Annex 1. Institutional information on the OECD/CERI case studies respondents

Name of institution	Mode of delivery Status Types	Size	Other characteristics
Aoyama Gakuin University (Japan)	Campus Private not for profit Business school (graduate school)	Students: about 150 Academic staff: about 70	– Specialised in international management and finance – Most of the students have working experience and basic IT skills – Active in partnerships/consortium
Asian Institute of Technology	Campus Public (intergovernmental) Technical institution (graduate school)	Students: 1 703 Academic staff: 176	– Offers only graduate-level degrees as well as lifelong learning programmes – Does not have tenured faculty – Funded by several countries and development agencies – Targeted for "professionals who will play a leading role in the sustainable development of the region" – Capacity building in the region – Active in partnerships – Provide off-shore face-to-face provision
Carnegie Mellon University (USA)	Campus Private not for profit Research and teaching	Students: about 8 500 Academic staff: about 1 400	– Offers diverse disciplines – Of 8 500 students, around 5 200 are undergraduates – It has branch campus (Carnegie Mellon West near San Francisco and Athens Institute of Technology Campus in Greece) – Is actively involved in partnerships with overseas institutions
Kyoto University (Japan)	Campus Public (changing from national institute to independent governmental agency) Research and teaching	Students: about 22 000 Academic staff: about 2 800	– Is in an early stage of e-learning development – It has numerous international exchange agreements with overseas universities, but is not really engaged in off-shore face-to-face provision nor off-shore online provision

Name of institution	**Mode of delivery** **Status** **Types**	**Size**	**Other characteristics**
Monash University (Australia)	Campus Public Teaching and research	Students: about 49 500 Academic staff: about 2 500	– It has 6 campuses in Australia, 1 campus in Malaysia, 1 campus in South Africa, 1 center in London, UK, and 1 center in Prato, Italy. And, it has numerous partnerships and franchises with overseas providers – It weighs on "strategic alliances" and "self-reliance" in its management
Multimedia Kontor Hamburg (Germany)	Campus Joint venture servicing the e-learning development of 6 publicly funded universities in Hamburg A service and coordinating consortium	The total number of the 6 participating institutions: Students: 62 545 Academic staff: 4 996	– It has started only since 2001 and it is still a "project" stage
University of British Columbia (Canada)	Campus Public Research and teaching	Students: about 34 329 (FTE or per head) (900 FTE full-time, of which, 309 FTE entirely online) Academic staff: about 4 600 (FTE or per head)	– It has a comprehensive e-strategy (including e-learning) – It has about 100 (or 10 FTE) off-shore students studying in their home country (mainly Canadians working abroad) – It is involved in international activities; partnerships/joint master's programmes, etc.
University of California, Irvine (USA)	Campus Public Research and teaching	Students: about 45 000 (of which 22 000 are continuing education students) Academic staff: about 1 700	– It has a number of international students on campus, but does not deliver any to offshore students.
University of Paris-Nanterre (France)	Campus Public Research and teaching	Students: about 31 000 Academic staff: about 1 500	– It provides undergraduate/graduate education, continuing education, and distance education (about 6% of the students) – 1 000 international students on campus
University of Sao Paulo (Brazil)	Campus Public Teaching and research	Students: about 72 867 Academic staff: about 5 700	– It has 3 campuses in Sao Paulo and 5 campuses in other Brazilian cities

Name of institution	Mode of delivery Status Types	Size	Other characteristics
Zurich University (Switzerland)	Campus Public Teaching and research	Students: about 22 400 Academic staff: about 2 000	– About 10% international students on campus. It offers, very few, off-shore online programmes. – It participates in the national Swiss e-learning initiative "Swiss Virtual Campus"
University of Maryland University College (USA)	Mixed Public Teaching	Students: about 87 200 (The majority of the students are working adult, part-time learners) Academic staff: about 2 500	– It focuses on entrepreneurship in its management – It is committed to teaching working adults – It has 23 locations throughout Maryland and the Washington, D.C. region, and 150 US military installations throughout Europe, the Middle East, East Asia, and the Pacific – More than half of its students are outside the US
University of South Australia (Australia)	Mixed Public Teaching (flexible, international, and industry-focused), and research	Students: 21 383 (EFTSU) Academic staff: 1 311 (EFTSU)	– About 20% of its students are off-shore students – Roughly about 40% of the students are adult learners – Roughly about 20 % are part-time students – It is active in several partnerships
Fern-Universität (Germany)	Distance Public Distance education, and specialised research in ICT and media	Students: About 56 000 (60% – part-time) Academic staff: about 980	– In 2002, 60% of the students were part-time students, of which 80% were working – It is in the transitional period to systematically convert the university into a Virtual University since 1999 – It is open to students outside Germany (having branch campuses in Austria, Switzerland, Latvia, Russia, and Hungary
Open Polytechnic of New Zealand (New Zealand)	Distance Public Mainly teaching (especially to meet the needs of lifelong learning and vocational needs) and research in open and distance learning	Students: about 30 000 (mostly part-time) Academic staff: about 480	– It aims to offer "learner-centred", "personalised", "blended" learning experiences – Majority of the students are people in the workforce and, thus, they have a high percentage of students being adult learners and part-time learners

Name of institution	**Mode of delivery** **Status** **Types**	**Size**	**Other characteristics**
Open University Catalunya (Spain)	Distance Private not for profit (public initiative, but private structure to be flexible) Mainly teaching, with some research	Students: about 31 360 Academic staff: 1 668 (majority of them – 1 438 – are adjunct or contract faculty)	– Distance education with the full integration of ICT is the educational model of Open University Catalunya. – It aims to meet the diversity of educational needs and learning styles – Is engaged in several partnerships.
Open University UK (UK)	Distance Public with large autonomy Mainly teaching, but do research in a number of disciplines	Students: 73 000 FTEs plus 800 (per head) doctoral students Academic staff: about FTE 1 860	– Students are all part-time except 285 PhD students – One of the aims is to widen participation (esp. of those who are disadvantaged) – It has 15% off-shore students studying in their home country
University of California, LA, Extension (USA)	Distance Public (self-supporting division within a public research university) Teaching for lifelong learning	Students: 56 256 (total headcount) 100 143 (total enrolment: majority are for professional credits) Academic staff: about 2 000	– It specialises in continuing education – As for academic staff, the faculty staff from UCLA counts only 5% while 58% are practitioners in the field in which they teach – As for students, 94% are domestic; 6% international
Virtual University Tec de Monterrey (Mexico)	Distance For-profit arm of a not-for-profit private university Teaching and some research	Students: 12 483 plus 67 778 (continuing and special programme students) Academic staff: 258	– It has 33 campuses, 18 mini campuses, and 19 receiving sites in Mexico, as well as sites in Central and South America, the U.S., and Europe – "The Virtual University" is present in all facilities in the university, and delivers only distance learning including fully on-line delivery for graduated and extension programmes, and on-line combined with satellite broadcasting for some undergraduate and postgraduate courses

Annex 2. OECD/CERI case study questionnaire

Introduction

Thank you for agreeing to participate in the OECD study of international trends and good practice in e-learning in post-secondary education and training. The institutions selected for analysis come from a wide range of countries, and represent a diversity of institutional types and approaches to e-learning. The generic findings will be shared among participants and more widely, and are designed to inform institutional practice in post-secondary education worldwide.

An important aspect of the study is an institutional survey. The survey is an attempt to elicit quantitative and qualitative information from participating institutions, and covers a range of issues under eight headings:

- Institutional strategy and different forms of e-learning
- Platforms and infrastructure
- Students' access to e-learning
- Teaching and learning
- Students and markets
- Staff and materials
- Funding and government
- Organisational change, scenarios and barriers

The survey was designed to combine ease of completion with facilitation of high quality and detailed returns. It was a challenge to design a survey tool that addressed such a wide range of institutions (*e.g.* traditional campus-based institutions, dual mode, and distance-only institutions). It is appreciated that some of the questions do not apply equally to all participating institutions. As you complete the survey, please indicate where this is the case.

It is also appreciated that institutions themselves are diverse. Individual faculties/departments/individuals may be leading important e-learning initiatives with little input from the centre. Please respond in terms of faculties/departments/individuals where appropriate, as well as the institution as a whole. The most important thing is that you provide a balanced overview of your institution's e-learning activities. For institutions that are geographically dispersed, please indicate whether you are commenting in terms of the whole or part of the institution (*e.g.* in terms of institution-wide policy that affects all campuses).

We acknowledge that to complete the survey properly will take some time, and require input from a number of individuals at your institution. There is no fixed "word length" for each question – the response will depend on the circumstances at your institution. 200-300 words per question are

a rough guide. In some questions we ask for specific numbers. If this information is not available, please give an informed estimate.

In general, we would be very interested to receive copies of supporting documentation. Please provide hard copies or an online location.

In addition to your responses in written, there will be an opportunity to discuss the answers of all the institutions involved in the study at a two-day meeting planned for April 2004 in Paris at the OECD.

Your responses will be kept confidential. No individual institutional answer will be identified without permission of the institution.

Definitions

1) **Online learning.** For the purpose of this survey, the following categories are used to define different types of online learning:

- Web supplemented *e.g.* course outline and lecture notes online, use of email, links to external online resource).
- Web dependent. Students are required to use the Internet for key "active" elements of the programme – *e.g.* online discussions, assessment, online project/collaborative work- but without significant reduction in classroom time.
- Mixed mode. Students are required to participate in online activities, *e.g.* online discussions, assessment, online project/collaborative work, as part of the course work, which replace part of face-to-face teaching/learning. However, students are required some physical presence in addition to the online activities.
- Fully online

The terms "online learning" and "e-learning" are used synonymously throughout the survey.

2) **Courses/programmes**. Different institutions organise provision in different ways and use different terminology. "Courses/programmes" is used throughout the survey as a generic term. It is our expectation that, in most institutions, the course will be the most appropriate unit of analysis, revealing differences in the extent of online learning between different courses that make up larger programmes (*e.g.* courses within a bachelors degree). However, please respond in the way that makes most sense for your institution (making clear what you are referring to).

General information

Name of institution.....

Country of main campus.....

Name and position of respondent(s) .....

To provide additional contextual information, please attach your institution's mission statement (or equivalent) and a concise account of your institution, including details of:
(If any of these categories are inappropriate for your institution, please respond using alternatives.)

- Status: public, private not-for-profit, private for-profit
- Mode of delivery: balance between on-campus, distance learning (TV, video, radio, paper, CD), remote online learning, other
- Details of any branch campuses/overview of any franchised provision
- Qualifications offered, *e.g.* associate degrees, bachelors degrees, masters degrees, postgraduate certificates/diplomas, executive programmes, non-credit programmes, other
- Major disciplines offered (*e.g.* humanities, medicine, social sciences, natural sciences, etc.)
- Number of students (full-time equivalent for 2002/03) divided into the following (Please attach the breakdowns of full time/part time, age profile and gender balance separately if the information is available):
  - Doctoral
  - Masters
  - Other postgraduate
  - Bachelors
  - Other undergraduate
  - Other

  and
  - Majority classroom-based
  - Majority distance (any type of distance learning)

  and
  - Domestic students
  - International students studying in the country of your main campus
  - Off-shore students studying in their home country
- Number of academic staff (full-time equivalent for 20002/03) divided into:
  - tenure and tenure track faculty
  - post-doctoral fellows
  - adjunct or contract faculty
  - teaching/graduate assistants

  (If this categorisation is not appropriate for your institution, please give academic staff numbers in another form.)
- Annual tuition fee (2002/03) in US dollars – for home, bachelor degree students. (If tuition fees vary by discipline, please give details.)
- Revenue 2002/2003 (or most recent annual figure) in US dollars by source:
  - National government
  - State government
  - Tuition fees
  - Other sales and services
  - Non-government grants/donations
  - Endowments
  - Other

  (If this categorisation is not appropriate for your institution, please give an alternative breakdown of revenue sources.)

1 Strategy

1.1 Does your institution have a formal, written online learning strategy?

YES ❒ NO ❒ Under development ❒

YES, but some faculties/departments also have their own e-learning strategies ❒

No distinct strategy, but e-learning is central to other institutional strategy documents *e.g.* teaching and learning) ❒

There is no central strategy, but some faculties/departments have their own e-learning strategies ❒

PLEASE ENCLOSE A COPY OF YOUR E-LEARNING STRATEGY (or other relevant strategies where appropriate).

For the following few questions, please answer in terms of your central e-learning strategy (or equivalent), if you have one. If there is no central strategy, but some e-learning strategies exist at faculty department level, please answer in terms of one or more of these (making clear what you are referring to).

1.2 Please describe how the strategy was first written (*e.g.* when it was written, who was involved, and who was consulted). (If your institution does not have a single e-learning strategy, but has positioned e-learning at the heart of other strategies, please comment accordingly.)

1.3 Please set out the main rationales for producing your institution's e-learning strategy (*e.g.* relating to students, staff, competitive advantage). Please focus on the rationales employed when your strategy was FIRST written. (Please describe any important strategic differences between the centre and faculties/departments particularly involved in e-learning.)

1.4 Has your strategy been substantially revised since it was first written? If so, please describe the reasons for change, what has changed, and how the process of revision was undertaken (*e.g.* who was involved, who was consulted). What mechanisms do you have for decision-making in this area (*e.g.* committees, line management, etc.)?

1.5 How does your institution's e-learning strategy or equivalent relate to your institution's mission or general strategic plan?

1.6 What estimated proportion (%) of current programmes/courses offered by your institution have the following kinds of online component? Please also provide a rough estimate of the situation three years ago, and predict the situation three years from now. For example, the proportion could be calculated based on the full time equivalence of the students enrolled in courses with online components.

3 years ago	Now	3 years time
None or trivial online presence		
____ %	____%	____%
Web supplemented (*e.g.* course outline and lecture notes online, use of email, links to external online resources)		
____ %	____%	____%
Web dependent. Students are required to use the Internet for key " active" elements of the programme – *e.g.* online discussions, assessment, online project/collaborative work – but without significant reduction in classroom time		
____ %	____%	____%
Mixed mode. Students are required to participate in online activities, *e.g.* online discussions, assessment, online project/collaborative work, as part of the course work, which replace part of face-to-face teaching/learning. However, students are required some physical presence in addition to the online activities.		
____ %	____%	____%
Fully online		
____ %	____%	____%

1.7 **Are there significant differences in the balance of different types of e-learning at your institution (*i.e.* Web supplemented, Web dependent, mixed mode and fully online) in different disciplines and at different levels (***e.g.*** undergraduate versus postgraduate, introductory versus advanced classes, credit versus non-credit)?**

1.8 **Please outline any plans to develop this balance over time.** How has growth of any mixed mode provision affected conventional face-to-face teaching and facilities?

1.9 **Is your institution part of an "online learning consortium" or other significant partnership in this area?** This might include collaboration on hardware/software procurement, maintenance and operations, or marketing/branding. Please outline the nature of any relevant consortia/partnership, and state which other organisations are involved.

