts of the sector might force other operators to follow suit in order to compete. Under such circumstances, employment conditions in the sector might become more casual, with a negative impact on levels of income, training and job security. Alternatively the increasing demand for high levels of quality and customer service related skills might ensure good wages and conditions for the majority of employees in the sector, with the more casual employment limited to a small segment of the sector. This will, to a certain extent, depend on general developments in relation to labour market regulation and social tax and insurance laws in the EU.

Baseline scenario for 2001-2005

Below we describe our baseline, or most likely, scenario for the future of EU postal sector employment for the period between 2001 and the year 2005.

EU directive and universal service obligation

We assume that inward cross border mail and direct mail will be liberalised by 2001. Public postal operators will continue to operate under a universal service obligation.

Evolution of the change drivers

The same general trends identified for the period between 1996 and 2000 are likely to continue to influence the postal sector after the year 2000.

In most EU countries, demand for physical mail will either stagnate or decline.

Most letters from business to private will still be paper-based. Hybrid mail will be used intensively, especially for marketing abroad. Marketing through e-mail will also be used extensively to those having a terminal, but this will not reduce the amount of direct mail.

In the most advanced country group (A) we expect that the absolute majority of enterprises (also small businesses) will have access to electronic services and most of these will use use EDI for goods and banking services on a regular basis. Intra firm communication is dominated by e-mail, but postal services are occasionally used for delivery of official documents. For inter firm communication e-mail is supplemented by fax and sometimes postal services. About 50 percent of households will have access to electronic communication services. PC's will be the most common type of terminal, but the NC will provide a cost-efficient alternative for those not using their terminal for other purposes (e.g. electronic games or word-processing). In this period PC-based home banking will be widely used and it will be possible to use electronic services for certain types of communication with public authorities (e.g. tax returns).

In the countries of group B, almost all large businesses will be using electronic communication services and many small businesses will also be using electronic services for a part of their communications. In these countries, PC's will become widespread, but residential use of electronic communication services will be less common. The most common application will be home banking, but communication with other authorities will be largely paper based.

In the least advanced countries (group C), financial institutions and the more internationally oriented enterprises will be using electronic communication services, while very few small and medium sized enterprises will use other electronic communication services than fax. Home PCs will only be common with people using a PC at their place of work. The most common application for electronic communication will be the telefax, either built into a PC or as a stand-alone fax.

Before 2005, electronic messages will be legally recognised as being as valid as paper-based messages, if they are delivered via a recognised operator. Also, in other countries electronic messages will become increasingly valid, however legal problems will still occur - especially for electronic messages delivered internationally.

Electronic newspapers will become more successful and will gain between five and ten percent of the market for paper-based editions in the most advanced countries by the year 2005. In particular in the least advanced country group (C), the growth of electronic newspapers will be limited by the low penetration of terminals. Other types of electronic publishing will still be hampered by copyright problems.

In the period between 2001 and 2005, automation will continue. Sorting in delivery sequence will be common and the transition from cell level to plant level will have begun in the most technologically advanced PPOs. Productivity gains from automation are however lower than during the previous phase. New technologies being introduced include handwriting recognition and robotic tray handling.

Outlook for postal employment

We expect the level of employment in the PPOs to continue to decrease in the EU after 2000. In the most advanced country group (A) employment will progressively stabilise or decline at a slower pace, while employment in countries of type B will continue to fall due to further increases in productivity and losses of market shares to electronic services. Employment in type C PPOs will start to decline due to a slower growth in mail volumes, productivity gains from automation, and an increased threat from private postal operators and electronic services.

Our calculations presented earlier in section 6.3 indicate that, according to our first projection (A), by the year 2005 employment in the EU PPOs will be about 14 percent lower than in 1995 at about 1.21 million.

This decrease in PPO employment will be partially offset by job creation among the private postal operators and in the telecommunications industry.

PrO employment is likely to increase by about five percent between 2001 and 2005, from 440000 to approximately 462000, thereby offsetting some of the reduction in employment in the PPOs.

Alternative scenarios

Below we describe our alternative, or optimistic and pessimistic, scenarios for the future of EU postal sector employment for the periods 1996 to 2000, and 2001 to 2005.

EU directive and universal service obligation

Public postal operators will continue to operate under a universal service obligation.

We also generate scenarios under two alternative assumptions. Under the first alternative scenario, no further liberalisation takes place at the EU level, the degree of liberalisation is so limited that it will have no real impact on employment. Under a second alternative scenario, postal services are fully liberalised.

As illustrated in our numerical examples, the directive is expected to have a limited impact on the majority of PPOs. However, it is reasonable to assume that liberalisation and organisational change will lead to more redundancies, especially since liberalisation will permit a realisation of the productivity gains from automation (as in a liberalised environment management have more commercial freedom and are under greater pressure to reduce costs) and an adjustment of the labour force to a decreasing mail volume as a result of telecommunications substituting for postal services.

Liberalisation will have a larger impact on employment in PPOs of type B, both in relative and absolute terms, as the majority of PPOs in this group are large employers.

Evolution of the change drivers

In the medium term (up to the year 2000), the key uncertainties are the copyright problem, the level and mode of liberalisation and the diffusion of NCs. These are the factors that most probably may lead to different scenarios.

If the copyright problem is begging to find a solution, the level of substitution between traditional and electronic publishing will be lower than otherwise could be expected.

If liberalisation does not develop as foreseen, there will possibly be fewer redundancies in the postal sector, however, substitution between telecommunications and postal services will develop as otherwise anticipated and maybe at an even higher level because postal operators will not have the same possibilities to offer customised services.

In the long term (after the year 2000), the main uncertainties are related to substitution of business to private mail, that is, the substitution of paper-based information from public and private service institutions and substitution of paper-based publications.

In our base scenario some substitution of paper-based information from public and private service institutions is foreseen in the most advanced country group, further substitution will have a notable impact on the total demand for letter services, and the general consensus on the need for universal service may be threatened.

Substitution of paper-based publications with electronic services is foreseen to be rather limited in the base scenario. Furthermore, substitution in this area will also have a severe impact on demand and employment. Substitution of paper-based publications can evolve in many different forms, and does not necessarily imply that the paper based publications are delivered electronically. The electronic media are different from the paper based ones, and new technical opportunities may be used to develop new forms of publications, which may take market shares from traditional paper based ones. These could be of the multimedia type integrating voice, pictures, text and images.

If the capacity of telecommunication networks is developed to an appropriate level, and if NCs on this basis acquire a large market share, the developments of substitution described above will take place at a much faster pace. NCs will become much cheaper than PCs, and if the idea of NCs is realised, these terminals will be much easier to operate and the idea of communication will be embedded in the terminals.

6.5 Applying our numerical model to the scenarios

In this section we use a scenario based numerical model to illustrate the scenarios presented above in quantitative terms. These illustrations must be used with caution as they are not predictions, but simply numerical explorations of a number of possible future situations. Also, the calculations are primarily based on data from a number of specific countries, and therefore it may be difficult to generalise results to other countries. However, the overall trends depicted in figures 6.6, 6.7 and 6.8 could be loosely applied to all countries in groups A, B and C.

Description of the model

Following on from our description of the model in section five of this report, we can conclude that our scenario-based numerical model places emphasis on volume and productivity as drivers of employment levels, and on demand, electronic substitution, automation, liberalisation and organisational change as change drivers of productivity and volumes. The workings of the model are described in more detail in Appendix 6.

