

## **Employability in the telecoms sector**

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### **Introduction**

The last ten years have been a time of massive turbulence in the once sedate world of telecommunications. Rapid technological change, coupled with market liberalisation of telecoms provision and the privatisation of state-owned monopolies, has transformed the sector. Increasingly, major telecoms companies are international, rather than national, players.

These transformations have not been without pain. The process of liberalisation has been accompanied in many countries by often sharp reductions in employment levels in previous state monopoly operators. In Deutsche Telekom, for example, employment fell from 233,100 in 1993 to 172,000 in 1999. In BT, the labour force was cut from 241,124 at privatisation in 1984 to 116,493 in 1998. At NTT, employment was 300,000 in 1985 and 216,000 in 1993. Similar examples of downsizing can be found in many other companies.

At the same time, however, new operators have been entering the telecoms sector, developing new products and bringing new job opportunities. Indeed, the sector as a whole can be judged to have been moving from the situation ten years back, where employers and trade unions were developing strategies for dealing with large-scale redundancies, to the challenge today of ensuring that enough workers with the necessary skills are available to meet the needs of the industry. This remains a key issue, even taking into account recent economic setbacks within the telecoms sector and the reappearance of downsizing (job losses) in some companies.

The so-called 'IT skills shortage' has become a major issue in the USA (where the US government predicts that the number of core IT workers will increase by 1.1 million over the decade from 1996 to 2006<sup>1</sup>) and in Europe (where the EU is concerned at a possible 1.7 million shortfall in the number of IT workers

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<sup>1</sup> The Digital Work Force, Building Infotech Skills at the Speed of Innovation, Office of Technology Policy, 2000

in the labour force by 2003<sup>2</sup>). It has also been suggested that other countries, such as India and Malaysia, may also in time face a similar shortage of adequately skilled IT workers<sup>3</sup>.

The much-discussed coalescence of the IT and telecoms industries into a combined ICT sector may have progressed somewhat less rapidly than some initially expected but nevertheless telecoms companies have as much reason to be concerned with the IT skills shortage as firms directly involved in the IT sector. Where IT skills were once the province of specialist staff, now they are becoming increasingly indispensable in a wide range of jobs.

Furthermore, demographic change means that, at least in respect to developed countries, the labour force is ageing. This has the result that companies will not be able to rely solely on skilled young people entering the labour market; it is therefore essential to ensure that older workers are able continually to upgrade their work skills. Unfortunately, at present only a small minority of adults participate in further vocational training and education.

One recent European study into skill needs and shortages within the telecoms sector drew attention both to the present shortage of skilled staff and to the danger of a skills mismatch between the skills needed and those already held by workers. It suggested that the staff shortages were in part the result of rapid growth in the sector, due to technological change and deregulation. But it also drew attention to what it called the 'limits of long-term personnel planning inside the telecommunications companies', and added:

"There obviously was a lack of policy efforts and initiatives several years ago to support the education of the required staff by extending the education capacities of the universities"<sup>4</sup>.

Another detailed study, this time on behalf of the UK government, also reported a series of 'skill gaps'. It found that:

"Firms have 'legacy' or 'inherited' skill-sets, which do not match current needs. Such 'gaps' are widespread among firms, since the new combinations of skill ('hybrid skills') are not commonly found within the labour market. Many basic technical skills are also in short supply. Thus, although firms aim to develop 'hybrid skills' among their existing workforce, it is also an industry problem that transcends the individual firm."<sup>5</sup>

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<sup>2</sup> Europe's Growing IT Skills Crisis, IDC executive summary 2000; Strategies for Jobs in the Information Society, European Commission DG Employment & Social Affairs, 2000

<sup>3</sup> This issue is discussed in The Economic and Social Impact of Electronic Commerce – Preliminary Findings and Research Agenda (annex 4.5: The 'skills shortage'), OECD, 1999

<sup>4</sup> Erich Latniak, Jürgen Schmidt Dilcher, Employment and skills in growing business areas of the telecommunication service sector, final report of the project Analysis of the Obstacles to the development of the full potential of employment in the telecommunications sector, July 2000, available <http://www.union-network.org/unitelecom.nsf/7bc3a7f8037b9be5c12568f90032d10f/a7bcfdb71bf0bc29c125692100536529?OpenDocument>

<sup>5</sup> City University Business School, London, Employers Skill Survey: Case Study, Telecommunications Sector, September 2000, available <http://www.skillsbase.dfee.gov.uk/downloads/SKT38.pdf>

The report concluded, “Three things mark out telecommunications from other sectors – the high level of skills; the fact that ‘recruitment difficulties’ are a real, inescapable part of the industry ‘story’; and the fact that ‘skill gaps’ are industry-wide.”

This paper will explore ways in which the challenges that these reports have identified are being met. We shall consider initially examples of good practice by employers, trade unions and governments in promoting and encouraging vocational training and employability. We shall then look in more detail at the skill sets which may be appropriate in the future in the telecoms sector, before focusing on two particular new forms of work organisation within the sector. Finally, we will consider ways in which the technology itself is being utilised as a means of meeting training requirements.

### **Social partnership: the example of the Lisbon Statement**

Perhaps the most significant recent move to raise issues of employability and training within the telecoms sector has been the joint initiative taken by employers and trade unions within the European Union.