1.10 **Perhaps related to the previous question, is your institution involved in any outsourcing of infrastructure/maintenance/operations associated with e-learning provision?** If so, please outline the arrangements and the rationale for pursuing them, and comment on your experience of outsourcing to date.

2 Platforms and infrastructure

2.1 **Do you have a plan for campus networking for learning purposes?** In particular, what is the principal networking technology currently available for student learning on campus, if applicable (*e.g.* Ethernet, wireless, fibre optic connections)? Roughly what proportion of

the campus is connected to each of the different network technologies? How do you see this changing over the next three years? What is driving these changes? Is lack of network infrastructure a major barrier at your institution to the development of online learning?

2.2 Does your institution deploy an online "learning management system" (*e.g.* Blackboard or WebCT)?

2.2.1 *Some faculties departments use:*		***2.2.2*** *We have implemented an institution-wide system*	
Blackboard	❒	Blackboard	❒
Lotus Learning Space	❒	Lotus Learning Space	❒
WebCT	❒	WebCT	❒
Open source system	❒	Open source system	❒
Please name _____		Please name _____	
Other	❒	Other	❒
Please name _____		Please name _____	
In-house system	❒	In-house system	❒
Please name _____		Please name _____	
Under consideration	❒	Under consideration	❒

2.3 Please comment on your choice and use of learning management systems (LMS). Is this stable or set to change? To what extent are LMSs central to e-learning at your institution? Approximately, what proportion of FTE academic staff regularly use an LMS? (If you do not use such a system and organise online provision in other ways, please give details.)

IF YOUR INSTITUTION DOES NOT MAKE SIGNIFICANT USE OF AN LMS, PLEASE IGNORE THE FOLLOWING LMS-RELATED QUESTIONS (2.4-2.6). *If you would like to comment in terms of an equivalent tool platform, please do so.*

2.4 Please comment on the functionality of your institution's LMS(s). Do the platform(s) offer sufficient customisation to accommodate diverse teaching and learning styles?

2.5 To what extent is the LMS(s) integrated with other applications in your institution (*e.g.* student records, finance, enrolment)? What issues have arisen as a result of any integration process?

2.6 How is LMS activity at your institution organised? What is the balance between central, faculty/department and individual control over tool selection, content creation, posting and maintenance? What are the advantages/disadvantages of this balance? Are there any plans to alter the balance in the future?

2.7 **Do you have a student portal system?** How extensive is this, in terms of function and reach? How is this likely to change over the next three years? What is driving these changes?

2.8 **Please comment on any other tools/platforms that are widely used at your institution in support of e-learning (*e.g.* instant messaging, handheld computers, other).** Why were they adopted and how are they used?

2.9 **To what extent have you moved administrative systems such as admissions, registration, fee payments, student and faculty purchasing, online?** What can students and faculty now do in these areas entirely online? How is this likely to change over the next three years? What is driving these changes?

2.10 **To what extent have you been able to integrate academic and administrative systems?** In other words, do you have a comprehensive "e-strategy" for both academic and administrative systems? Has your institution pursued integration by investment in a third party ERP system? If so, please give details. What have been the benefits and drawbacks to any attempt at systems integration?

3 Students' access to e-learning

3.1 **What is your institution's policy on computer/network access for students/staff? Does you institution have a policy mandating computer ownership for all students? Please give details of any policies, the thinking behind them, and impact to date. Do some faculties/departments have their own policies in this area?**

3.2 **What is your best estimate of the current personal computer/student ratio at your institution? For example, the ratio might be 1 computer for every 10 students. (This question concerns only personal computers paid for or facilitated by the institution, NOT computers purchased by students independently.) Please also indicate the situation three years ago, and predict the situation three years from now. If this information is available by faculty or school, please attach the break down separately.**

3 years ago		**Now**		**3 years time**	
1+:1	❒	1+:1	❒	1+:1	❒
1:1	❒	1:1	❒	1:1	❒
1:2	❒	1:2	❒	1:2	❒
1:3-5	❒	1:3-5	❒	1:3-5	❒
1:6-10	❒	1:6-10	❒	1:6-10	❒
1:11-15	❒	1:11-15	❒	1:11-15	❒
1:16-20	❒	1:16-20	❒	1:16-20	❒
1:21-50	❒	1:21-50	❒	1:21-50	❒
1:51+	❒	1: 1:51+	❒	1: 1:51+	❒ 1: ___

3.3 **Now please estimate the current personal computer/student ratio if you INCLUDE computers purchased by students independently**. If this information is available by faculty or school, please attach the break down separately. (*Please again indicate the situation three years ago, and predict the situation in three years time.)*

3 years ago		Now		3 years time	
1+:1	❒	1+:1	❒	1+:1	❒
1:1	❒	1:1	❒	1:1	❒
1:2	❒	1:2	❒	1:2	❒
1:3-5	❒	1:3-5	❒	1:3-5	❒
1:6-10	❒	1:6-10	❒	1:6-10	❒
1:11-15	❒	1:11-15	❒	1:11-15	❒
1:16-20	❒	1:16-20	❒	1:16-20	❒
1:21-50	❒	1:21-50	❒	1:21-50	❒
1:51+	❒	1: 1:51+	❒	1: 1:51+	❒ 1: ___

3.4 **Please describe the current balance at your institution between computer labs, portable computers paid for or facilitated by the institution, and computers purchased by students independently.** How has greater use of e-learning affected this balance, and what do you see as the long-term strategic implications? If this information is available by faculty or school, please attach the break down separately.

3.5 **What network facilities can students access for connecting from off-campus?** Is the network service for off-campus students centralised or decentralised? How are these arrangements likely to change over the next three years? What is driving these changes?

4 Teaching and learning

4.1 **What has been the "teaching and learning" impact of greater use of e-learning at your institution?** Specifically, what has been the impact on student satisfaction, teaching and learning approaches, student retention/attainment? Please give details of any evidence.

4.2 **In your experience, which subject areas, types/levels of programme, and learning activities are best suited to e-learning?** Please distinguish between different kinds of e-learning (*e.g.* Web supplemented, Web dependent, mixed mode, fully Online as above) as appropriate.

4.3 **Who decides how e-learning is delivered?** To what extent does your institution have a "centralised" approach to e-learning pedagogy, as opposed to faculty/department led initiatives and the preferences of individual faculty? Please describe the current "balance of power".

4.4 **Does your institution offer students any special assistance/guidance about learning online (***e.g.* as part of a more general IT literacy programme)? If YES, please give details. If NO, please give your impression of how students acclimatise to greater use of e-learning.

4.5 **Does your institution, or part of your institution, formally evaluate the impact of greater use of e-learning in teaching and learning?** If YES, please give details of the methodology and attach a copy of any important reports.

4.6 **What has been the cost impact of greater use of e-learning at your institution?** Has greater use of e-learning generally increased course development and delivery costs, or have ways been found to offset higher development costs over time, or to redesign provision to save costs from the outset? Please give an overview of current policy and practice at your institution.

4.7 **Has the increased/decreased/other cost impact of greater use of e-learning had any impact on tuition fees at your institution?**

4.8 **Do you have an institutional strategy to support the development of learning objects LO (if so, please describe)?** If you have a repository of re-usable learning objects, please provide the url(s). What are the challenges you are facing with respect to developing learning objects? What is driving your LO strategy? Are you working with international interoperability standards (*e.g.* IMS, SCORM)?

4.9 **What is your strategy with respect to access to online journals and e-books?** How is this affecting your strategy with regard to print-based journals and book acquisitions? How is this likely to change over the next three years? What is driving these changes?

5 Students and markets

5.1 **What is your *best estimate* of the total number (full-time equivalent) of current students on online modules/programmes that would fit under the "Web dependent", "mixed mode" and "fully online" categories given above?** (If over 1 000 students, please give an approximate figure.)

The term "module" refers to individual courses/units within a larger programme. For example, a single module within a degree programme might be "Web dependent" but the rest largely face-to-face. The "short award" and "degree" categories refer to instances where a programme *as a whole* is either "Web dependent", "mixed mode" or "fully online".

UG = undergraduate (including non-credit) **PG = postgraduate (including non-credit)**

UG modules		UG short awards		UG degrees (*e.g.* certificates/diplomas)	
0	❒	0	❒	0	❒
1-10	❒	1-10	❒	1-10	❒
11-20	❒	11-20	❒	11-20	❒
21-49	❒	21-49	❒	21-49	❒
50-99	❒	50-99	❒	50-99	❒
100-199	❒	100-199	❒	100-199	❒
200-299	❒	200-299	❒	200-299	❒
300-499	❒	300-499	❒	300-499	❒
500-999	❒	500-999	❒	500-999	❒
1 000+	❒	1 000+	❒	1 000+	❒

PG modules		PG short awards		PG degrees (*e.g.* certificates/diplomas)	
0	❒	0	❒	0	❒
1-10	❒	1-10	❒	1-10	❒
11-20	❒	11-20	❒	11-20	❒
21-49	❒	21-49	❒	21-49	❒
50-99	❒	50-99	❒	50-99	❒
100-199	❒	100-199	❒	100-199	❒
200-299	❒	200-299	❒	200-299	❒
300-499	❒	300-499	❒	300-499	❒
500-999	❒	500-999	❒	500-999	❒
1 000+	❒	1 000+	❒	1 000+	❒

5.2 **Please comment on the balance of interest in online provision at your institution between undergraduate and postgraduate students, short and long programmes, and credit/non-credit provision.** Is e-learning more popular among some postgraduates than undergraduates, for example?

5.3 **Is use of e-learning spread evenly across your institution or is it concentrated in particular faculties/departments/courses?** Please give details.

5.4 **Do you have any evidence that "traditional" or "non-traditional" students respond more or less well to greater use of e-learning at your institution?** Please comment. ("Non-traditional" students refers to those less academically-prepared. The next question asks about other kinds of students.)

5.5 **Do you have any evidence that students of a particular gender, ethnicity or age respond more or less well to greater use of e-learning at your institution?** Please comment.

5.6 **What effect has greater use of e-learning at your institution had on the balance between full-time and part-time students?** Similarly, how has greater use of e-learning affected the role of the physical campus (if applicable) in the typical student experience?

5.7 **Taking your best estimate (if no figures are available), what proportion of students taking "Web dependent/mixed mode/fully online" modules/programmes at your institution are international (*i.e.* taking the provision at a distance in their home country)?** Are these international students more prevalent in particular disciplines or at particular levels (*e.g.* postgraduate rather than undergraduate)?
If your institution offers offshore face-to-face provision, supplemented with online content, please describe this also.

5.8 **If your institution does offer online provision to students outside the country, how is student support organised?** For example, is all support conducted remotely, or are local face-to-face options also available?

5.9 If your institution does offer online provision to students outside the country, what are the key "lessons learned" (*e.g.* in terms of marketing, localisation, local regulation, quality assurance, student support)?

5.10 If your institution does offer online provision to students outside the country, which are the major markets (*i.e.* list by country)?

5.11 Taking both domestic and international students, do you have any evidence that investment in e-learning has afforded your institution competitive advantage (*e.g.* in terms of student recruitment, calibre of students on entry). Please comment.

6 Staff and materials

6.1 Please describe any staff development provision offered by your institution concerned with helping faculty utilise e-learning. What is the content, who provides instruction and what proportion of faculty attend?

6.2 Please outline key "lessons learned" from any such staff development activities at your institution. For example, how best to engage faculty, what content to include, how to follow-up once the development activities are over.

6.3 Has greater adoption of e-learning at your institution affected the staffing complement? Has it been necessary to employ different kinds of staff (*e.g.* instructional designers, Web specialists)? Has there been any change in the division of labour between faculty and graduate assistants? Please comment.

6.4 Has your institution devised particular strategies to facilitate co-operation between faculty and other staff (technical, instructional designers, library) in the development of e-learning? If YES, please give details.

6.5 Is your institution a member of a collaborative group for the production of e-learning materials, *e.g.* MERLOT, eduSplash? If so, which one(s)? Is this proving a useful strategy? If not, why not?

6.6 Have you established any internal mechanisms to ensure collaboration and sharing of e-learning materials within your own institution?

6.7 To what extent are faculty using off-the-shelf course packs such as WebCT/Blackboard e-packs?

6.8 Do you have a policy for making online materials created at your institution available to other users outside the institution? Please give details. What materials, if any, are available for free?

6.9 How has your institution handled the issue of intellectual property and ownership of materials with instructors/faculty?

7 Funding and government

7.1 Please describe any special funding your institution has received to undertake e-learning development (*e.g.* from government, foundations, companies). What was the amount of funding, over what time period, and for what purpose?

7.2 Does your institution have a "special fund" to which departments/individuals can bid for support for e-learning development. If YES, please give details.

7.3 More generally, to what extent are e-learning developments at your institution dependent upon special funding – whether internal or external? Does your institution have a strategy to ensure that promising e-learning developments can be funded sustainably on an ongoing basis without special funding? Please comment.

7.4 Are there examples of cross-subsidy at your institution between full-cost recovery online programmes (*e.g.* executive development) and other provision? If YES, please describe how these arrangements fit into your wider funding policy for online learning.

7.5 Please give your views on the role of state/national governments in your country in supporting higher education institutions in e-learning development in recent years. Has government strategy/funding been helpful?

7.6 Please give your views on ways in which state/national governments in your country might improve their strategy/funding for e-learning.

8 Organisational change, scenarios and barriers

Many of the questions above touch on matters of organisational change, future scenarios and barriers to development. This final section is an opportunity to reflect more broadly on these issues, and to pick up any other aspects of change you consider important.

8.1 Please give an overview of the major elements of organisational change at your institution related to greater use of e-learning. This might be change accomplished, in progress or on the horizon. What mechanisms has your institution put in place to rise to these challenges?

8.2 Please give an overview of possible future scenarios for your institution in terms of development of online learning. Your answer might take account of existing strategy and other factors that might alter your current direction (*e.g.* changes in government policy/funding, changing student profile, technology developments).

8.3 What are viewed as major barriers to further online learning development at your institution?

Annex 3. OBHE survey, 2004

Section A: Cover Sheet

Name of institution and country .....

Position/title of respondent(s) .....

Number of full-time equivalent students (academic year 2002/03) .....

Number of full-time equivalent academic staff (academic year 2002/03) .....

Annual budget (academic year 2002/03)
(please convert to US dollars) .....

