Chapter 7
Funding, costing and pricing

This chapter shows where the funding of e-learning has come from at an institutional level and examines some of its associated challenges. It then reports how institutions perceive the cost of e-learning and how it has been priced so far.

During the dot-com boom, the promise of lower programme development and delivery costs (compared to conventional campus-based provision) was one of the most frequently cited advantages of e-learning in tertiary education and beyond. It was argued that lower costs would result from increased automation of development and delivery processes, reduced marginal costs, and the removal/reduction of travel and accommodation costs. The rationalised approach of the industrial era could at last be applied to education, with rationalised materials development, reduced number of full-time faculty, higher staff/student ratios, etc. To what extent have predictions about reduced costs been realised? In practice, as evidenced by responses to the OECD/CERI survey, the major impact of e-learning has been on-campus as a supplement to classroom activities. This has factored out most direct travel/accommodation savings. Lower development/delivery costs have also been challenged by the high cost of software development and, in many instances, demand for face-to-face tutorial support for remote online activities. Although e-learning appeared as a promising new market for commercial provision, no clear sustainable business model has emerged yet. Much of the activity has actually been funded by governments and other non-commercial agencies aiming at helping a novel activity. This chapter shows where the funding of e-learning has come from at institutional level and examines some of its associated challenges, especially sustainability (7.1). It then reports how institutions perceive the cost of e-learning and how it has been priced so far (7.2). Interestingly, few institutions were able to offer direct evidence of the cost impact of e-learning.

7.1. Funding (Questions 7.1-7.4)

The vast majority of institutions in the OECD/CERI sample are significantly dependent upon government funding in some form, and many governments have assumed (either directly or indirectly through an agency)

a policy steering role for tertiary education. Many national and other governments, as well as supra-national agencies and a range of non-governmental organisations have and continue to view e-learning as a source of educational innovation, widened access and economic development. Given these factors, plus the fact that in the case of a novel area of development, such as e-learning, where cost/benefit analysis is under-developed and costing and efficiency structures in their infancy, it is unsurprising that much early e-learning activity in tertiary education has been funded by governments and other non-commercial agencies.

Internal and external funding

Few respondents offered precise figures on funding, whether internal or external, but it was clear that in many cases internal funding (in the general sense of mainstream funding allocation for teaching) exceeded external. For example, the Zurich University respondent said that the university has invested USD 19 million in e-learning between 1999 and 2003, compared to USD 4 million from government sources. Indeed, aside from "special" internal funds, it is often impossible to distinguish the contribution of mainstream institutional funding to e-learning development. That said, the frequency of external funding across the sample, and the range of sources, presented a picture of e-learning as beyond the means of most institutions to undertake alone and/or sufficiently novel to warrant special funding. Few claimed that e-learning was in any sense self-funding (*i.e.* through tuition payments), although the UK Open University and the University of Maryland University College cited almost sole use of internal resources (partly drawing on public funding) in support of e-learning development. As described below, UCLA Extension reported the imminent prospect of e-learning provision self-funded through tuition fees.

Most institutions reported some form of special internal fund available to departments/individuals in support of e-learning. In many cases, this took the shape of a generic teaching and learning or innovation fund that encompassed e-learning among other things. In others, it related to a specific centre within the institution (*e.g.* the Office of Technology for Education at Carnegie Mellon University), or a specific e-learning fund (*e.g.* "Global Online Learning and Development" at Monash University). In a few cases, funding was widespread and medium-term. For example, at Zurich University internal funds for e-learning were allocated across faculties (5 out of 7 in 2004), totalling USD 388 000 each. The same level of funding would also be available in 2005, then doubling in 2006 and 2007, and increasing again from 2008.

External funding included support for:

- The creation and ongoing development of e-learning institutions/consortia (Open University Catalunya, FernUniversität Hagen, Multimedia Kontor Hamburg).

- Application development (webCT at the University of British Columbia, and open source development at the Open Polytechnic New Zealand).

- Learning object/materials development (*e.g.* Edusource funding at the University of British Columbia, and the "Open Learning Initiative" at Carnegie Mellon University).

A number of respondents declined to offer full details of external funding, saying that the information was not held in a single, accessible location. Some noted that department/individual-led externally funded activity was not tracked centrally. Only Kyoto University, perhaps the least involved in e-learning to-date in the sample, reported no external funding for e-learning.

Sources of external funding included national governments and associated bodies (*e.g.* the University of South Australia secured competitive funding to develop e-learning from "Open Universities Australia", the national distance learning organisation for tertiary education), state governments (*e.g.* basic infrastructure support for FernUniversität Hagen from the government of North Rhine-Westphalia), regional governments (*e.g.* European Union support for Multimedia Kontor Hamburg), international NGOs (*e.g.* UNESCO funding for the Greater Mekong Sub-Region Virtual University, in which the Asian Institute of Technology is involved) and private foundations (*e.g.* Carnegie Mellon University's "Open Learning Initiative" is funded by the William and Flora Hewlett Foundation). Much government funding was available through competitive tender. New Zealand's "e-learning Collaborative Development Fund", administered by the Tertiary Education Commission, is a good example. The Open Polytechnic New Zealand secured funds under this initiative in support of the "Open Source Virtual Learning Environment Consortium" project (see Box 7.1). In the case of the Open University Catalunya, ongoing state government funding is tied to performance criteria (*e.g.* enrolments and negotiated new programmes/research projects). The UK Open University respondent described how public, non-competitive generic teaching and learning funding had been used to support e-learning. Similarly, the University of British Columbia used generic "innovation" funding from the provincial government to develop e-learning. Some funding is in the form of donations in kind (*e.g.* equipment, satellite time, expertise). The Asian Institute of Technology's unique mission makes its

funding structure original. The total revenue for 2004 was about USD 33 million, which came from various partnering governments and development agencies.