The Lisbon summit of March 2000 brought together the political leaders of the fifteen EU member states to endorse an ambitious ten year programme designed to strengthen Europe’s economic growth and competitiveness, and in particular to launch the *eEurope* programme focused on Europe’s path into the information society. This occasion was used as the springboard for the launch of a Joint Statement by fifteen major telecoms operators (acting together as European Telecommunications Network Operators, ETNO) and the trade unions.

This ‘Lisbon Statement’ argued that “training and the modernisation of work organisation are the key elements to ensure the emergence of a better trained, more motivated and flexible workforce which will be the main asset for more efficient, modern and competitive companies and the European economy as a whole”.

The Lisbon Statement was endorsed by Belgacom, BT, Deutsche Telekom, EirCom, France Telecom, KPN, OTE, Portugal, P&T Telecom, Sonera, Telefónica, Tele Danmark, Telia, Telecoms Italia and Telekom Austria, and on the trade union side by the telecoms sectoral section of Union Network International (formed in 2000 as a merger of four international trade secretariats including Communications International, formerly PTTI). The agreement reflects the long-standing traditions of social partnership and collective bargaining in the former state-owned telecoms monopolies in Europe; it is worth noting, however, that newer telecoms operators in the fast-developing areas of mobile telephony and internet service provision – including major companies such as Vodafone - have not generally joined the social partnership process and were not among the Lisbon signatories.

The Lisbon Statement includes four priority areas:

- ICT training for all employees. The Statement includes a commitment that every employee of every company will have the opportunity to receive 'essential ICT training' by the end of 2001.
- Certification of training in ICT. The Statement argues not only that skills certification is crucial but also that pan-European certification mechanisms need to be developed, with the aim of 'ensuring that all employees who have obtained relevant ICT skills are able to enjoy a high level of portability of their skills through recognition in all EU companies'.
- Use of the Internet as a training tool. The Statement's signatories pledge to work together 'to promote the use of Internet based ICT training within the sector'.
- Modernisation of work organisation. The Statement maintains that new technology, global competition and rapid economic change calls for new, more flexible work relationships. In particular, the Statement includes a pledge to develop a set of voluntary Europe-wide guidelines on telework.<sup>6</sup>

The Lisbon Statement initiative has been developed since 2000 in a number of ways. In June 2001, a two-day conference in Brussels *Connecting with Your Future: Delivering Skills for the Communications Sector*<sup>7</sup> brought together about two hundred representatives of governments, employers, trade unions and academic institutions to consider, among other themes, appropriate ways of attracting, motivating and retaining employees. Among the presentations, a number of Swedish high school students led a short session on the theme 'Motivating and Promoting Young Women in the Male dominated ICT Sector'.

As a further follow-up to the Lisbon Statement, the EU-supported project '*Report on training models and certification*' involves research by the German-based research body Institut Arbeit und Technik, based on the results of a detailed questionnaire on ICT skills, certification and training sent to major European telecoms companies. This research is examining among other things the percentage of telecom employees with 'essential ICT skills', the methods used by companies to promote ICT training, and the degree of training being provided. The results of this research are expected early autumn 2001.

This work follows on from research undertaken by the same institute as part of an earlier EU project '*Analysis of the obstacles to the development of the full potential of employment in the telecommunications sector*'. The project's detailed final report identified a number of challenges which posed potential

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<sup>6</sup> Joint Statement for the Lisbon Summit, March 2000 (available from <http://www.union-network.org/unitelecom.nsf/283239318e6a2941c12569130041fb27/e92f833bce50945cc125689e0052023d?OpenDocument>)

<sup>7</sup> See [www.futureconnecting.org/about.shtml](http://www.futureconnecting.org/about.shtml)

difficulties for the sector, including the changes in skills and competencies needed and the present shortage of highly skills employees. We shall return to this report in more detail below.<sup>8</sup>

### **Social partnership: joint employer-union initiatives in the US**

The *Alliance for Employee Growth and Development* – or simply the Alliance – was established in 1986 and has strong grounds for its claim to be one of the most successful joint labour/management initiatives in the country. The Alliance aims to offer training for workers at AT&T and Lucent Technologies who are in membership of the Communications Workers of America (CWA) or the International Brotherhood of Electrical Workers (IBEW), with the aim of improving their career and personal development and enhance their employability.

The Alliance was established as a result of the collective bargaining process, but is a separately constituted non-profit organisation, with senior figures from both the companies and the unions represented on the Alliance's board of trustees. The Alliance has two co-executive directors, representing the management and union sides. Its work has been endorsed as a 'best practice' programme by the US Department of Labor.

Since its foundation, more than 125,000 workers have benefited from its training activities, and currently about 23,000 workers participate each year. Courses range from basic skills to computer applications and college degree programmes, and are chosen and organised by a network of locally based joint labour/management workplace committees. According to the Alliance, "being part of the local workforce enables the committee members to offer programs and classes that are relevant to their co-workers and appropriate for the internal and local job markets."<sup>9</sup> This means that the courses on offer may vary from one part of the country to another. Most courses are traditional group classes, held either in workplace accommodation or local union or community facilities; however the Alliance also offers a Workplace Effectiveness self-study training series based on CD-ROMs, and an Internet-based Life/Work Planning course, delivered online.

Funding packages, formally agreed between the two companies and the unions, apply for workers being made redundant. These agreements mean that these workers can receive up to \$2500 for certain education, training, outplacement and relocation expenses. Full and part-time staff with at least a year's service who are represented by the CWA or IBEW are eligible, though the scheme does not apply to fixed-term, temporary or casual staff.