Section B: Strategy and Policy for Online Learning

1. From your *personal* perspective (or the consensus of those completing the survey), please indicate your opinion on the following statements by circling the appropriate number:

KEY: ❶ Strongly agree ❷ Agree ❸ Unsure/it depends
❹ Disagree ❺ Strongly disagree

a) Off-campus online learning (distance learning) will play a major role at my institution over the next five years

❶ ❷ ❸ ❹ ❺

b) Other forms of distance learning (*e.g.* print, video) will be important at my institution in the future

❶ ❷ ❸ ❹ ❺

c) At my institution, there is strong student demand for online learning as an alternative to campus attendance

❶ ❷ ❸ ❹ ❺

d) At my institution, there is strong student demand for online learning to enhance campus attendance

❶ ❷ ❸ ❹ ❺

e) Online learning will greatly enhance on-campus learning at my institution over the next five years

❶ ❷ ❸ ❹ ❺

f) Faculty at my institution are generally enthusiastic about online learning

❶ ❷ ❸ ❹ ❺

g) Faculty at my institution are generally well-prepared to teach online

❶ ❷ ❸ ❹ ❺

h) In general, the design principles employed by my institution mean that at least some forms of online provision are demonstrably less costly (to the institution – in financial terms) than the equivalent provision conducted through our conventional face-to-face teaching

❶ ❷ ❸ ❹ ❺

2. From your perspective, please indicate the importance your institution attaches to the following information technology issues over the next <u>three years</u>. Mark each issue out of five where "5" is very high importance, "4" is high importance, "3" is mid-range importance, "2" is low importance, and "1" is very low importance.

Developing online provision for distance learning	___
Developing online provision as a supplement for campus-based students	___
Improving IT development and support for faculty	___
Recruiting and retaining technical staff	___
Recruiting and retaining instructional designers	___
Upgrading campus technology infrastructure	___
Upgrading personal computers and software	___
Better integration of academic and administrative IT services/systems	___
Outsourcing a greater proportion of IT infrastructure	___

3. Does your institution have an institution-wide "Online Learning Strategy" or equivalent?

❒ YES ❒ NO ❒ Under development
❒ Some faculties/departments have their own online learning strategies
❒ YES, but we have various strategy documents on related aspects of online learning, rather than a single overarching document
❒ YES, but aspects of online learning are integrated into other strategies (*e.g.* teaching and learning, human resources etc) rather than presented as a single overarching document

Unless you have answered "YES" or "YES, BUT" to this question, please go to Question 5.

4. If you answered YES or "YES BUT" to Question 3, please indicate the priority your institution gives to the following rationales for undertaking online learning where "5" is very high priority, "4" is high priority, "3" is medium priority, "2" is low priority, and "1" is very low priority.

Enhancement of distance learning	___
Supporting local businesses and economic development	___
Entry into new international student markets	___
Safeguarding existing international student markets	___
Pursuit of new corporate clients	___
Safeguarding existing corporate clients	___
Widening access to local under-represented groups	___
Access for disabled users	___
Quality enhancement of teaching and learning on-campus	___
Improved flexibility of delivery for on-campus students	___
Cutting teaching costs long-term	___
Facilitating collaboration with other institutions	___
Keeping up with the competition	___

If other please give details

_____

_____

Please now go to Question 6

5. If you answered "NO" to Question 3 (*i.e.* your institution does not have an institution-wide strategy document – or equivalent strategy in other documents – on online learning), which of the following apply:

There is little perceived demand for online learning among our staff and students/potential students	❒
Online learning is currently not relevant in the main disciplines at my institution	❒
A "bottom-up" or department-driven approach is being taken	❒
The infrastructure to deploy online learning successfully is beyond the means of my institution at present	❒
Online learning is unproven as a technology and learning medium	❒
Other issues are currently more pressing (please give examples)	❒

Other (please explain)

_____

_____

6. At your institution, which of the following are:

(a) in place institution-wide
(b) to be implemented institution-wide in the next 12 months
(c) to be implemented institution-wide in the next 5 years
(d) in place in one or more sub-sections of the institution
(e) currently not a strategic priority.

Write a, b, c, d or e as appropriate.

a) Integration of major online elements into the majority of the curriculum ___
b) Use of online learning for distance education ___
c) Implementation of a learning management platform (*e.g.* Blackboard/webCT) ___
d) Implementation of a portal system ___
e) Shift to majority use of open source applications (*e.g.* Linux) ___
f) Compliance with international interoperability standards (*e.g.* IMS, SCORM) ___
g) Implementation of a Content Management System
(*i.e.* a repository of reusable learning objects) ___
h) Integration of disparate academic and administrative IT systems
(*i.e.* purchase of new system and/or integration of legacy systems) ___
i) Shift to significant outsourcing of IT functions ___
j) Shared IT procurement/support with one or more other institutions ___
k) Substantial investment in campus library access to online journals and e-books ___
l) E-commerce facilities (*e.g.* student/faculty purchasing and payment online) ___

7. Does your institution:

a) Have a formal policy mandating computer ownership by all students
(whether equipment is paid for by the institution or the student)
❒ YES ❒ NO ❒ UD*

b) Offer subsidies to students for computer purchase
❒ YES ❒ NO ❒ UD

c) Operate a minimum standard of student IT literacy
❒ YES ❒ NO ❒ UD

d) Offer formal incentives for faculty to develop online teaching and learning
❒ YES ❒ NO ❒ UD

e) Offer faculty formal training in online tools and techniques
❒ YES ❒ NO ❒ UD

f) Have a central unit/local units that focus on instructional technology
❒ YES ❒ NO ❒ UD

g) Conduct formal evaluations of the impact of online learning on the student/faculty experience
❒ YES ❒ NO ❒ UD

h) Have a formal policy on intellectual property rights associated with online learning materials and resources
❒ YES ❒ NO ❒ UD

(* UD = under development)

Section C: Infrastructure for Online Learning

This section is concerned only with the main campus or campuses of your institution. Please exclude details of any international campuses or branches.

8. Does your institution deploy an online "learning management system" (*e.g.* Blackboard or webCT)? This question concerns use by individual faculties/departments.

Some faculties/departments use (please tick all that apply):	
Blackboard	❒
Lotus Learning Space	❒
webCT	❒
Open source system (please name below)	❒
Other (please name below)	❒
In-house system (please name below)	❒
Under consideration	❒
No online learning management system is employed at my institution	❒

If other, please give details
_____

9. Has your institution implemented an online "learning management system" (*e.g.* Blackboard or webCT)? This question concerns institution-wide use.

We have implemented an institution-wide system: (please tick all that apply):	
Blackboard	❒
Lotus Learning Space	❒
webCT	❒
Open source system (please name below)	❒
Other (please name below)	❒
In-house system (please name below)	❒
Under consideration	❒
No online learning management system is employed at my institution	❒

If other, please give details
_____

10. According to your best estimate, what proportion (%) of current programmes/courses offered by your institution have the following kinds of online component?

a) None or trivial online presence ____ %

b) Modest online presence
(*e.g.* course outline, lecture notes, links to external resources, email) ____%

c) Significant online presence
(*e.g.* key "active" elements of the programme are online, such as online discussions, assessment tools and collaborative project work, BUT there is no significant reduction in face-to-face classroom time) ____ %

d) Web dependent (*e.g.* key "active" elements of the programme are online, such as online discussions, assessment tools and collaborative project work, AND these activities mean that face-to-face classroom time is significantly reduced) ____ %

e) Wholly or very largely conducted online ____ %

TOTAL 100 %

11. What is your best estimate of the current personal computer/student ratio at your institution?

For example, the ratio might be 1 computer for every 10 students. (This question concerns only personal computers supplied by the institution, NOT computers owned by students – unless student-owned computers are part of a formal institutional ownership scheme. A "personal computer" would include a sophisticated handheld computer designed to help students with their studies).

1+:1	❒	1:11-15	❒
1:1	❒	1:16-20	❒
1:2	❒	1:21-50	❒
1:3-5	❒	1:51+	❒
1:6-10	❒		

12. Now please give the computer/student ratio at your institution if you INCLUDE computers owned by students independently.

1+:1	❒	1:11-15	❒
1:1	❒	1:16-20	❒
1:2	❒	1:21-50	❒
1:3-5	❒	1:51+	❒
1:6-10	❒		

13. Does your institution run a wireless network?

❒ Yes – Institution-wide ❒ Yes – Part(s) of the institution
❒ No ❒ Under consideration

14. Does your institution employ satellite technology to reach students in remote areas?

❒ YES ❒ NO ❒ Under development

15. If your institution is connected to the Internet, what is the top speed of your backbone connection (in bits per second)? (For example, your connection might be 1Gbps or 64Kbps)

If yours is a multi-campus institution, please give the fastest backbone connection available. In the box below please give details of how the backbone connection speed contrasts with the connection speeds available on your campus(es) more generally

Top speed: _____ bits per second

❒ My institution is not connected to the Internet

Section D: Programmes and Initiatives – Distance e-Learning

In this section, "online modules/programmes" refers to programmes of study that fall under the "Web dependent" or "wholly online" categories used in question 10. These are:

- Web dependent (*e.g.* key "active" elements of the programme are online, such as discussions, assessment tools and collaborative project work, AND these activities mean that face-to-face classroom time is significantly reduced).
- Wholly or very largely conducted online.

Please do not include details of other programmes. "Modules" refers to individual courses within larger programmes where one or two courses are either "Web dependent" or "wholly online" and the other courses have little or no online components. The "short awards" and "bachelors/masters degrees" categories refer only to whole awards/degrees that are either "Web dependent" or "wholly online".

16. Referring to the definitions in the introduction to this section what is your best estimate of the total number of online modules/programmes currently offered by your institution?

Undergraduate Modules		Short Undergraduate		Bachelor Degrees Awards (*e.g.* certificates/diplomas)	
0	❒	0	❒	0	❒
1-3	❒	1-3	❒	1-3	❒
4-7	❒	4-7	❒	4-7	❒
8-12	❒	8-12	❒	8-12	❒
13-20	❒	13-20	❒	13-20	❒
21-49	❒	21-49	❒	21-49	❒
50-100	❒	50-100	❒	50-100	❒
101-200	❒	101-200	❒	101-200	❒
200+	❒	200+	❒	200+	❒

Postgraduate Modules		Short Postgraduate		Masters Degrees Awards (*e.g.* certificates/diplomas)	
0	❒	0	❒	0	❒
1-3	❒	1-3	❒	1-3	❒
4-7	❒	4-7	❒	4-7	❒
8-12	❒	8-12	❒	8-12	❒
13-20	❒	13-20	❒	13-20	❒
21-49	❒	21-49	❒	21-49	❒
50-100	❒	50-100	❒	50-100	❒
101-200	❒	101-200	❒	101-200	❒
200+	❒	200+	❒	200+	❒

17. Referring to the definitions in the introduction to this section, what is your best estimate of the total number (full-time equivalent) of current students on such online modules/programmes? (If you know the exact figure please give it)

Undergraduate Modules		Short Undergraduate		Bachelor Degrees Awards (*e.g.* certificates/diplomas)	
0	❒	0	❒	0	❒
1-10	❒	1-10	❒	1-10	❒
11-20	❒	11-20	❒	11-20	❒
21-49	❒	21-49	❒	21-49	❒
50-99	❒	50-99	❒	50-99	❒
100-199	❒	100-199	❒	100-199	❒
200-299	❒	200-299	❒	200-299	❒
300-499	❒	300-499	❒	300-499	❒
500-999	❒	500-999	❒	500-999	❒
1 000+	❒	1 000+	❒	1 000+	❒

Postgraduate Modules		Short Postgraduate		Masters Degrees Awards (*e.g.* certificates/diplomas)	
0	❒	0	❒	0	❒
1-10	❒	1-10	❒	1-10	❒
11-20	❒	11-20	❒	11-20	❒
21-49	❒	21-49	❒	21-49	❒
50-99	❒	50-99	❒	50-99	❒
100-199	❒	100-199	❒	100-199	❒
200-299	❒	200-299	❒	200-299	❒
300-499	❒	300-499	❒	300-499	❒
500-999	❒	500-999	❒	500-999	❒
1 000+	❒	1 000+	❒	1 000+	❒

18. Referring to the definitions in the introduction to this section, in which disciplinary areas are such online modules/programmes offered in your institution?

Code: 1 = Major area of activity (*i.e.* much online provision)
2 = Medium area of activity
3 = Minor area of activity
4 = No activity

	1	**2**	**3**	**4**
Business/management	❒	❒	❒	❒
Information technology/computer science	❒	❒	❒	❒
Education	❒	❒	❒	❒
Law	❒	❒	❒	❒
Nursing/health-related (not medicine)	❒	❒	❒	❒
Medicine	❒	❒	❒	❒
Physical sciences (including engineering)	❒	❒	❒	❒
Natural sciences	❒	❒	❒	❒
Social sciences	❒	❒	❒	❒
Humanities	❒	❒	❒	❒
Performing arts	❒	❒	❒	❒
Other (please name)	❒	❒	❒	❒

_____

We offer no online programmes of this kind ❒

19. Referring to the definitions in the introduction to this section, what approximate proportion (%) of current students on such online modules/programmes are resident in the home country (HC) of your institution's main campus?

Undergraduate Modules		Short Undergraduate		Bachelor Degrees Awards (*e.g.* certificates/diplomas)	
HC = 100%	❒	HC = 100%	❒	HC = 100%	❒
HC = 75%-99%	❒	HC = 75%-99%	❒	HC = 75%-99%	❒
HC = 51-74%	❒	HC = 51-74%	❒	HC = 51-74%	❒
HC = 25-50%	❒	HC = 25-50%	❒	HC = 25-50%	❒
HC = 10-24%	❒	HC = 10-24%	❒	HC = 10-24%	❒
HC = 1-9%	❒	HC = 1-9%	❒	HC = 1-9%	❒
HC = 0%	❒	HC = 0%	❒	HC = 0%	❒

Postgraduate Modules		Short Postgraduate		Masters Degrees Awards (*e.g.* certificates/diplomas)	
HC = 100%	❒	HC = 100%	❒	HC = 100%	❒
HC = 75%-99%	❒	HC = 75%-99%	❒	HC = 75%-99%	❒
HC = 51-74%	❒	HC = 51-74%	❒	HC = 51-74%	❒
HC = 25-50%	❒	HC = 25-50%	❒	HC = 25-50%	❒
HC = 10-24%	❒	HC = 10-24%	❒	HC = 10-24%	❒
HC = 1-9%	❒	HC = 1-9%	❒	HC = 1-9%	❒
HC = 0%	❒	HC = 0%	❒	HC = 0%	❒

20. If your institution recruits any international students to online modules/programmes (*i.e.* international students not resident in the country where your institution's main campus is situated), which are the main markets? (Do not include international students on other programmes.)

Africa	❒ Key countries.....
Asia (including Russia)	❒ Key countries.....
Australia/Pacific	❒ Key countries.....
Central America/Caribbean	❒ Key countries.....
Europe	❒ Key countries.....
Middle East	❒ Key countries.....
North America	❒ Key countries.....
South America	❒ Key countries.....
Data not collected	❒
Not applicable	❒

21. Is your institution part of any national or international network(s) of universities/other organisations dedicated to online learning? (This might include consortia concerned with campus-based online provision, as well as provision offered at a distance.)

❒ YES ❒ NO ❒ Under development/consideration

If YES, please name the consortia:

_____

Section E: Final Comments

Any other comments

37. Additional comments

Please add anything further you wish to mention about online developments at your institution, or your reasons for not pursuing online developments at this time.

38. Email address

If you wish to provide your email address (for future contact purposes) you may do so here.