Box 7.1. The New Zealand Open Source Virtual Learning Environment Consortium

In 2003, the New Zealand Government established the eLearning Collaboration Development Fund (eCDF) to be administered by the Tertiary Education Commission in an attempt to support e-learning capability development initiatives. The Open Polytechnic of New Zealand saw the government's interest in infrastructure development, spreading of costs and benefits across the tertiary sector, and collaboration, as an opportunity to introduce a fee-free virtual learning environment to New Zealand under an open source model. The New Zealand Open Source Virtual Learning Environment (NZOSVLE) project was funded by the eCDF alongside a consortium of 8 partner institutions that support inter-related open source initiatives designed to significantly reduce the financial, organisational, and technological barriers that many education providers encounter while starting and maintaining an e-learning programme.

The project started with the establishment of Eduforge to support and encourage collaboration across the project team and to support other eCDF projects. Eduforge is built on open source technology and is an open access resource allowing anyone with an interest in the exploration of teaching and learning to join the community. Eduforge encourages cross-institutional collaboration among individuals within an independent environment outside the normal boundaries of organisational infrastructure and resources. Eduforge has been used to support the development of requirements, publish reports and decision documents, and facilitate decision-making. Through a consultative process, core open source technologies were selected, and the project developers became involved in the communities. The core learning management infrastructure is Moodle, to which the NZOSVLE project has contributed over 500 code changes that have been accepted into the core application.

Since the middle of 2004 the New Zealand Open Source virtual Learning Environment (NZOSLVE) project has also managed the deployment of learning platforms at 6 schools that previously had no virtual learning environment, with dozens more deployments planned during 2005. The NZOSVLE project consortium has grown to 20 tertiary education providers, with high interest coming from the school sector, and additional funding to specifically enhance learner support tools in the platform. Along with continued development of technological architecture, the consortium is now turning its attention to collaborative models that economically provide high quality hosting, support, and end user support to partner institutions.

The NZOSVLE project homepage is available at *www.ose.org.nz*

Private funding

A study of funding of "ICT integration and e-learning development" at over 200 universities in Europe concluded that most institutions "only have limited or sporadic experience concerning private funding and sponsorships" in this area (PS RAMBOLL Management, 2004, p. 40). Private sector funding was unusual at the OECD/CERI sample institutions. As discussed further below, UCLA Extension funded its e-learning efforts through a contractual arrangement with a private company, OnlineLearning.net. The company met all development, application testing and marketing costs, and covered the institution's staff salaries and overheads associated with the work. In return, the institution revised enrolment, registration and other systems to accommodate e-learning. The respondent asserted that this private investment enabled e-learning provision to benefit both from marketing spend well beyond the capacity of the institution (said to have raised the profile of the institution as a whole), and to sustain the provision past initial low enrolments. Indeed, UCLA Extension said that if the provision had been funded by the institution alone, much would have been forced to close early one. So while the university reduced income from tuition (a proportion going to the private company), its risk exposure was greatly reduced. Now that the university has taken the infrastructure/provision co-created with OnlineLearning.net in-house, the view taken is that the arrangement – as was planned – enables the institution to sustain its e-learning effort long-term. UCLA Extension's e-learning provision is now solely dependent on tuition income. A smaller-scale example of private sector funding came from the University of Maryland University College/Verizon Virtual Resource Site for Teaching with Technology (*www.University of Maryland University College.edu/virtualteaching/vt_home.htm*). This award-winning public domain resource was partly funded by Verizon, a US telecommunications firm.

Sustainable funding

A great deal of e-learning has been supported by various kinds of "special" funding, and to date there appears to be relatively few "success stories" demonstrating cost-recovery through user fees. This is supported by other studies (Paulsen, 2003). That said, much of the activity currently described as e-learning is still relatively novel and experimental, making "special" funding appropriate.

All respondents with a major interest in e-learning viewed sustainability as an important issue, although some interpreted sustainability as mainstreaming (*i.e.* moving from special to mainstream public/institutional funding) and others as cost recovery. Sample institutions with more developed e-learning operations tended to report active efforts to shift the burden onto other funding sources – at least for established provision. Even at institutions such as Zurich University, where widespread internal funding

has been committed over a number of years, the long-term aim is for e-learning to be sustained through "normal" internal/public funding. Largely due to lack of experience, some respondents expressed uncertainty about the funding implications of e-learning – that is whether cost-recovery through user fees was realistic. One respondent explicitly stated that there were no cost-covering e-learning programmes at their institution to date. Another respondent described sustainability as a "major issue, as maintenance of sites and further development work are time-consuming and expensive" but did not offer any emerging solutions.