The main inputs to the model are:

- current mail volume by class and historic growth rates by mail class;
- current employment levels by category of employee;

- estimates of productivity gains by category of employee;
- rating of traditional mail services versus electronic-based communications services in terms of speed, cost, reliability, recognition as official record and accessibility; rating of substitution potential of various technologies by type of mail;
- rating of PPOs versus competitors in terms of financial stability, infrastructure, technology, cost, and customer service;
- estimate of the extent to which the expected benefits from liberalisation in terms of productivity gains are realised;
- rating of competitors', including other PPOs and PrOs, interest in each mail class; and,
- other inputs include: beginning year and estimated length of automation programmes; beginning year of liberalisation; historic and projected work hours per week; estimate of political ability to layoff employees as mail volumes decline.

The main outputs from the model are:

- ten year employment forecast by employee category;
- ten year volume forecast by mail type;
- ten year estimate of annual percentage mail volume changes due to competition and electronic substitution; and,
- ten year baseline mail volume forecast.

In order to take socio-political factors into account, we have built a floor for labour reductions on an annual basis into the model by setting a maximum allowable annual percentage decline in employment. Therefore, in effect, the model has been designed to predict changes in volume and employment with limited regard for PPO reaction.

One main weakness of the model we use is that it provides a forecast for PPOs only. This is a possible area for future work. Another weakness is that the historic trends on which it is based are limited by the availability of data.

Despite these weaknesses, the model has considerable strengths: its flexibility for multiple scenarios; its ability to aggregate countries; its ability to provide a quantitative assessment of the likely impact on different categories of employees, and a robust macro estimate of the magnitude of future trends.

Assumptions used in the model by type of postal industry

The three figures below summarise our assumptions for three change drivers, automation, electronic substitution and new services, which are mainly electronic-based. Each row can be seen as a "scenario path" for each type of country. The position of each type is relative to the two other types. The degree of uncertainty (last column) indicates our assessment of the likelihood that this "scenario path" will take place.

It is also important to stress that there is no determinism, and migrations from one group to another will happen.

The figure below summarises our baseline for the evolution of the threat of electronic substitution. For example, in type B countries, the threat of electronic substitution is currently medium (M), but we expect it to increase significantly (+++) before the year 2000, leading to large substitution away from postal services. After the year 2000, the PPOs in will be able to limit the effects of electronic substitution slightly (++) and as a result limit market share losses.

Figure 6.6 - The future evolution of electronic substitution - baseline assumptions

Type	Situation in 1995	1996-2000	2001-2005	Degree of uncertainty
A	H	++	+	Low
B	M	+++	++	Low to medium
C	L	++	+++	Medium

Source: Price Waterhouse, 1996

All PPOs create new services (and jobs in the provision of these services), but only PPOs of type A are able to rapidly expand the revenue (and jobs) generated by these new services. Type B and C PPOs are active in these markets but the rate of growth is slower (especially in group C), starts from a lower initial position and is more uncertain, that is, the gap between A and B/C is widening (as is the gap between B and C). The figure below shows our baseline for the evolution of new services and the associated generation of jobs.

Figure 6.7 - The future evolution of new services - baseline assumptions

Type	Situation in 1995	1996-2000	2001-2005	Degree of uncertainty
A	H	+	++	Low
B	M	+	+	High
C	L	+	+	High

Source: Price Waterhouse, 1996

Our main assumption is that the automation programmes now well under way in type A PPOs will reach a similar stage of development one period later for type B PPOs and two periods later for type C PPOs.

For type A PPOS, we expect a full implementation of inward sorting automation programmes, with probable productivity increases of 2.5 percent for delivery staff and 0.5 percent for sorting (operating) staff by the end of year 2000. Other annual productivity gains will amount to about three percent. No automation programmes leading to significant productivity gains in the delivery and sorting areas will take place after year 2000. These effects are additive.

The implementation of “type A” automation programmes in type B PPOs will take place within five years of them being fully implemented in type A PPOs, and therefore the same productivity gains that will be realised between 1996 and the year 2000 in type A PPOS will not be realised until after the year 2000 in type B PPOs. However, overall productivity gains between 1996 and 2005 will be significantly higher for type B PPOs than type A PPOs, as they will increase their level of automation between 1996 and the year 2000 (full automation of outward sorting and partial automation of inward), which will result in significant increases in productivity of 2.5 percent for delivery staff and 0.5 percent for sorting (operating) staff, and increase it again between the year 2001 and 2005 (full automation of outward sorting). In addition, other productivity gains amount to two percent per annum between 1996 and the year 2000, and three percent per annum between 2001 and the year 2005.

The implementation of “type B” automation programmes in type C PPOs will take place within five years of them being fully implemented in type B PPOs, or within ten years of them being fully implemented in type A PPOs. Therefore it is likely that no significant automation programmes will be implemented before the year 2000. One reason for this is that type C PPOs may lack internal funds to finance extensive automation programme. Therefore, type C PPOs will only reach a high level of automation of outward sorting and a partial level of automation of inward sorting by the end of 1995, leading to a total productivity increase of about 20 percent over the period between 1996 and the year 2005. Annual productivity gains in period are only 2 percent.

Figure 6.8 - The future evolution of automation - baseline assumptions

Type	Situation in 1995	1996-2000	2001-2005	Degree of uncertainty
A	H	H	L/M	Low to medium
B	M	H	H	Medium
C	L	M	H	Medium to high

Source: Price Waterhouse, 1996

Each numerical scenario presented below only shows the jobs lost and generated within the PPOs and does not take into account the changes in employment in the PrOs and in other sectors (such as the telecommunications sector). However, these job creations can be inferred/derived from the model's results. Numerical results from the scenarios can be extrapolated to cover the 15 EU PPOs by use of assumptions regarding the composition of the three groups and their relative weight. Similarly, numerical results from the scenarios can be extrapolated to cover the whole postal and communication sectors by use of additional assumptions on the net job creation by private postal operators and by competitors operating in the telecommunication sector.

We assume that changes in mail volumes and productivity levels will always automatically translate into changes in employment levels. This is of course unrealistic, but our objective is to show the potential (maximum) effect possible.

Another limitation of the model is that it does not take into account the financial impact on the PPO of the different scenarios. The model could be made more complex but in this case this was not required given the objectives and scope of this study.

Results

Below we present the results of our numerical model for each country type. We only report the results for a small number of key variables, such as employment levels, overall diversion away from PPOs as a result of electronic substitution, and overall diversion away from PPOs as a result of increased competition from PrOs.

Illustration of results for postal industry of type A

For the baseline, we made the following assumptions: volume of mail decreasing, in particular for first class mail; high threat from electronic substitution but able to increase supply of new services; the full benefits from liberalisation are realised; the productivity gains from automation programmes accrue mainly before the year 2000; there is no additional competition from private postal operators; and, there is no further closure or franchising of post offices.

In the optimistic scenario, the differences from the baseline are that: there is a smaller decrease in mail volumes before the year 2000, after which the volume stabilises; the threat from electronic substitution is less intense; and, there are less productivity gains from automation.

In the pessimistic scenario, the main differences from the baseline are that: postal markets are more competitive and this leads to further market shares losses; and, we assumed that five percent of the post offices are outsourced between 1996 and the year 2000.

The figure below presents the results for a postal industry of type A under three scenarios of liberalisation.