Annex 4. Overview of government-led initiatives to promote e-learning

This annex is intended to provide an overview on the existing government-led initiatives to promote e-learning policies and practices. It attempts to map major existing:

- Policies, strategies, and other official documents.
- Practices: programmes/projects.
- Portals/database which are relevant to e-learning at tertiary education.

It is worth noting that due to the cross-sectoral nature of e-learning, the tables do not limit themselves just to e-learning at tertiary education. In general e-learning policies are often part of or planned alongside:

- Generic ICT policies focusing on knowledge economies/societies *e.g.* Brazil, Canada, France, Germany, Japan, Mexico, New Zealand, Switzerland, Thailand.
- Generic education policies targeted towards the information society *e.g.* Australia, England, Germany and the United States.
- Higher education strategies *e.g.* England, Mexico, New Zealand, Switzerland.
- Distance learning policies *e.g.* Brazil, Japan, Mexico, the United States.
- Labour policies *e.g.* Germany; except some cases where it addresses distinct e-learning policies at tertiary education *e.g.* Canada, New Zealand.

The cross-sectoral nature of e-learning complicates the process of mapping government-led initiatives. In alignment with generic ICT policies (often produced cross-sectorarily), e-learning initiatives are implemented simultaneously by different ministries such as Ministry of Education, Ministry of Telecommunications and Information, Ministry of Industries, Ministry of Labour, etc. Therefore this list is not exhaustive.

Similarly, information relevant to post-secondary e-learning is often part of the portals/database designed for:

- Generic to education (*e.g.* "EdNA Australia", "US GEM").
- Generic to ICT and education at all levels (*e.g.* "France Educe Net", "Spain CNICE", "Switzerland Educa").
- Specific to flexible learning or open and distance education (*e.g.* "Australia Flexible Learning Framework", "France Formasup").
- Specific to e-learning at all levels of education (*e.g.* "UK E-learning strategy", "E-learning Brazil", "Germany "Manual eLearning", "Japan NICER").
- Specific to tertiary e-learning (*e.g.* "UK FERL", "New Zealand eLearn portal", "US MERLOT", US "Edutools", "US Educause").
- Specific to teacher education/training (*e.g.* "France Educasup", "Germany e-teaching").
- Specific to learning and career development (*e.g.* "Canada CanLearn").

In addition, what complicates the mapping exercise is the different jurisdiction over higher education or education in general. In some countries, the central government is responsible for major national policies (*e.g.* France, Japan, New Zealand, Thailand). In others, the national or federal government has little input or none in the decision-making process while provincial/state government has a strong influence on the formulation of policies and programme planning (*e.g.* Australia, Brazil, Canada, Germany, Mexico, Spain, Switzerland, the United Kingdom, the United States, etc.). In such decentralised countries, government-led initiatives are often fragmented and not always visible to the other regions nor communicated to the public.

Moreover, regional initiatives are growing such as eLearning programme of the European Commission[1] and the Asia E-learning Network;[2] future work should aim to index these regional developments.

Although the list does not include all the existing policies and programmes, the secretariat attempted to include the most relevant and salient initiatives by circulating data among experts from the participating institutions and, then, among countries.

1. Major policies, strategies and official documents concerning ICT in education and/or e-learning

Country	Who?	Policies/strategies/ documents	Year	Policy goals, concerns and areas/strategies/objectives
Australia	Australian Government Department of Education, Science and Training plays a leadership role through the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) which comprises the national and state/territory education ministers.	MCEETYA Joint Statement on Education and Training in the Information Economy	2005 earlier state-ment in 2000	All education ministers agree to pursue the following principles: 1) Creating an innovative society 2) Ensuring that all learners achieve their potential; 3) Improving quality and raising standards 4) Achieving efficiency through sharing of e-learning resources 5) Capitalising on the internationalisation of education

1.*europa.eu.int/comm/education/programmes/elearning/programme_en.html*; *www.elearningeuropa.info/*

2. *www.asia-elearning.net/*

Country	Who?	Policies/strategies/ documents	Year	Policy goals, concerns and areas/strategies/objectives
Australia	As above	Learning for the Knowledge Society: An education and training action plan for the information economy	2000	The Plan covers key education sectors: schools, vocational education and training, and higher education. It identifies outcomes needed if education is to support Australia's transition to the information society. Action areas for developing and implementing strategies include: 1) People 2) Infrastructure 3) Online content, applications and services 4) Policy and organisational framework 5) Regulatory framework. This action plan is being updated in preparation for MCEETYA approval in 2005.
	Department of Education, Science and Training in consultation with the Schools sector	Learning in an Online World 2003-06 – a series of policy, strategy, framework and action plan documents	2003-06	1) Content (including The Le@rning Federation) 2) Learning architecture and learning space 3) Bandwidth and connectivity 4) ICT research 5) ICT and pedagogy 6) Professional learning/leadership 7) Monitoring and reporting
	Department of Education, Science and Training in consultation with the VET sector	Australian Flexible Learning Framework for the National Vocational Education and Training System 2005	2005	To increase the sustainable uptake of e-learning in VET through a range of projects that: • Develop industry-based resources, such as Toolboxes, which contain learning strategies and online learning support materials • Engage industry peak bodies and organisations and Indigenous groups in e-learning • Enhance infrastructure and interoperability.
	The Higher Education Bandwidth Advisory Committee (HEBAC) Department of Education, Science and Training	A Framework for an Australian Research and Education Network	2002	The report assesses the availability and affordability of bandwidth for the higher education sector and frames a collaborative strategy to address the sector's needs both currently and for the longer term. It recommends the development of a national high bandwidth backbone.

Country	Who?	Policies/strategies/ documents	Year	Policy goals, concerns and areas/strategies/objectives
Australia	Australian ICT in Education Committee (AICTEC) which is the national forum for policy advice on educational uses of ICT and reports to MCEETYA.	AICTEC Business Plan	2004-05	AICTEC is a cross-sectoral, national committee responsible for providing advice to all Australian Ministers of Education and Training on the economic and effective utilisation of online technologies in Australian education and training. AICTEC has representation from the schools, vocational education and training, and higher education sectors; and includes both public and private education and training sector interests. *www.aictec.edu.au*
Brazil	Ministry of Education	Ministry of Education Law (Decreto) 2494	1998	To enable online courses to legally provide degrees
	Ministry of Education	Ministry of Education Law (Portaria) 2253	2001	To enable universities to substitute up to 20% of campus-based course activities by distance-learning activities
	Chamber of Commerce	E-Brazil: Information Technology for Development	2003	1) Society (access and participation) 2) Education 3) Private sector and environment 4) Government
Canada	The Advisory Committee for Online Learning (created by the Council of Ministers of Education Canada, CMEC, and Industry Canada)	The e-learning evolution in colleges and universities: a pan-Canadian challenge	2001	To accelerate the use of e-learning in post-secondary education and lifelong learning 1) Accessibility 2) Flexibility 3) Quality 4) Pan-Canadian synergy 5) Critical mass
	Ministry of Human Resources Development	Knowledge Matters: Skills and Learning for Canadians	2002	1) Lifelong learning 2) Accessibility and excellence in post-secondary education, for which e-learning is expected to play a crucial role 3) Quality workforce 4) Immigrants potentials
England	Department for Education and Skills	White Paper: The Future Of Higher Education	2003	1) Inclusion 2) Excellence 3) Flexibility 4) Collaboration To meet this end, e-learning is expected to be embedded in a full and sustainable manner

Country	Who?	Policies/strategies/ documents	Year	Policy goals, concerns and areas/strategies/objectives
England	Department for Education and Skills	Harnessing Technology: Transforming Learning and Children's Services	2005	The strategy has six overarching priority actions: 1) An Integrated online information service for all citizens 2) Integrated online personal support for children and learners 3) A collaborative approach to personalised learning and activities 4) A good quality ICT training and support package for practitioners 5) A leaderships and development package for organisational capability and ICT 6) A common digital infrastructure to support transformation and reform
	Higher Education Funding Council for England (HEFCE)	Hefce e-learning strategy	2005	To embed e-learning in a full and sustainable way within 10 years: 1) Pedagogy, curriculum design and development 2) Learning resources and networked learning 3) Student support, progression and collaboration 4) Strategic management human resources and capacity development 5) Quality 6)Research and evaluation 7) Infrastructure and technical standards
	Learning and Skills Council (Distributed and Electronic Learning Group – DELG)	The report of the DELG	2002	To deliver quality e-learning: 1) Content and learning systems 2) Learner support 3) Quality 4) Sustainability
France	The Prime Minister, the Interministerial Committee for the Information Society	The Governmental Action Programme for the Information Society (PAGSI – Programme d'action gouvernemental pour la société de l'information), the Ministerial Action Programme for the Information Society (PAMSI – Programme d'Action Ministérielle pour la Société de l'Information)	1988	To concretise the PAGSI, PAMSI focuses on: 1) Education 2) Culture and arts 3) Modernisation of public services 4) Business and e-commerce 5) Research and innovation 6) Regulation

Country	Who?	Policies/strategies/ documents	Year	Policy goals, concerns and areas/strategies/objectives
France	The Prime Minister, the Interministerial Committee for the Information Society	PAGSI 2000 Report	2000	To bridge the digital divide: 1) Training in the HEd sector 2) Equal access 3) Network and Infrastructure 4) Research 5) North-South digital divide 6) The visually impaired
Germany	The Ministry of Economics and Labour (BMWA) and the Ministry of Education and Research (BMBF)	Action programme, Information Society Germany 2006	2003	To advance Germany into information society: 1) Digital economy 2) Advancement of research and technology 3) Education 4) eGovernment 5) eCard Initiative 6) e-Health 7) IT security
	The Ministry of Economics and Labour (BMWA)	An action programme, Innovation and Jobs in the Information Society of the 21st Century	1999	1) Equal access 2) ICT literacy 3) Innovation and skills of employees
	The Ministry of Education and Research (BMBF)	A Concept paper, Online-Offline-IT in Education	2000	To realise the scheme of the BMWA's Action Programme (1999) Under the vocational education and training pillar: 1) Infrastructure 2) Educational software development Under the higher education pillar: 1) Research network 2) Virtual libraries
	The Ministry of Education and Research (BMBF)	A concept paper, Connection Instead of Exclusion – Information Technology in Education	2001	To realise the scheme of the BMWA's Action Programme (1999)
	The Ministry of Education and Research (BMBF)	Manual for e-learning	2004	A synoptic documentation of all the elearning projects funded in the federal programme *Neue Medien in der Bildung* ("New Media in Education") with a listing of short description of the projects purpose, contents, materials or courses developed, royalty regulations (if applicable) and project partners

Country	Who?	Policies/strategies/ documents	Year	Policy goals, concerns and areas/strategies/objectives
Japan	The IT Strategic	e-Japan Strategy II	2003	1) Medical services 2) Food 3) Lifestyle 4) Small and medium enterprises financing 5) Knowledge 6) Employment and labour 7) Public services E-learning is crucially concerned with: 5) Knowledge 6) Employment and labour
	The IT Strategic Headquarters	e-Japan Priority Policy Programs (2001, 2002, 2003) e-Japan 2002 Program		To materialise e-Japan Strategy (2001) and e-Japan Strategy (2003) 1) Network 2) Human resource development and promotion of education and learning 3) E-commerce 4) Digitalised public administration 5) Security and Reliability of ICT network E-learning is concerned with 2) Human resource development and promotion of education and learning
	Ministry of Education, Culture, Sports, Science and Technology (MEXT)	The reformed Standards for the Establishment of Universities 25	2001	Campus-based institutions are able to give up to 60 credits towards completion of a degree
Mexico		e-Mexico		1) e-Education ("e-Aprendizaje") 2) e-Health ("e-Salud") 3) e-Economy ("e-Economía") 4) e-Government ("e-Gobierno") The e-learning component gathers all the available information on the Internet about education; it includes the distance learning offers of public and private institutions at all levels
	ANUIES (The National Association of Universities and Institutions of Higher Education)	A Master Plan on Open and Distance Learning (Plan Maestro de Educación Superior Abierta y a Distancia)	2000	It includes e-learning in open and distance education developments and lays out strategies to achieve the developments with a vision towards 2020

Country	Who?	Policies/strategies/ documents	Year	Policy goals, concerns and areas/strategies/objectives
Mexico	COMEPO (The Mexican Council of Graduate Studies) approved in October	Development Plan for National Graduate Programmes ("Plan de Desarrollo del Posgrado Nacional")	2003	The plan includes the role of ICT in open and distance education
New Zealand	The Ministry of Economic Development (in collaboration with Department of Labour, Ministry of Education, New Zealand National Library, New Zealand Trade and Enterprise, Ministry of Research, Science and Technology, Te Puni Kokiri, Ministry of Health, State Services Commission, and Local government New Zealand)	A consultation paper, the New Zealand Digital Strategy	2004	To encourage the smarter use and uptake of ICT by individuals, communities, business and government: 1) Infrastructure (bandwidth) 2) ICT literacy 3) Content developments (for learning and for business) One of the ways to address change and challenge in different areas is to develop life-long e-learning opportunities within the wider community
	The Ministry of Education	An interim report, Tertiary e-learning Framework (2004-07)	2004	1) Staff development 2) Electronic rights management 3) Interoperability standards for e-learning systems 4) Qualifications to recognise flexible learning pathways 5) Sharing e-learning information and experiences 6) Research 7) Inclusion of the marginalised learners
	The Ministry of Education	The Tertiary Education Strategy 2002-07	2002	1) Economic transformation 2) Social development 3) Maori development 4) Environmental sustainability 5) Infrastructural development 6) Innovation E-learning is included as a way to work towards these goals
	The E-learning Advisory Group (the Associate Minister of Education, Tertiary Education)	Highways and Pathways: Exploring New Zealand's E-learning Opportunities	2002	To shift paradigm of e-learning from "distance education" to a wider potential: 1) To improve quality 2) To increase participation 3) To change cost structures 4) To change distribution/delivery methods

Country	Who?	Policies/strategies/ documents	Year	Policy goals, concerns and areas/strategies/objectives
Switzerland	The Federal Council (coordinated by the Interdepartmental Information Society Committee, IISC, in the Office of Federal Communications)	The 6th Report of the Information Society Coordination Group (ISCG) to the Federal Council	2004	1) Education 2) e-Government 3) e-Democracy 4) the Law 5) Data protection 6) Security and availability of information 7) Culture E-learning is mentioned in 1) Education; under the Swiss Virtual Campus, "Sustainability" is cited as a major political concern
		The 1999 Swiss Federal Law on University Development	1999	The law entitles the Swiss Virtual Campus as a programme to support new information and communication technology in higher education
Thailand	Ministry of Education	National Education Act		To promote quality of education and lifelong learning
	The Secretariat of the National Information Technology Committee (NITC)	The National IT Policy Framework for the years 2001-10 (IT 2010)		To move Thailand into the knowledge-based economy/society 1) e-industry 2) e-commerce 3) e-education 4) e-society 5) e-government E-learning is concerned under 3) e-education in relation to: 1) developing human resources 2) lifelong learning 3) computer literacy 4) virtual education
	The National Electronics and Computer Technology Center (NECTEC) and the Office of the National Economic and Social Development Board (NESDB) (joint)	The National ICT Master Plan (2002-06)		To acknowledge both the IT 2010 and the Ninth National Economic and Social Development Plan (2002-06) 1) Regional leader for ICT industries 2) The utilisation of ICT to enhance the quality of life and society 3) Research and development 4) Social capacity for future competition 5) Entrepreneurs capacity for the expansion of international markets 6) Small and Medium Enterprises 7) Government administration and services E-learning is concerned with 2) the utilisation of ICT

