

## Regulation, E-learning, and the Changing Structures of Higher Education

A White Paper to Guide Discussion for the International Seminar  
Regulation of E-Learning: New National and International Policy Perspectives

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E-learning is a continuum from basic use of technology in or around the conventional physical classroom (e.g., use of a course management system to distribute materials and track grades) to wholly online delivery. New technologies associated with e-learning have created opportunities and threats to the institutional structure of higher education, the learning patterns of individuals, and learning certification systems. E-learning, in offering the potential for more accessible, flexible and cost-efficient (and even pedagogically superior) higher education, is viewed by some as central to fashioning higher education systems that are fit-for-purpose in the 21<sup>st</sup> century. A more negative view (e-learning as threat) is that e-learning is pedagogically unproven, disrupts legitimate public control of higher education (e.g., enabling students in one country to take provision from another, and undermining national quality assurance) and is incapable of replicating the disciplinary breadth and socialization of “traditional” higher education.

The aim of this paper is to begin to consider how e-learning (at the institutional, sub-national, national, and international levels) might affect the underlying structure of higher education, and the extent to which existing regulation is facilitating or inhibiting change. In some ways, the closer to wholly online delivery, the greater the regulatory challenge posed by e-learning, and the greater potential impact on broader higher education structures. The greater the extent to which e-learning dispenses with physical norms in respect of facilities, student/faculty interaction, and geographical location, the greater the tension with conceptual, structural, and regulatory norms constituted in these physical terms. The focus of this study is higher education globally. Data on e-learning in higher education by country is patchy at best, with no genuinely comprehensive and updated global overview available. This paper is designed to generate discussion, and draws on examples and data known to the authors.

For the purposes of this paper, “regulation” refers to all aspects of regulation that directly (e.g., external quality assurance) or indirectly (e.g., national telecommunications policy) impacts e-learning in higher education and, by extension, higher education overall. It is vital to recognize at the outset that regulation is, of course, only one factor in the development of e-learning. Drivers for on-campus e-learning include desire (on the part of institutions and potential students) to achieve the potential benefits outlined above, with wholly online learning driven by desire for more radical improvements in flexibility, access, and/or pedagogy. Such desire might be driven by changing demographics and employment trends. Prevailing socio-economic conditions in a country/sub-national area will condition the extent to which e-learning development is realizable, as will management/faculty/student access to and familiarity with related technology. Government or management interest in aspects of e-learning may be hampered by faculty/student skepticism and *vice versa*. Forms and areas of regulation (whether sub-national, national, or international) may stimulate or quell interest in e-learning, and may challenge or confirm prevailing opinion.

The regulatory framework impacting e-learning can be viewed as a complex of attempts to balance the promotion of perceived benefits of the new technology with the protection of established forms, provisions, and institutional norms. Regulation is generally driven by public policy goals and, in e-learning, as in other fields, these goals frequently collide. Here is a brief list:

VS.

1. The encouragement of innovation, change, and competition in higher education.	2. The desire to control quality, with quality defined with reference to very traditional notions of higher education (raising barriers to entry).
3. The desire to diversify capital investment in higher education.	4. The desire to protect existing institutions and avoid “commercialization.”
5. The establishment of an enabling infrastructure (technological, legal, policy, financial) for new forms of education.	6. Unwillingness to divert limited resources from already resource-poor mainstream higher education provision.
7. The promotion of institutional autonomy, diversity, and competition.	8. The preservation of centralized control, coordination, and planning.
9. The desire to rationalize higher education to achieve tighter focus and greater efficiency.	10. The desire to maintain traditional notions of scope, scale, and content.

The regulatory responses to these colliding public values will have a profound effect on learning in the future. Of course, there are many interrelationships among public policy drivers not indicated on the above display, but this presentation provides a framework for the following discussion.