Figure 6.9 - Illustrations of results for a postal industry of type A

1995 = 100 or base year for employment	Stauts quo	Directive	Full liberalisation

		2000	2005	2000	2005	2000	2005
Baseline	EMP	87.8%	78.9%	87.8%	78.9%	87.9%	79.8%
	ES	7.3%	36.5%	7.3%	36.5%	6.9%	34.5%
	COM	0%	0%	0%	0%	0%	0%
Optimistic	EMP	94.6%	91.3%	94.6%	91.3%	94.7%	92.1%
	ES	4.3%	21.6%	4.3%	21.6%	4%	20.2%
	COM	0%	0%	0%	0%	0%	0%
Pessimistic	EMP	79%	63.5%	79%	63.5%	77.6%	61.4%
	ES	7.3%	36.5%	7.3%	36.5%	6.9%	34.5%
	COM	15.0%	21.5%	15.0%	21.5%	19.0%	27.1%

Key: EMP=employment; ES = Overall diversion away from PPOs as a result of electronic substitution; COM = Overall diversion away from PPOs as a result of increased competition from PrOs.
Source: Price Waterhouse, 1996

Illustrations of results for postal industry of type B

Our assumptions for the baseline are that: volume of mail is decreasing, in particular for first class mail; there is a medium threat from electronic substitution but the PPOs are less able to increase the supply of new services; the full efficiency benefits from liberalisation are realised; the productivity gains from automation programmes accrue throughout the entire period between 1996 and the year 2005; and, there is no franchising or outsourcing of post offices.

In the optimistic scenario, there is a smaller decrease in mail volumes; a lower threat from electronic substitution; and, less productivity gains from automation.

In the pessimistic scenario, the decrease in mail volumes is larger; there is a more competitive postal markets leading to market share losses; and, there is a bigger threat from electronic substitution.

The following figure presents the results for a postal industry of type B under three scenarios of liberalisation.

Figure 6.10 - Illustrations of results for a postal industry of type B

1995 = 100 or base year for employment		**Status quo**		**Directive**		**Full liberalisation**	
		2000	**2005**	**2000**	**2005**	**2000**	**2005**
Baseline	EMP	97,3%	77,2%	97,3%	73,7%	97,9%	70,7%
	ES	6,8%	33,8%	6,8%	33,8%	6,4%	31,9%
	COM	0%	12%	0%	20,5%	0%	35,8%
Optimistic	EMP	100,5%	87,5%	100,5%	83,5%	100,9%	80%
	ES	4,6%	22,8%	4,6%	22,8%	4,3%	21,3%
	COM	0%	12%	0%	20,5%	0%	35,8%
Pessimistic	EMP	95,3%	68,9%	95,3%	65,7%	95,9%	69,3%
	ES	8,1%	40,4%	8,1%	40,4%	7,7%	38,3%
	COM	0%	12%	0%	20,5%	0%	40,7%

Key: EMP=employment; ES = Overall diversion away from PPOs as a result of electronic substitution; COM = Overall diversion away from PPOs as a result of increased competition from PrOs.

Source: Price Waterhouse, 1996

Illustrations of results for postal industry of type C

Baseline: volume of mail increasing significantly; low threat from electronic substitution between 1996 and the year 2000, but increasing; full benefits from liberalisation are realised; productivity gains from automation programmes are mainly realised after the year 2000; no additional competition from private postal operators; and, no closure or franchising of post offices.

In the optimistic scenario, the only difference with baseline is higher mail volume increases after the year 2000.

The main variations in the pessimistic scenario are: more competitive postal markets leading to market shares losses after the year 2000; and, a high threat of electronic substitution over the whole period between 1996 and the year 2000.

The figure on the following page presents the results for a postal industry of type C under three scenarios of liberalisation.

Figure 6.11 - Illustrations of results for postal industry of type C

1995 = 100 or base year for employment		**Status quo**		**Directive**		**Full liberalisation**	
		2000	**2005**	**2000**	**2005**	**2000**	**2005**
Baseline	EMP	115,9%	100%	115,9%	103,8%	115,9%	95,3%
	ES	2,8%	14,2%	2,8%	14,2%	2,7%	13,7%
	COM	0%	0%	0%	2,8%	0,1%	10,5%
Optimistic	EMP	118,3	109,7%	118,3%	113,8%	118,3%	103,5%
	ES	2,8%	14,2%	2,8%	14,2%	2,7%	13,7%
	COM	0%	0%	0%	2,8%	0,1%	10,5%
Pessimistic	EMP	111,3%	85,7%	111,4%	89,6%	111,5%	82,2%
	ES	7,1%	35,7%	7,1%	35,7%	6,9%	34,7%
	COM	0%	0%	0,1%	10,5%	0,2%	14,2%

Key: EMP=employment; ES = Overall diversion away from PPOs as a result of electronic substitution; COM = Overall diversion away from PPOs as a result of increased competition from PrOs.
Source: Price Waterhouse, 1996

Future employment outlook for employment for the EU postal sector - a summary

The figure below summarises our main conclusions with regard to the employment outlook for the EU postal sector. These findings must be treated with caution in light of the limitations attached to any study investigating the future.

It should be kept in mind that a scenario is not a forecast but one possible future structure, involving the identification of uncertainties, the determination of the causal factors that drive them, and the formation of a range of possible assumptions. We use scenarios as a way to investigate possible futures and we keep our assumptions within the boundaries of realism. We are constrained by the availability and accuracy of historical data, and this is in particular true for employment in the private postal operators.

Our baseline scenarios do not say "what is going to happen", but merely "what is likely to happen" under a set of reasonable assumptions about the future evolution of change drivers and their likely impact on employment. We hope that these forecasts will serve as a guide in helping you anticipate, understand, and address the growing complexity of our changing environment.

Figure 6.12 - Future outlook of employment for the EU postal sector - a summary

Area	Future outlook
PPO Employment Levels 1996-2000	Employment in EU PPOs is likely to decrease over the next five years by around 7.4 percent from about 1.41 million in 1995 to 1.30 million in the year 2000. A small number of less developed EU countries (of type C) may experience some growth in employment levels mainly due to large increases in mail volumes.

PPO Employment Levels 2001-2005	The level of employment in PPOs is expected to continue to decrease in the EU after the year. It is forecast to fall a further 8.6 percent between 2001 and 2005, which means that in 2005 EU PPO employment is likely to be about 14 percent lower than it was in 1995 at about 1.21 million. In the most advanced type of PPO (A) employment will progressively stabilise or decline at a slower pace, while employment in PPOs of type B will continue to fall due to further increases in productivity and losses of market shares to electronic services. Employment in type C PPOs will start to decline due to a slower growth in mail volumes, productivity gains from automation, and an increased threat from private postal operators and electronic services.
PrO Employment Levels 1996-2000	If private postal operator employment increases by ten percent between 1995 and the year 2000 (the most likely estimate), from 400000 to about 440000, net job losses in the postal sector will be reduced by over one third.
PrO Employment Levels 2001-2005	If private postal operator employment increases by five percent between 2001 and 2005 (the most likely estimate) to about 462000, it is likely that there will still be a net loss in total postal sector employment.
PPO Employment Structure 1996-2000	The structure of PPO employment (composition and working patterns) is likely to change in the future: The number of civil service employment contracts will continue to decline although they will remain important in some countries. Terms and conditions in civil service employment contracts will increasingly be redefined to provide greater flexibility. The majority of PPOs do not expect any changes in the current level of non-permanent employment up to the year 2000. Most mail service providers do not expect changes in the length of the contractual working week by the year 2000. The combination of technological change, cost pressures, and changing customer expectations, add to the pressure for more flexible working hours and forms of employment. The share of women in the workforce is likely to grow but this increase will be limited by the overall lack of growth in employment in PPOs. The functional distribution of employment is not expected to change much over the next five years. Most postal workers will be directly employed with the exception of the in the provision of retail/financial services where outsourcing and franchising will continue to increase. Basic familiarity with IT and keyboard skills will be expected from the majority of employees, as well as a greater focus on customer service and marketing skills. There will be increased emphasis on total quality management and associated changes in working practices and training. PPOs expect to primarily manage employment reductions using natural wastage, early retirement schemes and voluntary redundancies, functional and regional redeployment, as well as cuts in working time. In some cases compulsory redundancies cannot be avoided.