By contrast, some other respondents put forward experiments or more advanced sustainability efforts. For example, a number of respondents positioned long-term sustainability as a condition of special funding. The University of British Columbia cited the valuable role of the university's "Office of Industry Liaison" as a source of guidance on long-term commercialisation (as happened in the case of webCT). To seed fund development at this institution, faculty/central units may borrow from central reserves and then re-pay (with interest) from fee income. Multimedia Kontor Hamburg is currently in receipt of government funds on the understanding that the "most promising projects" are eventually integrated into mainstream programmes. This presents a view of sustainability as mainstreaming rather than cost recovery, and reflects the German tertiary education context where tuition fees are generally absent or insignificant. Attainment of mainstream institutional funding for forms of e-learning support centres is another example of sustainability as mainstreaming. Of course, in many institutions, provision might be part subsidised and part supported by tuition fees, with the balance varying by programme. This was the implied situation at the Open Polytechnic New Zealand. This respondent stated that both the "Open Mind Online" and "Online Campus" initiatives are "funded internally on an ongoing sustainable basis", suggesting support from both internal funds and student fees. At the University of South Australia, it was emphasised that a "core budget allocation" is now made to fund "hardware, resources and support staff", and that this directly benefited e-learning activities. Similarly at the Open University Catalunya and the UK Open University: "e-learning developments are not dependent upon special funding. They are part of the core activity of the institution". The Open University Catalunya respondent listed a number of programmes, and described some as "full cost recovery" and others as "government funded". The UK Open University respondent reported a reduction in competitive funds administered through its "Learning Technologies and Teaching Committee" in line with attempts to mainstream e-learning.

Some respondents (*e.g.* University of Sao Paulo, University of California, Irvine) indicated that while mainstream provision was at least

part-subsidised, continuing education programmes were required to be entirely self-supporting. The University of California, Irvine respondent stressed that "we strive to self-supporting in all our business operations", and emphasised that the institution's "Distance Learning Centre" (run jointly with UCLA Extension) was dependent upon tuition income and received no core support. The UCLA Extension and the University of Maryland University College respondents – two institutions where "mainstream" and "continuing" provision are blurred – made essentially the same point.

The Carnegie Mellon University respondent described two initiatives designed to commercialise particular e-learning efforts. Two firms – Carnegie Learning and iCarnegie – were established to market the e-learning products of the Carnegie Mellon University faculty: an intelligent tutoring system, known as "Cognitive Tutors", and mixed mode online courses in computer programming respectively. Although financial information is not in the public domain, each firm appears to be very successful. Both reinvest part of their profits in related Carnegie Mellon University-based research. In addition, the intention behind the University's "Open Learning Initiative" is to fund free individual access to materials through fee-based institutional access. The vision is that institutions would receive learning management system (LMS) functionality alongside materials, while individuals in a non-institutional context would get materials only. Other funding options being explored include selling selected Open Learning Initiative materials as textbook supplements, and selling discrete "learning objects" through a re-seller.

The Multimedia Kontor Hamburg respondent claimed sustainability advantage insofar as the institution was launched after the burst of the dot-com bubble and after many other German *Landers* have developed similar initiatives. This permitted Multimedia Kontor Hamburg to benefit from lessons learned elsewhere, not least concerning funding. For example, the institution was conceived as a cooperative between existing universities, designed to pool resources (specifically to create a jointly-managed media production facility) rather than develop a separate infrastructure. Also, the decision was taken to use open source software, to save on upfront licensing costs, to allow applications to be unpacked and revised, and to enable materials to be used by third parties. In terms of internal funding, departments/individuals may bid to a central Multimedia Kontor Hamburg fund, rather than to separate institutional funds

In conclusion, while private funding remains marginal at most institutions, special funding, be it external or internal, is very common. Most institutions in the OECD/CERI sample are dependent upon government funding. Given the novelty of e-learning, this type of funding is appropriate,

but it raises a problem of sustainability, whether through recovery or through mainstreaming these special funds.

7.2. Costing and pricing (Question 1.6)

During the e-education boom of 1997-2000 (Ryan, 2002), the promise of lower programme development and delivery costs (compared to conventional campus-based provision), was one of the most frequently cited "advantages" of e-learning in tertiary education and beyond. Lower costs would result, it was argued, from increased automation of development and delivery processes, reduced marginal costs, and the removal/reduction of travel and accommodation costs. One might characterise this as an attempt to apply the "industrial" production approach of large-scale distance learning (rationalised materials development, reduced number of full-time faculty, higher staff/student ratios, etc) to mainstream provision (Rumble and Latchman, 2004). Of course, e-learning is distinguished by a number of post-industrial twists, such as more personalised materials production/update, notions of "mass customisation" or "mass personalisation", and more flexible pedagogy. To what extent have predictions about reduced costs been realised?

Cost appreciation through the OECD/CERI survey

In the above reasoning, the underlying vision of e-learning centred on remote delivery. In practice, as evidenced by responses to the OECD/CERI survey, the major impact has been on-campus as a supplement to classroom activities. This has factored out most direct travel/accommodation savings. Of course, for some of the institutions in the sample, distance learning was of major significance. Lower development/delivery costs have been challenged in terms of the high cost of software development and, in many instances, demand for face-to-face tutorial support for remote online activities. Lower marginal costs have been undermined by claims of a negative correlation between higher enrolments and the quality of the student experience (University of Illinois Faculty Seminar, 1999). As detailed below, practice at UCLA Extension stems from this perceived correlation.

Question 4.6 asked respondents about the cost impact of greater use of e-learning at their institution. It is important to remember that all but two of the sample institutions were recipients of public funds, complicating appreciation of actual costs and sustainability.