E-learning will play a significant part in what appears to be a major restructuring of higher education across the world. As national economies develop, higher education plays an evermore important role in social formation, entry to employment, and economic growth. In a climate of increasingly rapid skills obsolescence in many fields, higher education is conceived of as both “front-loaded” (i.e., concentrated study prior to employment) and as lifelong learning (i.e., where an individual returns to higher education at various points to update skills/switch careers). In addition, both credit/non-credit higher education attracts many students whose key motivation is personal interest rather than employability. As enrollments rise (from typically less than 10% of the age group to a third or more, plus numerous older students), publicly-funded, comprehensive student support (the norm in elite systems of higher education) becomes increasingly expensive. This leads to reduced public funding per student (alongside greater public funding overall), growth in the financial contribution expected from students, and demands for institutional efficiency. Quality assurance/accountability regimes emerge to monitor public spending and new kinds of higher education institutions emerge to address perceived deficiencies in conventional provision (e.g., around flexibility, student type, discipline, employability, institutional focus, etc.) or gaps in the market. Examples of ‘new’ kinds of institutions would be distance learning, online, and for-profit universities.

The potential for increased/flexible access, cost efficiencies, and pedagogic enhancement, suggests a promising fit between forms of e-learning and the broader trajectory of contemporary higher education. Table 1 outlines key impact areas for e-learning in higher education.

**Table 1 - Key impact areas for e-learning in Higher Education**

<b>Key Impact Area</b>	<b>Comments</b>
<b>Institutional diversity</b>	Moderate number of online-only universities/colleges, but represent small fraction of higher education enrollments.
<b>Teaching tools/resources</b>	Much mainstream higher education provision in the developed world is now unthinkable without use of ICT. New structural dependence on typically third party (often) commercial learning tools and resources.
<b>Staffing</b>	New and increasing structural dependence on non-faculty (e.g., technical staff, instructional designers) to facilitate mainstream(?) classroom experience
<b>Pedagogy</b>	Novelty of online encounter prioritized attention to pedagogy. Various new tools (e.g., wikis) suggest pedagogic innovation. Insofar as e-learning constitutes structured intermediaries between teacher and student (e.g., CMS, coursepacks), standardization of program development and delivery may be advanced
<b>Student engagement</b>	e-learning has raised the profile of distance learning; and hybrid programs have created the potential for greater distance between mainstream student and institution. Conception of 'virtual engagement' in its infancy
<b>Markets</b>	Some evidence that remote e-learning may reach students untapped by conventional campus/distance provision
<b>Competition</b>	In some countries, promise of e-learning prompted significant private investment (but overall, to date, little impact on market share relative to 'traditional' providers)
<b>Cost structures</b>	Evidence for both increased and decreased institutional costs- depending on form of e-learning, and its components (e.g., staff, materials, delivery). Transparent "standard" approach yet to emerge.
<b>Commercialization</b>	The potential low-cost/high enrollment e-learning scenario has encouraged a range of commercial initiatives (from both the public and private sectors). Arguably, this is driven by aforementioned massification and funding trends. Examples of strong commercial success (plus a long tail)
<b>Access</b>	Poor evidence to date—inequitable access to the technology of e-learning may break any historic association between distance learning and widened access (but tension will reduce as technology becomes ubiquitous in some countries)
<b>Location</b>	Remote e-learning allows provision from one country/region to be offered in another- disturbing established lines of authority, planning, marketing and competition, but potentially broadening access

In countries where demand and supply factors have favored e-learning, provision has taken off to varying extents. To the best of the authors' knowledge, there are no documented cases where regulation in terms of academic standards, degree-awarding powers/university title, or quality assurance has significantly inhibited the development of e-learning in higher education (and hence weakened its potentially transformative characteristics). Indeed, there are many cases where governments have attempted to seed fund e-learning in higher education and examples where a new online-only institution was formally mandated by a national government or a consortia or governments (e.g., Open University of Catalonia, Open University of Malaysia, Arab Open University). Revised regulation of degree-awarding powers/university title in the U.K. (and similar proposals in Australia) will permit a broader array of degree-granting institutions/universities (e.g., narrow disciplinary focus, teaching-focus, for-profit), reducing the barriers to new wholly online universities. This is not to say that aspects of quality assurance (e.g., rules on proportion of full-time faculty, faculty qualifications, general education requirements at undergraduate level) might not, if removed or revised, allow e-learning to grow faster; however, this begs the question of the value in quality terms of such rules. Table 2 offers an overview of different types of regulation of e-learning in higher education, and offers an initial assessment of scope, relevance, and impact.