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<sup>8</sup> Erich Latniak, Jürgen Schmidt Dilcher, Final Report of the Project 'Analysis of the obstacles to the development of the full potential of employment in the telecommunications sector', July 2000, available from <http://www.union-network.org/unitelecom.nsf/7bc3a7f8037b9be5c12568f90032d10f/a7bcfdb71bf0bc29c125692100536529?OpenDocument>

<sup>9</sup> See [http://www.employeegrowth.com/test/about\\_labor.htm](http://www.employeegrowth.com/test/about_labor.htm)

A separate funding programme, the Pre-Paid Tuition Program, offers support for workers who are enrolling for courses provided by accredited institutions. Tuition fees of up to \$1650 can be met by the Alliance (\$2650 for redundant workers), and there is a further book entitlement of up to \$200.

For workers at the regional telecoms company Qwest (US West), the CWA has negotiated a programme of financial assistance for training known as *Pathways*. *Pathways*, established in 1987, offers a total of \$10,500 over 24 months for tuition costs, books etc for redundant workers. It also funds the cost for 'active employees' of undertaking Associate or Bachelor degrees; current workers can also claim up to \$2100 for other forms of continuing education.

*NACTEL*, the National Advisory Coalition for Telecommunications Education, was formed in 1997 to address training and education needs in the telecoms industry in the US. Its Governing Board includes representatives from several telephone companies including Bell Atlantic, GTE, SBC and US West, and from the CWA and IBEW unions. One of *NACTEL*'s most innovative initiatives has been the launch in 1999 of a distance-learning degree programme, leading to an Associate of Science (AS) degree in Applied Information Technology. The course is taught primarily over the internet, with students also using textbooks and videotapes. The two-year degree is run by Pace University, New York, and students have access to a Pace University advisor as well as to a *NACTEL* mentor. The course began as a pilot with 100 students in 1999, and has since been expanded. The initial aim was to recruit 3000 students by the end of 2001.

Some of the tuition costs (which total \$15,411) are met by telecoms companies in membership of *NACTEL*, though the course is industry-wide and not limited to *NACTEL* members. A small discount is also available to CWA or IBEW members, designed to encourage non-union applicants to consider the advantages of union membership.

The launch of the *NACTEL* internet-based degree is one of a number of recent training initiatives in the telecoms sector. According to the CWA, these moves have been associated with a change of emphasis: "The number both of programs and of people participating in them has grown rapidly over the past year or two, as the emphasis has shifted from responding to corporate downsizing (workforce reductions) to addressing skill shortages resulting from the info-tech revolution. These shortages are encouraging unions, employers and government to seek joint training and retraining solutions".<sup>10</sup>

One example of this is the ICT company *Cisco*, which since 1999 has agreed a number of training initiatives with the CWA, including a programme for former Armed Forces personnel with telecoms experience. The union points out that young, high-tech companies can often be assumed to be associated

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<sup>10</sup> CWA Training and Education Programs, briefing paper (undated)

with anti-union attitudes from management and indifference among employees. At Cisco, however, the CWA claims that, “faced by a common problem, the union and the management have been able to find an area of co-operation and joint endeavour”.<sup>11</sup>

### **Training, employability and the social partnership process: the broader context**

Initiatives such as the Lisbon Statement and the Alliance for Employee Growth and Development can be seen as reflecting the long tradition of social partnership in the telecoms sector, based to a large extent on the pre-liberalisation model in many countries of a single monopoly national telecoms supplier. The entry of new companies, the development of new telecoms services (such as mobile telephony) and the increasing internationalisation of the telecoms sector can impose pressures on the established collective bargaining process. To what extent is it proving possible to raise issues of training and employability in this new situation?

One interesting example is *Italy*, where a new sectoral agreement for the telecoms sector was signed in June 2000 between the employers’ federation Confindustria and the union federations Cgil, Cisl and Uil. This step reflected the fact that many new entrants to the telecoms sector in Italy were choosing to operate collective agreements applying in other sectors rather than that in force in the former state monopoly Telecoms Italia. For example, Omnitel (originally created by Olivetti) had chosen to apply the metalworking agreement.

The new agreement, which can be applied to all companies already operating or entering the telecoms sector, aims to foster greater flexibility in employment relations and working time without worsening existing employee rights. A joint national committee has been created which is specifically entrusted with the management of vocational training for the sector. This committee has the task of analysing training needs and developing projects to meet set targets.<sup>12</sup>

Elsewhere, issues of employability and training provision in the telecoms sector are often absorbed within a broader context of initiatives taken on a more general, cross-sectoral, basis.

In *South Africa*, for example, the government’s Skills Development Act of 1998 established a number of sector education and training authorities (SETAs). The Information Systems (IT), Electronics and

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<sup>11</sup> *ibid*

<sup>12</sup> Sectoral agreement signed in telecommunications, European Industrial Relations Observatory (EIRO), July 2000, found at <http://www.eiro.euroworld.ie/2000/07/features/it0007158f.html>

Telecommunications Technologies (ISETT) SETA was established in March 2000, and is a tripartite initiative, with three members of the ISETT SETA Authority drawn from employers associations, three from trade unions in the sector and three government appointees. (Three further Authority members represent special interest groups).