To provide an overview of responses, institutions were divided into four categories:

- Insufficient experience of e-learning to make a judgement on relative cost.

- Considerable experience, but no firm evidence on relative cost.

- Experience to date suggests e-learning is fundamentally more expensive than face-to-face delivery, but this is offset by other benefits (*e.g.* increased access, enhanced pedagogy).

- Experience to date suggests that initial development and delivery costs were often more expensive than in the case of face-to-face delivery, but other factors (*e.g.* experience, cost control, division of labour, use of third party software/resources, efficiencies, re-use and economies of scale) have shown or suggest that e-learning will prove less expensive across the product cycle.

There were cases where an institution fell into one category in terms of experience, and another in terms of expectation. This is indicated in Table 7.1.

Table 7.1 suggests a strong correlation between those institutions with a more developed online presence and a view of costs that holds that after perhaps an expensive development phase (*e.g.* infrastructure, creating many course materials from scratch, experimentation, staff inexperience, new kinds of staff/units, immature technology), it is possible to achieve overall cost savings compared to face-to-face provision. A strong advocate of this view is Carol Twigg at the National Centre for Academic Transformation in the United States. As noted in Chapter 3, she maintains that higher education programmes (particularly large-scale introductory undergraduate provision) can achieve student learning gains, increase student numbers and reduce costs through specific redesign principles partly facilitated through the use of ICT. The Twigg rationale is to move beyond current uncertainty about the cost, access and pedagogic impact of greater use of ICT in higher education, and to address concerns about rising costs, access pressures and teaching innovation. A recent quote from Twigg neatly encapsulates this perspective on funding/costing/pricing in higher education: "The solution is not to throw money at the problem. The solution is to work together to re-think the ways we teach and the ways students learn". In the same article, Twigg claims that if all two- and four-year higher education institutions in the United States redesigned their 25 highest enrolment courses (using the methods described in Chapter 3), this would result in an overall 16% annual reduction in the cost of instruction – easing funding pressures and opening the way to price stability/reduction (Twigg, 2005).

Table 7.1. Cost implications of e-learning

Institution	Type	Category
Kyoto University	Campus	1
Asian Institute of Technology	Campus	1/3
University of Sao Paulo	Campus	2
University of California, Irvine	Campus	2
University of Paris Nanterre	Campus	2
University of South Australia	Mixed	2
UK Open University	Distance	2/4
Aoyama Gakuin University	Campus	3
Monash University	Campus	3
Zurich University	Campus	3
Carnegie Mellon University	Campus	3/4
FernUniversität Hagen	Distance	3/4
Multimedia Kontor Hamburg	Campus	4
University of British Columbia	Campus	4
UCLA Extension	Distance	4
Open Polytechnic New Zealand	Distance	4
Virtual University of Tec de Monterrey	Distance	4
Open University Catalunya	Distance	4
University of Maryland University College	Mixed	4

Categories:

1. Insufficient experience of e-learning to make a judgement on relative cost.

2. Considerable experience, but no firm evidence on relative cost.

3. Experience to date suggests e-learning is fundamentally more expensive than face-to-face delivery, but this is offset by other benefits.

4. Experience to date suggests that initial development and delivery costs were often more expensive than in the case of face-to-face delivery, but other factors have shown or suggest that e-learning will prove less expensive across the product cycle.

x/y (*e.g.* 2/4) means that the institution falls into category x in terms of experience and category y in terms of expectations.

Source: OECD.

While few respondents were able to report unambiguously that a stable, less expensive model (compared to conventional on/off-campus) had been achieved, all the institutions in the OECD/CERI sample under category 4 were at least reasonably confident that this was possible. Contributing factors included substituting some on-campus for online provision (rather than duplication), drawing on the open standards/learning objects model to increase material re-use/sharing, and greater standardisation of materials production. It was widely acknowledged that an answer to the question "what does e-learning cost?" is dependent upon a wide range of variables (*e.g.* media used, extent of software development/adaptation, staffing models, scale of enrolments, etc.). It was striking that the majority of respondents, even if they were positioned in categories 3 or 4, were not able to point to systematic data on costs (although some cited overall figures or figures for specific projects).

The two wholly virtual institutions (one a virtual arm of a campus-based institution) – the Open University Catalunya and the Virtual University of Tec de Monterrey – stated or implied that developing online learning from scratch, and not "building onto" a physical campus, was a cost advantage. Fixed capital costs were said to be lower, it was easier to align staffing structures to e-learning processes and better economies of scale could be achieved. The UK Open University reported per student costs one third of the average for comparable on-campus programmes in the country. The same institution was keen to point out that this would not be possible without government subsidy of the university as a whole – problematising unambiguous appreciation of relative costs. The Virtual University of Tec de Monterrey explicitly stated that the recent shift from satellite to online delivery had substantially reduced costs and lowered prices (see below).

