

# **The eLearning industry and market in Europe**

Lot 1

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**Workpackage 1  
Deliverable 1 Version 1.0  
A general description of the current  
situation in the field under study**

## ***Introduction***

The objective of this report has been to help us collect and reflect on what we know and what we don't know from published reports about eLearning in 26 European countries. And, following on from this, one aim of this first phase was to help us frame the questions we need to ask for our next phases of research, case studies and a survey of suppliers, and maybe go some way towards answering.

We define the term eLearning very broadly, to mean the use of technologies in learning. The market therefore includes all education and training activities and includes learning design, development, delivery and assessment.

In carrying out the desk research, we chose to review what data and information was available on ICT usage in Europe and also to review what is available in terms of measuring the scale and value of the education and training 'markets' in Europe. We were concerned not with this information per se but how it might help, together with other research and information available on eLearning markets, to inform the major part of our research and particularly in helping us understand the supply side in European eLearning. For this reason, we have only provided limited information here on education and training or ICT statistics where we feel they might help the reader understand more fully some of our reflections on the eLearning market.

The objective of this research as a whole is to examine the structure, characteristics and trends within the eLearning market. When the call for tender was issued, it specifically required the research to focus on the supply of eLearning in the training sector and our response and the contract were established on this basis. Since that time, at the first meeting with European Commission officials, we were requested to also include education from early schooling through and including higher education. As we have already stretched the time (and resources) beyond the planned date for the delivery of this first version of the desk research report and while we have attempted to include all education, training and lifelong learning in our review, we are conscious that this additional work has meant our coverage of all sectors is necessarily not as deep as it might have been had we focused on only one part of the sector.

We intend to continuously update this report both as we uncover resources we have not yet reviewed, as new data and reports become available and as we refine our thinking through the next phases. Our job is not to generate new quantitative data – that goes beyond the scope of our brief and way beyond our budget. In the next phase, we will try to confirm, modify and extend our reflections recorded here through surveys of suppliers and in-depth case studies with some suppliers representing certain player types and other stakeholders. This is presented therefore as Version 1.0 of the Desk Research Report: 'A general description of the current situation in the field under study', submitted on 23rd February 2004.

## ***Sources of Information and data***

### **ICT data sources**

ICT trade figures and adoption/use data include figures from eEurope benchmarking reports, OECD data and a number of other reports at national level. We have also used data that have been developed and/or analysed for rankings in relation to innovation in different countries. This data covers Internet penetration, broadband roll out, mobile penetration, eGovernment roll out, education levels, use of computers for work, and ICT skills in the public sector.

### **Education and training sources – policy and market data**

Most of the information on the training sector comes from the second Eurostat Survey on Continuing Training, last conducted in 1999, Education at a Glance, OECD 2003, the Eurostat Structural of Business Statistics and the Eurostat's Labour Market Policy Database.

### **ELearning reports – policy, ‘white papers’, market information sources**

In several of the countries (Denmark, Norway, Netherlands, Germany, UK, Belgium, Austria, etc) different e-learning market reports and white papers have been published during the period from 1998 and up to 2003. They all present useful information about the individual markets, however because they analyse very different themes (some have a focus on the corporate sector, some focus on the e-learning suppliers and others cover all e-learning markets) they do not enable a comparison between countries.

### **A question of trust?**

Interestingly, the reports we have reviewed indicate that there are differences in the data sources used by different players. This is partly a question of what is available and at what cost, why the information is sought and also relates to ‘trust’ which is linked to the perceived purpose of the data. Commercial suppliers appear to use large commercial information providers as their most reliable sources e.g. IDC and Gartner partly because the information is framed to answer the key questions they have and partly because it tends to be ‘up to the minute’. Given the regional nature of much of the industry, it appears that local information sources tend to be ‘trusted’ more than international data sources.

Public policy initiatives tend to rely more on publicly available and publicly collected data e.g. OECD, Eurostat and place little trust in commercial reports. This is not just a question of trusting the source and the validity of the data used, it is also the value placed on the data because of the purpose for which it was collected – e.g. to provide market research or to provide a picture of the status of policy initiatives. This is an area we will explore in more detail with suppliers in the next phase of our research. We have taken what we hope is an agnostic view and tried to cover a range of reports from all sectors.

## **European Training Sector**

### **Overview**

The European Training Market can be split into two distinct areas: *initial vocational training* (IVT) targeted at young people and continuing training targeted at the adult population. This section presents a high level overview of the broad outline and scale of these training systems and markets and, where possible, presents supporting data.

### **Initial vocational training**

Vocational training for young people is rooted in the overall education and training system at upper secondary level and as such it is difficult to distinguish clearly between general and vocational pathways. In general terms, initial vocational training can be undertaken either school-based or as an apprenticeship/alternance training. It tends to be funded mostly by the public sector, although a good deal of apprenticeship training takes place in the work environment and hence private companies do incur some of the direct costs.

Internationally comparable data from the OECD splits upper secondary education into three broad programmes: *general*, *pre-vocational* and *vocational*<sup>1</sup>. Across the OECD area most students attend vocational or apprenticeship programmes in more than half the countries. This is particularly so for dual system apprenticeships as in Austria, Germany, Luxembourg, Netherlands and Switzerland, but it true also for Belgium, the Czech Republic, Poland, Slovakia and the UK. Vocational education tends to be mainly school-based, though in some countries there is a mix between school and work-based programmes. Most upper secondary institutions are publicly financed and managed (accounting often for 80-90% or more of students at this level), but in some cases – Belgium, Netherlands, UK – most students are enrolled in government-dependent private institutions. Privately funded and managed institutions are less common, though can still account for between 10% and 20% of students in France, Spain and Portugal.

Although expenditure on upper secondary education is not available by broad programme as described above, it is still possible to view the range of expenditure per student for upper secondary education as a whole<sup>2</sup>. Overall the highest level of expenditure is in Switzerland (\$11, 622<sup>3</sup> per full-time equivalent student in 2000). In the EU the range is from \$9,625 in Germany to \$3,859 in Greece<sup>4</sup>. As might be expected expenditure per student in the new Member States is far lower, ranging from \$1,790 in Poland to \$3,360 in the Czech Republic.

### **Continuing training for adults**

Adult education and training encompasses three broad sectors: *continuing training for those in work*, *training targeted at the unemployed* and *other disadvantaged groups*

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<sup>1</sup> Definitions: *General* – not intended for specific occupations or for further vocational programmes; *pre-vocational* – designed to introduce participants into the world of work and prepare them for further vocational education; *vocational* – preparation for direct entry in specific vocations without the need for further training.

<sup>2</sup> OECD Education at a Glance 2003, Table B1.1.

<sup>3</sup> Expenditure amounts are in equivalent US \$ converted using Purchasing Power parities (PPPs).

<sup>4</sup> NB: this is an average figure for lower and upper secondary education.

and *adult education*. Overlaps between these categories do exist and particularly so in some countries such as Sweden and Denmark.

### Continuing vocational training (workplace training)

By far the biggest provider of continuing vocational training are *private enterprises*, but the data for training in this sector is notoriously difficult to collect or indeed, if available, to compare across sectors and countries. Some countries, such as France, Greece, Spain and Ireland to impose training levies on companies - usually fixed as a proportion of total wage bill - and as a result more information tends to be available in these cases. Otherwise the only major source for international comparison is the second Eurostat Survey on Continuing Training, last conducted in 1999<sup>5</sup>.

Using CVTS data in conjunction with another major international data source<sup>6</sup>, it is possible to establish an admittedly crude estimate of the extent and cost of training for most of the EU15 countries and a few of the accession countries too. Together these data sources only provide data for certain sectors<sup>7</sup>, as well as for enterprises with 10 or more employees<sup>8</sup>. Hence the public sector<sup>9</sup> is not covered at all – a major consumer of training for its employees – and neither is trade, finance or agriculture, nor indeed are very small companies<sup>10</sup>. Therefore it must be remembered that only part of the economy is being covered by these calculations<sup>11</sup>.

The basic results are that in terms of participation in CVT courses on average for the EU around a third of employees underwent training in 1999, but training rates (i.e. the percentages of employees that have received training) are higher in services (46%<sup>12</sup>) than industry (33%)<sup>13</sup>. Participation rates are highest in Sweden (60%), and the UK and Denmark (both around 49%). With the exception of the Czech Republic (43%), participation in training was far lower among the accession countries – around 10-15%<sup>14</sup>.

It is possible using the same data to estimate total training expenditure by enterprises on CVT courses by country for these sectors. Across the EU (for the limited sectors noted above) private enterprise expenditure on CVT courses is estimated to amount to

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<sup>5</sup> The CVTS is an occasional survey, previously carried out back in 1993. It is directed at enterprises and covers training undertaken anytime in the previous year.

<sup>6</sup> The Eurostat Structure of Business Statistics, which provides a further breakdown of the number of employees by sector and firm size for EU15 and the accession countries. Resulting calculations are author's own. Please note the figures are preliminary and may be revised.

<sup>7</sup> Namely NACE sectors C,D,E,F,H,I,K covering respectively mining, manufacturing, energy, construction, hotels & restaurants, transport & communication, and business services.

<sup>8</sup> In fact within this subset of sectors enterprises with 10 or more employees represented just fewer than 80% of all employees working in these sectors.

<sup>9</sup> Health, education, public administration

<sup>10</sup> An alternative data source covering everything is the Community Labour Force Survey, produced by Eurostat, which is addressed to households/individuals. However this measures training participation only in the 4 weeks prior to the survey being conducted. Because of the shorter reference period it is not comparable to the CVTS. It also does not cover the costs of training.

<sup>11</sup> As a rough guide this group of sectors accounts for around half of all employees in firms of this size in the EU and slightly more in the accession countries.

<sup>12</sup> NB: services figure excludes Germany for which no data was available.

<sup>13</sup> An alternative measure is the percentage of enterprises that stated they provide CVT courses. For the EU15 this was 54%. However as this is not the same as employee participation – and given the requirements for the combined analysis to follow – less emphasis is put on this figure.

<sup>14</sup> Data availability is generally poor for these countries such that only the Czech Republic, Hungary and the Baltic countries are covered completely, and Poland and Slovenia for Services only.

between €17-20b<sup>15</sup>. CVT expenditure is estimated at €4.07b in the UK, €3.6b in France and almost €1.6 b in Italy. In the accession countries – where less data is available, training in the Czech Republic amounted to €242 million in 1999, in Hungary €52.5m and in Poland €74m (services only). To reiterate once again, these calculations are based on a subset of sectors and enterprises, representing about half or less of the economy, so total training course expenditure is likely to be far higher.

### Continuing adult education

Continuing adult education may be work-related or not and tends to be either publicly, or more likely, privately funded by individuals or households. Data on individual funding is almost non-existent and data on public funding is patchy.

### Training for the unemployed

Training for the unemployed tends to be exclusively provided and financed by the public sector. Increasingly over recent years there has been a shift in emphasis away from merely *passive measures* (income assistance) for the unemployed to more *active measures*, such as training. Efforts to combat youth and long-term unemployment in particular have been boosted by policy initiatives at both national and the European level to *activate* these groups into participating in training or job creation measures. Data from Eurostat's Labour Market Policy Database indicates for the existing Member States plus Norway the scale of participation of the unemployed in training measures and the degree of financial support from the public sector. Overall in 2000 some €20b was spent on training-specific measures in EU15, accounting for 0.32% of EU GDP.<sup>16</sup> Across Member States, the most generous support for training of the unemployed was to be found among the Scandinavian countries (e.g. Sweden and Denmark – both around 0.67% of GDP in each case)<sup>17</sup>. Equivalent data do not exist for the accession countries<sup>18</sup>.