ISETT SETA has identified a high level of training need in the telecoms sector, in the following areas: manufacturing and cable engineering, electronic engineering, software engineering, telecommunications law, policy formulation, telecommunications regulation, management, and spectrum management. The cost of the work of each SETA is being funded by a compulsory employers' payroll levy, initially 0.5% and currently 1%.<sup>13</sup>

In *Germany*, the tripartite Alliance for Jobs, Training and Competitiveness (Bündnis für Arbeit) was established in 1998. This includes regular high-level conferences between the social partners, as well as structures for working groups focusing on particular issues. The most recent high-level conference, in March 2001, reiterated the importance of formal vocational training, combined with adequate quality assurance, and also called for a paradigm shift in attitudes to the employment of older workers.

In *Spain*, training is the subject of the third National Agreement on Continuing Vocational Training (Acuerdo Nacional de Formación Continua), signed between the employers' organisations CEOE and CEPYME and the trade union confederations CC.OO., UGT and CIG. This agreement follows two earlier similar agreements, dating back to 1992. The social partners jointly manage public funds devoted to training employees, with these funds raised partly from employer and employee contributions and partly from government funds and the EU Social Fund. The preamble to the National Agreement describes training as having the function of improving skills and qualifications, to improve business competitiveness, of social and personal development, and of improving workers' employability. The National Agreement includes arrangements for joint sectoral training commissions to be established.

In the telecoms sector in Spain, vocational training is provided by among others the Information Technologies Foundation (Fundación Tecnologías de la Información), run by the National Association of the Electronic and Telecommunications Industries (ANIEL), to which all the major telecoms operators in Spain are affiliated. ANIEL courses are free to member companies.

In *Ireland*, the Programme for Prosperity and Fairness is the latest in a number of agreements between the government and the social partners which date back to 1987. Framework IV of the Programme is dedicated to lifelong learning. Among the objectives are "to grow competitiveness and employment by supporting increased productivity through enhanced skills

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<sup>13</sup> See <http://www.isett.org.za>



development at all levels of the workplace and by facilitating labour market adaptability in response to rapid technological and structural change”.

In the *United Kingdom*, the idea of workplace-based ‘learning representatives’ (worker representatives concerned to develop learning and training initiatives) has been explored. Their role is seen as analogous to that performed by existing workplace health and safety representatives, and the government is currently considering formalising their status. The government is also offering grant assistance to all adults engaged in vocational training, through a new Individual Learning Account scheme.

### **Reskilling workers for a changing industry**

Important as it is to ensure that workers in the telecoms sector are encouraged to develop their skills and undertake learning and training initiatives, these steps will not necessarily increase their employability, if there is no recognition of the changing nature of the industry and therefore the changing skill base which will be needed.

The OECD drew attention to the significant changes in the occupational mix of telecommunications jobs in its *Communications Outlook 2001*, which it put down to competition, organisational and technical changes. It reported:

“The major impact of competition on occupational categories has been an upsurge in employment in marketing and sales... It is interesting to note that the monopoly carrier in Greece (OTE) reports no-one in marketing, whereas France Telecoms reported in 1999 that 31% of its employees had changed to new jobs in marketing and sales, wireless or information system over the preceding three years, and Energis (United Kingdom) reports no fewer than 50% of their employees are in sales and marketing.

“Management is also changing as competition and privatisation bring new challenges. There has been, and continues to be, strong growth in executive and managerial occupations within telecommunications.”<sup>14</sup>

These new opportunities are matched by a reduction in industry’s need for some traditional telecoms jobs. The OECD’s *Communications Outlook* drew attention to a US study by the Bureau of Labor Statistics, which predicted an overall increase in employment in the sector between 1998 and 2008 of 23.4% from a base of just over one million employees. Within this trend, however, the BLS forecast a 36% fall in the number of Directory Assistance Operators (from 22,000 in 1998), a similar fall in the number of Station installers and repairers (23,000 in 1998), and a 23% fall in the General Office clerks category (28,000 in 1998). By contrast, a 71% growth was predicted over this period in the number of computer systems personnel (38,000 in 1998).<sup>15</sup>

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<sup>14</sup> *Communications Outlook 2001*, OECD, p234

<sup>15</sup> US Bureau of Labor Statistics, quoted in *OECD Communications Outlook 2001*

In terms of the major telecoms occupational categories, the BLS forecast was as follows:

Occupational category	Employment 1998	Forecast change, 1998-2008 (%)
Administrative support & clerical	354,000	7.9%
Precision production, craft and repair	261,000	23.0%
Executive, administrative and managerial	165,000	37.3%
Marketing and sales	109,000	37.6%
Professional speciality (computer systems personnel and electrical/electronics engineers)	95,000	46.7%
Technicians and related	47,000	13.6%
Other	9,000	20.4%
TOTAL	1,042,000	23.4%

The study on telecoms skills undertaken for the UK government mentioned earlier also looked at the changing employment needs of telecoms companies. This found that telecoms firms face the following requirements:<sup>16</sup>

- Firms need hybrid skills that combine different areas of technical expertise.
- Firms need hybrid skills that combine technical expertise, an understanding of the telecommunications market, the business acumen to know what products have market potential, and customer-relations (i.e. communication) skills.
- Changing sets of activities and the changing roles of firms vis-à-vis one another mean that new skill-sets are necessary. The components of these skill-sets may have existed separately within the industry in the past, but reconfiguring them means that they cannot be easily bought off the shelf from the education system.
- There is increasing demand for some of the more specialised technical skills.
- Computing-related skills are paramount and will become even more important within telecommunications.
- The speed of change means individuals need to be flexible and open to continuous learning.
- Organisation structures and cultures need to be flexible and responsive to facilitate learning.
- The rate of growth of the industry means that more skills of all kinds will be needed, and quickly.