One of only two entirely self-financing institutions explained its costing approach in some detail. As mentioned above, in 1996, UCLA Extension outsourced key aspects of e-learning development and delivery to a private company (OnlineLearning.net). The aim was to reduce the institution's central expenditure, time commitment and risk. In line with its policy more generally, the institution made a commitment to invest in e-learning on a three-year cost recovery cycle. UCLA Extension claims to have almost achieved this (*i.e.* recovered all development and delivery costs from student fees). Over time, once confident that the model was sustainable, the institution has gradually pulled the majority of outsourced functions in-house, and became fully independent mid-2004. Interestingly, the pedagogical model employed requires instructor-led cohorts over a finite period, with capped enrolments by subject area (often lower than the equivalent face-to-face programme). While costs were said to be marginally higher online, overall savings were achieved through non-use of

facilities/classrooms. The institution expected savings from e-learning relative to on-campus to continue improving on comparable enrolments (as a result of experience, efficiencies, etc.), but equally acknowledged that more significant improvements will only be possible if other factors (*e.g.* class sizes) can be changed, and if these changes can be justified on pedagogic grounds.

Aoyama Gakuin University saw an indirect cost saving in that delivery of a programme online from another country saved the (theoretical) cost of the students travelling to that country and paying for accommodation. The Asian Institute of Technology predicted that future development of online programmes might mean reduced travel to the institution's sister campus in a neighbouring country. The Aoyama Gakuin University respondent stated (without offering supporting evidence) that video-based distance learning was less expensive than e-learning (not defined), and thus would remain a core delivery medium. The Kyoto University respondent simply described investment in e-learning as "too huge", and indicated that conventional teaching and learning was sufficiently unproblematic that such investment was not justified.

Zurich University argued that for non-profit institutions, a strict return on investment calculation was beside the point. The main rationale for e-learning, it was argued, should be an enhanced student experience, not cost savings. Similarly, one institution reported added-value (rather than reduced cost): "This is not to say that the university believes that moving to online teaching and learning will lead to cost savings. Rather, it is understood that greater quality and added value is likely for a similar outlay of resources and that, strategically employed, online approaches have the capacity to foster a significantly improved customer focus in programme delivery. In short, rather than believing online teaching and learning enables us to do more with less, we believe that, strategically applied, we can do better with present resource levels." The same institution mentioned a policy decision to fund early development of e-learning from IT/library staff reductions – at least implying that e-learning may lead to administrative savings over time.

Cost appreciation through the Observatory survey

The Observatory survey asked respondents to state whether in their experience "some forms of online provision are demonstrably less costly (to the institution – in financial terms) than the equivalent provision conducted through conventional face-to-face teaching". Only 26% of all respondents "Agreed" or "Strongly Agreed" that at least some forms of online provision at their institution were demonstrably less costly, slightly up from 24% in 2002. Forty-three per cent were unable to answer the question due to

uncertainty, while 31% gave a negative response – figures almost identical to those in 2002. Analysis of returning respondents supported the overall trend. Low income/low-middle income and South Africa respondents reported the highest rates of optimism vis-à-vis online learning as a potential means of cost reduction, with 37% and 40% respectively providing a positive response and not a single respondent opposing this claim. Australia/Asia-Pacific demonstrated the most scepticism, with 42% and 43% respectively disagreeing or strongly disagreeing with the claim. This could suggest a context where low-middle income and South Africa respondents have succeeded in the past in reducing costs through other forms of distance and non-traditional learning. Moreover, universities in poorer countries – compared to their richer peers – may be under more pressure to realise a financial return on their investment, and may have less expenditure options. Conversely, among survey respondents, given that the Australia/Asia-Pacific respondents are arguably most developed in the field, their scepticism could point to a more experienced and knowledgeable viewpoint from which to assess the cost-reduction claim.

While a greater number of Observatory respondents (in 2004 compared to 2002) cited "cutting teaching costs long-term" as a key rationale in their online learning strategy (see Chapter 2), the cost-reduction question suggests that the majority remain unsure or sceptical vis-à-vis the potential of online delivery to reduce total expenditure relative to conventional teaching in the short or long-term. Indeed, only seven institutions (8%) cited "cutting teaching costs long-term" as a top priority. Most institutions appear either to have not addressed the cost implications/possibilities of online delivery in its various forms, or to have found such delivery to be at least as costly as or more costly than conventional methods. Given the significant and ongoing infrastructure costs associated with online learning, the widespread lack of explicit attempts to redesign provision to reduce overall teaching costs (alongside sustained or improved quality) is a worrying trend. The OECD/CERI sample exhibits the same mix of optimism (generally not supported by significant evidence), pessimism, and overwhelming uncertainty.

Pricing

Did the OECD/CERI sample institutions price e-learning programmes differently compared to conventional provision? Aside from one wholly virtual branch of an institution (Virtual University of Tec de Monterrey), no respondent reported reduced student fees for online programmes (compared to face-to-face equivalents). This branch offered programmes at 40% cheaper fees than the face-to-face programmes at its parent campus. In the case of the one wholly virtual institution (Open University Catalunya),

despite costs per student being said to be one third of the average at regional universities, prices were the same (it was implied that this was due to regional/national regulation on price). No respondent mentioned increased fees for e-learning compared to conventional provision. One should bear in mind that in many sample countries, student fees are not generally charged at all, or institutions have limited control over fees for some categories of student. The pricing of e-learning therefore provides little evidence on its cost compared to face-to-face education.

7.3. Conclusion

"Special" internal or external funding remains a prominent feature of e-learning development in tertiary education. This stems from a perception of e-learning (in its recent manifestation) as a novel activity that merits experimentation and research. It was clear from responses that many institutions are attempting to move towards "normal" funding, typically through a combination of mainstream internal funds and student fees (balance depending on the type of programme and the country concerned), especially as external funding raises the problem of sustainability of funding.