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<sup>15</sup> Data are calculated as equivalent Euros that converted using PPP (Purchasing Power Parity) exchange rates. Data are missing for total cost of training for services in Germany, hence the presentation of a range figure. Data also missing for Luxembourg and for services in Greece.

<sup>16</sup> It should be noted that the data do not include special support for apprenticeships that exist in around two-thirds of Member States, particularly in Germany, France, Italy. For more information on methodology see Eurostat LMP Database 2000.

<sup>17</sup> Clearly these simple figures do not tell the whole story. Ideally the data should be standardised to account for differences in unemployment levels between countries.

<sup>18</sup> In Norway, which is included in the LMP, training specific measures accounted for 0.09% of GDP.

## ***European Educational Sector***

### **Primary and Secondary Education**

There are approximately 30 million primary school pupils in 200,000 primary schools with 1 million primary school teachers in the EU. In 2002, a survey was conducted by the European Schoolnet into the development of virtual learning environments. It studied the priorities and practices of 500 schools and 17 national agencies. 10 out of 17 agencies fund the development and localisation of VLEs at the national level. VLEs were a high priority for 60 percent of them. Of those schools (320) that had implemented a VLE, 15% were using an open source product, 33% a commercial product and 52% an in house product. 80% of those that use VLE platforms have access to learning materials through the VLE that they use.<sup>19</sup>

The survey raises interesting issues for future analysis:

- The older the pupils, the more VLEs are used– does this mean that VLEs are not suitable for younger pupils or because older students are more tolerant of this learning style?
- How will the choices of open source and in house developed VLEs affect the standards for sharing learning content in the long run?
- VLEs are primarily used for communication, document management and if they are used for accessing learning, this is mainly ICT training. This may simply reflect the early stage of development for VLEs. How will this evolve in the future, when VLEs are part of the school infrastructure?

VLEs in primary and secondary education are not as widely used as in Higher Education and workplace training.

### **Higher Education**

Higher Education in Europe is in continuous development. Most countries have experienced a change from elite higher education to mass higher education. Up to 50% of a country's population may now attend higher education, although not necessarily at university. The Lifelong learning initiatives of the 90s included higher education, both for those who missed their chance and those who need updating of their education after years of working experience. Virtual Universities and Open Universities have appeared in many of the European countries. This has placed huge demands on the state, which in most countries, can no longer afford to pay for the total cost of higher education.

A student in tertiary education costs twice as much as a pupil at primary school. The share of the GDP earmarked for tertiary education is distinctively lower than the corresponding share for primary and secondary education combined – the proportions are averages of 1.1% and 3.4% of GDP respectively. However, the cost per student is much higher. It corresponds to twice as much as that in primary education. This expenditure per pupil includes staff salaries, which are generally higher in tertiary

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<sup>19</sup> Virtual Learning Environments for European Schools, A 2002 survey, EUN insight <http://insight.eun.org>

education than at the other two levels, as well as student grant, and loan support, which is also more well developed in tertiary education<sup>20</sup>

In some countries tuition fees have to be paid. In other countries, such as the Nordic countries, politicians insist that higher education should in general be free for all young students. However, special courses for life long learners require payment, even in state institutions. In many countries in Central and East Europe, state institutions may have non-paying and paying students in the same class. The increased number of students is of major concern to politicians in most countries and different financing models are under discussion.

As eLearning is growing, private and also for-profit education has been escalating in many countries in the nineties, however more in the US, Australia and Canada compared to the European sector. Nevertheless countries like the UK have also developed commercial educational services aimed at the higher education sector (Heriot Watt, Henley Management, UK eUniversity, etc.). Most Higher Educational Institutions have invested in some sort of learning management system (LMS) in order to support “blended learning” or pure on-line learning modules. The challenge ahead for most of them is the development of good quality content, the integration of the online learning with existing educational activities and the integration of the LMS with other administrative systems at the institutions.

Quality has become a central issue in European Higher education. There have been concerns for academic standards against the background of mass higher education. Budget limitations have led to stagnating or declining government funding per student and a pressure to increase efficiency in public expenditure. In most countries, there has been a growing public demand for more transparency of the higher education system, including issues of quality. The pressure from private institutions and the opening up of the higher education market has meant that the sector itself has become more competitive.

The internationalisation of the higher educational sector and other elements of the Bologna process has created new challenges for national policy and education laws with regards to autonomy of institutions, accountability of institutions, student participation, degree systems, quality assurance systems and teaching languages.

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<sup>20</sup> [www.eurydice.org](http://www.eurydice.org)

## ***ICTs in Europe***

Over and above collecting hard data, research into Internet usage in the 26 countries examined has placed a big emphasis on how the technology is being used and on what this can tell us about future patterns of behaviour regarding the ways in which individual countries may choose to develop ICT.

Although it is possible to identify clusters within the 26, which have common characteristics on certain indices, it is clear that the rate of development in some countries on factors such as mobile phone penetration is so rapid that grouping countries on the basis of surface statistics would not be meaningful. Factors such as online tenure and where and how the Internet is being used give a deeper and more permanent insight and in this, some general trends emerge.

Online tenure is generally higher in Scandinavia, the UK and Germany and lower in the Mediterranean countries. This might be explained by a number of factors including differences in climate and even temperament of the nations involved. Rates for Internet use at home in EU member states rose from 18% in March 2000 to 44% in May 2002 with the Netherlands, Sweden and Denmark having a 60% household usage rate. Broadband connections stand on average at 7% for EU member states but rates are rising rapidly in some areas such as the UK. Twenty per cent of EU members buy over the Internet and digital literacy rates are generally high although Greece, Portugal, Spain Italy and France lag behind the rest of Europe on this.

In concentrating on the 'haves' in the statistics and patterns of usage of ICT in an area as advanced as Europe it is quite surprising to realize that nevertheless, forty per cent of Europeans don't use the Internet at all.

### **Information about ICT adoption**

One of the ultimate tests of the effectiveness of the eLearning market is its impact on business competitiveness. International variations in competitiveness have been shown to be closely related to three factors, which are the stability of the macroeconomic environment, the quality of public institutions and technological progress<sup>21</sup>. This last factor is, arguably, the most important in influencing long run economic growth, since the two others yield diminishing returns. More and better microeconomic stability and public institutions probably cannot affect growth to anything like the extent of technological progress.

However, the origins of technological progress may vary in different countries. Innovation has been shown to be the main source of technological progress in those countries that are at the technological frontier, such as the USA and other leading economies. By contrast, technological progress can be achieved through copying and adopting the knowledge of others in countries that are far away from the frontiers of technology and such is likely to be the case in the economies of the new European entrants<sup>22</sup>. Thus we can talk of core and non-core innovators, which have been defined in terms of the patents per million population. The World Competitiveness

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<sup>21</sup> The Global Competitiveness Report 2003-2004, World Economic Forum

<sup>22</sup> The Global Competitiveness Report 2003-2004, *ibid*

report has devised a technological index to reflect importance of countries that innovate rather than copy.

The current position of European countries on the Global Competitiveness is shown in Table 1<sup>23</sup>.

Country	GCI 2003 rank	GCI 2002 rank
Finland	1	1
Sweden	3	3
Denmark	4	4
Netherlands	12	13
Germany	13	14
UK	15	11
Austria	17	18
Luxembourg	21	-
Estonia	22	27
Spain	23	20
Portugal	25	19
France	26	28
Belgium	27	21
Ireland	30	23
Slovenia	31	26
Hungary	33	29
Greece	35	31
Latvia	37	43
Czech Republic	39	36
Italy	41	33
Slovak Republic	43	46
Poland	45	50
Croatia	53	48
Bulgaria	64	58
Romania	75	67

The main point to note is the close relationship between rankings in competitiveness and the ICT infrastructure, as measured by concepts such as network readiness.

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<sup>23</sup> 2003 is the latest report

## ***Estimates of market sizes***

### **The challenge we faced in terms of validity**

Not the least of our challenges in estimating market sizes and trends is the variation in the quality and characteristics of the sources. We reviewed data from a range of sources in three major categories: ICT, education and training, eLearning. This data has helped inform both the country reports and the reflections in this overall summary.

### **Information on education and training markets in Europe**

Secondly, we reviewed data concerning the size of education and training ‘markets’ as described above.

OECD data provides information on rankings on expenditure as a percentage of GDP, per capita and by public and private expenditure. While this data gives us an idea of the size of overall officially recorded expenditure per country and some simple comparisons of public and private spending on education and training, it is a very crude indicator of education and training market size and of course tells us nothing about the size of the ‘traded’ elements of the sector, much of which will fall outside the official statistics.

Furthermore, education and training systems differ greatly across Europe and different public expenditure budget lines serve different parts of the education and training systems, especially it would seem when we are looking at expenditure on products and services such a computer hardware and software. Furthermore, there are other players and activities that our reports show are part of the market in providing services in education and training that are unlikely to be ever included in the data. Examples here are services to support purchase and re-conditioning of used hardware for schools, private sector media and other company provision of education portals and content etc.

In addition to the data discussed above in relation to training markets, there is a need to understand better the markets for *traded* products and services in workplace training/continuing vocational training, one might expect to gain some insight from global surveys on multinational company training expenditure data. These do provide useful information on the amount spent per employee and as a percentage of sales and payroll. Traditionally, surveys have generally shown that US firms spend more per worker on training than European firms. However, it appears from a recent survey that the comparison between Europe and the USA is not as clear as it may have seemed. What is interesting about the most recent ASTD data is that European respondents indicated that 44% (40% in 2001) was spent on ‘outsourcing’ while the respondents from the US showed only half this amount - US 22% (21% in 2001).<sup>24</sup>

An obvious question requiring further investigation is what is included in ‘internal’ as well as ‘external’ expenditure by the companies in the different regions (we know that even within countries, companies have different reporting approaches for training expenditure and that even within companies, the reporting base can differ). What gets

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<sup>24</sup> ASTD State of the Industry report 2003.

measured may depend on taxation regulations, company policy, public requirements for reclaiming subsidies etc.

## Information on eLearning in Europe

The third set of sources we examined were reports directly relating to eLearning. There are two kinds of reports here – private commercial reports – largely aimed at supporting marketing and business development decisions by large providers – and data collected for public policy purposes.

### ICT Readiness in the education and training sector

Despite the drive to integrate ICT into education and training in recent years it is still difficult to assess advances made in ICT readiness among those emerging from the education system as well as the rest of society as a whole. One method used in a major international survey<sup>25</sup> allows for the creation of a digital index<sup>26</sup>, which, when calculated separately for youth (15-24) and adult (25+) populations, serves as a useful proxy for recent advances made in digital literacy. On a scale of 0-3 the index score for youth population for the EU was 1.5, while for the rest of the population it was just 0.6<sup>27</sup>. This pattern seemed to be true across Member States, as well as in Switzerland. Of course such progress cannot be pinned down to ICT use in education and training alone: the survey showed quite clearly a positive relationship between digital literacy and income, social grade, how recently people had left education and access to internet at home<sup>28</sup>.

Despite the information presented here on the rollout of ICT to schools and the training of teachers in ICT skills, it can be difficult to derive information on the actual use of technologies for learning. Again, the SIBIS survey provides some information on students' use of ICT/eLearning in the 4 weeks prior to the survey<sup>29</sup>. What this showed was that 84% of students in the EU had used a PC and that 45% had used eLearning (both on and offline), with a third in each case using online and offline eLearning.