PPO Employment Structure 2001-2005	There is much greater uncertainty concerning predictions beyond the year 2000. Civil servant status will become a clear minority. In some countries (but not in all of them) a greater level of outsourcing and franchising in the provision of universal service obligation will take place. The 1996 to 2000 trends are likely to continue.
PrO Employment Structure 1996-2000	Among global integrators and large national operators trends will be very much like the trends for PPOs. There will be more emphasis on IT, customer service and marketing skills. Direct employment is likely to remain significant, but there will be rapid growth in a range of non-standard employment contracts (franchising, sub-contracting, self-employment, temporary employment, on-call employment, and part-time employment). The use of performance-related pay is likely to increase. In smaller operators the focus on IT and customer service will grow but there will be a continued decline in direct permanent employment. A formal shift in working time arrangements is not foreseen. More flexibility of employees is expected concerning the willingness to respond to unforeseen changes in demand. Some PrOs will introduce equal opportunity measures to achieve a more balanced workforce
PrO Employment Structure 2001-2005	Continuation of 1996 to 2000 trends.

Source: Price Waterhouse, 1996

Although the current position of public postal operators is a good predictor of future developments, predictions are uncertain. The least efficient PPOs are most exposed in the medium term to the threats of a more competitive world, but they could take initiatives to strengthen their relative position, for example, by continually improving their quality of service and launching new services and products.

The overwhelming majority of industry participants (PPOs, PrOs, regulators) and postal experts contacted during this study agree that employment levels in PPOs will decrease over the next decade. There is, however, much more uncertainty concerning future employment levels in the postal sector as a whole (in public and private operators).

Our numerical model provided a number of interesting illustrations. For example, according to the "baseline" cases we constructed, PPOs of types A and B are more likely to experience a decrease in employment than those of type C.

In a number of PPOs of type C, it is likely that there will be net job creation as a result of increasing mail volumes in the period between 1996 and the year 2000. However, we expect that in these countries employment levels will stabilise around the year 2000 and are likely to decrease in the medium term.

The additional effect of the EU directive on employment levels is limited. The effect will be nil or insignificant in the most liberalised public postal operators, and in a best case estimate may even be positive in these countries (from the total postal industry viewpoint) if accompanied with greater commercial freedom. The effect of other change drivers (such as automation, electronic substitution, organisational change) seems more important.

Job losses are expected in the mail processing area and as a result of reductions in the number of sorting centres and financial/retail outlets. Job creation is expected in the hybrid and electronic mail area and as a result of the introduction of new value-added services. However, there is a disagreement with regard to the opportunities offered by hybrid mail. While certain experts see hybrid mail as a "short-lived transition service" and that "the future will go electronic end-to-end", others see hybrid mail as a "major business opportunity for PPOs". All in all, we do not expect hybrid mail to lead to significant job creation.

We expect that PrO employment will increase and this will compensate to some extent for the job losses experienced by PPOs. It is likely that job creation (within both PPOs and PrOs) will not outweigh the job losses. However, if PrO employment increases by 15.5 percent between 1995 and 2005 from 400000 to about 462000, and if job losses in the PPOs are limited to the expected 14 percent in this period, net job losses between 1995 and the year 2000 could be limited to about 135,000 or just over 7.5 percent of total employment in the postal sector.

There is more uncertainty concerning the number of jobs that will be generated in the non postal part of the communications sector. It is widely accepted that the telecommunications sector will be the main beneficiary of the future growth in the total demand for communication services. Electronic substitution will generate new jobs in the telecommunication sector. Telecommunications is capital-intensive and operates in a more deregulated and competitive environment than postal services. These factors suggest that the market shares and revenues taken away from the postal sector (e.g. because of electronic substitution) will not generate the same amount of employment in other sectors.

Mail volumes may decrease quite significantly if competition increases and if quality of service is not good. This would bring the PPOs into a vicious circle where poor economy, increases in postal rates, less funds for investments in technology, and crisis planning, could lead to poorer quality of service and further decreases in revenue. Net job losses in public postal operators could then be well over 10 percent before the end of the millennium.

PPOs may also enter a virtuous circle of improving their price/quality ratio to fight against the threat of electronic substitution. This could enable them to keep market shares through marketing efforts, the development of new products, and more competitive prices and better quality of service.

Section 7 - Recommendations

7.1 Introduction

The public postal operators are among the largest employers in each EU member state. In total they employed about 1.41 million people in 1995, which was more than 100000 less than they employed in 1990. Overall PPO employment is expected to decline in mail services as well as in financial and retail services up to, and beyond, the year 2000. In addition, we estimate PrO employment in the EU to be between 350,000-400,000 people. Our survey shows that PrO employment has grown in recent years and it is expected that this growth will continue.

In this section we draw conclusions about the changing character of postal sector employment in the EU. Based on the expected changes in employment we present a range of recommendations in line with the Community’s overall strategy for reducing unemployment.

Section 7.2 analyses the need for postal sector structural adjustment and section 7.3 briefly outlines the Community's strategies for reducing unemployment and ensuring social protection. In section 7.4 we discuss the specific employment changes that are expected and make recommendations. Finally, in section 7.5 we make suggestions for future work.

7.2 Structural adjustment

In this report we have examined the impact on European postal sector employment of changes in demand, electronic substitution, automation, the regulatory framework, and the organisational status of postal operators. These factors all have an impact on postal employment, but their specific impact depends on a host of factors as illustrated by the analytical model presented in sections two and five of this report. Both private and public postal operators are facing changing customer demands and increased competition.

The numerical model that we presented in section six predicts volume and employment changes with little regard for major postal operator reactions, such as, getting into new complimentary types of business. If such a model predicts declines in volumes and employment, the estimates should serve as a signal to postal operators that they need to become competitive prior to the introduction of any type of competition in the future resulting from such change drivers as liberalisation, electronic substitution, etc.

If we were to put forward a vision of successful postal operators in the future, given that it is difficult to generalise at a European-wide level, we believe such a vision would constitute the following:

- Successful postal operators will be market-driven organisations with market-oriented employees at all levels in the organisation. They will market both standard and customised products and services at variable and competitive prices within the boundary of universal service and uniform tariffs. They will be proactive in product development and design.
- Investment in increased training, re-training and education of the workforce will be made in order to cope with the requirements of a market oriented company as well as the widespread use of information technology and automation throughout the organisation.
- Customers increasingly demand quality of service. Standards will be set for quality of service, the actual quality of service will be closely monitored, and operators and their employees will strive to improve and upgrade logistics systems and the relationship between quality and price.
- Postal operators will look for new business opportunities to capitalise on their existing infrastructure and workforce. This will include services such as hybrid mail, mailroom services, logistics handling, and joint ventures with other communication and transportation organisations.
- Post offices will be turned into communication centres, offering all the traditional postal services, but also banking and insurance services as well as other products, such as ticket and stationary sales. Office hours are set according to local customer needs. Information technology is used to the utmost extent in counter and administrative functions.
- Public postal operators will develop into far more business oriented companies but they still represent an important part of the national infrastructure. Through the widespread network of offices and delivery personnel, they remain companies which perform activities that are important for society.