While a number of respondents expressed positive expectations about the cost reduction potential of forms of e-learning, few were able to offer direct evidence. Factors such as class size and course design norms were cited as major barriers. A strong theme was a call to evaluate e-learning in pedagogic as well as cost terms: e-learning could indeed prove to be more cost effective than face-to-face education (rather than cost-efficient).

There was only one clear example of e-learning that was priced lower than comparable face-to-face programmes, but in many countries direct student fees are either absent for many types of students, or institutions have only limited control over fee levels.

Given the relative novelty of contemporary forms of e-learning, one might expect cost efficiencies (and perhaps resultant price reductions) – matters dependent upon cultural change, institutional experience as much as infrastructure and policy development – to emerge over the coming decade.

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Chapter 8
Current government roles: funding and beyond

This chapter shows how institutions view current governmental activities in e-learning, and what they expect from them in terms of funding and other policies.

In all the countries where sample institutions are based, the state/national governments play a significant role in the strategic direction and funding of higher education in general, and e-learning in particular. Even in countries where institutions have significant autonomy and governments are not expected to play a direct part in institutional management, governments play an important role in influencing the behaviour of institutions by means of strategic funding/policy. This chapter demonstrates how institutions view current governmental activities in e-learning (8.1), and what they expect from them in terms of funding (8.2) and other policies (8.3).

8.1. Current roles of governments (Questions 7.5-7.6)

Sample institutions were asked about state/national government roles/strategies in supporting higher education institutions in e-learning development. They were not asked for a detailed description of government activities as such (although aspects of this emerged in responses), but rather respondents' views about government activity, and how the value of government involvement might be enhanced and improved. It needs to be highlighted that the institutional inputs on these questions only give a partial view – although an important one – concerning governments' role in the funding and support of e-learning in tertiary education. Institutions would, for example, not necessarily take into account the students' interests. Governments need both a supply and demand perspective when developing e-learning in tertiary education. The survey did not directly address funding and strategic efforts related to e-learning from supra-national governments and non-governmental agencies, such as UNESCO, World Bank and the European Union. However, many of the issues raised would apply. To bridge the information gap between the institutional perceptions of the government initiatives and the actual existing initiatives, the major

government policies, programmes/projects and portals concerning e-learning are listed in Annex 4.

The following were identified by institutions as the roles that governments currently played or were expected to play in relation to e-learning:

- Strategic development and provider of special funding for e-learning projects/research.
- Deregulation/regulatory reform to optimise the broader higher education context and its suitability for e-learning.
- Advocate for "non-traditional" learning.
- Broker and funder of partnerships/collaboration and creator of a new e-learning entity.
- Investor in technology infrastructure and regulator of telecommunication services.
- Initiator and funder of faculty development for e-learning.

The role of state/national governments in tertiary education and training differs from country to country and even from state to state within federal systems. Therefore, some of the roles listed above may not be appropriate in some countries: "E-learning" involves a wide range of actors within the government sector (*e.g.* department of education, department of information and communications, department of science and technologies, department of commerce and industry, etc.). It is therefore important to understand that these roles should not stand alone but should be strategically planned and managed across government departments.

8.2. Government and its funding role

Many institutions were very positive about government involvement, most consistently in terms of large-scale cash injection for project funding and research, infrastructure development, and profile-raising. The creation of dedicated agencies (*e.g.* the Joint Information Services Committee in the UK) and new entities (*e.g.* Swiss Virtual Campus – see Box 8.1) was also seen as important by some. The Catalan government was said to have been critical to the development of the Open University Catalunya, not least given the novel status of a virtual university at the outset (1994). By contrast, another respondent (representing a distance learning institution) was broadly positive about the context fostered by national government e-learning/higher education strategy and policy, but considered that specific e-learning funding had made no significant difference to the university's development in this area. Stronger drivers were said to be student demand, employer needs and competition. This

partly reflected the distinctive nature of the institution (large-scale, national distance learning provider). The response from a campus-based university in the same country might have been different.

Box 8.1. Swiss Virtual Campus

The Swiss Virtual Campus initiative (SVC) started in 1999 when the Swiss Parliament granted 30 million Swiss Francs (about US$ 22 million) to the project for the period 2000-2003. The main aims of the SVC is to improve the quality of the student experience, to facilitate collaboration between institutions and to generate high quality online materials. The goal is not to create a separate virtual institution, but rather to ensure the genuine integration of online materials and delivery into mainstream undergraduate teaching. SVC funding criteria have particularly welcomed proposals that seek to develop online alternatives to the conventional lecture, especially in cases where provision is over-subscribed, and have insisted on collaboration between universities. Collaboration is with a view to work with institutions that teach similar content working on jointly developed online alternatives to share between them. The criteria for new projects require at least three institutions to be involved (foreign universities may participate but are not eligible for funding). To date, about 50 courses have been created across a wide range of disciplines, and another 32 are under development. To aid the sharing process, the SVC is working on a national credit structure and is encouraging modularisation. According to Gerhard M. Schuwey, Director of the Federal Office for Education and Science, the Swiss Rector's Conference (the representative body for Swiss universities) intends that about 10% of "all courses should be offered in electronic form" by 2007.