Overall, the poor quality of data is keenly felt at national as well as European level and clearly hinders planning. For example, as noted in the Irish e-Inclusion report of 2003, there is a real need to 'improve the data related to ICT skills. The current data are vague and do not distinguish between IT training and ICT (Internet) training. Training should be broken down into informal learning and formal training. Questions related to IT skills certifications should be included.'<sup>30</sup> Overall, it is clear that any investigation of a segment of the education and training sector is almost impossible to achieve effectively if the sector as a whole has little or no reliable data available.

In addition, it is extremely difficult to gather any reliable information on the cross border trading of education and training services. Recent discussions in the current

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<sup>25</sup> Statistical Indicators Benchmarking the Information Society (SIBIS-WP4), *Benchmarking Education in the Information Society in Europe and the US*, March 2003

<sup>26</sup> The so-called COQS index which is a compound indicator of self-evaluation of competence in internet use in the areas of: communicating with others; downloading and installing software; questioning the source of information search on the internet; searching for the required information.

<sup>27</sup> SIBIS-WP4, page 41.

<sup>28</sup> SIBIS-WP4, pp. 44-47

<sup>29</sup> SIBIS-WP4, pp 48-49

<sup>30</sup> From eInclusion. Expanding the information society in Ireland October 2003. Information Society Commission.

GATS round highlight the difficulty in gathering information in this field and estimating what is perceived to be a significantly growing part of internationally traded services. A recent OECD working paper notes ‘Cross-border e-learning activities are likely growing at a faster rate than the number of students studying abroad, although from a low level. Increasingly, educational institutions, publishers, and ICT companies are teaming up to design and deliver e-learning courses on a variety of subjects. Large companies are also developing education and training courses to improve the skills of their employees and to keep these up to date. Again, there is very little information on the scale of these activities and the proportion that is traded cross-border’.<sup>31</sup>

Table 2 below shows examples of both private managed sites and official public information resource sites:

Table 2

Country	Private sites	Official Government sites
Denmark	<a href="http://www.linx.dk/info.php">http://www.linx.dk/info.php</a> <a href="http://www.e-learning.dk/unregistered/index.aspx">http://www.e-learning.dk/unregistered/index.aspx</a>	<a href="http://www.e-kompetencer.dk">www.e-kompetencer.dk</a> (Training) <a href="http://www.unev.dk">www.unev.dk</a> (HE) <a href="http://www.emu.dk">www.emu.dk</a> (Primary Schools)
The Netherlands	<a href="http://www.e-learning.nl">www.e-learning.nl</a> an e-learning information resource site	<a href="http://www.surf.nl">http://www.surf.nl</a> (HE)
Germany	<a href="http://www.b-o.de/">http://www.b-o.de/</a> (partnership of publishers <a href="http://www.school-scout.de">www.school-scout.de</a> (partnership of publishers <a href="http://www.global-learning.de">www.global-learning.de</a> an e-learning website by T-Systems. <a href="http://www.elearning-expo.de">www.elearning-expo.de</a> <a href="http://www.competence-site.de/elearning.nsf">www.competence-site.de/elearning.nsf</a>	<a href="http://www.online-studying.de">www.online-studying.de</a> <a href="http://www.eduserver.de">www.eduserver.de</a> (German education server)
UK	<a href="http://www.elearningcentre.co.uk">www.elearningcentre.co.uk</a> An online e-learning information resource <a href="http://www.ukeu.com">www.ukeu.com</a> The UK eUniversity	<a href="http://www.becta.co.uk">www.becta.co.uk</a> British Educational Communications and Technology Agency <a href="http://www.learndirect.co.uk">www.learndirect.co.uk</a> A network of online learning and information services
Ireland	<a href="http://www.skool.ie">www.skool.ie</a> (privately sponsored)	<a href="http://www.ncte.ie">www.ncte.ie</a> (education and training) <a href="http://www.scoilnet.ie">www.scoilnet.ie</a> (education) <a href="http://www.oscail.ie">www.oscail.ie</a> (national distance education centre) Enterprise Ireland
France	<a href="http://www.fffod.org">www.fffod.org</a> (prime association within E-learning)	<a href="http://www.cned.fr">www.cned.fr</a> (all levels – national platform <a href="http://www.educnet.fr">www.educnet.fr</a> (education) <a href="http://www.formatel.com">www.formatel.com</a> Training site
Italy	<a href="http://www.idearium.it/nuke/index.php">www.idearium.it/nuke/index.php</a> An e-learning network with link resources	<a href="http://www.istruzione.it/innovazione/">www.istruzione.it/innovazione/</a> Government institution for technologies in education. <a href="http://www.e-didateca.it">www.e-didateca.it</a> National platform for electronic learning materials <a href="http://www.osservatoriotecnologico.it/en/default.ht">www.osservatoriotecnologico.it/en/default.ht</a>

<sup>31</sup> Trade in Educational Services: Trends and Emerging Issues  
By Kurt Larsen, John P. Martin, and Rosemary Morris. May 2002 OECD  
<http://www.oecd.org/dataoecd/54/44/2538356.pdf>

		<a href="#">m</a> research and development in Educational technologies
Spain	<a href="http://www.elearningworkshops.com">www.elearningworkshops.com</a> (an open source knowledge source)	<a href="http://www.dirfo.es/">http://www.dirfo.es/</a>
Portugal	<a href="http://www.jacm.net/e-learning_o_livro/">http://www.jacm.net/e-learning_o_livro/</a> A book presenting Portuguese e-learning cases	<a href="http://www.educacao.te.pt">www.educacao.te.pt</a> National Education site
Sweden	<a href="http://www.sverd.org/">http://www.sverd.org/</a> <a href="http://www.imhresurs.se/PED/elearning.htm#lankar">http://www.imhresurs.se/PED/elearning.htm#lankar</a> An e-learning links page	<a href="http://www.netuniversity.se">http://www.netuniversity.se</a> (Net University)
Belgium	<a href="http://www.traininginfo.be">www.traininginfo.be</a> (private training and e-learning resource site)	<a href="http://www.bisonline.be">www.bisonline.be</a> Initiative for adult training via e-learning
Austria	<a href="http://www.apostrophe.at/themen/elearning/e_learning_1.php">www.apostrophe.at/themen/elearning/e_learning_1.php</a> An e-learning information resource	<a href="http://www.bildung.at">www.bildung.at</a> (education and training)
Finland	<a href="http://www.webfellows.fi/myedit/genrerekisteri/e_default.html">http://www.webfellows.fi/myedit/genrerekisteri/e_default.html</a> (A list of e-learning suppliers in Finland) <a href="http://www.dipoli.hut.fi/org/CET/">http://www.dipoli.hut.fi/org/CET/</a> <a href="http://www.avoinyliopisto.fi/english/">http://www.avoinyliopisto.fi/english/</a> Open University	<a href="http://www.edu.fi">www.edu.fi</a> (main educational server) <a href="http://db3.oph.fi/koulukaveri/e_index.htm">http://db3.oph.fi/koulukaveri/e_index.htm</a> primary school resource
Greece	<a href="http://dir.forthnet.gr/845-0-en.html">http://dir.forthnet.gr/845-0-en.html</a> Directory of e-learning sites in Greece	<a href="http://www.sch.gr">www.sch.gr</a> Greek School Network <a href="http://www.ypepth.gr/en_ec_home.htm">www.ypepth.gr/en_ec_home.htm</a> Site of the ministry for education and religious affairs <a href="http://www.gunet.gr">www.gunet.gr</a> Greek Universities Network Portal
Luxembourg		<a href="http://www.cte.lu">www.cte.lu</a> National centre for Technology in Schools <a href="http://www.education.lu">www.education.lu</a> multilingual platform of the Luxembourg school community <a href="http://www.elabotic.lu">www.elabotic.lu</a> Learning resources for education in Luxembourg
Norway	<a href="http://www.hrnorge.no">www.hrnorge.no</a> (published an eLearning supply report 2002) <a href="http://www.nade-nff.no/">http://www.nade-nff.no/</a> (distance learning association)	<a href="http://www.itu.no/">http://www.itu.no/</a> Research and competence network for IT in Education <a href="http://www.viten.no">www.viten.no</a> a free learning resource
Switzerland	<a href="http://elearning.zhwin.ch/">http://elearning.zhwin.ch/</a> (Resource site at Zürcher Hochschule Winterthur)	<a href="http://www.virtualcampus.ch">www.virtualcampus.ch</a> (higher education)

### Information from private data sources

Table 3 considers a subset of the 60 country e-learning readiness rankings conducted by the Economist Intelligence Unit in collaboration with IBM. The ranking puts Sweden at the top of the overall rankings and many of the European Union member countries are naturally to be found among the top countries of the rankings. As can be seen the Nordic Countries and the UK score quite high in the readiness rankings, whereas, the Southern European countries are rated less ready for eLearning.

Similarities in ranking are strongly correlated with the Table1 on global competitiveness.

Considering the ranking within the category “Industry” the study has considered many questions covering Internet access and usage across sizes of organisations, IT and Internet for education and training, to reach customers and for internal processes.

Top of the Industry rating is not surprisingly the US and South Korea, whereas most of the European countries have been considered less e-learning ready within Industry. Germany received an Industry readiness score that is lower than both the Czech Republic and Hungary. In fact, the four new member States included in the study show significant potential in terms of the industry readiness for eLearning.

In terms of industry readiness, the European countries need to compare themselves with countries like Canada, Australia and of course US and South Korea.

Table 3

Country	Rank of 60	Total score of 10	Industry score of 10	Industry rank of 60
Sweden	1	8.42	8.26	4
Finland	4	8.37	7.97	5 (tie)
Denmark	7	7.98	7.32	10 (tie)
UK	8	7.93	7.16	12
Norway	9	7.91	7.32	10 (tie)
Switzerland	10	7.72	6.87	16
Ireland	12	7.60	7.06	13 (tie)
Netherlands	13	7.59	6.71	19
France	14	7.51	6.81	17 (tie)
Austria	15	7.49	6.81	17 (tie)
Germany	17	7.45	6.48	24
Belgium	20	7.19	6.26	25 (tie)
Italy	21	7.07	6.52	22 (tie)
Spain	22	6.98	6.26	25 (tie)
Greece	24	6.52	5.87	28 (tie)
Portugal	27	6.33	5.29	32 (tie)
Czech Republic	29	6.11	6.65	20
Hungary	30	6.09	6.58	21
Poland	33	5.73	6.23	27
Slovakia	35	5.51	5.87	28 (tie)
Canada	2	8.40	8.35	3
US	3	8.37	8.39	1 (tie)
South Korea	5	8.24	8.39	1 (tie)
Singapore	6	8.00	7.84	7
Australia	11	7.71	7.97	5 (tie)

Source: Economist Intelligence Unit

One of the most comprehensive sources of eLearning products and suppliers is a website run as an on-line service as well as a consultancy service. The site can be found at [www.eLearningcentre.co.uk](http://www.eLearningcentre.co.uk). In addition, there are a number US based communities, market analysis sites and online magazines specialised in reporting on eLearning suppliers, products and services.

There are a variety of other reports that give indications of the numbers of players in each market and in some cases put a monetary value of these firms' activities. These are referenced in the country reports. Below we summarise some of the findings.

An online survey in Finland in 2003 identified 250 companies in this space: indications are however, that most of the 150 private sector firms only employ small number, an average of 2-6 persons, with approximately 10 are of a more substantial size. 100 public sector organisations are also providing eLearning products/services but it is unknown whether these are operating traded services. There are attempts on the part of publishers to create a separate, additional market for electronic learning materials in addition to the annual €15 - 30m currently invested in information technology and €65 - 80m currently invested in learning materials. Of a much smaller size is the Luxembourg market which according to a recent report boasts 18 companies, mainly small and which suggests that most eLearning provision is anyway complementary to other core business. The Belgian market is split, in three, but in reality contains two blocks of suppliers – French and Flemish. The latter claims two hundred suppliers.