The study distinguished between what it called high-level critical skills, high-level traditional skills and volume skills, dividing the first category into (a) specialist technical skills, (b) cross-disciplinary hybrid technical skills, (c) software skills, (d) hybrid technical and business skills, and (e) business and management skills. It found that, in the telecoms sector in Britain, the 'skills gap' lay particularly in the hybrid technical and business categories, that is to say (b), (d) and (e). The study concluded, "All imply broadening experience by in-company training and career development moves, and as such are a

<sup>16</sup> City University Business School, London, Employers Skill Survey: Case Study, Telecommunications Sector, September 2000, available <http://www.skillsbase.dfee.gov.uk/downloads/SKT38.pdf>

company responsibility, although recruitment philosophy and the education system can make some impact on them.”

The European study for the EU project *Analysis of the Obstacles to the development of the full potential of employment in the telecommunications sector* also explored the skills needs and training implications for highly qualified specialists in the telecoms sector. It summarised its findings in tabular form<sup>17</sup>:

	Required skills	Tasks to be performed	Organisational and vocational training implications	Estimation on changing demands
<b>Highly qualified specialists</b>	<b>for technical staff:</b> <ul style="list-style-type: none"> <li>- broad scope of technical knowledge</li> <li>- business knowledge</li> <li>- design competencies</li> <li>- knowledge on legal background (regulations)</li> <li>- communication and interaction competencies (esp. launching process)</li> <li>- "experience"</li> </ul>	<ul style="list-style-type: none"> <li>- product development incl. technical specification, prototyping, "launching" (introduction to the market)</li> <li>- re-engineering of products</li> </ul>	<ul style="list-style-type: none"> <li>- close co-operation with different professions</li> <li>- support and opportunity to update competencies</li> </ul>	<ul style="list-style-type: none"> <li>- low numbers (development groups are small groups but they are essential)</li> <li>- ongoing need for highly skilled staff/ high performance staff</li> <li>- faster "induction" processes for graduates to become productive</li> <li>- danger of "burn out"</li> </ul>
	<b>for marketing research staff:</b> <ul style="list-style-type: none"> <li>- good technical understanding</li> <li>- good analytic skills in market research and marketing</li> <li>- communication and interaction competencies (esp. launching process)</li> </ul>	<ul style="list-style-type: none"> <li>- market monitoring</li> <li>- research on customer behaviour</li> <li>- definition of product features, prices, potential customers</li> </ul>	<ul style="list-style-type: none"> <li>- close co-operation with different professions</li> <li>- support and opportunity to update competencies</li> </ul>	<ul style="list-style-type: none"> <li>- there seems to be a scarceness in finding experienced marketing people; but less dramatic than in the technical professions</li> <li>- danger of "burn out"</li> </ul>

<sup>17</sup> Erich Latniak, Jürgen Schmidt Dilcher, Employment and skills in growing business areas of the telecommunication service sector, final report of the project *Analysis of the Obstacles to the development of the full potential of employment in the telecommunications sector*, July 2000, available <http://www.union-network.org/unitelecom.nsf/7bc3a7f8037b9be5c12568f90032d10f/a7bcfdb71bf0bc29c125692100536529?OpenDocument>

	<b>for management:</b> <ul style="list-style-type: none"> <li>- project management</li> <li>- social networking and interaction competencies (esp. launching process)</li> <li>- financial and time control</li> <li>- use of IT-based project management tools</li> </ul>	<ul style="list-style-type: none"> <li>- central task: organisation of productive teams on scarce resources</li> <li>- communication/ interaction (different type of leadership)</li> </ul>	<ul style="list-style-type: none"> <li>- not only single persons and individual skills are relevant but there is a need for productive teamwork</li> <li>- different style of management needed: open access, communication, co-operative leadership</li> <li>- accepting mistakes as chances to learn</li> <li>- knowledge management</li> </ul>	<ul style="list-style-type: none"> <li>- management of these units while there is an "in" and "out" of staff</li> <li>- danger of "burn out"</li> <li>- recruitment by internal management development procedures, partly from external companies</li> </ul>
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The same report undertook a similar exercise also for two other categories of employee, those engaged working in call centres and help desks, and those performing technical maintenance and customer related technical services.