**Table 2 - Regulation of e-learning in Higher Education: Scope, Relevance & Impact**

Type of Regulation	Scope	Relevance to e-learning	Impact on e-learning/trends
<b>Academic standards</b>	“Abstract” statement/assumptions about “level” of study	May equate certain traditional inputs/processes with academic standards	Trend to apply same academic standards to e-learning and mainstream provision. No inhibitor to e-learning
<b>Degree-awarding powers/university title</b>	Government criteria to determine power to award degrees/confer university title	May rely on physical input measures	No evidence of negative impact; examples of government-mandated online HEIs
<b>Quality assurance-inputs</b>	Inputs (e.g., faculty qualifications, selective admissions) used as proxy for quality process/outcomes	E-learning confounds many physical input measures (e.g., land size, books in libraries)	Low- QA has accommodated e-learning (e.g., U.S., U.K.); High- QA less accommodating (some emerging economies). General shift to quality as outcome downplays role of inputs
<b>Quality assurance-process</b>	Modes of faculty/student interaction; assessment processes	Forms of e-learning may confound norms of physical interaction	Low- QA has accommodated e-learning (e.g., U.S., U.K.)- with odd exceptions (e.g., ABA); High- QA less accommodating (some emerging economies). General shift to quality as outcome downplays role of process
<b>Quality assurance-outcomes</b>	Student achievement	Rarely measured transparently for mainstream provision or e-learning	Low at present; but outcomes remains a pressing accountability issue. Raises tough questions about retention/attainment for online programs
<b>Public funding</b>	Funding for higher education from public sources	Lever/brake on forms of innovation	Many national/other governments consistently fund a variety of higher education e-learning initiatives
<b>Private funding</b>	Funding for higher education from private sources (excluding students)	Access to private capital diversifies higher education funding, and may enable innovation	Few countries exhibit significant commercial higher education sectors; or permit nonprofit higher education institutions to raise private money (e.g., bond issues). Examples of for-profit e-learning subsidiaries of nonprofit universities
<b>Financial aid</b>	Rules governing public funding for institutions/students	May exclude online-only institutions from access to types of funding	U.S. moving towards normalization of e-learning in terms of financial aid. Other countries- research needed
<b>Telecommunications</b>	Rules governing licensing, pricing and competition in telecommunications infrastructure	Major influence on availability of e-learning infrastructure	Combination of competition and socio-economic stability has provided widespread access in developed world. Developing world characterized by both examples of stifling monopolies deregulation in line with economic re-thinking/growth
<b>Cross-border e-learning (import)</b>	Regulation of e-learning from another country	National regulation may ignore imported e-learning, attempt to regulate as if domestic, or attempt to curtail.	Cross-border e-learning relatively small-scale at present. Most countries ignore the phenomenon; a few attempt to regulate
<b>Cross-border e-learning (export)</b>	Regulation of e-learning offered in another country	National regulation may ignore exported e-learning, attempt to regulate as if domestic, or attempt to curtail	Cross-border e-learning relatively small-scale at present. Most countries ignore the phenomenon; a few attempt to regulate

Each type of regulation is examined in turn.

**External quality assurance (including academic standards and access to degree-awarding powers/university title).** All countries have some system for recognizing qualified post-tertiary education institutions and for identifying and excluding those that do not meet established standards. For degree-granting institutions/universities, this frequently takes the form of a government issued “charter” or license allowing an institution to offer degrees/adopt university title. In the U.S., additional recognition is conferred through recognized accreditation, giving institutions access to federal aid and facilitating credit transfer. For non-degree programs and institutions, the regulatory framework is generally more relaxed, sometimes even non-existent. This difference, in itself, without reference to e-learning, has created a situation in which many different kinds of organizations have entered into non-degree education and certification.