7.3 EU measures to reduce unemployment and ensure social protection

The decline in postal sector employment is by no means an isolated incident in the EU. Since the early 1970s especially, unemployment has been a problem in western Europe and today in the EU as a whole almost 11 percent of the workforce is out of work.

Structural adjustment is necessary in order to cut costs, increase efficiency, and improve the quality of service in order to prepare the postal sector for the single market and new forms of competitive pressures. Our study shows that competition from other means of communication will increase significantly in the future, and it is therefore in the interest of all groups in the postal sector (regulators, postal operators, and employees) to support measures that will enhance efficiency, quality of service, and overall competitiveness. Experience from other industries which face extensive competition shows that structural adjustment cannot be avoided even if large amounts of subsidies are paid. Governments must not decide whether to restructure but, rather how soon.

The key challenge facing industrial sectors in the European Union, including the postal sector, is to undertake structural adjustment while at the same time providing social protection and encouraging human resource management. Structural adjustment must be accompanied by social protection measures (which constitute key aspects of the European welfare state model) in order to alleviate the negative social effects of unemployment.

Maintaining a high level of employment and social protection is one of the Community's fundamental objectives and is included in Article 2 of the Treaty on European Union. This challenge should be met by encouraging a strong dialogue between the social partners.

Critics have argued that the underlying principles of the 1985 White Paper and the internal market program constituted the basis for creating a businessmen's Europe, ignoring the needs and interests of those who might be hurt as member states underwent restructuring to prepare for a more economically liberal environment. Partly to counter these criticisms, at the December 1991 Maastricht Summit, the member states made a commitment to a high level of social protection (European Commission 1995f).

The Commission has identified the reduction of unemployment as a long-term goal, stating that unemployment is "the major economic and social problem confronting the EU" (European Commission 1995c, p 7). At the Essen Summit the member states therefore identified a range of policy areas as being of major importance for tackling the EU's unemployment problem. In particular the European Council agreed on the following five priorities:

- Improving employment opportunities for the labour force in general, for example by strengthening vocational training.
- Promoting greater flexibility in relation to the organisation of work in order to help employees achieve efficiencies, but also to respond to employee wishes for more individual and diversified working.
- Employment supporting wage policies through moderate overall wage agreement and reduction in non-wage costs. These factors are seen as particularly relevant in relation to employment creation for lower skilled people.
- Encouragement of active labour market policies and the promotion of job creation initiatives which respond to new social and environmental needs.
- Development of measures to help groups that are hard hit by unemployment. These measures focus on young people and the long-term unemployed. For example, young people have been encouraged to continue their education and training for a longer period of time in order to improve their basic skill levels and qualifications.

7.4 Employment changes and recommendations

The level and quality of employment are expected to continue to change well into the next decade. Community wide initiatives in relation to retraining and the implementation of job reductions might be required in order to facilitate change in individual member states. These changes require careful monitoring. In particular, facilities need to be set up to enable more comprehensive monitoring of the evolution of private sector employment. Monitoring should focus on both the number of jobs and to the quality of employment.

Employment patterns and human resource management practices evolve over time and reflect the evolution of employment and industrial relations in each country as well as in individual enterprises. Recommendations therefore need to take into consideration the specific economic and policy traditions in each member state.

Flexibility and working hours

Changes in social expectations and the need for greater efficiencies are pushing postal operators towards the use of more flexible working practices, such as, part time employment, week-end working, or temporary employment. There are no uniform trends across countries concerning flexibility and working hours.

PPOs traditionally respond to variations in demand by working overtime. Private operators, especially the express and courier services companies, traditionally rely on evening and night work.

Pressure for increased efficiency and reorganisation also affects contractual working hours and shift patterns. Longer opening hours in other sectors, such as the retail sector, contribute to the growing demand for an extension of opening hours in the postal sector. Competition increasingly centres around speed and quality of service leading to a need for work outside of the standard working day and a closer match between labour costs and variations in demand. The length of the average working week has declined in PPOs, while private operators tend to have longer working hours. Both PPOs and PrOs use overtime working.

Recommendations

Innovation in working patterns has potential benefits for both employers and employees. Part time working allows a tailoring of labour costs to regular peaks and troughs in demand and provides a solution where a task does not require a full working day. Part time employment for employees can offer the opportunity to combine paid employment with other activities such as caring for a family, education or phased retirement.

A move towards part time working requires careful amendment of human resource management policies in relation to training and career development because part time employees are often disadvantaged in these areas. Part time work should provide earnings which are high enough for such employees to qualify for social insurance payments (pensions, unemployment and health benefits). Assurances need to be given that a shift from full time to part time employment for existing employees is voluntary.

Temporary employment can be useful during a process of employment reductions brought about by technological change, such as, the introduction of new IT systems and reorganisation. Temporary employment also provides an opportunity to enter the labour market for young people or others returning to employment after a period of absence. Overall, temporary employment is a second best solution for employees because only a small minority of people are employed voluntarily in temporary jobs.

Annualised hours contracts constitute another option for dealing with predictable variations in work load.

Gender

Although women’s share of employment has increased between 1990 and 1995, more than 75 percent of PPO employees are men. The global integrators tend to employ a higher proportion of women than PPOs. In short, the workforce in most postal operators is predominantly male and women are underrepresented both in absolute numbers as well as in managerial and professional positions.

Recommendations:

A balanced workforce, reflecting the gender and age of the general population, eases the transition of postal services towards a stronger focus on customers by enabling employees to anticipate the diversified needs of the postal market place.

Postal services need to examine human resource management practices in order to identify reasons why women are underrepresented and to take steps to remove barriers preventing a more equal distribution of jobs between men and women.

Channels of recruitment must be examined to ensure that they are not biased against women, and the share of men and women in recruitment, training and promotion campaigns should be regularly monitored.

Demographic changes, particularly the decline in the number of young people entering the labour market, are likely to lead to a declining supply of well qualified and motivated staff. Postal services need to be perceived as good and welcoming employers for all employees in order to attract talented and skilled staff.

Employment reductions

The management of work reductions includes the use of natural wastage, early retirement schemes, voluntary redundancies, functional and regional re-deployment, cuts in working time, and as a last option, compulsory redundancies. We found that PPO employment declined by more than 100,000 between 1990 and 1995 and this trend is expected to continue during the next decade.

Recommendations:

Job reductions need to be planned in due time and in consultation with the social partners at the national, regional and local levels.

Human resource management policy should focus on two areas. First, job losses should be as few as possible and compulsory redundancies should be avoided. Avenues to be investigated include a reduction in working hours, as well as the implementation of flexible working patterns, retraining, functional re-deployment, phased retirement and early retirement schemes. Secondly, the ability of employees to find new employment should be encouraged where job losses are unavoidable. The provision of training and of transferable and recognised skills for example, strengthens employability. Early consultation with labour market institutions and out placement services also help employees find new jobs.

In the case of job losses, labour market institutions (job centres), local authorities (economic development offices), and training providers should co-operate to facilitate adjustment.

Training and development

Only a minority of PPO employees have external vocational qualifications. Skills are also relatively particular to the job and are not easily transferable. In view of the overall employment reductions that are planned in the postal sector, the comparative absence of externally recognised vocational qualifications makes postal employees particularly vulnerable.

Both private and public postal operators emphasise the need for continuous training and development of employees, and some have taken considerable steps towards achieving this goal.

Both sectors have similar training needs, such as, a focus on customer service skills, the ability to use new technology, as well as people management and leadership proficiencies. The composition of the workforce differs between PPOs and PrOs as employees in PPOs typically have been out of formal education for a longer period.