For France, IDC, the marketing intelligence and advisory firm forecasts that the eLearning market will be worth € 250m in 2004, i.e., eight times more than in 1998, a trend similar to what is happening in most European countries. Given the above conservative estimate of €3.6b worth of continuing vocational training courses, this suggests that the percentage of training spent on eLearning in France is a very low. There are many hundreds of French suppliers but almost all very small with exceptional large players including iProgress, Auralog, Telelangue and Formavision.

### **A confusing picture**

The available data for Germany highlights the huge difficulty in estimating the market. According to one report, the market for further education and training in Germany was estimated at €30b in 2001<sup>32</sup> although it is unclear what the scope of 'further education and training' comprises. This estimate is 10 times our above estimate expenditure on CVT courses. Of the total market for further education and training, it is expected that eLearning represented 2% in 2002<sup>33</sup>, 15% in 2004<sup>34</sup> and 30% in 2005<sup>35</sup>. IDC in 2002 estimated that the 2004 market for eLearning in Germany would reach a value of \$230m, but we assume this is intended to describe continuous workplace training and not the wider training market. Given that they suggested that eLearning would constitute 20% of further education and training in 2005, this would put their estimates of the whole further education market as significantly less than the other sources.

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<sup>32</sup> Mummert Consulting, 2002

<sup>33</sup> Cap Gemini Ernst & Young, 2001

<sup>34</sup> Mummert Consulting, 2002

<sup>35</sup> Cap Gemini Ernst & Young, estimate 2001

To further confuse the picture, a study by the German eLearning company Unicmind.com AG<sup>36</sup> showed that not even one in four companies had a written statement referring to the use of eLearning within their strategy. Furthermore, only about half the participating companies indicated that they actually take advantage of the opportunity to continuously update the eLearning materials that they use. As this study covered the top 350 German companies, it is also surprising that only one in seven suggested that they had spent in excess of €1m on eLearning systems and content.

### **Information from public policy sources**

The SIBIS survey also provides some insights<sup>37</sup> on the use of eLearning among those in the labour market. Focusing on work-related training only, it showed that almost 41% of the labour force<sup>38</sup> had participated in any work-related training in the 4 weeks prior to the survey being conducted. In terms of pure eLearning though, the figure was 14½% of the base labour force or 35½% of those who had undertaken training<sup>39</sup>. Of these the proportion who had used *online* eLearning was 9½%, though the range across EU countries was significant – 16% in Finland, just over 14% in Sweden, to 1.7% in Greece and 3.5% in France. In both Finland and Sweden online methods accounted for over 80% of all eLearning, suggesting a more progressive use of this technology for training, certainly more so than in Greece where 70% of eLearning was still conducted offline using CD-ROMs etc<sup>40</sup>.

While the comparability of the data relating to ICTs in education has improved in recent years with the eEurope initiative benchmarks, there is still a long way to go in getting really useful comparable information. The eEurope benchmark indicators in the education sector are fairly limited and are aimed at providing some simple benchmarks/base lines on ICT adoption in education and training systems and covers public sector investment in Internet access, computer/school students ratios etc. As such it does not provide data on technology supported learning activities but does give some useful information on investment in hardware, software and teacher training.

### **Also a very unclear picture**

The main European reports are those linked to the European Commission and European projects and networks. A report partly funded by European funds from a Dutch source, also funded by national resources, estimated the public investment in ICTs in education in the Netherlands in 2002 at €92 per student. In their report, they make a valiant attempt to compare this expenditure with other countries and their conclusions per year in the years 2001-2 the range from €19 in Italy, €45 in Sweden, €47 in Norway, €59 in Ireland and €83 in the UK. From another source, in the UK, a survey was conducted in January 2002 estimating the average spent on books and library resources at primary and secondary schools. The research found that spending on digital learning resources was on average estimated at £4.08 sterling per pupil, whereas Secondary schools estimated digital learning resource spend at £2.89 Sterling

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<sup>36</sup> The usage of eLearning content a study into the practice of 350 top German companies, 2002, <http://www.unicmind.com/unicmindstudie2002.pdf>

<sup>37</sup> Benchmarking Work, Employment and Skills in the Information Society in Europe and the US, SIBIS-WP5, March 2003

<sup>38</sup> i.e. employees, the self-employed and the unemployed

<sup>39</sup> SIBIS-WP5, Table 4.7

<sup>40</sup> SIBIS-WP5, Table 4.8

per student. Applying average spend per pupil to the European market suggests a market size for digital learning resources of €184m in 2002 in the primary sector. This however is based on the assumption that the average spend in the UK is the same for the rest of Europe which is highly unlikely. A market of \$140-150m is perhaps more realistic. Nevertheless, this crude market estimate gives a starting point for an indication of the possible European market size of this sub-segment of the eLearning industry.

It's one thing to state the ratio of students/computers, it's another to uncover in each country/region, what are the purchasing patterns and how much do the public sector interventions impact on the market size and spending trends. For example, if a public authority acts as a negotiator and centralises purchasing, this will inevitably create short-term efficiencies but may restrict flexibility and may act as a barrier for those who might otherwise wish to adopt continuous upgrading. It may also impact significantly on the number of suppliers that can effectively compete – limited by scale on the one hand and by the inevitable restriction of the suppliers to a small 'approved' list on the other.

Furthermore, not only are different parts of the value chain provided by different suppliers but it is often the case that purchasing decisions/approvals come from different bodies – local and national and even from different parts of the public sector altogether. Very often the responsibility might be divided between the school, the local authority and a centralised agency, with a public private partnership perhaps also contributing.

The impact of these complex arrangements will be addressed to suppliers in the next phase of our study.

### **Traded v non traded**

One of the first activities in a research project such as this is to draw some boundaries around the work and to prevent it from growing beyond both budgetary and time resources. In plotting the work, it became clear that there is a huge range of activity that might be characterised as non-traded and whatever difficulties might be presented in trying to estimate traded products and services, estimating non-traded services is impossible. It is important to recognise however, that the traded portion of the market is only a portion and impressions are that it is probably a smaller portion of the total value of the sector than the non-traded portion.

#### *Examples of non-traded activity in eLearning.*

- Internal learning content resources development
- Internal remote and on-site facilitation using technology tools
- Training in product/equipment use where no separate sales charge is made to the customer
- 'Free' resources provided by media groups such as print newspapers
- Peer networks and communities of practice supporting professional development
- Public sector initiatives aimed at disseminating good practice
- Public sector initiatives aimed at encouraging and assisting shared resources
- Free online assessment/self assessment initiatives – public and private

There are also a number of ‘grey’ areas for example: a non-traded service e.g. public provider/services within domestic market may become a private provider when exporting those same services (a characteristic of the higher education market as a whole). Also some organisations may have a portion of their activity in non-traded services e.g. BECTA in the UK but part of its revenues come from services to education notably in providing advice and consultancy. And an organisation such as the BBC which is a significant player especially in eLearning for schools is extremely difficult to categorise, but must inevitably impact trading in the market. Unfortunately, for many of these providers it is extremely difficult to extract what is traded and non-traded from their financial reports.

Another example of the difficulty is extracting information on traded services can be seen in the Netherlands, where the public committed budget for ICT in all primary, secondary and vocational/adult education and training has been set for 5 years until 2006 when it is set to reach €233 m. Much of this goes to schools so might be spent on traded products and a portion of it goes to Kennisnet, which is a public private partnership.

We have found most of the public sources of reports and sites relating to all the above of value in informing us about the market characteristics but they provide us with limited useful information when attempting to measure and chart trends in the area in which we are reporting – traded services.

## ***The player types***

At the highest level, the player types can be divided into technology providers, content suppliers and the eLearning services industry. However, it is clear that within these categories there are many different types of suppliers that have emerged from different sectors.

Keiran Levis considers there to be seven categories<sup>41</sup>,

- Learning management software,
- Collaborative platforms,
- Catalogue content,
- Customised learning programmes,
- Systems integrators and consulting groups,
- Publishing conglomerates,
- Training companies which include technology in their blended offerings.

Other analysts herald the arrival of a range of other emerging players – simulation tools and content providers, games providers, and ‘enterprise application suites’. Some analysts go so far as to predict these will be ‘killer’ applications<sup>42</sup> and that they will ‘obsolete’ eLearning applications<sup>43</sup>. None of the European sources point as yet to these players penetrating the eLearning market with these offerings although some of them are European players e.g. Siemens and SAP.

## **The role of universities in fostering start-ups**

One interesting feature of the European markets we have reviewed in our country reports, is the presence of a number of European suppliers that emerged from educational sector – e.g. Didascalias in Belgium has its roots in the University of Antwerp, Hyperwave in the University of Graz in Austria, EUC North a merger of three Business and Technical colleges in the North of Jutland in Denmark has supplied learning services to a number of Danish and international companies and institutions and WBT Systems in Ireland was started at University College, Dublin. We will explore in at least one case study in our next phase of research whether this background makes these companies different to those started from commercial roots – in terms of strategy, funding, marketing capability, quality, competitive advantage in education market.

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<sup>41</sup> Kieran Levis. *The Business of (e) Learning. A revolution in training and education markets.* Published by Screen Digest 2002.

<sup>42</sup> A recent Gartner presentation, states ‘simulation: ‘The “killer” application for applying knowledge.’ ELearning applications and SES: a new dimension  
Gartner Symposium ITXPO 2003. Debra Logan, Jim Lundy

<sup>43</sup> ‘Enterprise systems aren’t going to improve the performance of current eLearning models: they’re going to obsolete them.’ From forward by Jay Cross *Simulation in the Enterprise: the convergence of eLearning, Simulation and Enterprise Application suites*  
Sam S Adkins. Published by Internet Time Group January 2003

## ***How do analysts perceive the market?***

After the hype of the late 90's and the vastly over-estimated expectations of huge growth in eLearning, one would have expected significant caution to be exercised today in predicting future trends and growth. There is certainly great caution now running through European reports and some of the more measured US reports also demonstrate restraint in forecasted growth. However, some of the global players still present rather over-excited and intemperate expectations both in growth expectations and in trends. There are other commentators who foresee quite radical changes in the market in the future and especially relating to education. They anticipate the 'Napsterisation' of books and other text content following the radical changes in the music and now film industry, and point to projects such as the MIT OpenSource initiative and web community development activities such as Wikipedia as indications of a significant change in consumer attitudes towards ownership and use. The changes forecast have significant implications for content suppliers in particular and especially publishers whose responses so far have been to prevent changes in practice by extending copyright periods and introducing new regulation.<sup>44</sup>

## **What phase of market development?**

One of the first questions analysts' reports bring up is the state of maturity of the market or markets for eLearning. Some suggest it is already quite mature while others consider it to be at an early stage of development. Gartner for example at a recent European presentation stated that 'eLearning is in the early throes of mainstream adoption.'

Adkins on the other hand from a US perspective, states 'The industries competing for the eLearning market all have maturing product lines and see the learning market as a means to generate new revenues to offset the decline phase in their current product pipelines. They are entering the learning market now because the industry has reached a period of wide adoption and profitability for eLearning products are now possible.'<sup>45</sup> Adkins appears to base this statement on the evidence of downward price pressure and over-supply of existing products.