When e-learning is added to this regulatory context, many existing issues are amplified. Generally there are fewer “natural” barriers to entry into e-learning activities. E-learning does not require a large capital investment in physical plant (or large rental payments) and the cost of the required technical infrastructure is relatively low. The ability to reach large numbers of students in a cost-effective manner makes a strong business case for the development of online programs, but online-only institutions may confound approval norms that emphasize physical input measures (e.g., land size, library holdings). In the late 1990s, as these special qualities of e-learning became clear, and against a backdrop of suspicion about the efficacy of online education (despite a long-standing acceptance of distance education), many accrediting agencies developed a “special case” attitude toward both the entry of new online-based institutions and the introduction of online degrees by existing institutions. These special case attitudes have made more difficult and delayed entry of institutions and online programs.

For instance, in the U.S., the regional accrediting bodies deliberated for about two years as they developed special standards for online education/distance education (published in 2001) and then invested special commission sub-committees (substantive change committees) with powers to review new online programs. Requirements vary by region. For example, under the rules of the Southern Association of Schools & Colleges’ Commission on Colleges, all new “distance learning programs offered electronically” require notice and approval prior to implementation.<sup>1</sup> In New England, only first establishment of “electronically offered degree programs” at an institution requires such action.<sup>2</sup> The academic standards applied to e-learning are typically identical to those applied to mainstream provision. Quality assurance differences concentrate on matters of process where e-learning contravenes various norms (e.g., cross-institutional delivery partnerships, electronic libraries, and distance between instructor and student). The trend has been to merge e-learning and mainstream regulations. For example, in the United Kingdom, the formerly distinct “Guidelines on the Quality Assurance of Distance Learning” (published in 1999) were later folded into the 2004 “Code of Practice for the Assurance of Academic Quality & Standards in Higher Education” (Section 2 “Collaborative Provision and flexible and distributed learning”).

The establishment of entry standards and processes is clearly an important feature of the regulatory landscape and will have an important effect on the shape and structure of higher education. Insofar as these regulations vary by jurisdiction, there may well be differential effects on the introduction of e-learning and the gaining or losing of competitive advantage in an increasingly market-oriented world of higher education. While the establishment of barrier to entry is clearly one motive behind some regulations, it is also the case that well-defined standards, when met by institutions, actually encourage innovation. Institutions and programs that have met certain standards gain a legitimacy they might not

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<sup>1</sup> SACSOC (2005) *Substantive change for accredited institutions of the Commission on Colleges*, Southern Association of Colleges & Schools Commission on Colleges, p. 2. SACSOC website: <http://www.sacscoc.org/>

<sup>2</sup> NEASC (2004) *Commission on Institutions of Higher Education- policy on substantive change*, New England Association of Colleges & Schools. Available at: <http://www.neasc.org/cihe/substan.htm>.

otherwise receive. Widespread government interest in student outcomes (as the defining metric of higher education quality) over and above inputs/processes may help the e-learning cause. An outcomes focus, however, will demand transparent retention/completion data from mainstream and e-learning provision alike.

E-learning, with its “any place, any time” capabilities is capable of delivering highly targeted learning opportunities efficiently to individuals and defined segments of society. The low barriers to entry and the opening of education to many different organizations and institutions threaten traditional higher education norms. Is the four (or three) year degree in danger of losing its status as the primary vehicle for gaining certification of learning? Shorter periods of learning coupled with competency-based examinations can deliver skills and knowledge to the workforce in very cost-effective ways. The public clearly has a stake in gaining this cost-efficiency, but it also has a stake in having a significant portion of the population broadly educated. A radiologist may not need to have had a course in American history to do his job, but he might make more informed voting decisions for having learned something about our history and our values as a nation. Of course, the debate between the proponents of narrowly focused professional or vocational education and the liberal education advocate is not new, but the high efficiency of e-learning has made the debate more pointed. The debate is much more important for developing nations, including China and India, where the achieving of levels of mass higher education is simply impossible. Economic development in these countries depends upon the achievement of literacy coupled with large-scale technical and vocational training. The broader question is where the line between higher and “vocational” training will be drawn. To date, worldwide enrollment growth at the bachelor’s level suggests that traditional “levels” of higher education study have a robust future (even while e-learning streamlines sub-degree provision and continuing education).