<b>Information support staff (Help desks)</b>	<ul style="list-style-type: none"> <li>- Communication/ interaction with customers</li> <li>- basic technical understanding, good knowledge on technical infrastructure and customer equipment (necessary for diagnostics: net problem or customer equipment problem? misuse?)</li> <li>- knowledge on service processes (who else to be asked)</li> <li>- basic IT qualifications (user level)</li> </ul>	<ul style="list-style-type: none"> <li>- customer support</li> <li>- problem detection and solution</li> <li>- link to back-office functions</li> </ul>	<ul style="list-style-type: none"> <li>- increasing requirements for technical and product related knowledge</li> <li>- training related to new products – updated information on products and difficulties</li> <li>- customer communication continuously developed</li> </ul>	<ul style="list-style-type: none"> <li>- presently expanding area: increasing employment, no severe problems in finding skilled staff (some regional scarceness)</li> <li>- trend towards outsourcing of lower quality services could lead to a change; less growth of employment, but "smarter" jobs</li> <li>- uncertainty on substitution effects</li> </ul>
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<b>Technical support staff</b>	<ul style="list-style-type: none"> <li>- good knowledge on signalling, measurement technology, and digital technologies (e.g. complex switching)</li> <li>- skills in network management (very much equipment or supplier specific)</li> </ul>	<ul style="list-style-type: none"> <li>- technical installation</li> <li>- network management, optimisation, maintenance, and repair</li> <li>- technical support at the customer (internet, e.g. access)</li> </ul>	<ul style="list-style-type: none"> <li>- need for higher speed in retraining and upgrading skills due to changes in technologies (e.g. high speed switching, UMTS/GPRS)</li> <li>- strong emphasis on equipment or supplier related training</li> </ul>	<ul style="list-style-type: none"> <li>- presently no problem of finding staff</li> <li>- regional distribution problems (skilled staff at the wrong place)</li> <li>- no large changes in employment visible: stagnation/ low</li> </ul>
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	<ul style="list-style-type: none"> <li>- (internet:) competencies in interaction with customers; understanding problems of customers/ diagnostic tasks, support, and consulting</li> <li>- extended IT-skills (operating equipment, programming)</li> </ul>		<ul style="list-style-type: none"> <li>- internet: customer contact for a part of the staff (private and business customers)</li> </ul>	<ul style="list-style-type: none"> <li>- growth potential – but: employment security maybe changing (increasing demand) due to installation of further infrastructures (e.g. UMTS mobile networks)</li> </ul>
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In summary, the point is clearly that training and lifelong learning opportunities need to be directly related to the current and forecast future skills needs of telecoms companies.

We shall now turn to consider the implications of two new forms of work organisation in the telecoms sector. We shall begin by looking at the burgeoning call centre sector.

### **New forms of working: call centres**

Call centres, purpose-built telephone call handling units which make use of automated call distribution (ACD) technology, have developed very fast in the telecoms sector, both for traditional telephony (where services previously provided at local telephone exchange level have been relocated to more distant centralised units) and for mobile telephony companies.

In terms of working conditions and employment, call centres have attracted poor publicity. Some have described them as twenty-first century electronic sweatshops, comparable with the sort of assembly line working in manufacturing associated with Taylorism and Henry Ford. The degree of surveillance necessary has also invited unfavourable comment. Certainly, the work undertaken by call centre staff is dictated by ACD technology to an extent which has not traditionally been associated with white-collar workers (although a comparison can perhaps be made with the work of local switchboard operators, usually women, in the early days of telephony).

Call centres typically have a number of characteristics. These include:

- Very flat management structures, with only one or two layers of management
- As a consequence, very little opportunity for traditional career progression
- The organisation of individual workers into teams, which may be encouraged to compete, eg over sales targets
- Work which is highly structured (eg use of scripted conversations) and does not lead to the acquisition of additional skills

It can also be noted that call centres employ a high percentage of women workers and of younger workers. A high turnover of staff is a feature of many call centres.

Call centres have increasingly been targeted by trade unions, concerned both that call centre staff may not be represented for collective bargaining purposes and that working conditions may be inadequate. One example was the international Call Centre Action Day, organised in November 1999 by two international trade union organisations FIET and Communications International, now both merged into Union Network International (UNI).<sup>18</sup>

Companies too have increasingly been looking at their management practices in call centres, concerned to avoid the high staff turnover rates and low staff morale which some call centres exhibit. Whilst call centre working may always be relatively repetitive and low-status, there is nevertheless a growing recognition of the advantages of providing call centre staff with training for appropriate certifiable qualifications, and with recognised paths for career progression.

One interesting initiative was that coordinated by the European Federation of Direct Marketing Associations (FEDMA), which between June 1999 and December 2000 led a EU-funded project developing standards and qualifications for call centre workers. UNI was responsible for coordinating national trade union input into the project.

One aim of the project was to establish European standards for call centre qualification. The project aimed to devise methods for structuring the core competencies needed, so that qualifications obtained in one EU member state were recognised elsewhere. At the project's start only three member states (the Netherlands, Belgium and the UK) had national recognised training standards for the industry.

This objective was achieved at the end of 2000 with the publication by the European Committee for Standardisation (the European equivalent of ISO) of European Competencies for Customer Contact Representatives. For team leaders and call centre managers, the project recommended adoption of qualifications already established by the UK's national training organisation for the telecoms sector NTO Tele.com.<sup>19</sup>

In New Zealand, the Electrotechnology Industry Training Organisation has been engaged in developing with other partners including Telecom New Zealand, NZ Post and the FinSec trade union a National Certificate in Call Centre Operation. Whilst some of the competency units in this Certificate are generic to office working, others are specific to call centre working.<sup>20</sup> In Germany, a similar initiative was launched in early 2000 by the Chamber of Commerce and Industry in Düsseldorf.

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<sup>18</sup> For more information see *Organising in Financial Call Centres*, Andrew Bibby, published by Union Network International, 2000

<sup>19</sup> See [www.eurocallcentre.com](http://www.eurocallcentre.com)

<sup>20</sup> See [www.etito.co.nz/call.htm](http://www.etito.co.nz/call.htm)

In the United Kingdom, concerns about alleged management bullying, stress, unachievable targets and the use of agency staff in call centres led to a one-day national strike in 1999 organised by the Communication Workers Union against BT. However the dispute was rapidly and satisfactorily resolved, with an agreement between the company and the union to develop a model of best practice for the call centre industry, as well as the revision of staff performance criteria and the adoption of a stress management programme.

### **New forms of working: Teleworking**

Teleworking, that is to say remote work facilitated by information and communication technologies, has been an issue receiving considerable attention in recent years. A report published by the ILO in 2001, *The High Road to Teleworking*<sup>21</sup>, surveyed the development of telework internationally and reviewed best practice in its implementation.