'The eLearning industry is also seeing the maturation of first-generation product lines. Mass-market eLearning content in particular has already become commoditised. Commoditisation in itself is not a bad thing. It is usually good for customers as a ready supply of products are available at falling process.' While it is true that certain parts of the eLearning industry have been subject to downward price pressure and over-crowding of suppliers, this probably has a great deal to do with the Internet/stock market bubble and ready finance that supported large numbers of start ups in a

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<sup>44</sup> Donald Clark. Presentation at elearn International. Edinburgh Feb 2004.

<sup>45</sup> SE#1 Centrifugal Force: the race for eLearning in the real time extended enterprise. Simulation in the Enterprise: the convergence of eLearning, Simulation and Enterprise Application suites

Sam S Adkins. Published by Internet Time Group January 2003

condensed time period followed by rapid fall and economic recession rather than a maturation of the market.

### A commoditised market?

Adkins is largely concerned with the technology segment of the eLearning market and this has certainly been subject to strong downward price pressure. Falling prices of 'commodity' products in the eLearning market has a great deal to do with a failure to prove any real value proposition with the products provided as more and more companies that purchased commoditised content products (large libraries of pre-packaged courseware) realise the failure of these products to meet real needs.

In addition, disappointment with their capacity to realise changes in education and training achievement and promised cost efficiencies with the purchase of the technologies, have led many users to question the value proposition of a great deal of the supply. Falling prices of technologies may also have more to do with over-crowding of suppliers in what is still a relatively immature market where these suppliers were dependent on investment for growth rather than revenue generation and with the absence of further investment, fought to secure contracts on the basis of massive price reductions. And as Levis has pointed out, 'in most of these market segments, barriers to entry are low, there are many suppliers and compared to the IT industry, an absence of standards.'

### Still immature

It is probably fair to conclude (but this will be subject to further discussion with suppliers in the next phase of research) that the market at least in Europe is still in an immature and growth phase with unclear boundaries around what will survive as a critical segment of the sector. Segments that appear stable and likely to continue and grow at least in the short to medium term are forms of learning environments that provide access to synchronous and asynchronous learning resources and activities (Virtual Learning Environments – VLEs), authoring tools to design learning approaches and resources (including simulations), learning management systems (LMS) that support administration of learning and in some cases support linkages between learning and performance, tools to support the development and storage/retrieval of resources (content management systems, CMS and LCMS), tools to support collaborative activities including learning, and live event systems also known as virtual classrooms.

What remains unclear as a segment is the 'content' market. There is demand as evidenced in our country reports for learning resources, some in the form of generic courses, some as tailor made or customised content and some as resources generated by and shared among users much of which is linked to curricula and may be free/shared among certain user groups. The two most stable supplier types trading in this market appear to be the custom content providers, many of whom appear to be linked to or have developed expertise in sector sub-sectors of education and training – e.g. engineering software and simulations for professional training, software for compliance training in financial services industries and educational publishers with increasingly integrated media offerings solidly linked to curricula.

## Anyone for eLearning services?

Another domain that remains rather less than distinct in terms of its boundaries and rather unstable is the services area. This comprises business/strategy consultancy, project integrators, evaluation etc. some of the players here have added eLearning to their existing services and their presence in the market will depend on the profitability of their eLearning services over competing markets they can service. In the last two years (2002+) many of these organisations have successfully bid for large-scale public sector contracts across Europe as governments work to fulfil their eEurope objectives, improve the efficiencies of public services and adapt to the delivery of eGovernment services.

Given the state of most European economies during this period, it is clear that many of the business services companies have retained their eLearning services through the development of public sector contracts. An upturn in the economy leading to demand for new services in the private sector or a retreat in spending by public sector bodies could lead to a reduction in service suppliers (notably those that are not pure education/training/eLearning players) and this segment of the supply side may look very different quite quickly. Another factor influencing this segment is the growing expertise of the users who often through their experience are gaining expertise as fast as their consultants.

One other services area is hosted services – providing ‘outsourced’ full learning services. There are few really big players evidenced from the country reports occupying this segment but companies such as the global player Centra with many European clients including Cadbury Schweppes, Danfoss, Deutsch Telecom, France Telecom, Nokia, Shell, and education institutions INSEAD and the London Business School, has seen a significant change in its revenues sources with large growth in services and proportionately significantly less in software licenses. Given that one third of their 2002 revenues were earned outside US, it is likely that they occupy an important position in this service provision in Europe.

Adkins certainly hits on a valid point when he says ‘There is some sense in this in that the early entrants led the way and lost money – bigger ICT companies then moved in once markets had been through the early adoption phase.’ The big publishing companies have also moved into the field. However, while the latter are creating integrated offerings, the former may not always continue to see eLearning or the education and training sector as relatively attractive in comparison to other business opportunities. And so far, integrated ICT offerings e.g. learning applications integrated into enterprise suites do not appear to be capturing significant business.

## ***Regionalism versus internationalism***

In general, the European eLearning market has a very strong regional character. The language and cultural differences from country to country are still making the transfer of know-how, products and services across borders a difficult process. However, there are small signs of change and especially in the workplace-training sector, evidence of quite considerable international trading activity. This is a business where there is a clear divide between suppliers servicing international markets and sometimes set up for this express purpose e.g. Scottish IVMEDs (online medical education and number of the Irish companies) and those supporting local needs. A number of universities in Europe are targeting developing markets such as China (for example Liverpool) with eLearning offerings. Supplying to markets in Europe, Henley Management College from the UK provides eLearning programmes in the Danish market and of course, through its INSEAD Online, INSEAD in Paris provides management training and development worldwide. Interestingly, the online and CD-ROM based language learning industry in Europe seems to have been able to operate across borders with many companies operating in several European countries (examples: Berlitz, Auralog, and Macmillan). These companies are also among those that have been active in the educational software market for longest and have built up the size and the financial muscle to withstand the ups and downs.

A challenge crossing borders, especially in providing training for regulated occupations, is finding a way to achieve scale in services and products that can be used locally. There is the emergence of specialist providers in this international space – e.g. US based Red.Vector cited in Danish report which is a supplier to engineering and architectural fields, and a number of the other cases for example in Ireland where they have specifically targeted the telecomms and healthcare sectors internationally. In the case of Red Vector, while it is a US venture and a commercial provider, it has partners from universities and publishers and works in partnership with professional and certification bodies. Its model is to provide content to prepare users for professional qualifications rather than directly providing ‘degrees’ online. On the other hand, universities such as the Open University in the UK have a strong and well-respected ‘brand’ and with their management programmes have no difficulty selling into other European countries.

## **Smaller markets**

The country reports seem to suggest that there are some differences in the characteristics of the suppliers in some of the smaller (and especially less developed) markets. They appear to be more likely to be supplied by providers from other countries – especially when there is a decision to roll out a major public initiative. Is the reason for this that these large firms are offering a track record, scale, speed and possibly cost/economies of scale? For example, in Cyprus, it is the Greek re-seller of an international supplier (US) that has the contract to supply schools under the government’s IT programme. Several of the players in Cyprus use Greece as their representation office for both countries. Many of the smaller countries also report that these large companies have no actual presence in their markets and are servicing them

from neighbouring large countries e.g. Belgium, Luxembourg. We will investigate this a little further in our next phase.

## Global players

The term global players is used here because while many these companies have clear US parentage, they are often comprised of businesses that have been built up over years through both organic growth and acquisition, often of local players. Therefore, although experts such as Levis consider these players 'with global pretensions'<sup>46</sup> in the main to be American, calling them US players isn't always absolutely accurate. There are a number of large players, from the ICT sector (e.g. IBM), the publishing sector (e.g. Thomson), the educational sector (e.g. WebCT), the consultancy sector (e.g. Accenture, PWC (now part of IBM) and pure eLearning players (e.g. Click2Learn). These players have a presence across Europe and capture many of the large public as well as private eLearning contracts. Brandon Hall's eLearning stock tracker of some 19, mostly worldwide eLearning companies (covering technologies, content and services – with only one pure European player -EPIC) most of these companies are experiencing significant growth in stock prices indicating the concentration of e-learning contracts on fewer and fewer companies<sup>47</sup>. In terms of software for education and training markets, one report states that Germany, has the ambition to become the number one country for educational software worldwide<sup>48</sup>, and it is this objective that underpins its "Neue Medien in der Bildung" programme.

## European players

European suppliers are starting to develop networks and collaborations across countries. Interestingly, the online and CD-ROM based language learning industry in Europe seems to have been able to operate across borders with many companies operating in several European countries (examples: Berlitz, Aurolog). These companies are also among those that have been active in the educational software market for longest and have built up the size and the financial muscle to withstand the ups and downs.

The large educational publishing groups like Klett Verlag, SWOY, Egmont Group, Reed Elsevier, Pearson Group, etc. have established units of educational publishing companies in multiple countries and these collaborate across the borders on joint multimedia and eLearning development projects. As a consequence, the large groups have been able to introduce highly innovative products and services on the education and training market.

The above two operator types are characterised by the fact that they have emerged from other businesses primarily audio/video and printed media. For them eLearning is not a core business but a part of its learning services and products portfolio (book systems, traditional language courses, etc.). What don't appear in the supplier maps are large European eLearning companies that have grown out of the training sector although one Azlan, a large pan European IT training company operating in 13 countries was recently taken over by a US owned eLearning provider Knowledgegenet.

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<sup>46</sup> Levis 2002

<sup>47</sup> <http://www.brandonhall.com/public/ticker/>

<sup>48</sup> <sup>48</sup> The Dutch Challenge in Perspective. Policies on ICT in education set side by side. Marion Meesters (BMO) Nienke van der Plas in co-operation with the European Schoolnet Office (EUN) Report written in commission of the Dutch Ministry of Education, Culture and Science and the Dutch Inspectorate of Education. 2002

One reason for this is that the European training industry has been very localised as a whole, with notable exceptions in sectors such as language and IT training.

Nor are there any large eLearning companies that have emerged from within the European ICT industry. Interestingly, there are a number of internationally trading players that have grown out of European universities, among them one or two quite large players e.g. Hyperwave as noted and WBT Systems which grew out of University College, Dublin. Looking at the operators that are pure or almost pure eLearning suppliers, the numbers of European companies that have succeeded in expanding their business to other European countries or even other continents represent a very small number. In those cases, where it has happened, the operators primarily succeed in getting a foothold in a neighbouring country. Subsequently, most cross border companies are located in European regions like the Nordic countries, the Benelux, the German speaking countries and UK and Ireland. What are noticeable by its absence are European players supplying into new member States – reports from these countries tend to mention global rather than European providers.

A survey conducted by the company HighText Verlag in 2002 into the practices, preferences and expectations of 233 suppliers from 11 European countries found that in five of the eleven countries pure eLearning content suppliers represented the majority of the operators with Denmark showing a share of 69%. In Finland, Sweden and Switzerland the share of pure eLearning content suppliers is up to 50% whereas pure content providers represent 44% of suppliers in the UK.

eLearning in Europe can also mean full service. As Levis notes ‘Collaboration and knowledge sharing is a big theme for European providers’ and ‘are more likely to emphasise human and learning issues than technology as a complete solution.’ In four of the eleven countries, the majority of suppliers are primarily offering full service solutions. In other words, the suppliers are selling content as well as services and technologies. In Austria, these types of suppliers represent 67% of the respondents to the survey, in Germany 58%, in the Netherlands 45% and Greece 44%.

The technology sector is according to the HighText survey of 2002 a small segment of the eLearning industry. In none of the research countries do technology suppliers dominate the industry. On average, the share of technology suppliers across all countries was approximately 14% of the total number of respondents. However, in Greece, Denmark and the Netherlands the share of technology suppliers is close to 25%. These numbers are based on a small respondent base.