The need for training to support and sustain organisational change towards business and customer focused operations is likely to be even stronger in the future.

Recommendations:

Training should be encouraged in order to improve the ability of both the organisation and its employees to effectively respond to the challenges of organisational and economic change.

Training should cover all groups of employees, including the self-employed. Postal employers should increase the amount of training offered to each employee and should encourage life long learning.

Organisational changes require new management and supervisory skills. Managers and supervisors need to be supported in their functions through extensive training and development programs.

In order to avoid skill shortages and recruitment problems in advanced technology employment areas, postal operators need to re-examine their internal recruitment, training, and remuneration practices for experts in these areas. Postal operators also need to advance their general level of technical and information technology skills.

Training policies should be co-ordinated with local training providers/colleges in order to increase the external recognition and transferability of qualifications.

New methods of training using computer based learning, team centred training courses, self-study, etc., should be investigated as alternatives to traditional training methods.

Efficient and successful franchising and outsourcing require that workers should receive training in business and market knowledge.

Industrial relations

Co-operation between employers and employees is crucial in order to achieve successful implementation of change. Public postal operators tend to be highly unionised with a long tradition of negotiated solutions to technological and economic problems. It is in the interest of both employers and employees, and their representatives, to maintain co-operative relations and develop solutions which recognise the competitive pressures on postal services for changes in working practices, without losing sight of employee welfare.

Recommendations:

Communication between management and employees, and their representatives, will enhance the understanding of, and the commitment to change. One way of doing this is to establish joint working groups between management and employees concerning economic and business issues.

Private postal operators are generally less unionised than PPOs. The rights of individual employees to be active in their unions should be guaranteed in all parts of the sector.

Remuneration

Remuneration in the postal sector is comparatively low (payments are lower in PPOs than in PrOs). Established remuneration systems have come under pressure in PPOs. This development is not solely a result of commercialisation and organisational change, but also reflects changing expectations in the labour market in many countries. Changes in remuneration systems may well help to reinforce and reward flexible implementation of change programs.

Recommendations:

Restructuring of remuneration systems in postal operators is not likely to be easy. The effects on overall wage costs and productivity, motivation, and gender related pay differences need to be carefully monitored.

In order to ensure a cost effective and affordable postal sector, wage increases should be covered by productivity increases. Labour costs as a share of total costs should remain stable. PPOs need full commercial freedoms to design pay policies and, if appropriate, share financial success with employees.

The establishment of effective performance management systems is one of the key challenges for the future. The exact shape of each system will depend on national traditions and the particular circumstances of each employer. Schemes require a high level of competence from managers when setting objectives and providing feedback and leadership.

The move towards performance related pay systems has frequently led to a widening of pay differentials between men and women, and in some cases has resulted in expensive court cases. It is important to ensure that the new payment systems are not gender biased.

In order to prevent major financial liabilities from corporatisation, as PPOs employees move from civil service status to regular employment status, PPOs need to ensure that independent pension arrangements are set up.

7.5 Conclusion

In conclusion our report shows that the growing pressures on public postal operators require adjustment if they want to be able to remain competitive and maintain employment. The report also illustrates that different opportunities for adjustment are available.

However, while the report has extensively analysed the effects of liberalisation, organisational change, demand, electronic substitution and automation on employment, our study has also identified a number of important issues and problems that we suggest warrant further examination:

The study shows that there is considerable diversity in the organisation of working hours and working time among PPOs, with large differences in levels of night working, weekend working, part time working and overtime working. Without wanting to prescribe solutions, a more detailed investigation of working patterns and organisation would help generate good practice examples which both enhance efficiency and increase employment quality;

Several PPOs are reforming remuneration and performance management systems. More detailed analysis of appropriate performance management systems in postal operators is required, as is an investigation of how best to achieve efficient implementation of new services;

Improvement of services requires a review of organisational structures and capacities, including skills and work organisation, in order to identify processes which support a focus on quality. More research is needed in order to identify what constitutes best practice across the sector, in both public and private postal operators, as well as to develop human resource management quality criteria which are relevant to the postal sector;

A coherent human resource management policy is required in order to effectively manage and motivate employees, improve service, etc. Mechanisms need to be set up to monitor whether human resource management policies is working in the best possible manner. These mechanisms can include feedback from employees, line managers and supervisors; and, Monitoring of private operator employment growth, employment levels, employment quality, etc., would fill the current gap in EU wide statistics and standards.

Appendix 1

Methodology applied to the search of secondary sources

To structure and focus the search of secondary sources in phase one, the initial list of change drivers and postal employment aspects were described by means of more detailed indices and indicators (see appendix 1.3 for further details). This enabled us to specify the relatively broad change drivers further.

The initial list of change drivers included:

- deregulation;
- organisational change;
- automation;
- electronic substitution; and,
- demand for communication.

The specification process was conducted in three levels:

- the change driver level - e.g. deregulation;
- the indices level and - e.g. actual competition; and,
- the indicator level - e.g. volume and price limit of the reserved service area.

The literature search in phase one was guided by these indicators. This means that we considered the availability of secondary data for each indicator, and considered how to obtain missing data, particularly through the use of questionnaires and interviews.

In order to collect data from all available secondary sources, we searched a number of relevant databases, the most important ones were:

- ABI Inform (October 1995 - March 1996);
- Financial Times (March 1995 - March 1996);
- Reuters Business Briefing (March 1995 - March 1996);
- Social Science Citations (December 1991-September 1995);
- Econlit (1969-September 1995); and,
- SocioFile (1974-September 1995).

In addition we investigated the EU Labour Force Survey as a source of information on changes in employment in the postal sector, and the database of the British UCW as part of reviewing the extent of existing information on employment practices in both the public and private postal operators.

Furthermore, we contacted each public and private postal operator to get annual reports for the last five years. We also contacted UPU, IPC Unipost, international postal worker federations, user organisations, and postal suppliers.

Appendix 2

List of organisations consulted

Public postal operators	
Five public postal operators in the EU	Face-to-face interview
New Zealand Post, New Zealand	Telephone interview

Postal associations	
PostEurop	Telephone interview
IPC Unipost	Face-to-face interview
Universal Postal Union (UPU)	Telephone interview
Other regulators	
EU Commission	Face-to-face interview
Trade unions	
PTTI	Face-to-face interview
EURO FEDOP	Face-to-face interview
Three national trade unions	Face-to-face interviews
Users	
AMEX Europe Ltd.	Telephone interview
Readers Digest	Telephone interview
User organisations	
International Chamber of Commerce (ICC)	Telephone interview
Bureau Européen of Commerce (BEUC)	Face-to-face interview
European Mail and Express Services Users Association (EMESUA)	Face-to-face interview
European Magazine Publishers Federation (FAEP)	Face-to-face interview
Association Européenne des Editeurs de Journaux (ENPA)	Face-to-face interview
Union des Confédérations d l'Industrie et Employers d'Europe (UNICE)	Face-to-face interview
European Express and Mail Order Trade Association (EMOTA)	Face-to-face interview
Suppliers	
AEG Electrocom	Telephone interview
IBM	Telephone interview
Féderation Européenne des Producteurs d'Enveloppes (FEPE)	Telephone interview
Pitney Bowes	Telephone interview
Private postal operators	
DHL	Face-to-face interview
GD Express	Face-to-face interview
UPS	Face-to-face interview
Fedex	Face-to-face interview
Five national private operators	Face-to-face interview
22 national, local, private operators	Telephone interview
Private postal operator organisations	
Association of European Express Carriers (AEEC)	Telephone interview
The European Express Organisation (EEO)	Telephone interview