Telework was, as noted above, one of the four priority areas identified in the Lisbon Statement between the European Telecommunications Network Operators and the UNI trade union. Subsequently, the social partners drew up agreed Guidelines for Telework in Europe. This began by asserting:

“Telework constitutes a form of work organisation whose increasing use is a clear sign of a trend towards a more flexible and more mobile workplace. Telework is particularly important for the telecommunications companies, for whose products and services it provides an important field of application.”

The Guidelines, which focus particularly on home-based telework, include twelve principles, including the following:

- Teleworkers will be treated equitably with employees working on Company premises, and will be assigned to a Company organisation unit. Therefore, when an employee previously working on a company’s premises agrees to telework, his/her employment status and conditions will not be affected.
- Teleworkers will have access to the same opportunities for training, career development and career advancement, which are available to other employees working on Company premises. They will be involved in the same ‘work review; policies adopted by the Company for the other employees
- Arrangements should be made in order that teleworkers do not undergo exclusion and isolation, including, as far as possible the opportunity to meet with colleagues on a regular basis and access to company information.

Also within the European context, the employers associations UNICE and CEEP are (summer 2001) in the process of negotiations with the European Trade Union Confederation a voluntary European framework agreement on teleworking. This also includes the proviso guaranteeing that teleworkers

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<sup>21</sup> Available at [www.ilo.org/safework/telework](http://www.ilo.org/safework/telework)

have the same access as other workers to opportunities for training and life-long learning and for career development.

Telecoms companies were among the first to sign collective agreements for the introduction of telework. At Deutsche Telekom, for example, an agreement linked to a part-time home-telework pilot programme was concluded with the DPG union in October 1995, and was followed in 1998 by a collective agreement on teleworking at Deutsche Telekom's T-Mobil. In Australia, an agreement was signed between the national telecoms company Telstra and the Communication Workers Union of Australia in 1994. In Italy, Telecom Italia signed an agreement in 1995 with the trade unions introducing the concept of 'remote working'. France Télécom and BT also have agreed provisions for teleworking arrangements. These agreements follow closely the principle that teleworking employees have the same rights as other employees to training and career development opportunities.

More generally, remote working (including remote customer service handling from distant call centres) offers the likelihood that work will increasingly migrate across national frontiers. This, combined with the growing international reach of the major telecoms operators, could pose a significant threat for the jobs of some current telecoms employees. These trends need to be anticipated, so that steps can be taken now to ensure that individual workers affected have the skills necessary to adapt to new types of work.

### **Delivering training using new technology**

As the ILO World Employment Report 2001 has pointed out, the new opportunities made possible by information and communication technologies can themselves be utilised for learning and training purposes:

"The advantages of harnessing the technologies themselves for the delivery of training are many. Their access is immediate; barriers of time and distance – and cost – are less imposing; and their interactive nature may improve retention rates. In consequence, the private (often industry-based) online training market has been mushrooming in the past few years, expanding the supply of online courses to cater to corporate and individual demands for knowledge and skill development, free from the constraints imposed by traditional classroom delivery."<sup>22</sup>

Enthusiastic predictions have been made for the rapid growth of online learning or e-learning. For example, IDC has forecast that traditional instructor-based training in the USA would decline from its 77% share of the market in 1998 to only a 35% market share in 2004, as technology-based training delivery became more popular.<sup>23</sup> IDC claims an annual compounded

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<sup>22</sup> World Employment Report, ILO, 2001

<sup>23</sup> IT Training and Business Skills Training will Reach Parity in 2004, IDC press release, 2 Aug 2002. [www.idc.com](http://www.idc.com)



growth rate in the market for corporate learning of 69% in the years to 2004, with the western European market showing even stronger growth, almost doubling in size each year.<sup>24</sup>

Whilst some voices recently have struck a slightly more cautious note,<sup>25</sup> nevertheless the upwards trend is clear. IBM is reported to have saved \$200m per year in training costs by switching to e-learning for its 95,000 employees worldwide.<sup>26</sup> Cisco claims that its switch to e-learning (in January 2001, more than half its training programmes in Europe were for the first time delivered via the net) has improved training quality, led to gains in productivity and has also, according to its European MD, corporate communications and training, saved “tens of millions” of dollars.<sup>27</sup>

A significant step to develop e-learning in the telecoms sector in the *Asia Pacific* region was taken in December 2000, with the endorsement by the International Telecommunication Union of a proposal by the Singapore Infocomm Development Agency (IDA) to develop the *Asia Pacific Centre of Excellence Virtual Learning Centre*. The Virtual Learning Centre is designed to maximise the opportunities of the internet to deliver high quality training and development programmes in the telecoms sector. Key features include collaborative learning tools (such as discussion forums, on-line text and video libraries, web conference capabilities and interactive video-on-demand), and a ‘online virtual learning centre interface’, offering individual users their own personalised web space in which to maintain their training objectives.<sup>28</sup>

E-learning is already being widely adopted by larger telecoms operators. In *France*, for example, France Télécom Formation, the telecom company’s training arm, has recently begun to offer access to e-learning via both its intranet and the internet, using the MEDIA plus product of the commercial provider Editions ENI. MEDIA plus can be accessed by France Télécom’s office staff directly from their desks.<sup>29</sup>

In *Belgium*, Belgacom is utilising the TopClass Knowledge Management System from US producer WBT to deliver, and to evaluate the effectiveness of, its e-learning facilities. Internet-based training delivered by TopClass is intended to substantially enhance Belgacom’s traditional classroom-based training for products, business processes, management and IT skills. According to Belgacom’s Learning and Development Director, the company’s corporate structure depends on achieving a well trained and highly skilled workforce.