The European eLearning directory conducted an analysis of approximately 620 suppliers throughout Europe. In order to gain entry into the directory, the companies had to have been in eLearning business for 2 years or more, a physical office in at least one European region and eLearning should represent a significant part of their revenues. These criteria reduced the above list to 147 suppliers. There is a significant presence of US based eLearning suppliers in the eLearning directory, which may account for the large difference in the presence of eLearning technology suppliers compared to the HighText survey.

According to the European ELearning directory 2003 that primarily contains descriptions of eLearning suppliers addressing the corporate eLearning market, the suppliers are divided quite evenly over the three product sectors:

Solutions (110 companies)  
Systems (109 companies)  
Services (105 companies)

The number of companies specialised in providing products and services to the educational sector totalled 44 out of the 147 companies.

From our desk research in 27 countries, it can be concluded that there are far more than 147 companies in Europe that can satisfy the criteria set out by the directory. Nevertheless, it gives a good indication as to how the industry is structured.

Across European countries, eLearning content suppliers to the educational sector are to a large extent made up of publishers and multimedia publishers who either specialise in the development of multimedia content or who publish online and CD-ROM resources to compliment existing book systems. Often the online resources are free or part of a subscription on a book system, however there are also a number of suppliers publishing products that are sold commercially.

In terms of technologies most eLearning platforms addressing the higher education segment originate from the US (e.g. WebCT) however there are a few European operators like WBT Systems in Ireland, LUVIT in Sweden, Eurocom in Greece and Fronter in Norway that have captured a share of the market. A great number of platforms have emerged as open source platforms typically developed by academics for academics. In countries like Spain and Germany, Internet communities have been established focusing on the promotion of open source eLearning tools.

Most operators in Europe, excluding the large international operators like Click2Learn, SkillSoft, and ThomsonNetG mainly operate in their national markets. As an example, the Hightext research showed that of the German eLearning suppliers almost 60% were just addressing their national market, 35% were addressing the German speaking countries (Switzerland, Austria and Germany), 22% of the companies were targeting all of Europe and 25% the global market. Similar patterns can be found in other European countries. One Finnish company cited in our country report, is operating internationally and has achieved some scale (€14m) and the Danish firm, Danish Probe has also managed to compete successfully internationally.

The data discussed in the financial data (below) available about the large players in eLearning, supplements our knowledge of the market size for the continuing training sector and in some cases for the educational sector. Considerably more investigation into suppliers' financial status and how they are funded will occur in phase 2 of our research. However, some initial findings show some interesting patterns. Getting financial data from the industry is not a simple matter as most firms involved in trading are private and small companies with no obligation to disclose financial information. However, a useful source is Levis<sup>49</sup> who provides some estimated as well

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<sup>49</sup> Levis 2002

as some quoted financial data – but only up to end 2002. We will attempt to update this in our next phase.

## The big players

Most of the firms he quotes are large players and what are described as ‘new entrants’; in other words, they are start-ups of less than 5 years. Accessing data about eLearning revenues, and profits and losses from suppliers in broader ICT industries, educational publishing and traditional education and training providers is much more difficult, partly due to a paucity of public information and partly because even where that firm’s financial information is available, it does not always provide a breakdown between different lines of business. He estimates that one of the biggest, if not the biggest player is IBM which even if less than 1% of their \$86b 2002 revenues is in eLearning related sales would significantly overshadow any of the pure eLearning players.

Thomson Learning, a Canadian company and parent of NetG generated revenues of \$1,851m in 2001, approximately 30% of which came from electronic products and services. NetG according to Levis, generated approximate revenues of \$150m in 2002. One of the other global media empires, Pearson has a significant part of its business in educational publishing and has ‘made big bets on a number of learning markets and on the Internet as a delivery medium’<sup>50</sup>. Pearson Education had sales of \$3802m in 2001 most of which was earned in the US but with nonetheless significant sales in Europe. Part of Pearson Education is FT Knowledge (with revenues of £59m and losses of £86m in 2001) that works mainly in ‘corporate training’ and another interesting section of the business is ‘Distributed Learning’ that partners with academic and professional institutions to supply to individuals. These partners include the Edinburgh Business School, whose MBA has one of the largest customer bases in the world.

Other European players include Wolters Kluwer with annual revenues (2002) of more than €3.9b, employing almost 20,000 people and activities in Europe, North America and Asia Pacific. The Wolters Kluwer Education division has annual revenues of €300m and employs nearly 1500 people.<sup>51</sup> The biggest European operator, Reed Elsevier with its Dutch and UK parent companies, saw a fall in revenue and profits from 2002 to 2003 due to the constraints on government funding for education. The Education divisions achieved revenues of €1,302 m in 2003 (2002: 1,579) and 2003 profits of €252m.<sup>52</sup> The German company, The Georg von Holtzbrinck Publishing Group which owns Macmillan and several other educational publishing companies achieved revenues of €2.2 b in 2002, however, with education only representing a small share of the total revenue. The Finnish publishing group SonomaWSOY that includes an extensive eLearning division achieved total sales of €2,434 m in 2003 up by 3.2% on 2002<sup>53</sup>. Based in Ireland and the USA, Riverdeep Group plc has specialised in educational software and acquired several large brands over the last few years, including The Learning Company, Edmark and others achieved sales of \$169m in 2002 and made net income of \$8.8m. The main competitors are Harcourt Education (part of Reed Elsevier), McGraw-Hill and Scholastic.

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<sup>50</sup> Levis 2002

<sup>51</sup> [www.wolterskluwer.com](http://www.wolterskluwer.com)

<sup>52</sup> [www.reedelsevier.com](http://www.reedelsevier.com)

<sup>53</sup> [www.sanomawsoy.com](http://www.sanomawsoy.com)

The most interesting features of the financial data on the big and pure eLearning suppliers provided by Levis are:

- The rapid growth in revenues in the first few years of trading
- The huge losses incurred in early years funded from investment
- The significant fall in revenues experienced in 2001/2
- The improvement in trading (reduction in losses) in 2002.

SABA for example grew from revenues of £1.9m in 1999 to \$53.1m in 2001 (20% of which in Europe). Losses incurred rose to \$62.8m in 2001 but fell to \$25.5m in 2002! Docent had revenues of \$0.8m in 1999, rising to \$29m in 2001 (a quarter in European sales) and losses of \$60.1m in 2001! According to Levis, they spent \$47m on sales and marketing in the year ended March 2002. DigitalThink grew revenues to \$53.4m in 2002 and incurred a loss of \$15.5m in the same year. Think, a private company was estimated to have sales of £35-40m in 2002, SkillSoft (which merged with SmartForce in 2002) grew revenues from 0 in 1999 to \$44.3m in 2002, Centra had revenues of £39.1m in 2001. Preliminary results for Click2Learn (which announced a merger in 2003 with Docent) for the year 2003 indicate total revenue between \$29.1m and \$29.4m compared to \$30.5m in 2002. 'Net loss for the year ended December 31, 2003 will be in a range of \$6.4 million to \$6.0 million in 2003 as compared to a net loss of \$18.1 million in 2002, which included \$7.6 million of loss from discontinued operations.'<sup>54</sup>

The scale of losses during the last five years accepted by investors is significant and needs to be seen within the 'internet bubble' period and it is notable that all these companies are US organisations. Whether the level of investment and preparedness to accept such high losses would have been acceptable to European investors is unknown – although European investors and shareholders in some of the big players in ICTs and publishing have clearly also been through these investment strategies. Since the bubble burst, little further investment has appeared and losses have been sharply reduced. At the time of writing this report, one well-known company KnowledgePool has gone into administration. It generated revenues of £16m in 2002 but having been sold in 2003 by Fujitsu to Maxim Training Corp (a subsidiary of a Canadian company) it failed to make forecast revenues for 2003 and was suffering according to the administrators from under-capitalisation.<sup>55</sup> In relative terms, KnowledgePool is one of the smaller 'global' players, on the other hand, even much larger players have found the market extremely challenging – SmartForce with revenues of \$261m in 2001 merged in 2002 with the much smaller SkillSoft at a time when the former was considered 'most troubled'<sup>56</sup> and has in effect been subsumed into the SkillSoft business.

### **Is anyone making any money?**

Interestingly, while Epic, which claims to be the largest 'European eLearning solutions provider' had relatively small sales of £8.7m in 2003 up from £7.2m in 2002<sup>57</sup>) unlike its US counterparts, it has been consistently profitable since 1999 and has comfortable cash reserves. It is notable that in 2002 government contracts

<sup>54</sup> [www.click2learn.com](http://www.click2learn.com) investors relations

<sup>55</sup> eLearning Age Feb 2004. 'KnowledgePool in administration'

<sup>56</sup> Levis 2002)

<sup>57</sup> [www.epic.co.uk/content/investors/Epic\\_annual\\_2003.pdf](http://www.epic.co.uk/content/investors/Epic_annual_2003.pdf)

contributed half of revenues up from less than a quarter in 2001 when financial services contributed to over a quarter of sales.

What this information tells us about the large players is that building a profitable business out of eLearning is proving so far to be extremely challenging and that investors are now much more cautious in supporting start ups and expansion plans in the sector. It places the spotlight on not just market growth potential but issues of cost of production and distribution models that we will return to in our future research.

Perhaps as a counter balance to the emerging dominance of a few players often from outside a particular country or even from outside Europe, there are a number of partnerships arising among European and even national players. Generally, these are aimed at cooperation in the market. For example, learning material publishers have established a range of commercial facilities, <http://www.b-o.de/> a partnership of 15 leading publishers in Germany. However, there is a more widespread move towards alliances/partnerships when bidding for large contracts often encouraged in documentation from major public sector investments and calls for tender e.g. UK NHSU and the Irish HEA call for eLearning services in higher education. This may be driven by a desire to treat in one contract all eLearning requirements and recognition by players, large and small that they are co-dependent for full and locally tailored services.

## ***Summary of Drivers for Change***

### **Drivers in workplace training**

Early drivers for change in workplace training were pressure on training resources in large and expanding companies, compliance requirements and providing consistent training across the globe. There was probably also a large measure of fashion, which, in a time of Internet hype, persuaded a number of senior executives that a LMS and library of courses was part of any competitive organisation. Since the downturn in the economy, drivers that continue are cost pressures, compliance training and a need to realise a return on investment on their early learning technology acquisitions. Consistency of training remains a driver added to an expectation of improved access and greater impact from investment of training on performance. Investment in training is perceived to be a means to improved efficiency from training resources.

### **ICT usage and skills**

At a broader environmental level, a general demand for ICT usage has driven eLearning as a means to achieve ICT skill acquisition. Acquisition of technologies across workplaces and business processes has probably stimulated demand for skills training to use and exploit these technologies as well as stimulated an increase in ICT related jobs, itself a driver for skills training. ICT applications in certain occupations such as sales and distribution has also stimulated demand for training in these occupations and in sectors such as manufacturing and telecomms where digital technologies have significantly changed the nature of job tasks and skills.

### **Regulation and improvement of services**

In addition, regulation in industries such as healthcare and finance has driven a lot of eLearning. A significant driver has been the adoption of technologies within public services and government/public organisations. ELearning has been used as part of change processes in improving public services e.g. in the UK with the NHSU. The move towards eGovernment (driven heavily by eEurope commitments by the Member States) is beginning to act as a strong driver for the adoption of eLearning e.g. in Denmark many government bodies utilise eLearning as a part of their drive to e-enablement.