Country	Who?	Policies/strategies/ documents	Year	Policy goals, concerns and areas/strategies/objectives
United States	The web-based Education Commission to the President and the Congress of the United States	The Power of the Internet for Learning: Moving from Promise to Practice 1) The Power of the Internet for Learning 2) Seizing the Opportunity 3) Moving from Promise to Practice: A Call to Action		To promote e-learning at all levels of education 1) Student-centeredness 2) Needs of individual learners 3) Lifelong learning 4) Broadband access 5) Professional development 6) Research and development 7) Quality of content 8) Regulations 9) Privacy and protection 10) Funding
	The U.S. Department of Commerce	Visions 2020: Transforming Education and Training through Advanced Technologies		The report is a complication of visions prepared by leaders in industry, academia and government on how new technologies might change the education and training landscape
	The U.S. Department of Commerce and the U.S. Department of Education	The Advanced Education Technology Initiative		1) Innovation in education and training 2) Workforce (develop skills and abilities) 3) Competitiveness (in the knowledge-based economy) As part of the strategies, an Interagency Working Group on Advanced Technologies for Education and Training (under the aegis of the President's National Science and Technology Council) was set up. The aims are to: 1) Raise awareness of the opportunities and barriers 2) Explore where government may be able to remove barriers inhibiting market development 3) Examine effective allocation of Federal investments to foster the development, application, and deployment of advanced technologies in education and training
	The Office of Post-secondary Education, U.S. Department of Education	The Distance Education Demonstration Programme (two reports in 2001 and 2003) to Congress		1) Access 2) Flexibility 3) Financial assistance
	The National Center for Education Statistics, the U.S. Department of Education	Distance Education at Degree-Granting Post-secondary Institutions: 2000-01		The report presents data on distance education at post-secondary institution, one of whose chapter is dedicated to the use of educational technologies

2. Major programmes/projects concerning ICT in education and/or e-learning

Summary table of e-learning development by country

Country	Australia	Brazil	Canada	England	France	Germany	Japan	Mexico	New Zealand	Spain	Switzerland	Thailand	United States
Infrastructure/networking	X	X	X	X	X	X	X	X			X	X	X
Course materials/courseware development/learning objects repository	X	X	X	X	X	X	X		X		X	X	X
Fostering collaboration (consortium, cooperation, partnerships, etc.)	X	X	X		X	X			X	X	X		
Quality enhancement by innovation in teaching/learning (*e.g.* personalisation, flexibility, easier access, etc.)	X	X	X	X	X	X					X		X
Human resource development (*e.g.* university staff development, IT professional development, etc.)	X	X		X			X		X			X	X
Innovation and research	X		X		X	X	X		X	X			X
Development and/or provision of e-learning products (platform, software, applications, etc.) and services		X	X			X			X	X			X
Establishment of centres specific for online learning (*e.g.* offering courses, providing information, etc.)				X	X	X					X	X	
Quality assurance/consumer protection			X	X		X	X		X			X	
Promoting lifelong learning via e-learning			X	X			X			X			
Standards and specifications			X						X				X
International cooperation/aids projects for developing countries (*e.g.* development of hardware and software, teacher training, capacity transfer, promoting inter-operability, etc.)			X		X		X						
Establishment of a virtual university/campus/school						X				X	X		
Special funding for e-learning	X	X	X	X									
Promoting e-learning within the framework of distance learning			X			X							X
Capturing new markets for e-learning (home country and abroad); coping with the international competition			X			X							
Fostering of transparent e-learning markets						X							
Ensuring access by minority	X			X					X				

Details: country notes

Australia

In Australia, the government's responsibility for higher education is shared by the commonwealth and state governments, with the Federal government providing operational funding. The Commonwealth Department of Education, Science and Training (DEST), previously the Department of Education, Training and Youth Affairs (DETYA), is responsible for national education, training and science policy. DEST is also responsible for higher education funding, policies in the area of international/overseas students, and Indigenous education policy. There are different State-based initiatives in e-learning in tertiary education. It is not possible to highlight all state-based initiatives; however, we have selected two states where the participating institutions in our case studies are located: *i.e.* Victoria (Monash University) and South Australia (University of South Australia).

- *Fostering collaboration:*
  The Framework for Open Learning Programme (FOLP) aims to support a range of projects relevant to the whole of the education and training sector. Funding is provided for EdNA Online (see the portal/database section) which makes online collaboration tools available, including chat groups, community sharespaces, newsletters and discussion lists in education and training. FOLP also provides funding support to community groups such as an Indigenous Science and Technology Online project and the University of the Third Age which promotes collaboration across every state and territory to promote lifelong learning for older members in the Australian society.
- *Network infrastructure*
  Australia has made significant investments in systemic infrastructure for key elements of e-research infrastructure: a robust high bandwidth communication network; distributed high performance computing capacity; accessible data and information repositories; accessible research facilities and instruments; and agreed standards and specifications to maximise interoperability. These include the Australian Research and Education Network (AREN), the Advanced Network Programme (ANP), Australian Partnership for Advanced Computing (APAC) and Australian Research Information Infrastructure Committee (ARIIC) initiatives. AREN serves higher education and research institutions and their associated vocational education providers, supporting education and research, including e-learning and a greater capacity for research training. The AREN is being established as a collaborative venture between the Australian Government, State and Territory Governments and higher education and research institutions. "The Australian Government is exploring ways to leverage its significant investment in bandwidth for the higher education and research sector to the benefit of other education sectors including schools." APAC provides high performance computing facilities, while ANP strengthens Australia's research networks. ARIIC oversees projects dealing with middleware issues, interoperable repositories and issues associated with the regulatory framework for accessibility of data and published information. Together these initiatives enhance the utilisation of electronic media and thus provide a platform that benefits the delivery of education through electronic media.
- *Flexible learning in the vocational education and training sector.*
  The Australian Flexible Learning Framework is funded by the Australian Government through the Australian National Training Authority (ANTA) to create and share knowledge about flexible learning (especially e-learning) and to support its take-up in vocational

education and training. As well as the development of innovative online products and services, projects under the Framework cover professional development opportunities to assist accelerating the implementation of a flexible learning approach to training.1

- *ICT skills for work*
  All education ministers (national, state and territory governments) agree that the eight employability skills groupings, which comprise ICT skills, are skills that young people require for successful transition from school, work and to a range of other destinations. They also note that work on building employability skills into schools and VET sectors is progressing. Jurisdictions are continuing to embed employability skills within existing secondary schools curricular and the National Training and Quality Council has requested that the Industry Skills Councils (ISCs) incorporate employability skills into Training Packages, which provide the qualification frameworks for VET.
- *ICT and Teachers*
  The Partnership in ICT Learning project focuses on the technology-related needs and challenges for different groups of Australian teachers, including those working with Indigenous students, disadvantaged students, isolated students and those in schools with low bandwidth connectivity.
- *The Le@rning Federation*
  A collaborative initiative of the Federal, state and territory governments, aims at producing a pool of high quality online content for all Australian and New Zealand schools. The online curriculum content is available to schools across the country.

State government's initiatives

South Australia

- The Department of Further Education, Employment, Science and Technology (DFEEST)'s statement "New Times, New Ways and New Skills" outlines a ten-point action plan to strengthen the state's economic and social future until 2010 (from Technical and Further Education – TAFE – perspectives). E-learning is considered as a potential way to foster innovation to ensure that TAFE institutions deliver higher quality learning experiences.

Victoria

- The Victorian Government initiated a portal service, TAFE Virtual Campus, for any resident of Victoria to access fully accredited TAFE programmes through online enrolment via a registered training organisation. The portal contains a range of information and links related to e-learning and vocational education and training (*www.tafevc.com.au/default.asp*).
- The Victorian Government through the Office of Training and Tertiary Education (OTTE) collaborates with training providers on a programme: Frontiers – Building Capacity for Flexible Learning Innovation (*www.tafefrontiers.com.au/*). The priority areas include learning materials, professional development, information and research, and networks.

1. See *www.flexiblelearning.net.au/projects/*

Brazil

The responsibility of higher education, by definition, lies in the Ministry of Education (the Federal Government). However, some initiatives can be taken by the state – or city – government for the state – or city – universities. Research in higher education is supported by two foundations: CAPES (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior) under the Ministry of Education and CNPQ (Conselho Nacional de Desenvolvimento Científico e Tecnológico) under the Ministry of Science and Technology. There are local initiatives for e-learning at the state and municipal levels. For this study, we have only included Sao Paulo State/City – initiatives where our participating institution (University of Sao Paulo) is located.

- *Infrastructure/networking/collaboration*
  The federal government supported FUNTEVE (originally started as the PRONTEL) to connect all federal universities to TV EXECUTIVO (teleconference service) to develop a network/system of collaboration and learning modules.
- *Special funding for e-learning developments*
  Government agencies at federal and state levels supplemented university budgets to promote e-learning initiatives.
- *Learning objects repositories, development of applications*
  The Ministry of Telecommunication (*www.mc.gov.br*) sponsors the SBTVD Project (2003-06) which is to develop the Brazilian system for digital interactive TV. E-learning is highly integrated to advance developments of: learning objects repository for training support, interfacing for tele-education, applications with a user-centred approach.

Local initiatives

The State of São Paulo

- The State of Sao Paulo Research Foundation launched a cooperative project between government, industries and research communities called the TIDIA project. It promotes advanced communications in infrastructure/networking and applications of e-learning, becoming a virtual incubator of Internet content.

The City of Sao Paulo

- The city government of Sao Paulo supports professional training in collaboration with universities.

Canada

Post secondary education as well as education in general is the responsibility of ten provinces and three territories in Canada and each has a different policy. Therefore, it is not possible to highlight all the provincial/territorial initiatives on e-learning in tertiary education. For this study, we have included British Columbia, where the participating institution (University of British Columbia) is located.

- *Infrastructure/Connectivity*
  The Federal Government supports CANARIE to accelerate Canada's advanced Internet development by facilitating the widespread adoption of faster and more efficient networks.

- *Learning objects repositories*
  Industry Canada, under the CANARIE Learning Program, launched the edusource project as a pan-Canadian collaborative project to create a testbed of linked and interoperable learning object repositories.
- *Infrastructure/learning resources/collaboration/standards and specifications*
  The Multimedia Learning Group (MLG), part of Canada's SchoolNet at Industry Canada's Information Highway Application Branch, works with educational institutions to increase access to and integration of ICT into learning environments. In order to increase e-learning resources in national and international markets, one must develop an ICT-skilled population, capable of participating in the knowledge economy, by collaborating with post-secondary institutions in their take-up of online learning. MLG launched the EduSpecs project (*www.eduspecs.ca/index.htm*) to support the development of e-learning by promoting and facilitating the adoption of interoperable, international e-learning standards through inclusiveness, knowledge-sharing, collaboration, sustainability, innovation and research.
- *Consortia for online courses/learning materials*
  Industry Canada, part of SchoolNet programmes, launched an Internet portal Canada's Campus Connection (*www.campusconnection.net/index.html*) that connects learners to Canadian on-line university and college courses as a resource for skills development and personal growth to promote lifelong learning. It aims at helping Canada's post-secondary institutions expand their on-line presence both at home and abroad, reaching new markets with on-line courses and learning materials.
- *Lifelong Learning and ICT*
  The Office of Learning Technology was established by the federal government in 1996 with an aim to build a culture of lifelong learning through the use of technology. Projects include: Community Learning Networks Initiative (CLN) to enable lifelong learning and community capacity-building through the use of network technologies; New Practices in Learning Technologies Initiative (NPLT) to raise awareness of innovative practices in technologies for adult learners within the educational sector, including universities, colleges, educational associations and/or organisations; Learning Technologies for the Workplace Initiative (LTW) to help workers take advantage of technology and to efficiently adapt to the rapidly changing global marketplace and the new economy; and Research in e-learning Initiative (ReL) to promote research in e-learning practices and implements projects in collaboration with provinces.[2]
- *Quality/consumer protection*
  The Office of Learning Technologies (OLT) of Human Resources Development Canada (HRDC) in collaboration with the Canadian Association of Community Education (CACE) prepared the Consumers Guide to E-learning, a tool for learners to help evaluate programmes before purchasing online courses. It also prepared the Canadian Recommended E-learning Guidelines, a tool for service/product providers to design and deliver e-learning that meets consumer's expectations.
- *International collaboration/increasing visibility*
  Industry Canada supports the Connecting Canadians as the federal government's vision and plans to make Canada be seen as a world leader in the development and use of advanced information and communications technologies. As part of the plan, Industry Canada supports the NetCorps Canada International, which offers volunteer internships in developing

2. *www.hrsdc.gc.ca/asp/gateway.asp?hr=/en/hip/lld/olt/Projects_at_a_glance/projects_funded_by year/summary_2003-2004.shtml&hs=lxt#126920*

countries for students with appropriate skills in ICT. Some of the programmes that interns work on include the developments of hardware (*e.g.* infrastructure with satellites) and software (*e.g.* e-learning for lifelong learning).

Local (provincial/territorial) initiatives

British Columbia

- BCcampus, a British Columbia government post-secondary education initiative, has been established to provide learners with a single point of contact for a number of services, including:
    - Access to information on all distance education courses and programmes available throughout the British Columbia public post-secondary system.
    - Access to student support services tasks on-line, including applying for admission, selecting and registering for courses on-line and tracking personal academic history as well as extended hour (24 hours, 6 days a week) helpdesk services for on-line students.
    - The ability to transfer course credits achieved easily from one institution to another.
    - Enhanced individual choice by giving learners access to a broad range of programs, courses, schedules and delivery formats. Students are able to choose learning that fits their individual needs.
    - The option of completing their programmes of study entirely on-line and receiving their credentials on-line.
    - Access to interactive student resource and "chat" areas to enhance networking, information sharing and peer support.
- Over the past two years, the BCcampus On-line Programme Development Fund (OPDF) has approved 100 projects involving 26 British Columbia public post-secondary institutions. The $3 million OPDF is funding the development of over 120 online courses, well over 100 learning objects, 2 virtual labs and several tools for supporting online course development. A third round of proposals for a further $1.5 million will be adjudicated in Spring 2005.
- The BCNET Optical Regional Advanced Network (ORAN) was created in 2001 as a jointly funded initiative between the Province of British Columbia and the federal government through the CANARIE project. All of British Columbia's universities, as well as many government and non-government research organisations in British Columbia are connected to each other and to CA*net4 via the ultra high-speed data network.
- The British Columbia Ministries of Education and Advanced Education operate a joint initiative, the Provincial Learning Network (PLNet), which connects all communities in the province with a school or a college site to a broadband data network that also provides access to the Internet.