Regulations again are important in this domain of public policy conflict. Regulations governing minimum educational requirements for entering and remaining in a profession or vocation are most clearly to the point. In some cases, such regulations specifically prohibit or limit using other than classroom-based education as meeting these requirements. In other cases, such regulations bypass the educational system altogether and require only the demonstration of knowledge or skills. Regulations will thus have a very important impact on the pattern and structure of the certification of knowledge in our society.

The American Bar Association (ABA) is an interesting example. Under ABA Standard 306, a law school may “not grant a student more than four credit hours in any term, nor more than a total of 12 credit hours, toward the J.D. degree for courses qualifying under this Standard” (i.e., any form of distance learning).<sup>3</sup> This means that less than 20% of credits may be earned by e-learning. In addition, “No student shall enroll in courses qualifying for credit under this Standard until that student has completed instruction equivalent to 28 credit hours toward the J.D. degree.” Qualifying distance learning must ensure “ample interaction with the instructor and other students both inside and outside the formal structure of the course throughout its duration” and “ample monitoring of student effort and accomplishment as the course progresses.” “Ample interaction” is defined as “students in distance education courses [having] opportunities to interact with instructors that equal or exceed the opportunities for such interaction with instructors in a traditional classroom setting.”

To inform the ABA’s thinking, law schools were asked to update the ABA on their distance offerings. The growth of e-learning over the past ten years generated the following “interpretation” of the Standard, offering campus-based institutions greater flexibility. “Courses in which two-thirds or more of the course instruction consists of regular classroom instruction shall not be treated as “distance education” for purposes of Standards 306(d) and (e) even though they also include substantial on-line interaction or other

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<sup>3</sup> American Bar Association, “Standard 306: Distance Education.” Available at: <http://www.abanet.org/legaled/distancededucation/distance.html>.

common components of ‘distance education’ courses so long as such instruction complies with the provisions of subsections (1) and (2) of Standard 306(c)” (i.e., the provisions outlined above). Widespread interest in e-learning persuaded the ABA to compromise, but the current Standard 306 denies ABA approval to wholly online institutions (and wholly online programs). The vast majority of U.S. state boards of bar examiners rely on ABA approval as the key criteria for eligibility to sit the bar exam, making the ABA’s stance particularly influential.

Accreditation is not always essential to success. University of Liverpool in the U.K. runs what is thought to be one of the world’s largest online MBA programs (in terms of enrollments); however, Liverpool’s MBA is not accredited by AMBA (Association of MBAs, which currently accredits 21 online/distance MBAs).

***Suggested further research and case studies.*** In the U.S., a study might be made of the activities of state licensing boards and/or regional/other accrediting agency substantive change committees to determine the extent to which e-learning is now normalized in quality assurance terms. A study could review changes over time that facilitated leading start-up e-learning institutions such as Capella University, Open University Catalonia, and Interactive University. Another possibility would be to examine e-learning development relative to prevailing regulation at an on-campus institution. Outside the U.S./U.K., research is needed to better determine the extent to which third-party quality assurance (whether in terms of inputs, process, or outcomes) inhibits/boosts e-learning in higher education. It might also be valuable to determine whether the ABA is increasingly isolated in its stance or whether many other professional associations hold a similar line.

**Public & Private Funding.** Funding is a form of regulation insofar as its pursuit may influence the activities of higher education institutions (i.e., institutions may be eligible for funding if they do one thing rather than another). The promise of e-learning has stimulated an infusion of capital into most systems of higher education, especially where for-profit institutions are allowed or in those higher education markets where nonprofit, even public, institutions can gain a financial return on e-learning. One side of the public policy debate views such new investment as positive, increasing the supply of higher education at a time when public institutions are suffering budget cuts. On the other side are those from the higher education establishment, with arguments against the introduction of for-profit motives (either from for-profit institutions or from existing nonprofit institutions seeking to supplement sagging income streams), who see the potential exploitation of students and a decline in quality.