From 2004, the initiative entered its second phase, the Consolidation Period, which will run until 2007. The aim is to offer additional funding in support of the integration of online provision into mainstream undergraduate teaching. Central to this process is the establishment in every public institution of "centres of competence, service and production", that is, centres of local expertise in all aspects of online development. Funds are also been made available for new projects. Institutions wanting to develop a course are required to make a substantial financial contribution – typically 50% of development costs. SVC-funded provision must be multi-lingual, typically French, German and English.

The SVC is viewed as a vehicle for pedagogical and culture change in Swiss higher education. Indeed, the initiative fits neatly with the country's commitment to the Bologna Process. The SVC is attempting to overcome many of the problems that have curtailed its counterpart "national virtual universities" elsewhere – lack of ownership by higher education institutions, poor connection with mainstream provision, lack of sustainability. The requirement that institutions pay half the development cost might be particularly important in ensuring commitment and longevity. As a relatively small and wealthy country, with a primarily public higher education sector, Switzerland is well-placed to initiate this kind of sector-wide reform. Nonetheless, the emphasis on linking ICT development with mainstream provision and trying to address the limitations of conventional delivery are certainly worthwhile goals for any national strategy. It is fair to say, in conception at least, that the Swiss Virtual Campus can lay claim to the accolade of one of the most integrated, reform-minded and radical national virtual universities initiatives in the world.

For further information see: *www.swissvirtualcampus.ch/*

Sample institutions made a number of suggestions on what governments might fund, and how funding might best be organised. Key general issues included:

- Raising the amount of funds available (predicated on persuading governments to give a higher strategic priority to e-learning), not least to improve the underlying telecommunications infrastructure. This was mainly an issue for institutions in the developing world – specifically the Asian Institute of Technology, University of Sao Paulo and the Virtual University of Tec de Monterrey.

- Shifting the emphasis from the theoretical to the practical – funding for infrastructure, applications and staff development, rather than "research" into e-learning (Kyoto University, Multimedia Kontor Hamburg)

- Governments often only invest in physical facilities and equipment as targets of a *capital* investment in e-learning facilities. It was argued that it is equally important to invest in the human infrastructure. As mentioned in Chapter 6, many institutions expressed a strong need for staff/faculty development. One institution proposed that governments fund such activity, and another mentioned staff development as a way to increase the impact of government strategy.

- Improved coordination between government departments and other agencies, both nationally and internationally. For example, the Asian Institute of Technology was keen to see the formation of a genuinely regional approach to IT development.

- Funding to encourage disciplinary breadth in e-learning. This implied a role for public funding to support less marketable provision.

- Funding to encourage the internationalisation of institutions through e-learning cooperation.

- One respondent called for government intervention to secure cheaper e-journal pricing.

- Funding to encourage the formation of disciplinary clearing houses for e-learning materials. The Monash University respondent argued that initiatives of this sort started during the 1990s had failed because of insufficient funding and lack of clarity on copyright. It was suggested that an intellectual property regime that allowed authors to receive some recompense when material was used by others would introduce a more sustainable (if only partial) cost-recovery mechanism. The University of British Columbia respondent also emphasised the importance of

dedicated funding for the production of high quality materials, and staff development to support this.

Funding for sustainability was a major issue. The Carnegie Mellon University respondent praised the work of two of the main US federal funders of e-learning development (the National Science Foundation and the Education Department's "Fund for the Improvement of Tertiary Education"), but cited lack of dissemination. Many worthwhile department/institution-led initiatives had been supported, but "dissemination of these projects beyond their home institutions is rare". Faculty were said to have a poor record on successful commercialisation of e-learning activity, and the private sector was said to typically have an inadequate understanding of how to market the most promising academic developments. Government funds to "study the problem of sustainability and dissemination of quality e-learning progammes are badly needed". Certain US foundations (such as the Mellon and Hewlett foundations) were said to be supportive of this agenda.

Similar comments were made by another respondent. "With the exception of their investment in national and institutional infrastructure, which has been helpful, government strategy has been dominated by the 'easy solution' of grant schemes which are focused on short term 'products' which fail to be mainstreamed because there are no ongoing funds for maintenance and further development."

The Multimedia Kontor Hamburg respondent noted that the main disadvantage of large-scale government funding was that it acted as a disincentive for institutions to think through their own strategic positioning, and to develop long-term sustainable funding for e-learning. "It is a paradox that some universities who did not avail themselves of the opportunity of public funding and instead found their own approach and financing are now much more advanced in e-learning than others who have benefited from public funding". The respondent called on government to promote self-sustaining initiatives by funding institutional strategy development. The Virtual University of Tec de Monterrey respondent characterised the problem as the need for cultural change, requiring institutional ownership of the development process and long-term planning.

A number of recent government funding initiatives (*e.g.* the "e-learning Collaborative Development Fund" in New Zealand) have attempted to overcome some of these concerns. For example, institutional cooperation is a pre-requisite, and project outcomes (*e.g.* e-learning materials) must be made available to the tertiary sector as a whole. New Zealand's "Tertiary Education Commission" has also funded a national e-learning portal to facilitate the sharing of information, and to promote materials and

programmes. Several institutions mentioned advantages of government involvement in promoting and funding collaborations/partnerships. Advantages were identified as: 1) the sharing of limited funding, 2) the transfer of knowledge and expertise across institutions, 3) the reduction of unnecessary duplication of effort, 4) the stimulation of best practices, and 5) the avoidance of conflicting objectives. However, one respondent complained that government commitment to cooperation sometimes verged on the ideological – *e.g.* stipulating a minimum number of partners – and was not always appropriate.