List of change drivers and their indices and indicators

Change driver	
Indices	**Indicators**
Deregulation	

Change driver	
Indices	**Indicators**
Universal service obligation	Percentage that fulfils D+1 (standard letter) Number of deliveries Number of collections Post offices/sq. km Number of inhabitants served per post office
Definition of reserved service	Price limit Weight limit What services are part of the reserved service (direct mail, newspapers, document exchange service, outgoing international letters, incoming international letters, use of stamps)
Subsidies	Types of subsidies
International regulation	EU directive
Organisational change	
Organisational status	Public organisation: part of the state administration, but with separate budget State owned corporation with financial and administrative autonomy, but with possible special rights for instance within the areas of tax structure, customer relations or employee relations State owned PLC: state: owned company subject to the same regulations as privately owned companies Privatised PLC: of which part of the shares have been sold
Separation of post, telecom, postbank	Telecom, postbank and post have consolidated accounts Postbank and post have consolidated accounts
Managerial freedom	Administrative autonomy Financial autonomy Limits on investment Joint ventures
Scope of the business	Product development Pricing structure
Use of franchising and outsourcing	Use of subcontractors for transport, delivery, collection, sorting
Automation	
Mechanising	Number of automatic machines for sizing, facing and cancelling of stamps, letter sorting machines (standard letters), letter sorting machines (large letters), letter sorting machines (bulk mail), OCR equipment, on-line video coding equipment, off-line video coding equipment, and automatic tray handling systems The readability percentage for OCR processed letters The percentage of the whole volume of outward letters sorted automatically Number of places using automatic outward sorting Number of places doing outward sorting Electronic data from outward sorting utilised for inward sorting The affirmative number of places with inward OCR-sorting Level of inward sorting (delivery office, postman's district..) Parcel sorting machines, manual coding vs bar-codes readers
Information technology	Level of office automation Use of IT in finance, personnel, payroll, labour schedule, product

Change driver	
Indices	**Indicators**
	economy, marketing/sales, production planning Use of Management Information Systems Overall IT strategy
Logistics systems	Number of IT-based track-and trace facilities
Electronic substitution	
Evolution of electronic substitution	Penetration of electronic terminals Cost of electronic services compared to paper-based services Quality of postal services Legal status of electronic information Other institutional and cultural factors influencing the development of electronic services, such as the traditions for paper-based work procedures
Demand for postal services	
Demand for postal communication	Customer buying power expressed by GDP Domestic mail item volume Customer trends Customer expectations
Demand for postal transportation	Customer buying power expressed by GDP Domestic parcel volume Customer trends Customer expectations Internationalisation
Demand for other postal services	Financial and retail service turnover Financial transactions Suppliers of new services
Employment and human resource management factors	
Number and change of employees by	Postal services / financial services / retail services Full-time / part-time / temporary / self-employment Male /female Civil servant contracts / regular employment contracts
Composition and change of employment by	Management / supervisors / operators / postmen / others
Manpower statistics	Annual turnover Age structure
Working patterns (actual and expected)	Full-time / part-time / night / Saturday / Sunday Overtime
Remuneration	Starting wages and salaries for postmen and counter staff Pensions Bonuses / performance related pay
Training policies	Skill structure Number of employees / managers having received internal / external training Training costs Training days per year Types of training
Industrial Relations	The use of industrial relations in the management of organisational change
Reductions in employment	Reasons for employment reductions The management of employment reductions:

Change driver	
Indices	**Indicators**
	natural wastage retirement schemes redeployment cuts in working time

Appendix 3

Estimation of private postal operator employment

Previous estimates

The Green Paper

An estimate for private postal operator employment was put forward in the Green Paper on the development of the Single Market in Postal services. The Green Paper estimates that employment in the private postal operators amounted to 350000 for the 12 EU countries in the late 1980s. This figure equals approximately 20% of total postal sector employment in the 12 EU countries at that time (Green Paper, 1992).

DHL estimation

During 1995 one of the global integrators, DHL, analysed the size of employment in the private postal operators in the EU. DHL used the following definition of employment in the analysis:

- Persons employed in the EU by any company that is engaged in the door-to-door expedited transportation of documents and/or packages. This covers both cross-border and domestic shipments by any mode.

The research was conducted through DHL's network. It focused on data collection in the UK, Germany and France. In each of these three countries, employment and market data was collected from the largest 10 - 20 domestic and international PrOs. Based on the information gathered, an extrapolation of the total number of PrO employees in each of the three countries and in the EU in total was made. The extrapolation was based on the following assumptions:

- The three countries chosen were assumed to represent 40 percent of the total number of employees in the private postal operators in the EU;

- The largest 10 - 20 private postal operators from whom data was collected were assumed to represent 80 percent of the total number employed in the private postal operators in the respective countries.

These assumptions have been questioned, particularly as to whether the three countries only represent 40 percent of total PrO employment, and as to whether the significance of the 10 - 20 PrOs surveyed was overestimated.

Using the methodology described above, DHL estimated the total number of PrO employees to be 372000 (DHL estimation 1995), or 26 percent of PPO employment.

Our estimation based on information from national statistical offices

Since no PrO employment data is available at an overall level, we have tried to estimate the employment in PrOs by collecting data from the national statistical offices. All national statistical offices in the 15 EU countries have been contacted directly. The statistical offices have provided data on employment levels in accordance with the NACE definition, which is a division of the employment statistics into more industry specific statistics. The NACE code 64.12 was selected, which is defined as collection, transport and distribution of letters and parcels conducted by private companies. As examples, the definition mentions courier companies, messenger companies and companies that distribute newspapers. The code is not defined as precisely as we have defined the postal sector, but it is close to our definition and is the most useful source available.

Information was provided by four of the 15 EU statistical offices, namely, Denmark, Spain, Sweden and the UK. For the majority of countries it has not be possible to provide the requested data. While it is the intention of the NACE classifications to provide common statistical definitions across the EU, problems of conversion of the national data continue to exist. Furthermore, it was our experience that the NACE codes were not used consistently between the countries, which makes it difficult to compare the numbers across countries.

As a reference point for the calculation of PrO employment in the 15 EU countries, we have taken PrO employment as a proportion of PPO employment within mail services. The PPO employment is not a perfect basis, since a lot of factors, such as the level of automation, level of liberalisation, and efficiency, affect this number. A more correct basis for the calculation would have been the total mail volume handled by both PPOs and PrOs in the four countries, but these numbers are not available.

Number of employees in the PrOs in Denmark, Sweden and Spain and the UK.

Country	Employment in PrOs according to NACE code 64.12**	Employment in PPOs (mail services) in 1995***	PrO employment as a percentage of PPO employment (mail services) in 1995
Denmark	7800 (1993) *11200 (1995)	26400	42%
Sweden	11500 (1995)	35400	32%
Spain	23900 (1995)	62500	38%
UK	45700 (1995)	177000	26%

* Estimate for 1995 assuming 20 percent annual growth rate between 1993 and 1995
** Data from national statistical offices.
*** Data from Price Waterhouse survey, 1996.

In order to use 1995 figures for all countries we have updated the Danish PrO employment figures assuming an annual growth rate of 20 percent between 1993 and 1995. Our data collection from global integrators and local Danish companies suggests considerable growth among PrOs.

This has also been confirmed by the Danish regulator who, without being able to provide precise figures, confirms a rapid increase in the number of registered companies in the sector.