In terms of public funding, e-learning has benefited from numerous national/other government initiatives over the past decade and more. Funding has supported technology-related pedagogic innovation (e.g., development, evaluation, and implementation of software/hardware; staff development), technology-related resources (e.g., online databases and other collections), and new online institutions. Public funding has a mixed reputation in terms of efficacy. Many initiatives are project-based and not sustained post-funding, suggesting insufficient attention to long-term relevance and demand. In a bid to better embed and coordinate funding, some countries have developed national e-learning strategies for higher education (e.g., China, U.K., and New Zealand). Different strategies focus on different things. For example, China’s strategy appears to privilege a relatively small number of institutions for either major infrastructure investment or online delivery. New Zealand’s strategy has a strong open source element. Aside from a possible charge that much public funding has been insufficiently strategic, in countries where to-date e-learning has been technically feasible on any scale, public funding rules have not proven a significant barrier to e-learning development.

Countries with a history of for-profit higher education (notably U.S., Singapore, Malaysia, and the Philippines) have witnessed e-learning growth (relative to the particular country’s online infrastructure). Investors have been attracted by the potential low cost/high enrollment e-learning vision and the fit with

mass, career-oriented higher education. There are a handful of examples of commercial e-learning initiatives in countries with no recent tradition of commercial higher education (e.g., Syria's Syrian Virtual University). In most countries, commercial e-learning at higher education level has been muted or non-existent; or government-led (e.g., the U.K. eUniversity was supposed to attract 50% private funding, but conspicuously failed to do so). In many countries, public subsidies/absence of tuition fees dampens any commercial interest in direct higher education delivery. While many of the world's largest distance online providers are commercial (University of Phoenix in the U.S., PurpleTrain in Singapore), other significant players are nonprofit (e.g., University of Southern Queensland, Australia; Canadian Virtual University).

***Suggested further research and case studies.*** There is an emerging literature on best practices in public funding for e-learning in higher education, at least in the U.K./U.S./Canada. It might be instructive to examine the extent to which, in particular contexts, public funding over-stimulated the e-learning supply-side, anticipating structural change that other factors hindered. In terms of stimulating change, has institutional funding (e.g., purchase of CMS) in fact proven more influential than public funding? Is there any evidence that in countries lacking a tradition of for-profit higher education, 100% e-learning has been relatively slow to take-off?

**Financial aid.** In the United States, the so-called Fifty Percent Rule is an example of a restriction on e-learning. Under the rule (part of the federal Higher Education Act), institutions that offer more than 50% of programs at a distance and/or graduate more than 50% of students from distance programs, are ineligible for federal financial aid. The rule was instituted following cases of distance education fraud (prior to the online era), and concerns over retention and loan default. The Fifty Percent Rule barred online-only institutions from access to federal aid. The Distance Education Demonstration Program (DEDP) was an attempt to experiment with allowing distance-only institutions to access aid. Since 1999, 29 institutions have participated in the DEDP. A recent report evaluating six years of the DEDP pointed to federal aid as key to growth at most participating institutions (the eight participants in the DEDP for six years reported growth of almost 700%—from around 8,000 to 63,000 students between 1998/99 and 2003/04), found no link between distance delivery and loan default rates, and called for the Fifty Percent Rule to be revoked. The report also called for revision of financial aid rules to allow students to obtain two portions of aid in one year (to allow accelerated completion online). The one significant called-for increase in regulation was to include faculty/student interaction in the definition of acceptable e-learning.<sup>4</sup> Also in the U.S., the “one-day” rule (formerly the “12-hour” rule) requires that to be eligible for federal aid, a student must register for at least one day of coursework per week. The precise meaning of the rule is unclear, but there is no evidence (compared to the Fifty Percent Rule) that the “one-day” rule has significantly hampered e-learning.

***Suggested further research and case studies.*** A study could examine higher education financial aid/public funding rules outside the U.S. to determine any positive/negative impact on e-learning, and consider whether introduction of direct tuition (in countries with a history of comprehensive public subsidy) might hasten adoption of e-learning as a potentially low-cost alternative.