England

- *Networking, infrastructure, etc.*
  The Joint Information Systems Committee (JISC), through the United Kingdom Education and Research Networking Association (UKERNA), has set up the Joint Academic Network, SuperJANET, connecting higher education institutions, further education colleges and research council sites. *www.ukerna.ac.uk*

The JISC has established Regional Support Centres to advise the learning providers on e-learning development in infrastructure, collaborative networking, staff development and management of change. *www.jisc.ac.uk/index.cfm?name=about_rsc*. The JISC also funds a number of services to support UK further and higher education. For further information see *www.jisc.ac.uk/index.cfm?name=about_services*

ACL Connectivity Mapping takes a "snapshot" of connectivity, broadband and Internet access in post-secondary adult and community education.

- *Course materials development/implementation*

  The National Learning Network (NLN) formed a NLN Materials Team based at BECTA to procure and manage the development of high-quality electronic learning materials across a wide range of subjects. They worked in partnership with experts in further education colleges and with commercial developers (*www.nln.ac.uk/materials/*).

  BECTA are developing a content strategy for the post 16 sector which takes into account wider issues such as licensing arrangements; tools for local materials development; access to materials; and developing the market

  The Teaching and Learning Technology Programme (TLTP) was launched to foster collaboration among the higher education sector to explore how new technologies could help to improve the quality of teaching and learning. Phase one and phase two focused on developing computer-based teaching and learning course materials. Phase three focused on how to embed the use of new technologies and how to evaluate its effectiveness.

  JISC had funded the development of the JORUM, a repository service for all Further and Higher Education Institutions in the United Kingdom, providing access to materials and encouraging the sharing, re-use and re-purposing of them between teaching staff. See *www.jorum.ac.uk/* and RELOAD an editor and SCORM tool designed to facilitate the creation, sharing and reuse of learning objects and services. See *www.reload.ac.uk/background.html*. These tools were created under the JISC Exchange for Learning development programme. For further information and other tools developed under this programme see *www.jisc.ac.uk/index.cfm?name=programme_x4l*

- *Staff development*

  See *www.ccm.ac.uk/ltech//staffdev/default.asp*

  The QUILT (Quality in Information and Learning Technology) Project was a five-year undertaking which raised standards in further education by providing staff development in the use of ICT (1997-2002).

  - The Joint Information Systems Committee (JISC) manages a range of staff development projects, such as the Recognition of ICT Skills of Staff (tRISSt), and gives advice and guidance on the topic of "Training and Staff Development" (*www.jisc.ac.uk/index.cfm?name=topic_training)*;
  - BECTA also manages, through the National Learning Network, a range of transformational staff development projects and provide arrange of resources and events for practitioners through its website. *www.nln.ac.uk/lsda/nln_events/resources*.
  - The Learning and Teaching Support Network Generic Centre (now part of the Higher Education Academy) launched a project, E-learning (*www.ltsn.ac.uk/genericcentre/index.asp?id=17104*), where interactive online workshops for academics were implemented;
  - BECTA, in partnership with the JISC Regional Support Centres as well as the National Learning Network (NLN), manages the Ferl Practitioners' Programme (FPP) (*http://ferl.becta.org.uk/display.cfm?page=403; www.nln.ac.uk/viewproject.asp*). This programme aims for comprehensive staff development in further education across England, Wales, Scotland and Northern Ireland.

The Joint Information Systems Committee (JISC) has an e-learning development programme which aims to identify how e-learning approaches can facilitate learning and advise on effective implementation. Projects are funded as case studies in e-learning practices, they question the effectiveness of resources, designing learning systems, develop e-learning tools within a framework to facilitate interoperability and consider innovative approaches to e-learning, etc. JISC encourages collaboration between institutions and sectors and is helping to develop communities of practice. JISC is also working in the areas of e-Assessment and e-Portfolios within the EU Diploma Supplement initiative. JISC is developing the international e-learning framework with colleagues in Australia and others and supports e-learning tool development, see *http://elframework.org/*

- *Leadership*
  The Centre for Excellence in Leadership (CEL) was established in late 2003 as a "leadership college" for the Post 16 learning and skills sector. One of its key aims is to improve leadership understanding and skills to utilise the transformative potential of e-learning
- *New working practices/forces.*
  The Association for Learning Technology (ALT), with funding from the Joint Information Systems Committee (JISC), has initiated development of a UK-wide structure to accredit individuals as learning technologists, in collaboration with higher education, further education, and industry bodies. See *www.ccm.ac.uk/ltech/benchmarking/intro.asp*
- *Quality Assurance, Inspection, Raising standards, etc.*
  The new Quality Assurance Agency (QAA)'s Code of Practice specifically addresses e-learning.
    - LSDA manages projects to evaluate the impact of technology on teaching and learning (for example as part of the NLN programme).
    - The Raising Standards Steering Group, co-ordinated by the BECTA, initiated a discussion forum between inspectorates and key sector bodies such as college practitioners and inspectorate representatives (*e.g.* Ofsted, Adult Learning Inspectorate, Quality Assurance Agency for Higher Education, and the Education and Training Inspectorate, Northern Ireland, University for Industry (Ufi), the Learning and Skills Council (LSC) and the DfES).
    - Demonstrating Transformation is a programme which offers guidance on inspection and e-learning in post-secondary education by providing information on a free CD-ROM.
- *Learning Centres/services for lifelong learners*
  DfES started UK online centres with an aim to provide computer access to people in the community and help them to acquire new skills in technologies. They may be located in libraries, community centers, schools and church.
  UfI, Limited represents the government's vision of a "university for industry". Forming a unique partnership between government and private and public sectors, the industry aims to strengthen people's employability by creating online learning services called Learndirect centers. These centers provide over eighty per cent of their courses online, and account for being the largest publicly-funded online service in the UK.
- *Standards and specifications*
  JISC works with international standards bodies through CETIS (Centre for Educational Technology Interoperability Standards) see *www.cetis.ac.uk* and UKOLN see *www.ukoln.ac.uk/*

- *Accessibility and inclusion*
  JISC funds TechDis (*www.techdis.ac.uk*) to support staff and students with disabilities through the use of technology.
- *Digital Inclusion.*
  The objective of MyGuide is "to assist in decreasing the digital divide by facilitating access to the Internet and to learning opportunities for those who currently do not, or cannot, use the Internet because of a lack of skills or confidence or because of physical or cognitive disabilities". The projects owned by the DfES and Project Managed by Ufi Limited aims to use innovative technology to develop and market a search and interaction facility that will help people over the barriers they face in using online services, due to physical or cognitive disability, lack of confidence, skills or motivation. The project fits in with the Government's aim to make Britain a society that is inclusive: creating opportunities and removing barriers to ensure that everyone can fulfil their potential. It is also consistent with the Department's Skills Strategy and the objectives of encouraging and enabling adults to learn, improve skills and enrich their lives. A pilot service is due to be launched in December 2005; with full service available 2006/07.

France

- *Under generic framework*
  Within the framework of Four-Year Contracts (for institutions of higher education set out by the Ministry of Education), numerous projects are being put into practice. Any educational establishment, including post-secondary education institutions, can receive funding for projects concerning quality teaching. For instance, as for ICT developments, institutions may receive funding to develop its infrastructure for pedagogy and research; to improve its access of educational resources and services; to implement the use of new applications of learning management; to modernise documentation practices, etc. This can be done by contracting with the Ministry of Education.
- *Digitalisation of campus*
  The Ministry of Education launched a project called "Campus numérique" (Digital Campus) with an aim for higher education institutions to offer open distance post-secondary training via new technologies. They aim for education of higher quality carried out in a flexible and personalised way, incorporating diverse teaching methods and adopting formative assessments.
- *Educational resources*
  The Ministry of Education carried out a two-year research project, the Manum project, on existing digital resources. The research identified a need to establish an industry standard for production that meets professional norms. It also uncovered needs to find better ways to disperse materials and suggested the development of digital libraries of teaching materials (*www.educnet.education.fr/chrgt/SDTIC-sup-BS.pps*).
  The creation of an Electronic Knowledge Base,[3] coordinated by the Technology Directorate (Ministry of Education), is currently in an initial development stage. Its aim is to better supply contents and services in a coherent, widespread and sustainable way.
  The Ministry of Education is supporting a "web-TV" project for higher education called "Canal U" (*www.canal-u.education.fr/*). It emits streaming videos of numerous filmed

3. It was formerly the "Espace numérique d'éducation européen" (ENEE) project.

lectures and lessons with an aim to enhance visibility of French higher education and research via Internet.

The Ministry of Education supports the Fédération Interuniversitaire d'Enseignement à Distance (FIED) on their radio service project, Audiosup, where users can listen to programmes produced by universities belonging to Inter-university Distance Learning Federation and their partner institutions.

The Ministry of Education supports a digital version of the television series, "Channel Five Lecture Hall", "Les Amphis de France 5" (*www.amphis.education.fr*). The site provides users with access to a wide range of university training programmes.

- *Consortium*

  The Ministry of Education supports establishments of consortium: *e.g.* the Campus Numérique en Économie et Gestion (CANEGE), the Campus Virtuel des Technologies de l"information et de la Communication (CVTIC), the Université Médicale Virtuelle Francophone (UMVF), CampuSciences, the IUTenligne.

- *Public-private partnerships*

  To achieve the aims of the PAGSI, numerous public-private partnerships were formed. Some of them relate to post-secondary education and training: *e.g.* the RIAM (Recherche et Innovation en Audiovisuel et Multimédia) project, managed by the Secretariat of three Ministries (industry, research and technologies, and culture and communication); the Société Digitale for assisting the trainers who educate people with new technologies; the Société Hewlett-Packard France for the provision of distance education and training programmes; etc.

- *Tripartite partnerships*

  The Ministry of Education encourages tripartite contracts between the Ministry of Education, higher education institutions and local authorities for the Regional Digital Universities (UNR) project. Its aim is to offer online services (students' services and teacher support services) on a regional basis.

- *Establishment of a centre*

  The Ministry of Education supports the European Residence for Educational Technologies – the Villa Media – project. The centre was established to focus exclusively on new teaching and learning methods with the use of multimedia. It intends to create a place for people to share ideas, conduct research, network and create innovations.

- *Internationalisation* (*www.educnet.education.fr/eng/inter/offrefor.htm#acteurs*)

  The "Campus Numérique" project of the Ministry of Education is now beginning to consider the expectations of France's partners abroad by forming an international consortium with foreign institutions (*www.educnet.education.fr/superieur/campusouvert.htm*).

  The HEAL (Higher Education E-learning Courses Assessment and Labelling) project (*www.heal-campus.org*) is an experimental European Commission programme. It was created to offer on-line education to European students (through programme mobility), within the framework of the ECTS (European Credit Transfer System). The current participating countries are Germany, Finland, France, Italy, and Portugal. The evaluation report is to be published in October 2004.

- *International cooperation*

  Within the framework of the ICT Education (La Formation aux Nouvelles Technologies) (*www.diplomatie.gouv.fr/mediasociete/ntic/formation/index.html*), the Ministry of Foreign Affairs supports aid projects for Africa such as teacher training, vocational training, capacity transfer of ICT in education, etc.

The Ministry of Foreign Affairs finances the Regional Management Education Programme Synergy, to support management education programmes in Cambodia, Lao PDR, Thailand and Viet Nam. The programme includes an e-learning component such as video-lectures, both in the between centres in the region and between Europe and the region, as well as the sharing of collections of online content. It aims at sharing of platform, technology, and content (especially for the tourism component).

Germany

In Germany, responsibility for higher education is shared by the federal government and the state governments with a strong tradition of sovereignty in the *Lander* (States). It is a trend that universities have high autonomy, depending on contexts.[4] By definition, the federal government provides financial assistance, governs degree programmes, manages human resources, and concerns itself with teaching and research, etc.[5] Regarding ICT in education, the federal authorities share responsibility with the *Lander* in such areas as property rights, rights relating to the use of the Internet, distance education and quality

- *Infrastructure/networking/accessibility*
  The Wireless Campus Networks (WLAN) project, introduced in the BMBF's Online-Offline-IT in Education, was launched with an aim to promote easy access to learning and teaching materials on campus for students, faculty, administration and to encourage new forms of teaching and learning and to study the feasibility of wireless networks for e-learning.
  The BMBF supports the development and expansion of a country-wide gigabit DFN-Verein network for higher education and research institutions.
  The Learnet Project, sponsored by the Federal Ministry for Economics and Technology was launched to develop educational software to improve e-learning accessibility to small to medium-sized enterprises (SMEs) and to public administration.
- *Infrastructure/teaching and learning*
  The Notebook University programme (2001-03) was financed by the BMBF with an aim to provide selected universities (all universities in Germany were eligible to apply) to allow students to benefit from the full and flexible use of modern ICT (*e.g.* notebooks, WLAN, etc.). Thus, the focus was on infrastructural support for campus universities rather than the development of online courses. However, a precondition for application proposals was that universities would prepare a strategy for web-based multi-media learning and teaching.
- *Quality of teaching and learning/new online programmes/international market*
  Under a "Neue Medien in der Bildung" (New Media in Education) programme (2000-04), the BMBF funds projects which promote the use of new media and ICT in education. The overall goals of the programme are to realise added value to teaching/learning; to help to foster a structural change in the education sector; to foster a market for learning software; and to retain an independent national learning culture. The programme covers schools, vocational training and higher education. Goals specific to the higher education are to improve the quality of teaching and learning, to create new distance-learning programmes, to keep up with the international competition, to foster e-learning markets for lifelong learning on a global scale, etc.