One respondent argued that government funding should move away from competitive tendering for a fixed amount, to purely merit-based funding. "This may require a boost in funding in some years but with the assurance that extra investment is based on the strength of business cases rather than an arbitrary figure and perceived relative merits of competitive bids for a slice of the pie." A non-contestable merit-based system would also "avoid the perception, warranted or not, of the 'politicisation' of the process… – that funding is allocated to some degree with considerations such as spread across institutions and geographical regions".

Another comment concerned inconsistency between successive governments. For example, state-level e-learning strategy was said to be much stronger under one administration, and then weaker under the next. There was also seen to be inconsistency between state governments within a nation, said to undermine any notion of national strategy. A proposed solution was for the federal government to fund state governments to develop e-learning strategies within a specified period, and to share thinking and practice.

8.3. Non-funding roles of governments

Some respondents raised a number of non-direct funding issues relating to governments:

- **Higher education regulatory reform.** One respondent pointed to future federal agreement to tuition fees as a potentially significant enabler of sustainable e-learning. Fees would provide institutions with a cost recovery mechanism. The same respondent also called for reform to enhance the legal framework for academic employment (*e.g.* the balance between individual and institutional authority and ownership). The low status of distance learning was addressed by some respondents. For example, the Virtual University of Tec de Monterrey respondent attributed the relative lack of state government commitment to e-learning in Mexico partly to concerns about the quality and standards of non-traditional delivery.

- **National strategy on open standards.** One respondent argued that governments can play an important role in the adoption of open standards – facilitating the economies of scale to leverage the advantages of open standards at sector level.

- **Forging connections between dedicated virtual/distance institutions and campus-based operations.** This was seen as vital to avoid the perception that e-learning was somehow separate from conventional higher education. On the other hand, another respondent complained that governments over-emphasised the role of campus-based institutions as vehicles for e-learning. This was said to be due to enduring scepticism ("fuelled by traditional academics") about the value and quality of e-learning, and an "out-of-date view" that "traditional" campus delivery was still the experience of the majority of students. The respondent cited the so-called "50 per cent rule" in the United States (currently under review) that bars access to federal student aid to institutions that offer more than half their provision outside the traditional classroom.

- **Telecommunications regulation** – on privacy, security, intellectual property and negotiating special rates for educational institutions. Stable electricity, reliable technology infrastructure and networks, as well as moderately priced Internet access, are necessary conditions for the development of e-learning. This area, typically outside the remit of the Ministry of Education (or equivalent), emphasises the need to orchestrate collaboration across different government departments.

Other government roles/strategies that were not stressed by the institutions can also be mentioned. Bates (2001, p. 29) distinguishes six roles for governments to consider in promoting e-learning in tertiary education:

- Deregulator and streamliner of planning and oversight processes.

- Stimulator of "best practices" and "choice".

- Enabler, funder and broker of partnerships.

- Creator of "utilities" or technology networks.

- Informer and protector of consumers.

- Strategic investor on behalf of the state and its under-served "customers".

The first four roles have been addressed, to a large extent, in the institutional responses. The last two roles were, however, not frequently

mentioned by institutions. In terms of the "under-served customers" issue, only one out of the 19 institutions pointed to government policy on inclusion of under-represented groups, specifically "people with disabilities", through use of ICT. For example, the French PAGSI 2000 Report (Action Governmental Programme for the Information Society) was produced by the Prime Minister and the Interministerial Committee for the Information Society includes a policy objective to "bridge the digital divide for the visually impaired". However this is not constrained to tertiary education/training. Another example is the German government's action programme "Information Society Germany 2006" that includes a target area in education: "to further increase of percentage of women in IT training and university studies of information technology to 40%".

Some aspects of consumer information are addressed by government-backed national e-learning portals, and quasi-government agencies that have begun to integrate e-learning into mainstream quality assurance arrangements. A recent study speculated that accreditation agencies in the United States "will take a greater interest in technology and establish technology criteria as a factor for accreditation" (Kvavik *et al.*, 2004, p. 81-82). Protecting consumers from unscrupulous and low-quality e-learning provision remains a vexed question in many countries. The very reach of online delivery constrains the capacity of national governments to regulate what is available to their citizens. Initiatives such as the planned UNESOC/OECD international database on approved providers (covering conventional as well as online delivery) may constitute a valuable global resource in this respect. Some examples of governments' work in the area include: the Canadian Recommended E-learning Guidelines and the Consumers Guide to E-learning (Canada), the UK Quality Assurance Agency's Code of Practice (addressing e-learning) (UK), the Ministry of Education's proposal on the Standard Criteria for Establishing Internet-Based Program of Studies by Thai Universities (Thailand), etc. (see Annex 4 for details).

8.4. Conclusion

The diversity of both institutions and countries in the sample meant a diverse take on the role of governments in relation to e-learning development. In some countries, notably those with emerging economies, government interest in e-learning, and basic infrastructure funding/regulation were perceived as inadequate. In the developed world, government investment in infrastructure was widely praised. Critique focused on project-based funding models seen to be weak on dissemination beyond the funded unit/institution concern, and the general absence of a transformative framework to shift e-learning to the mainstream and

maximise its impact. A number of respondents saw a tension between government strategy/funding in e-learning and institutional innovation and autonomy. The task for governments was to create an enabling environment and not attempt to micro-manage change.

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