**Telecommunications.** Without adequate and relatively low cost access to the requisite telecommunications infrastructure, e-learning in higher education is impossible on any scale. Poor infrastructure and weaker socio-economic conditions generally have prevented e-learning from taking-off in many countries. One vision for e-learning is that it will allow poorer countries to catch up with their wealthier counterparts, using new technology to reach large numbers of students at low cost. Initiatives such as the World Bank-funded African Virtual University and the Pakistan Virtual University (PVU)

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<sup>4</sup> Department of Education (2005). *Third Report to Congress on the Distance Education Demonstration Program*. Available at: <http://www.ed.gov/programs/disted/DEDP-thirdreport.pdf>.

have been attempts to realize such a vision. Both initiatives have proven more complex, costly, and less sustainable than first envisaged. In fact, the PVU currently delivers through television rather than online. Often hard choices have to be made between investing in unproven e-learning infrastructure or in established and well-institutionalized infrastructures.

A recent World Bank report claims that, since the 1990s, the digital divide has been “rapidly closing,” with telecommunications services in lower-income economies growing at an “explosive” rate.<sup>5</sup> According to the report, half of the world’s population now enjoys access to a fixed-line telephone and 77% to a mobile network, surpassing a WSIS campaign goal that calls for 50% access to both by 2015. The report acknowledges that “the picture is more mixed for advanced ICI,” with considerable growth, but also significant gaps, in this area. Only about one in 100 sub-Saharan Africans use the Internet, and 12% have access to a computer. The corresponding figures for the developing world as a whole are 42% and 32% respectively. Europe-U.S. bandwidth is 333 times higher than Africa-U.S. bandwidth despite Africa’s trade flows to the U.S. being greater than 10% of Europe-U.S. flows. The World Bank, however, suggests that this technological gap may not last long. According to the ITU, the percentage of the world population able to gain online access has risen from 4.5% in 1999 to 11% in 2003, and this rate is expected to accelerate as “ever-cheaper and more portable technology meets with exploding world-wide demand.” In Africa, bandwidth allegedly tripled in 2000, while world bandwidth increased by over 400% that same year. Overall, the WB report claims that “developing countries are catching up with the rich world in terms of access.”

The World Bank report argues that technological advancements in lower-income countries can mainly be attributed to the emergence of new technologies, declining costs, and considerable investment (particularly from the private sector). The introduction of mobile technology has dramatically reduced the per-subscriber costs of telecommunications services, with fixed-line switching costs halving over the past decade. Over that same period, telecommunications investment in the developing world has more than doubled, primarily due to increased funding from private operators. Private investment in telecommunication infrastructure projects in the developing world is estimated to have exceeded US\$210 billion over the past decade. Sixty-six lower-income countries (including 14 in Sub-Saharan Africa) have attracted private investment worth more than 5% of GDP during that period. While there has been a decrease in North-South foreign direct investment (FDI) in telecommunications, the report argues that this has been replaced by South-South FDI flows, domestic financing, reinvested profits, and other sources of funding. Telecommunications investments in the developing world rose from 21% of the world total in 1992 to 46% by 2002 while developed country investment ratios stagnated. It should be noted, however, that this stagnation could stem from the fact that certain developed markets are reaching saturation point in terms of ICI.

The World Bank argues that competitive, well-regulated private investment is the key to meeting the growing demand for ICI. According to “numerous studies,” low income economies that have introduced private competition under a strong regulatory framework have been most successful in bolstering the ICT sector, with an average growth rate of 1000% in Internet connectivity between 1998-2000 (from typically a very low base). Additionally, competitive private provision is said to reduce telecommunications and Internet costs by as much as 20% and promote greater efficiency in the ICT sector. The report puts forth a list of proposals that are designed to enable governments to attract greater private competitive financing and facilitate the development of the ICT sector. The World Bank recommends that developing countries open up their markets to private sector expansion. According to ITU data, 46% of countries retain international monopolies and 42% have fixed local monopolies in the telecommunications sector. One

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<sup>5</sup> This account of the World Bank report is taken from OBHE (2005). *World Bank argues that the ‘digital divide’ is ‘rapidly closing,’ as United Nations prepares to launch a costly ICT initiative in the developing world*, Observatory on Borderless Higher Education. Available by subscription at: <http://www.obhe.ac.uk/news/March2005.html>

recent estimate suggests that in the developing world as a whole, investment requirements for new technological capacity will exceed \$100 billion within the next five years. According to the report, ICT investment gaps are most likely to be filled with greater private sector involvement.