4. This is protected by the *Grundgesetz* (Basic Law of the Federal Republic).

5. The framework is provided by the national *Hochschulrahmengesetz* (Higher Education Framework Law).

- *Development of online teaching/learning courses/content sharing*
  The Virtual Universities Project, introduced in the BMBF's Online-Offline-IT in Education, is an alliance of projects to experiment with tele-learning/teaching and to develop multimedia teaching and learning units.
  The BMBF supports a virtual professional school project that would offer a master's degree, and be aimed at developing online courses of high quality to be recognised internationally.
  The BMWA supports the Content Sharing Project, which aims at new co-operation forms for the commercial change of learning contents between producers among themselves and with educational institutions.
- *Public-private-partnership*
  To transform Germany into an information society, a public-private-partnership project, Initiative D21, was launched by some *Landers*, the business sector and the social community. One of the Task Forces is the creation of "Education, Qualification and Equality of Chances". The four objectives are to ensure ICT competencies for all; to enhance the quality of education in schools and universities; to overcome the gender inequality in jobs in the ICT sector; to enhance further education and to strengthen the regional economy.
- *Evaluation/research*
  The BMBF commissioned evaluation/research projects, such as positioning of virtual universities in an education market; concepts of virtual universities; markets and business models for provision of e-learning products by higher education institutions; gender mainstreaming, etc.
  The evaluation report of the Notebook University programme, results and experiences of a successful initiative was issued in July 2004 (*www.medien-bildung.net/notebook/notebook_3.php*).
- *Interdisciplinary project for documentation*
  The Dissertation Online project (1998-2000) was funded by the national German Research Foundation (*www.dfg.de*) (DFG – *Deutsche Forschungsgemeinschaft*). It was an interdisciplinary project to present dissertations online, involving five universities[6] and five academic fields.[7] This initiative was made into a national initiative with the German National Library, who established a centre for coordination amongst librarians and researchers.
- *Coordination between the central government and federal states*.
  The Bund-Länder-Commission for Educational Planning and Research Promotion (BLK), a body for coordination between the central government and the federal states, carries out pilot projects and promotes programmes to promote the use of technology in education, *e.g.* "Systematic integration of media, information and communication technologies in teaching and learning processes (SEMIK)"; "Cultural education in the media age (KuBIM)"; "Distance learning", etc. The tendency is to stress capacity building and organisational development rather than the development of content.
- *E-learning services*
  The BMBF funding programme on E-learning services in higher education (*www.e-teaching.org/news/ausschreibungen/foerderprogramme/*).
- *E-learning market*
  The BMWA supports the Quality Initiative eLearning in Germany (Q.E.D.), which aims at developing a new harmonised quality model for more transparent eLearning market.

6. Berlin, Duisburg, Erlangen, Karlsruhe, and Oldenburg.

7. Chemistry, education, informatics, mathematics and physics.

Lander-initiatives

- The Bund-Länder-Commission for Educational Planning and Research Promotion (BLK) carries out pilot projects and promotes programmes to promote the use of technology in education; *e.g.* "Systematic integration of media, information and communication technologies in teaching and learning processes (SEMIK)"; "Cultural education in the media age (KuBIM)"; "Distance learning", etc.
- Each *Länder* has founded its own centre for e-learning in higher education: among them ELAN in Lower Saxony and, ELCH in Hambourg, UVM – now CeC, VHB, Virtuelle Hochschule Baden-Württemberg, etc. They are separate from the federal endeavours, though. They have also administered funding programmes, carried out research, offered courses, coordinated activities between different universities, etc.
- The Humburg State Governemt (*Hamburger Landesregierung*) issued a document "eGovernment Fahrplan 2004" (eGovernment Schedule 2004). It comprises a huge range of issues associated with eGovernment, digital signature, eHealth, and eLearning in schools and higher education.

Private foundations

- Bertelsmann Stiftung/Heinz Nixdorf Stiftung (*Bildungswege in der Informationsgesellschaft*) Foundation supports e-learning projects. While the previous focus was on content and software development (*www.big-Internet.de*), the current focus shifted to capacity building for educators (*www.e-teaching.org*).
- Stifterverband der Wissenschaft (*www.stifterverband.de*) develops innovative, creative and futuristic programmes/projects between science and economics, politics, education, etc. As for e-learning, it supports the VCRP (Virtual Campus Rhineland-Palatinate) programmes, which have launched numerous e-learning projects: *e.g.* evaluation of a learning management system (webCT) with different learning scenarios; the establishment of qualifications of university e-teaching; the development of an online database and lecture rooms, etc.

Japan

Programmes/projects

- *Infrastructure/connectivity/materials/consortium*
  The National Institute of Multimedia Education (NIME) operates a project "IT Support for Higher Education". To encourage the use of IT in higher education, it aims to promote a consortium, develop educational networks, supply multimedia instructional materials and resources, and foster the implementation of multimedia at institutes of higher education. One example of these subprojects is the "xGate" (eXtended GATE of the University of Tomorrow) project, a research project at the University of Tokyo. It intends to establish a system/platform to build a virtual university. A new subproject includes developing software for a cellular phone (i-mode) to enhance access to virtual university courses in the country, creating a streaming of video lectures on virtual university and evaluation of learning outcomes, etc.

- *Infrastructure/connectivity*
  The National Institute of Informatics (NII) has set up the networks SINET and Super SINET, connecting higher education institutions and research institutions. The Super SINET is designed to transfer heavy data (via 10Gbps) and give priority to basic research and information technology. It currently focuses on connecting institutions to five specific areas of advanced science and technology.
- *Quality assurance*
  The MEXT set up a research project on quality assurance of higher education with an aim to respond to cross-border education. One of the research themes includes quality assurance of e-learning in higher education.
- *E-learning materials and courses*
  The Japan Science and Technology Agency (JST) developed open educational resources (learning materials and courses), namely Web Learning Plaza, on science and technology to support the continuing professional development of engineers – the aim was to contribute to the advancement of Japan's technological manpower.
  The MEXT launched an open learning programme via El-Net (*www.opencol.gr.jp/*) to promote lifelong learning. Courses can be taken free of charge at community centres and libraries.
  The Ministry of Internal Affairs and Communications (MIC) launched the Information and Communications Human Resources Training Project to promote IT literacy to the larger population. The training takes place at existing schools, community centres, libraries, museums, universities, etc. MIC raises the needs to further develop the project in areas such as using the existing facilities as support centres, developing human resources as "instructors-to-be" and creating relevant contents, etc.
  METI set up a working group to launch a project to promote e-learning at the grass-root level. The project aims to develop human resources to strengthen Japan's industrial competitiveness as well as to ensure social security by creating employment for the youth. It intends to collaborate with MEXT and MHLW.
- *International collaboration*
  Asia e-learning Network (AEN) has been established by the Japanese government's initiatives to promote economic development and human resources training in the Asian region through e-learning. The proposal was approved at the ASEAN+3 Economic Ministers Meeting. The objectives are to share information on latest e-learning trends and technologies, to promote interoperability and resource sharing of e-learning systems and contents and to promote the spread of knowledge on the effective use of e-learning in the region.
  School on Internet (SOI)-Asia Project is an inter-spectral project between industries and academics, supported by METI and MIC. It aims at assisting capacity building of neighbouring Asian countries by delivering quality higher education from Japan. It utilises satellite-based Internet to allow universities located in the regions to access the project where Internet environments are insufficiently equipped.
  The Asia Broadband Programme was set forth by MIC in collaboration with other relevant ministries to realise a globally-balanced IT society for Asia. One of the basic concepts is to strengthen cooperation among Asian economies and provide support for developing countries in such areas as introduction of broadband platforms, distribution of digital contents, and promotion of compatibility with a multilingual environment which enables information to freely flow within the Asian region.

Mexico

- *Infrastructure*
  The Government of Mexico has launched the Distance Learning Conference System (DLCS), video-conferencing platform and software. It aims to enable universities throughout the country to engage in "one-to-many" distance learning programmes in an affordable, reliable and flexible manner.

New Zealand

- *Standardisation*
  The Ministry of Education launched a project to provide a set of recommendations for e-learning standards. It prepared a draft document, *e-learning Standards Overview* (*www.steo.govt.nz/download/Draft%20Standards%20Overview.pdf*), for consultation, which provides an overview of existing and emerging e-learning standards.
- *Numerous themes are covered by government projects under two funding schemes*
  Funding for collaboration. The Ministry of Education makes available funding, the e-learning Collaborative Development Fund (eCDF) (2003-07) to improve the capability of e-learning delivery with the aim to facilitate collaborative and strategic implementation of e-learning among tertiary education institutions. Under the first round (2003), project applications received funding were: *e.g.* to develop improved Maori access to, and participation in, e-learning; to develop a set of guildelines and standards to ensure the quality of e-learning; to develop and implement a unique NZ open source courseware tailored to NZ's population (particularly Maori and Pacific peoples); to support staff development; to establish an e-learning diploma, New Zealand e-learning quality standards, framework guidelines, etc. (*www.tec.govt.nz/about_tec/mediareleases/release22.htm*).
  Funding for research. The Ministry of Education funds five projects for research on the current context and future impact of e-learning on tertiary learners and providers in the New Zealand context.

Spain

Since 2001, a new act on higher education in Spain was promulgated by the government called *la Ley Organica de Universidades (LOU)*. It decentralised authority from the central government to seventeen regional governments (*comunidad autónoma*). For this study, we have included the Autonomous Government of Catalonia (the *Generalitat de Catalunya*), where a participating institution called the Open University Catalunya is located.

- *Research*
  Under the programme to promote technical research, the Ministry of Science and Technology provides subsidies to promote production of educational software and development of ICT in education.
- *Inter-university collaboration*
  An initiative was taken to create a single, virtual point of encounter, *the Grupo9 Universidades*[8] (at *www.uni-g9.net/*). Grupo9 is composed of nine Spanish public universities which, among other projects, have a joint offering of subjects that are taught via e-learning.

8. This Group includes the universities of the Balearic Islands, Saragossa, La Rioja, Navarre, the Basque Country, Cantabria, Oviedo, Extremadura and Castilla-La Mancha.

Regional

The instigation of the *Generalitat de Catalunya* (Autonomous Government of Catalonia).

- The Educampus project was launched by the *Generalistat de Catalunya* with an aim to create an innovative platform of educative, interactive and collaborative work for and between professors and students.
- The edu365.com portal was constructed by the Department of Education of the *Generalitat Catalunya* to provide lifelong learning and professional training to students and families from non-university educational systems (*www.edu365.com/*). The portal is closely related to the ARGO project,[9] which is conducted by the Department of Education in collaboration with the Secretariat of Telecommunications and Information Society of the Department of Universities, Research and Information Society.

Switzerland

In Switzerland, responsibility for higher education is shared between regional governments (cantons) and the central government (Confederation). In general, universities have high autonomy. This autonomy varies, however, by the type of institution and its level of studies. The Confederation has responsibility for advanced vocational training[10] and for universities of applied sciences. In addition, the Confederation has jurisdiction over two Federal Institutes of Technology and promotes research and provides financial grants for cantonal universities.[11] For this study (in addition to the Confederation's initiatives) we have included institutional initiatives in the Zurich canton, where the participating institution is located.

- *Funding for ICT in education through collaboration*
  The Swiss Virtual Campus programme[12] was launched to encourage an advancement of the use of technology in higher education institutions: *e.g.* developing e-learning courses, setting up a special centre to promote e-learning on campus, etc. Its aim was to identify institutions that have developed their teaching and research independently of each other and coordinate them with other institutions. In effect, the government called for more collaboration by setting funding conditions that a proposal must involve a minimum of three institutions.
- *Infrastructure/connectivity/networking*
  The Confederation (and eight university cantons) established the SWITCH Foundation to promote modern methods of data transmission and to set up an academic and research network, *SWITCH* (*www.switch.ch*), in the country.
  The two Federal Institutes of Technology joined the Telepoly project, which aimed at providing high-tech synchronous distance teaching.

9. The Argo Project is a joint initiative with an aim of fostering the full integration of information technology in primary, secondary and vocational education.

10. This has been enacted under the new Constitution (1999).

11. Swiss National Report for the OECD Review of Swiss Tertiary Education Policy (2002), the Confederation and the Cantons, Bern.

12. The first phase was 1999-2003; the second, 2004-07 (*www.virtualcampus.ch*).

A research and development project, Classroom 2000, was launched to develop modular courses (from infrastructure to technologies to pedagogies) for engineers and technicians. This project was initiated and realised collaboratively by the Federal Institute of Technology, NDIT/FPIT,[13] a consortium of Swiss universities, universities of applied sciences and private corporations.

- *Technical and pedagogical consulting services*
  The Network for Educational Technology (NET) was established to promote integration of ICT in teaching. It was first started as an initiative from the Centre for Continuing Education and the Centre for Teaching and Learning (*Didaktikzentrum*) at the Federal Institute of Technology in Zurich. It has now become a permanent centre at the institute and provides information, consulting and support to instructors on learning platforms, software and pedagogies.
  The E-learning Centre at Zurich University, part of the Vice-President's Office for Teaching, provides consulting for e-learning developers, training for university teachers, funds for projects on e-learning innovations.
  The Swiss Centre for Innovations in Learning (SCIL) is being established (*www.scil.ch/about/index-en.html*).
- *Creation of a virtual community space*
  The Federal Institute of Technology Zurich launched a project called the "ETH world" to create a virtual campus with a communication and cooperation platform and to support activities of people working or studying at the institute. A number of sub-projects are being implemented under "ETH world": *e.g.* developing e-learning, research tools, information management, infrastructure, building communities for e-learning, etc.

Thailand

- *Establishment of a centre*
  The establishment of the National E-learning Centre was authorised by the *Council of Ministers*, and was established by the Ministry of Education (MOE), the Ministry of University Affairs (now incorporated into MOE) and the National Economic and Social Development Board (NESDB). The centre provides e-learning and e-training services with an aim to establish Thai society as a knowledge society, enhancing the quality of education through the practice of e-learning, etc.
- *Infrastructure/connectivity/courseware development/digital library/teacher training*
  To be part of a large National Education Network (EdNet), a higher education network, Interuniversity Network Project – UNINET (*www.uni.net.th/en/About/members.htm*), was administered by the Ministry of University (now part of MOE), and the Office of Information Technology Administration for Educational Development. It aims to support all universities and institutions of higher education in Thailand by networking, researching, developing its materials and training.
- *Quality assurance*
  For online learning programmes, the Ministry of Education is proposing a set of regulations (Standard Criteria for Establishing Internet-Based Programme of Studies by Thai

13. NDIT/FPIT is a virtual university for postgraduate studies in ICT in Switzerland and works as an education and research coordinator between universities, universities of applied sciences, and technology-related industries (*www.ndit.ch*).

Universities: Ministry of Education's Proposed Regulations) for setting up Internet-based programmes in universities.

- *Providing e-learning courses/solutions*
  The National Science and Technology Development Agency (NSTDA) launched a project, LearnOnline (*www.learnin.th/*) in cooperation with Thailand Graduate Institute of Science and Technology (TGIST). It provides web-based courses to customers – a majority of which are graduate school students and working adults.
  The National Science and Technology Development Agency (NSTDA) also launched a project, Online Learning Project (NOLP), to provide e-learning services to educational organisations and companies.
- *Localisation*
  The National Electronics and Computer Technology Centre (NECTEC), in cooperation with ITEC Inc., Japan, conducted an e-learning course to prepare people for an IT professional examination. Possibilities and challenges were examined in operating a multilingual e-learning course in a Thai environment.

The United States

In the United States, education is primarily a State and local responsibility. It is States and communities, as well as public and private organisations of all kinds, that establish schools and colleges, develop curricula, and determine requirements for enrollment and graduation. Therefore, there are more initiatives based on private and community initiatives than government-led ones. However, the Department of Education at the federal level is set up with a mission to operate programmes in order to ensure equal access to education and to promote educational excellence throughout the nation. To examine the State initiatives for this study, we have included State of California (University of California, Irvine and University of California, Los Angeles Extension), State of Maryland (University of Maryland University College), and Commonwealth of Pennsylvania (Carnegie Mellon University), where the participating institutions are located.