### **Public policy initiatives**

Within public education and training systems, eLearning adoption has been primarily driven by policy initiatives and funding instruments. At the top level, competing in a global knowledge economy is perceived by European governments to be a pre-requisite to economic prosperity in the 21<sup>st</sup> Century. In order to achieve this, initiatives to create the conditions for growth of knowledge industries include eGovernment change programmes, total citizen training in basic ICT skills, the support of advanced ICT expertise both for ICT occupations and to support the changing nature of work and economic activity across all sectors with the introduction of new technologies and processes enabled by technologies. Many of these are of course part of the eEurope initiatives and are driven by commitments by the Member States to achieve their benchmarked objectives.

All of these drivers have led to massive infrastructural and hardware investment in education and VET systems, teacher training programmes and investment in new resources and centres of provision in adult education and retraining. On the one hand eLearning is being used to support the skills development of all those involved in these changes. One result of these initiatives is the continuing stimulation through national policy initiatives of demand in schools, higher education and vocational training and some specific adult education sectors. Though driven by policy objectives such as enabling all students access, equipping teachers and trainers with skills etc, there is an inevitable result that the demand for products and services will be stimulated and more broadly and systemically. Questions remain however about how this demand will be sustained once the current public funding instruments are no longer available.

### **Improving education**

On the other hand, these changes have brought about the conditions to be able to fully exploit and mainstream new ways to learn using technologies. For example, in Germany, policies such as "Neue Medien in der Bildung" (new media in education) which covers HE and schools as well as VET, aims to improve academic programmes on offer through the integration of technology supported elements and to achieve a lasting and broad integration of new media as an effective vehicle for education and training. With expenditure estimated at €320m between federal and Länder investment, all mainly focused on the development of teaching and learning software, this is one of the most significant public sector investments in Europe. In Portugal, a mix of national and European education policy and funding initiatives, some channelled through public private partnerships e.g. the Nónio Programme of the Ministry of Education, finances the development of educational software and web content.

In Luxembourg, the approach has been to provide public sector investment in schools partly through technician training and investment in laptops, as well as investment in continuing professional training and lifelong learning supported through a national portal. There are also instruments to support and encourage public private networks. In Finland, there has been a well-established set of public policies for a number of years to provide access and information society realisation. The results are clearly demonstrable. 'Three times as many members of its workforce are engaged in work related training involving eLearning as some other EU member states. This is significant given the strong relationship between participation in work related training and demand for eLearning tools. In 2002, ninety-one per cent of employment in Finland was within companies that provided their staff with free access to the Internet (compared to 40% in Greece).'

### **New business opportunities**

A final driver can be found in countries such as Ireland, Finland and Scotland that have programmes to support the development of eLearning industries – with new businesses in the sector being given support to grow and export traded products and services. In France, for example, there is an active national policy creating several networks including large companies that works as a frame for the eLearning industry. In some countries, these business are supported partnerships of educational institutions wishing to 'export' their knowledge, qualifications and 'brands' in the hope of earning revenues in overseas, often developing markets e.g. IVMEDS in

Scotland. Similarly, the major eUniversities UK initiative is a network of universities pooling expertise and resources in new eLearning offerings primarily aimed at non-UK markets. Belgian public sector investment in eLearning for vocational training/lifelong learning has been extensive and extends back to the second half of the 1990s and within the Flemish community, there is extensive encouragement for public private partnerships to support eLearning adoption in the public systems and for private company users

At a public sector level, there are enterprises and partnerships for example in accession countries which deliver internal ICT training built around use of technology and which increase technology skills well as being the first step in technology supported learning. An example here is the Czech ELearning Network (CELN) in which CESKY TELECOM is playing an active role helping to build the skills it needs through sharing of its resources, as well as supporting development of other programmes in areas in which it has expertise and in supporting development of methods to design and develop online courses. This type of activity has a broader economic development impact than simply one which focuses solely on the organisations' own immediate needs.

The mainstreaming of eLearning has generated significant related activity such as training for schools leaders/directors in managing ICTs and the establishment of standards bodies for example CETIS in the UK.

Of course these public policy initiatives have moved at different paces across Europe, impacting on the potential opportunities for suppliers. While some countries for example the Scandinavian countries, Netherlands and the UK are achieving high ratios of computers to students and internet access in schools, other such as Portugal have been slower in adoption, and most accession countries are much further below the benchmarks of the EU countries. It is hardly surprising therefore that the supply side is weaker in these countries and dominated by multi-nationals.

### **Impact of broadband**

A number of countries are now addressing the next stage in infrastructure, namely faster and higher capacity Internet connections. Irish policy makers are very slowly introducing broadband access but there are serious challenges for dispersed and remote schools. In the United Kingdom, The Prime Minister, Tony Blair, announced that every primary and secondary school in the country would have broadband Internet access by 2006. In Norway a programme for broadband Internet access for schools has developed, and part of the project is to try out different models for connecting Norwegian schools to the Internet using high-speed fibre.

So far, the reports available at a national level do not indicate any significant impact of the spread of broadband on changing or new market opportunities for suppliers or the appearance of new players to service these markets. One would expect to see an impact in the growth of online simulations, virtual classrooms and other bandwidth hungry applications. We will investigate this further in the next phase of our research.

### **Spread of wireless**

As with broadband, there is no clear evidence from the reports of any growth in the supply of applications for wireless delivery. However, the European eLearning

Market Report 2003 did indicate a small growth in anticipated demand and again we will explore the response of suppliers in the next phase of our research.

## ***Impact on the supply side of drivers and trends***

### **Compulsory education systems**

As the country reports demonstrate, public policy initiatives comprise a variety of interventions that are inevitably stimulating demand for products and services. These interventions may include support for the roll out of infrastructure (Austria, UK), direct agreements with suppliers for hardware, software, teacher and trainer training, direct commissioning of software, and aggregation of products and services through portals etc (e.g. the Austrian Bildung.at) There are also extensive public funds supporting pilot projects that enable organisations to learn and develop capacity and the capability to make decisions about purchase and in some cases purchase products and services.

There are different approaches in different countries, and suppliers need to understand the policy positions from country to country. This will be easier for those companies that are local than for those looking to move across countries. For example, 'In the Netherlands, stimulating the market to produce more high quality educational software is one of the main policy lines in educational ICT policy. In Germany, for instance, much emphasis is placed on the production of software, but accessibility is also an item. In the UK, the ambition is formulated in a different way: the curriculum should be on line. Norway has already developed educational software within prioritised areas and provides schools with software at reduced prices. In Finland, software has only recently been taken up as a governmental responsibility.'<sup>58</sup>

On the other hand, in 2002, UK schools, when receiving money from the National Grid for Learning, were supposed to spend 15% of it on educational software. In Italy, publishers can apply for a certification of their didactical software according to a pedagogical evaluation grid. INDIRE collects and documents experiences in the use of multimedia in curricula and teaching and the Technical Observatory OTE runs a service giving information and technical assistance for the acquisition and use of freeware or open source software.

### **Leapfrogging into the 21<sup>st</sup> century**

An example from one of the new Member States is Tiger Leap in Estonia (a national initiative aimed at supporting Estonia's objectives for eEurope) which at the end of 2000, contributed to IT development in Estonian schools the following: An efficiently operating financing plan for computer procurement in counties, supported by local governments with 87,500,000 EEK. Over the same period, businesses and organisations contributed 2,000,000 EEK to the Tiger Leap Program. 10,900 out of the 17,000 teachers in Estonia were trained on the elementary level in computer skills with support from Tiger Leap and 2,600 teachers participated in different in-service training courses. Schools have been supplied with 61 different educational software

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<sup>58</sup> The Dutch Challenge in Perspective. Policies on ICT in education set side by side. Marion Meesters (BMO) Nienke van der Plas in co-operation with the European Schoolnet Office (EUN) Report written in commission of the Dutch Ministry of Education, Culture and Science and the Dutch Inspectorate of Education. 2002

programmes by Tiger Leap, including the financing of the creation of 39 new original educational software packages in Estonian.

## **Educating the customer**

For many suppliers, a challenge over the years is managing the level of understanding of their potential customers. While some suppliers have taken advantage of low levels of expertise of eLearning among purchasers, for many, educating the customer has been an important goal. A better-educated customer makes a better customer. The efforts of public sector initiatives have helped to improve the decision making of users. One such initiative has been developed by the UK's National College for School Leadership with their self assessment online programme for school heads to assess their competence and provide them with a framework/matrix to examine and plan their development – including their use of ICTs <http://matrix.ncsl.org.uk> This should lead to a planned approach to development of ICT in schools and may help to make demands clearer and more realistic for suppliers. A similar online self-assessment programme The IT-Spejlet (IT-mirror), an Internet based survey focusing on the educational application of IT in teaching as well as on attitudes to IT among pupils, students, teachers and managers is available to the schools sector in Denmark.

## **Procurement practices**

With formulation of national education policies in ICT, co-ordination of procurement / approaches to procurement are becoming evident. However, there is still fragmentation of systems, where different authorities at national, regional and local level have responsibility for decision making and funding, particularly of hardware, enabling software and tools, and telecomms, for example in Portugal. While this means that there may be opportunities on supply side for a greater number and variety of suppliers, it may not mean that efficiency is achieved in public spending. If anything, in some countries, for example Denmark, there is a trend towards greater decentralisation of the purchasing process. All schools or certainly local authorities (covering a number of schools) are responsible for purchasing PCs and educational software. It is often purchased in connection with book systems. There are examples in Denmark and the UK, of teachers and ICT administrators taking the purchasing decisions on specific educational software products that they feel they need. While in the UK in the last 18 months, purchasing power in Great Britain has been returned into the hands of the teachers, products must be approved by the Department of Skills and Education.<sup>59</sup>

A similar picture can be found in other countries. For example 'In the Netherlands, individual schools are to a great extent responsible for the integration of ICT in their everyday practice of teaching. Schools have great autonomy and may follow their own policy, while the government sets the overall goals and core targets, provides institutions with information, creates the right conditions and supervises schools. The autonomous school is very highly valued in the Netherlands in all aspects of educational policy and ICT is no exception to this.'<sup>60</sup> On the other hand, 'In Sweden

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<sup>59</sup> Review of BETT 2004 by market analysts Jedlet.com January 2004

<sup>60</sup> The Dutch Challenge in Perspective. Policies on ICT in education set side by side. Marion Meesters (BMO) Nienke van der Plas in co-operation with the European Schoolnet Office (EUN) Report written in commission of the Dutch Ministry of Education, Culture and Science and the Dutch Inspectorate of Education. 2002

the responsibility for ICT investments and training for working teachers rests with the local educational authorities.’<sup>61</sup>

In general, on the software content side, the picture emerges of one where the control of curricula is a primary influence on the opportunities for content supply. Highly centralised control of curricula is likely to mean volume opportunities for content, whereas greater freedom in curriculum delivery allows greater choice in content. At vocational training level, highly specified occupational competences linked to formalised assessment, suggests larger market opportunities although the range of players that provide training will influence this. Although not straightforward, large-scale training based on common curricula – e.g. ECDL, can open up market for suppliers in competition based around same curricula, with training likely to be particularly price and quality sensitive.

### **VLEs: Buying, building or licensing**

Two trends emerge in relation to VLEs: on the one hand, institutions continue to develop new VLEs in spite of the fact that hundreds have been developed with only probably less than 10 having any serious commercial viability. On the other hand, there is a definite trend evidenced for example in Denmark one of the most advanced markets, towards licensing inexpensive externally hosted facilities rather than hosting in-house in order to maximise cost and flexibility. The cost of dedicated learning solutions has also come down as noted in the Adkins and Gartner reports partly as a result of the maturing of the market, and arguably mainly because of over supply and the difficult economic environment of the last two years. For the education sector in particular, the introduction of PPPs and public support has had a strong influence. In all sectors, the major international players dominate the VLE market, often in partnership with local firms. For example in Greece – major international players– blackboard, Smartforce, click2learn, docent all have a strong presence in partnership with Greek firms acting as local agent Value Added Re-sellers.