According to the figure above, the PrO employment share in the four countries ranges from 26 percent in the UK to 42 percent in Denmark. By using the actual numbers for the countries, and the simple average between the four countries (35 percent) as an estimate for the share of PrO employment in the remaining countries, this calculation ends up with the result that 380000 people are employed in PrOs throughout the EU. However, the uncertainty related to such an estimate, is also shown by the fact that this number will change to 310000 if 26 percent is used, and to 440000 if 42 percent is used as the basis for calculations.

Taking the available of statistical information into account, any estimate of PrO employment can only be based on very rough assumptions. Our own research supports earlier estimates that there are approximately 350000 - 400000 people employed by the PrOs in the EU.

We would like to point to two issues regarding the estimation of PrO employment.

Given the uneven regional concentration of PrOs, with their main concentration in urban areas, and given the informal and fluid employment relations particularly in the smaller PrOs, it is possible that official employee based surveys underestimate the true level of PRo employment. For example, a survey of the Spanish postal sector, which was conducted for the Spanish regulator by Price Waterhouse in 1994 by means of telephone interviews, similarly estimated Spanish PrO employment as considerably higher than NACE estimates, namely at 31800 or 51 percent of PPO employment within mail services. Our estimate of UK employment corresponds to those collected for the DHL study.

To achieve a more qualified estimate of the employment in PrOs, a co-ordination of national statistical sources might provide an important basis for a full estimate of employment levels within the EU in the future. Moreover, this would allow a monitoring of the evolution of PrO employment over time. In the meantime our figures provide broad guidelines on the total level of employment, especially as time and scope did not allow for a comprehensive independent study of PrO employment in each EU country.

Appendix 4

Impact of electronic substitution - summary of evidence

Source	Methodology & assumptions	Conclusions & findings
USPS: "The Postal Service and Electronic Communications", 1983.	Methodology: Review of 8 earlier studies and a qualitative analysis of the possibilities of electronic services to substitute postal services.	In contrast to predictions, mail volumes grow. Furthermore, difficulties in implementing new telecom services will reduce substitutions.
Ghislaine Clot: "Impacts of Information Technologies on Future Employment and Training - Postal Services", BIPE, 1991, commissioned by the European Commission.	Methodology: Analysis of postal statistics. Assumption: Telecoms should not be considered as a threat but as an internal quality and productivity enhancement tool.	Continued growth in mail volumes in the coming decade of 4-5% per year. Technology impacts on qualifications of labour power.
Anders Henten & Knud Erik Skouby: "New Technology, Structure and Employment in the Postal Area" (Danish title), 1992, commissioned by the trade union of postal workers (SiD).	Methodology: Analysis of substitutions and complementarity between postal and telecom services and of the effects of liberalisations on the postal sector.	Recommendations regarding strategies both for postal operators and for the postal workers.
Thomas Baldry: "Substitutional Relation Between Traditional Letter Services and New Forms of Communication" (German title), 1995.	Methodology: Review of literature concerning quantitative and qualitative aspects of substitutions between postal and telecom services relating to Germany.	Previous studies have overestimated the substitutional effects. However in the long run, the share of postal services will decline due to the ongoing restructuring of business information and communication systems.
Heikki Nikili: "Replacement of Letter Mail by Electronic Communications to the Year 2010", in Crew & Kleindorfer (ed.): "Commercialization of Postal Services", 1995.	Methodology: Analysis of data on the demand for postal services in Finland by province explaining differences in demand by reference to regional patterns in numbers of electronic communications devices.	Substitution between postal and telecom services will affect mail volumes negatively. The extent of this negative effect depends on the developments in GDP: Higher growth in GDP will diminish decreases in mail volumes.
Eric Iversen & Einar Pedersen: "The Position of the Post in the Global Information Society: An Exploratory Study", 1995.	Methodology: An explorative study aiming at developing a framework for analysis including as many relevant factors as possible. Assumption: The market for communications is not constant. Both substitutions and complementarity are at play.	Recommendations for the postal operators regarding the development of hybrid services which are considered to be an important market area for postal operators in the coming years.
Information Week, 1995.	Journal report.	

Appendix 5

The postal sector employment model - how it works

Input

- **Current Volume:** 1995 mail volume by mail category obtained from questionnaire.
- **Volume Growth:** Five year historic trend calculated from Eurostat data 1988 to 1993 and validated by calculating similar trend 1990 to 1995 from questionnaire.
- **Current Employment Level:** Total 1995 employment by staff classification obtained from questionnaire.
- **Automation Productivity**: Estimate of productivity improvement for each staff classification obtained by consulting expert opinion; also includes beginning year and duration of automation program.
- **Organisational Change:** Estimate of the productivity improvement for each staff classification due to organisational change; includes implementation year.
- **Electronic Substitution:** Estimate of how much market share would be taken by electronic substitutes such as fax, e-mail/Internet, EFT/ACH, EDI, smart cards; ranks substitutes against post on a scale of 0 to 5 by timeliness, reliability, official record recognition, accessibility, and cost; also estimates by mail classification on a scale of 0 to 5 the substitution potential of each electronic product.
- **Competition:** Estimate of how much market share would be taken by competitors such as courier services, messenger services, and alternate delivery under a variety of liberalisation scenarios; ranks competitors against post on a scale of 0 to 5 by financial stability, infrastructure, technology, cost, and customer service; also estimates by mail classification which products the competitors would target and to what degree by using a scale of 0 to 5.
- **Capture Rate:** Attempts to quantify the effect of union strength and political pressure to maintain employment even when volumes are declining by using a percentage of labour decline that is captured.
- **Current and Future Work hours:** Allows for a change in future work hours from current levels; for example, a lowering of work hours from 40 to 35 could be used to maintain employment levels in times of increasing productivity and volume declines.

Output

- Ten year employment forecast by employee class
- Ten year volume forecast by mail class
- Ten year estimate of annual percentage volume loss due to liberalisation and electronic substitution
- Ten year baseline volume forecast.

Appendix 6

Model strengths and weaknesses

Weaknesses

- Forecast for postal administration only
- Historic trends limited by availability of data.

Strengths

- Flexibility for multiple scenarios
- Ability to aggregate countries
- Quantitative assessment of impacts on classes of employees
- Solid macro estimate of magnitude of future trends.

Appendix 7

Description of the Delphi Survey and its participants

In order to obtain qualitative input from recognised postal sector experts, from both the sector itself and from within Price Waterhouse, we conducted a Delphi Survey. Through this survey we received assistance in analysing and interpreting the data collected throughout the study.

The Delphi Survey involved asking a select group of postal sector experts a number of questions related to the key factors affecting future postal sector employment. The questions were designed to ensure short answers as the experts should answer using only their in-depth knowledge of the industry. Once they had answered the questions, and returned them to Price Waterhouse, we prepared an analysis in order to summarise their answers into one document. This analysis was sent to all the members of the group, and comments and amendments were invited in order to ensure that consensus was achieved in terms of the output from the Delphi Survey.

The selected group included the following experts from within the postal sector:

- A CEO of private a postal operator;
- Two CEOs of public postal operators;
- A Director of International Affairs for a public postal operator;
- An Executive Manager of a postal operator;
- A Chief of Finance for a postal operator;
- A Head of Division of a central regulatory body;
- A Director of a private operator association;
- A Chairman of a postal services user association; and
- A Manager of Marketing Services for a postal association.

The group also included Price Waterhouse partners with postal expertise from:

- Canada;
- Denmark;
- Ireland;
- United Kingdom; and
- The United States of America.

During the selection of the panel members, emphasis was given to the representation of both Northern and Southern European countries as well as countries of various sizes.