- *Infrastructure*
  The National Information Infrastructure (NII) was launched to meet the information needs of its citizens. It aimed to enhance national economic competitiveness and improve quality of life. The first report by its Advisory Council (1995) set out five sets of principles. One of the principles was Education for Lifelong Learning where the NII aimed to enhance the quality of education by making information and learning resources available in schools, colleges, universities, libraries, and other related institutions for all ages of population.
- *Distance education*
  The U.S. Department of Education's Office of Educational Technology supports a federal grant programme "Learning Anytime Anywhere Partnerships" to support online asynchronous distance education through partnerships among post-secondary institutions, technology companies, employers, associations, and any other relevant organisations.
- *Technology innovation*
  The U.S. Department of Education's Office of Educational Technology supports Technology Innovation Challenge Grants to promote innovative uses of educational technology by awarding grants to school districts, universities, businesses, libraries, software designers, and others.

- *Technical assistance*
  The U.S. Department of Education's Office of Educational Technology supports Regional Technology in Education Consortia to provide professional development, technical assistance and information about the use of technologies to improve teaching and learning to states, school districts, adult training programmes and other educational institutions.
- *Specifications/standardisation*
  IMS Global Learning Consortium came into existence under the EDUCAUSE National Learning Infrastructure Initiative.[14] The Consortium develops specifications to support distributed learning utilising technologies such as the Internet. It defines and distributes open architecture interoperability specifications for e-learning products.
  Advanced Distributed Learning Initiative (ADL) is a standardisation organisation, launched by the Office of the Secretary of Defense (OSD) and the White House Office of Science and Technology Policy, which works collaboratively with government, industry and academia. It aims to establish learning technology which permits the interoperability[15] of learning tools, course contents, and repository of educational resources on a global scale in the field of e-learning.
- *Educational materials*
  There are growing online Open Educational Resources (OER) initiatives at the institutional level: *e.g.* MIT's OpenCourseWare, Carnegie Mellon's Open Learning Initiative, Rice University's Connexions, Utah State University's Open Learning Support to be specialised in Biological and Irrigation Engineering, Eastern Oregon University's EduResources Portal, and community colleges' Sharing of Free Intellectual Assets (SOFIA) scheduled to begin in 2005, which are supported by private foundations such as the William and Flora Hewlett Foundation and the Western Cooperative for Educational Telecommunications (WCET). The William and Flora Hewlett Foundation also supports a non-profit group, the Monterey Institute for Technology and Education, to create the National Repository of Online Courses, which will allow courses to be shared among institutions. The Sloan Foundation supports the League for Innovation in the Community College's project, the Specialty Asynchronous Industry Learning (SAIL), which helps institutions to exchange courses.
- *Software development*
  A collaborative initiative at the inter-institutional level is growing: *e.g.* the Sakai Project among the University of Michigan, Indiana University, MIT, Stanford, the uPortal Consortium, and the Open Knowledge Initiative (OKI) with the Andrew W. Mellon Foundation. The project aims to integrate and synchronise their considerable educational software into a pre-integrated collection of open source tools. The Sakai Educational Partners' Programme extends this community to other academic institutions around the world, and is supported by the William and Flora Hewlett Foundation.

14. The initiative aims to help higher education redesign the use of technology in order to improve the learning outcomes of academic programmes, increase the delivery flexibility of academic programmes and support services, and increase the return on investment, or value of investment in higher education.

15. The Sharable Content Object Reference Model (SCORM). The SCORM is a reference model that defines the interoperability of course components, data models and protocols in order for learning content objects to be shared across systems that conform to the same model. The newly announced was the Content Object Repository Discovery and Resolution Architecture (CORDRA).

California

- The Department of Personnel Administration launched The Virtual Classroom to make available some of the courses taught at the State Training Centre to the public via the Internet. The courses are taught by instructors from California State University, Sacramento (*www.dpa.ca.gov/tcid/stc/virtual/virtual1.shtm#CEUs*).

Pennsylvania

- Penn State University's World Campus offers more than 30 online degree and certificate programmes. Penn State is also the home of the American Centre for the Study of Distance Education, which was founded in 1986 to study and disseminate information about distance education.

Maryland

- As a participant in the Department of Education's Distance Education Demonstration Programme, University of Maryland University College has been granted waivers of some of the laws that limit the amount of distance education an institution can provide and retain eligibility to participate in federal financial assistance programmes.
- MarylandOnline is a statewide inter-segmental consortium of Maryland colleges and universities. MarylandOnline facilitates students' access to articulated courses, certificates, and degree programmes offered via distance education and provides faculty with training and resources to support excellence in web-based learning.
  Maryland has established minimum standards for programmes offered in whole or in part through distance education by private careers.

3. Major portals/database concerning ICT in education and/or e-learning

Country	What?	By who?	What information?	Portal/database address
Australia	Education Network Australia (EdNA) Online	Education.au limited, a national company owned by Australian Ministers of Education and Training, and States and Territories of Australia	Set up to develop a national digital database of information at all levels of education in Australia. In the database, e-learning information and resources for higher education are made available	*www.edna.edu.au/edna/page2409.html*
	Australia Flexible Learning Framework	The Australian National Training Authority through the Australian Government	Contains extensive information and links to all framework projects and activities. There is a comprehensive resource database, which enables discovery and access to quality assured flexible learning resources that have been generated by the Australian Flexible Learning Framework's projects over the past four years. Information can be found on teaching and learning resources as well as flexible learning research, case studies and guidelines	*http://resources.flexiblelearning.net.au/*
Brazil	Universidade Virtual Pública Do Brasil (Brazil's Public Virtual University)	Consortium of 70 public Brazilian tertiary institutions receive support from Ministry of Education and Ministry of Science and Technology (MCT)	Used to secure access to the quality of education by offering courses at levels of undergraduate, graduate, extension and continuing education	*www.unirede.br*
	e-learning Brazil	The portal appears to be run by a private company called "MicroPower", a company which develops its business in the area of technology in education	A portal, *E-learning Brazil*, serves as a source of information for e-learning courses, research, congress, and workshops.	*www.elearningbrasil.com.br/*

Country	What?	By who?	What information?	Portal/database address
Canada	International Gateway to Education in Canada	Information resource sponsored by the Council of Ministers of Education, Canada (CMEC), the secretariat for the provincial and territorial ministries/ departments responsible for education	Launched to showcase Canadian education to the international community. This Web portal is designed to direct potential students, teachers, and professionals to information on provincial and territorial educational systems and institutions and to national learning organisations. It offers information on distance education in Canada, for which ICT plays a crucial role	*http://educationcanada.cmec.ca/*
	Canlearn Interactive Canada	CanLearn is an initiative of the department of Human Resources and Skills Development Canada	It provides information on products and services to support Canadians in pursuit of learning and career goals. With the participation of provincial and territorial governments and over twenty-five learning and career development organisations, it includes a database of courses/programmes at higher education institutions in Canada, and it specifically has a search engine for *online courses.*[16]	*www.canlearn.ca*
	Campus Canada	Partnership between government and post-secondary educational institutions.	Industry Canada supports *Campus Canada*, which is to introduce courses and programmes that are offered online or by distance, aiming at providing learners greater accessibility to university and college credentials through online learning.	*www.campuscanada.ca*
	Edusource Canada	CANARIE within the framework of its Learning Programme with support from Industry Canada	It aims to promote interoperable learning object repositories across Canada. It provides information regarding the tools, systems, protocols and practices.	*www.edusource.ca/*

16. *http://canlearn.campusconnection.ca/course_search.jsp?type=simple&language=eng*

Country	What?	By who?	What information?	Portal/database address
Canada	The Pan-Canadian On-Line Learning Portal (PCOLP)	CMEC	A single point of access available in both French and English to authorised users (currently, Ministers, Deputy Ministers, Ministry staff and CMEC Secretariat staff only). A directory and search mechanism enables users to locate content from database according to key categories and descriptors (*e.g.*, type of resource, subject area, educational level, jurisdiction, etc.). Future plans include adding more content and expanding the audience to include learners, learning providers, teachers/faculty, parents, researchers, learning stakeholders and public audiences	*http://cmecportal.learning.gov.ab.ca*
England	e-learning strategy	Department for Education and Skills	The Department for Education and Skills maintains a portal for sharing its e-learning strategy	*www.dfes.gov.uk/elearningstrategy/index.cfm*
	Further Education Resources for Learning (FERL)	Further education by the Learning and Skills Council (LSC) and managed by British Educational Communications and Technology Agency (BECTA)	It is an information service for all staff working in the post-compulsory education sector, "in meeting the needs of our audience we expanded our scope to include management, technology and teaching approaches as well as the use of online resources". FERL maintains a portal to share information on the effective use of ICT teaching and learning	*http://ferl.ngfl.gov.uk/*

Country	What?	By who?	What information?	Portal/database address
England	The National Grid For Learning	Funded by the Department for Education and Skills and managed by the British Educational Communications and Technology Agency (Becta)	It is the gateway to educational resources on the Internet. It provides a network of selected links to websites that offer high quality content and information. The NGfL portal was launched in November 1998 as part of the Government's National Grid for Learning Strategy to help learners and educators in the UK benefit from ICT	*www.ngfl.gov.uk/*
	National Learning Network	The network is made up of partners including Becta, DfES, JISC, lSC, LSDA, NIACE, NILTA, and UKERNA	Implementation of the National Learning Network has encompassed a wide range of activities in developing infrastructure, resources and support in order to embed e-learning within post-16 education	*www.nln.ac.uk*
	National Learning Network	As above	The National Learning Network has commissioned e-learning materials for the UK post-secondary sector	*http://nln.mimas.ac.uk/login.jsp*
France	Educe Net	Ministry of Education, Higher Education and Research – Technology directorate	It aims to make resources available to the public, as well as to disseminate teaching practices for the use of ICT in education at all levels. The site includes a portal for higher education	*www.educnet.education.fr/superieur/default.htm*
	Educasource	Centre National de Documentation Pédagogique (CNDP)	The purpose is to offer teachers and teacher trainers' basic on-line and off-line resources	*www.educasource.education.fr/*
	Educasup	Centre de Ressources et d'Informations sur les Multimédias pour l'Enseignement Supérieur (CERIMES)	It identifies available multimedia teaching resources in specific disciplines for higher education with reviews and comments from researchers/teachers	*www.educasup.education.fr/*
France	*Formasup*	Ministry of Education	It contains all available information (news, studies, analyses, etc.) on open and distance training in French higher education, including e-learning	*www.formasup.education.fr*

Country	What?	By who?	What information?	Portal/database address
Germany			A national portal for information on e-learning and e-teaching in higher education is available. It has been sponsored by the Bertelsmann Foundation and the Heinz Nixdorf Foundation and will the BMBF until 2007	*www.e-teaching.org*
			A network portal to link the projects on e-learning was created as part of the BMBF's *New Media in Education* programme:	*www.medien-bildung.net/*
	Within the German Education Server (Eduserver)	The federal government and the *Landers*	A portal developed for information on study courses for multimedia and virtual universities	*www.bildungsserver.de/zeigen_e.html?seite=1159*
	Manual eLearning 2004		Lists all the e-learning projects funded in the federal programme "Neue Medien in der Bildung" (New Media in Education), with short descriptions of the project's purpose, contents, materials or courses developed, royalty regulations (if applicable) and project partners	*www.medien-bildung.net/*
Japan	The National Information Centre for Educational Resources (NICER)	Launched by the National Institute for Educational Policy Research in 2001, mandated in the e-*Japan Priority Policy Programme*. The plan was developed by three ministries in collaboration: MEXT, METI, and MIC.	A central website/data providing information on educational resources in Japan. They are organised by five categories: Kids, Teens, Teachers, Higher Education and Lifelong Learning. It has a database of open educational resources	*www.nicer.go.jp/*
Japan	Portal Site of Multimedia Education (NIME Educational Information for Higher Education)	The National Institute of Multimedia Education (NIME)	A portal site for educational resources such as contents, tools, syllabus, etc., to be shared among higher education institutions. It is planned to be coordinated with the NICER site	*www.ps.nime.ac.jp/ www.ps.nime.ac.jp/english/index.html*

Country	What?	By who?	What information?	Portal/database address
New Zealand	*eLearn portal*	Government of New Zealand, Ministry of Education, Career Services, e-Government Unit (State Services Commission), Inland Revenue, Department of Labour, New Zealand Qualifications Authority, Ministry of Social Development (StudyLink), and Tertiary Education Commission collaboratively contribute to the portal, the resources of information and services available on e-learning	Designed to facilitate the sharing of e-learning information in tertiary education in New Zealand among students, tertiary education organisations, and education staff, as well as to encourage activities among different sectors: *i.e.* public administration, educational community, and industries. The next step in the eLearn portal development is the integration of collaborative community development environment, which is being sourced through Eduforge.org	*www.elearn.govt.nz/index.jsp*
	Ted (New Zealand's Tertiary Education portal)	A number of government and non-government agencies and organisations	A portal which focuses on learner needs. Aims to provide both learners/students and Tertiary Education Organisational staff with access to comprehensive information and services relevant to tertiary education in New Zealand	*www.ted.govt.nz/ted/ted.portal*
Spain	The CNICE (Centro Nacional de Información y Comunicación Educativa*)*	The Ministry of Education	It aims for smooth development and uniform distribution of ICT in education in all autonomous communities	*www.cnice.mecd.es/*
Switzerland	*Educa*	A collaborative project between the Federation and the Cantons	Launched to share information on ICT activities in the country to raise awareness to the Swiss population of challenges of an information society	*www.educa.ch/dyn/1818.htm*

Country	What?	By who?	What information?	Portal/database address
United States	The Gateway to the Educational Materials (GEM)	Sponsored by the US Department of Education	A website (databank) for teachers, parents, and administrators. It contains educational materials, including lesson plans, activities, and projects at all levers of education, including post-secondary education	*www.thegateway.org/welcome.html*
Specific to higher education	The Multimedia Educational Resource for Learning and Online Teaching (MERLOT)	It is partially supported by the National Science Foundation	An open resource designed primarily for higher education. The materials come with annotations such as peer reviews and member comments	*www.merlot.org/Home.po*
Specific to decision-makers in education	EduTools	Developed by the Western Cooperative for Educational Telecommunications (WCET) and supported by the William and Flora Hewlett Foundation	A portal that aims to provide an objective source of information to decision-makers such as comparisons, reviews, analyses, and decision-making tools in course management systems; student services; and e-learning policies	*www.edutools.info/*
Specific to higher education e-learning	Educause		A portal contains information such as professional development activities, research, policies, teaching and learning initiatives, collaboration opportunities, and publications in the domain.	*www.educause.edu/*

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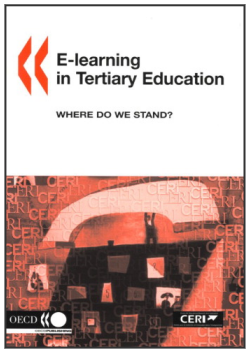

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