In both the public and private sectors, there has been plenty of evidence of licensing of multiple platforms. This is partly a result of the patterns of early adoption where in many organisations, pilots and innovations may be taking place simultaneously across different parts of the organisation. It is also due in the public education systems to initiatives which have emerged from different sources in the public sector at different times. For example in Denmark, a primary school may have licensed an hosted school intranet ([www.skoleintra.dk](http://www.skoleintra.dk)), while communicating with other schools using [www.skolekom.dk](http://www.skolekom.dk) (a FirstClass server) and participating in competitions and finding inspiration on [www.emu.dk](http://www.emu.dk) and using specific online learning tools coupled to their book system on <http://elevunivers.alinea.dk/univers/index.htm> publisher service with free and commercial online products).

On the other hand, in some countries, there is a tendency to for local school systems to collaborate on the acquisition and development of platforms. Notably Germany with its Bundesländer structure. One would expect greater consolidation to occur with market maturation although the standards movement is aimed at supporting the continuance of multiple systems through the improvement of interoperability. It is too early to tell. In the corporate sector, analysts argue that the next ‘wave’ is enterprise

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<sup>61</sup> *ibid*

application suites incorporating learning applications but as yet, the take up on these offerings is very low. For suppliers, it is clear that there are strong arguments for and against consolidation and the jury remains out. One trend that is emerging is a preference for freeware/open source systems (for example in Portugal where it is anticipated this will be a hallmark of future platforms in the education sector).

### **Vocation education and professional Training**

For formal VET systems suppliers, many of the drivers are similar to those in the compulsory education sector: eEurope benchmarks, national policy initiatives on skills for the Information Society etc. More specific to the VET sector, emerging and changing occupations and in particular, those relating to the application of new technologies in traditional industries in manufacturing and processing has resulted in a demand for pure and applied ICT skills. Examples of these new occupations are among those classified in the European Career Space project. These developments have provided opportunities for innovation in VET provision and the use of technologies in training and examples here include the mechatronics programme run by FAS, the national Training agency in Ireland. Delivered in part through a commercial VLE (WebCT) and using both internally developed resources including simulations (requiring the acquisition of authoring and multimedia development tools) and incorporating software tools for learners to model simulations (e.g. FluidSim), this is an example of how changing VET offers new supply opportunities.

### **Testing and assessment**

Of course, the most widespread example of eLearning in training is the enormously wide adoption of ECDL across and the stimulation of a large range of suppliers offering software for this qualification. One of the other big growth areas in VET and professional development is in assessment and testing software as new and more flexible forms of assessment are offered. City and Guilds in the UK for example, one of the largest qualification bodies in the training field in the world has in the last two years adopted extensive use of automated testing for globally distributed candidates and in the first three months of 2003 administered online tests to 50,000 candidates expecting to quadruple this by the third quarter of the year.<sup>62</sup> Public agencies charged with vocational and professional training such as the UK's Teacher Training Agency are also adopting online testing and there are large numbers of suppliers, some from large publishing groups such as Thomson competing for this type of business.

Partly driven by a need to get better value from investment and partly by increased focus on improved take up of continuing professional development, these public policy initiatives include for example, in Finland the integration of 'virtual studies' into all teacher training.

### **Adult basic skills**

One other area where policy initiatives have stimulated supply developments is in the area of adult basic skills and 'lifeskills' programmes for adults at risk or marginalized due to lack of skills and qualifications. There are a number of private specialist content providers in this domain some of them having benefited significantly from

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<sup>62</sup> 'Online testing – first step in narrowing North-South divide' Press release City and Guilds. April 2003. <http://www.city-and-guilds.co.uk>

public sector contracts. An example here would be one of the larger small content businesses in the UK, CTAD now part of the much larger Tribal Group.

## Higher Education

Within the higher education and university sector, changes have been relatively slow with adoption of learning technologies following more the incremental ‘stretching the mold’<sup>63</sup> model than radical innovation and change. However, digital library content has been a significant growth area in this market with suppliers from major publishers being the primary beneficiary. As yet, an emerging model in other parts of the world to reduce costs of academic and scientific papers and change the relationship between authors and publishers e.g. Public Library of Science (PLoS) in the US is not evident in Europe. Any such move will have significant implications for the publishing sector. In a number of countries, there has been widespread recent acquisition or development of VLEs across HE institutions for example in Ireland, all universities now have some form of learning platform accessible to all registered students as do many of the Institutes of Technology. As suppliers there are a number of major suppliers of eLearning from the Higher Education sector, the most successful are distance-learning institutions that have integrated learning technologies (to a greater or lesser extent) into their offerings. Among these number, the Open university of Catalonia in Spain and CNED in France and the Open University and the Edinburgh Business School in the UK. New opportunities to build new supply offerings are emerging with public policy initiatives to support universities in the development of new mainly export ventures for example UK eUniversity which is a collaborative venture between a number of universities and primarily aimed at the export market.

## Continuing training and workplace development

While the first major adopters of eLearning technologies came from the large corporate sector, the difficult global economy and disappointment in the return on investment as well as poor take up by users in the workplace, has meant that there appears to be a relative decline in the proportion of the market occupied by these customers. The emergence of the European eLearning Group in 2002 signalled a new interest in the public sector by the major suppliers – partly driven by an expectation of a new market growth but also because the corporate market in a time of economic difficulties was significantly retrenching. Some markets had advanced considerably more than others mapped out above in the Economist chart detailing country and industry readiness.

## Content – bringing control inside?

Although large companies continue to be the main users of eLearning products and services, a number of these are developing their own expertise especially in terms of resources development and are less inclined to buy large content libraries<sup>64</sup>. For example, the Danish country report suggests, ‘A large part of content production takes place in-house within the customer organisations. A survey<sup>65</sup> showed that 10% of companies using eLearning have solely had their modules developed by eLearning suppliers, 40% of user organisations had developed modules in collaboration with the

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<sup>63</sup> Models of Technology and Change In Higher Education. Edited by Betty Collis & Marijk van der Wende Report for Centre for Higher Education Studies December 2002

<sup>64</sup> European eLearning Market report 2003. eLearning Age.

<sup>65</sup> ELearning in practice – a study of eLearning in 285 public and private companies in Denmark, January 2003

suppliers and as many as 50% of companies have developed the eLearning content in-house.’

A number of our country reports suggest markets among SMEs are growing but it remains slow. Adoption is still heavily weighted towards some sectors e.g. financial services, telecomms but there appears to be a rise in the healthcare/pharmaceutical sectors and of course in public sector workplace training. Overall, however the country reports suggest that adoption remains low; on average it seems to still only constitute about 10% or less of training investment.

Overall, the trend discerned in the eLearning Europe Market report survey 2003 for in-house development, appears to be continuing and for companies in countries such as the Czech Republic seems attractive prospect because of the language requirement and specificity of needs and is occurring in a market where there is no tradition of buying in outside courses (majority have done training in house).

The corporate market is also subject to some new entrants on the supply side that are not yet apparent (and may not be) in public education and training systems. These include the appearance of companies that are both eLearning and knowledge management providers e.g. Key2Know (DK), Hyperwave (D) and the enterprise suite providers such as SAP, PeopleSoft, and IBM.

Also trading in this market are companies that have grown out of training department, or internal eLearning development units and are now servicing external clients e.g. Maersk Data(DK) and Intel (IRL). These are not only targeting corporate training, the latter for example, addresses schools.

### **Public Private Partnerships (PPPs)**

Public private partnerships are treated separately here as they exhibit some interesting features about suppliers. On the one hand there has been the appearance of large and strategically significant relationships between private and public sector players, not exclusive to eLearning but which will inevitably impact on the structure of the supply side of the market. For example in the UK, agreements of the nature of a ‘special relationship’ have been signed between BECTA and Hewlett Packard on the one hand, and BECTA and Microsoft on the other. In Belgium, Belgacom has agreements in place for schools for preferential rates for Internet access – *I-Line*.

In France, La Poste supplies e-mail accounts for students and staff and France Telecom develops telecommunication networks for schools. Public Private partnerships have been a very important feature of the development of the eLearning market in Germany in recent years, with a number established at national and regional levels concentrating on the development of platforms for eLearning in schools and online resource aggregation in order to offer valuable digital learning processes. Other partnerships include, the Bertelsmann Foundation and the Heinz Nixdorf Foundation joint initiative called BIG (Bildungswege in der Informationsgesellschaft) to support innovation in the educational system covering new methods for teaching and learning using new media. In order to do this they created partnerships between schools, high schools and software industries with the aim of developing the

competences around new media. <sup>66</sup> In the Netherlands, Kennisnet, the Dutch school network, is a public private partnership between the Ministry and nl.tree, a joint venture of cable companies.

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<sup>66</sup> [www.big-internet.de](http://www.big-internet.de)

## **Growth Potential and Barriers to growth**

This section is treated lightly at this time as much of the information for this we expect to research in our next phase.

### **Growth expectations**

Most country reports suggest that there is significant potential for growth in their markets. Some comment that they have already developed quite a significant supply base (e.g. UK, Belgium, Sweden, Denmark, Finland and France) but still anticipated they have a long way to go to develop the market to a mature stage. Others indicate they believe they are still at a very early phase and there is significant expansion in demand anticipated both in the private and public sectors (Germany, Portugal, Greece, Luxembourg).

### **The influence of the public sector**

Most of the growth in most countries at this time appears to be due to public sector expenditure. Most of the major players have been targeting public sector contracts and few of them are profitable as yet. Companies such as EPIC in the UK is both rare in terms of profitability but even here as noted above the proportion of public sector contracts in their business has significantly increased over the last two years.

As European governments continue their commitment to their eEurope targets and to their fulfilment of agreed policies in education and training (Bologna and Copenhagen declarations), there will remain a strong and healthy number of opportunities in the markets. Not least among these will be in the New member states and those lagging the more advanced countries.

### **Value for money?**

The general state of the European economy remains unattractive for many private sector firms and investment is now very tightly managed. Returns on investment in eLearning need to be demonstrated and compete against other investments in all organisations. Experience among users to date has not been hugely successful in demonstrating really good evidence of the impact of investment that can be measured easily and many express cynicism about current claims for cost savings. This is partly because the approach adopted by many suppliers has been rooted in US models of training investment and approaches and fails to recognise the different training systems in Europe. Low take up and continuing resistance among users by early adopters is well documented and many companies have come to realise that in order to optimise the benefit of their investment, they must address wider issues of organisational change and development.

### **It's hard!**

Given the state of the economy and competitive demands, undertaking a major change programme across whole training and development systems is not attractive. More successful adoption, appears to occur where a major change programme is being undertaken and eLearning is used to support this change e.g. the UK eGovernment initiative and the use of the local authority employers eLearning programme Learning Pool to support this. ICT skills levels and engagement among the wider workforce

remains a challenge, as does investment in hardware and infrastructure especially in SMEs.

In addition to the above, at a public sector level, barriers are the pace of change and adaptation, the challenge of funding sustainable and continuing adoption and upgrading and the fragmented and often confusing number of initiatives and instruments that often lead to duplication and inefficient planning and purchasing.

### **Sourcing more investment**

Above all, while the economy continues sluggish in most European countries, a major barrier will be sourcing the level of investment needed to transform whole systems and to ensure widespread and equal access. There remains a major barrier in terms of creating a workable means to develop and share content that can be continuously updated and which nonetheless safeguards IPR. And finally, the skills of teachers and trainers and the issues concerning rewarding and recognising changing practice remain a major barrier.