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<sup>24</sup> The worldwide Corporate eLearning Market is on course to exceed \$23 bn by 2004, IDC says, IDC press release 27 Feb 2001, [www.idc.com](http://www.idc.com)

<sup>25</sup> See for example *Some Painful lessons for the e-learning sector*, Della Bradshaw, Financial Times, 4 June 2001

<sup>26</sup> Blended learning is the new buzz phrase, John Lamb, Financial Times (Review of Information and Communications Technology), 6 June 2001

<sup>27</sup> Desktop training system saves time and money, Nuala Moran, Financial Times (Review of Information and Communications Technology), 6 June 2001

<sup>28</sup> ITU endorses IDA Singapore’s Virtual Learning Centre Proposal, ITU press release, 7 Dec 2000 [www.ida.gov.sg](http://www.ida.gov.sg)

<sup>29</sup> France Télécom à l’heure de l’e-learning avec Editions ENI, Yahoo Actualités, 14 May 2001

Another example of a company which is making use of its corporate intranet for training purposes is *BT*. The company and the Communication Workers Union (CWU) agreed in 2000 a formal *Learning and Development* statement which places obligations on the company to foster the lifelong learning and development of its staff, including the provision of high quality retraining and reskilling assistance, whilst BT employees themselves have the obligation to “recognise that their willingness and ability to adapt and to learn new skills and behaviours are essential to sustain their employability in the fast changing communications industry”.<sup>30</sup> Most BT employees have access to the intranet (the ‘central nervous system’ of the organisation, in the words of the company’s HR Director), and are able to find out for themselves what training resources and opportunities are available, without this process necessarily having to be mediated through their line manager. The ‘BT Academy’ distinguishes between work-related e-learning and personal development learning.

Examples of innovative use of e-learning by *US* telecoms companies, such as NACTEL’s on-line degree course in Applied Information Technology, have already been referred to earlier in this paper.

As one study of e-learning has pointed out, the necessary investment of money and time in this form of training delivery requires a strategic decision within an organisation. The author suggests that there are a number of requirements for successful implementation of e-learning<sup>31</sup>:

- the availability of good quality secured networks
- the acceptance of the new tools by the users
- the choice of an educational platform or providers or ASPs
- the definition and development (or acquisition) of the contents
- the existence of trainers who become ‘tutors’, ‘mentor’ or ‘coaches’
- the possibility to capitalise the knowledge of the organisation
- the fact that everybody is familiar with the use of a PC, e-mail etc

E-learning also requires a different pedagogic approach to training from that traditionally adopted in instructor-led face-to-face training. This is a new area, and clearly not all current practices are of an adequate standard. One survey of attitudes to e-learning found 12% of e-learners thought the quality ‘poor’ or ‘terrible’, whilst 39% considered their courses only ‘satisfactory’. Another report quoted a user as saying “Right now the content available isn’t much better than a workbook or reference manual with a few quizzes. The design needs an overhaul so that the content is more engaging”.<sup>32</sup>

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<sup>30</sup> Learning and Development – the BT Commitment to our Employees

<sup>31</sup> Telework and Vocational Training, report on distance or e-learning for remote workers, Nicole Turbé-Suetens, Euro-Telework project 2000 [www.euro-telework.org](http://www.euro-telework.org)

<sup>32</sup> Attitudes to E-learning, Campaign for Learning, KPMG and Ufl, 2000, and ASTD/Masie Center, 2001, quoted in Engineering e-learning, Clive Shepherd, [www.fastrak-consulting.co.uk/tactix/features/engineer.htm](http://www.fastrak-consulting.co.uk/tactix/features/engineer.htm)

In other words whilst there are potentially great benefits, both for companies and individual workers, to be gained from e-learning there does also need to be close attention to the quality of the courses and materials provided. Course design, rather than the degree of sophistication of the technology being utilised, is the key principle.

## **Conclusion**

Governments, telecoms companies and trade unions share a common interest in ensuring that employees are adequately trained in the necessary skills relevant for the fast-changing telecommunications world of the twenty-first century. This has been recognised in joint initiatives taken in a number of different countries and regions of the world. However, it is possible to argue that many telecoms companies have failed to take a long-term *strategic* approach to the development of their employees' skills base and employability, and that this could damage the ability of the sector to respond quickly to future market opportunities.

Newer telecoms operators have in general been slower than their more established competitors in associating themselves with these initiatives or engaging in social partnership discussions.

The sector has seen traditional skills diminish in importance, and new skills (including 'hybrid' skills) become more in demand. The broader context is that of the more general, global, 'IT skills shortage', which may be holding back economic growth and development in industries reliant on ICT.

The telecoms sector is making use of new forms of work organisation, such as call centres, where staff have particular training and learning requirements. More flexible forms of working such as teleworking are also becoming more widespread and have implications for the relocation of work.

The work of ensuring employees are adequately trained for life-long employability can be assisted substantially through the use of new, ICT-based, learning technologies. Company intranets in particular are emerging as a valuable conduit for training delivery. However, e-learning is still a very young industry and not all on-line training has yet adequately adapted to the pedagogic requirements of what is a new medium. Human support remains essential, even when training is primarily delivered using ICTs.