The World Bank acknowledges that even with greater private-sector-led growth, it is likely that investment gaps will remain, particularly in rural and sparsely populated areas. There may be a role for innovative public financing mechanisms to catalyze (or, in extreme cases, substitute for) private investment flows, particularly in sub-sectors where it is not evident that the private sector is prepared to intervene on its own. The report suggests that some investment gaps could be filled by leveraging the government's role as consumer and infrastructure owner. As a major consumer of ICI services, the government could provide an incentive to private operators to serve local communities by offering to pay for public sector operations in rural areas (e.g., schools, hospitals, etc.). Subsidizing the lowest competitive operator to serve underprivileged communities or granting low interest operator loans and microcredit to telecenter owners are put forth as recommended reforms. In regard to FDI and development-based aid, the World Bank argues that "the donor community plays a relatively small role in investments in ICI." Although the report acknowledges that donor investments can have an important catalytic effect, it is argued that the great bulk of external financing to developing country telecommunications sector has been, and will likely remain, private flows.

***Suggested further research & case studies.*** Research is needed on the impact of deregulation and private investment in particular countries on e-learning in higher education. A study could examine the extent to which enhanced telecommunications infrastructure is accompanied by deregulated higher education systems (e.g., allowing for-profit providers to take advantage of new technology to reach new students) and whether there are any tensions between enhanced ICT and higher education culture/user preferences.

**Cross-border e-learning (import & export).** Another vision for e-learning in higher education is that it may dissolve geographical enrollment limitations, potentially allowing students from one country to enroll in provision from another without leaving home. The recent OECD report "E-Learning in Tertiary Education—where do we stand?" concluded that cross-border e-learning "has generally failed to emerge as a significant market to date."<sup>6</sup> By contrast, cross-border higher education in general (i.e., program and institution mobility) is booming. Accurate figures are not available, but extrapolation suggests a worldwide total student population of around 500,000 (with cross-border e-learning probably accounting for around 5% of this total).<sup>7</sup> Cross-border higher education represents around 20% of total student/program/institution mobility worldwide (i.e., 1.9 million OECD figure, plus 500,000 cross-border figure).

As is the case with domestic higher education worldwide, the dominant impact of e-learning is as a supplement to on-campus cross-border delivery. Remote e-learning (whether intra-national or international) is on a much smaller scale. The possibility of cross-border remote e-learning challenges norms of national authority and higher education planning. Indeed, by crossing borders, e-learning is, by definition, difficult to track. No government has an accurate picture of the extent to which its citizens are taking online higher education provision from abroad; and if remote e-learning has no in-country presence whatsoever (i.e., all delivery and support is conducted remotely from another jurisdiction), it may circumvent legal definitions of operation.

A few governments are known to have taken active steps to include cross-border e-learning in national higher education regulation. That is, foreign suppliers of cross-border e-learning are required to comply with the same quality assurance procedures as on-campus cross-border provision and/or domestic

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<sup>6</sup> OECD (2005). *E-Learning in Tertiary Education- where do we stand?* OECD, Paris, p. 69.

<sup>7</sup> Figure based on Richard Garrett's work at the Observatory on Borderless Higher Education.

provision. South Africa is an example of this approach. Henley Management College from the U.K. (a campus-based institution offering distance provision worldwide) is, to date, the only foreign distance provider to attain registered status as a private provider in South Africa. In 2003, the Malaysian government announced a plan to include cross-border e-learning under its national quality assurance scheme but, to date, no action has been forthcoming. India's AICTE (All-India Council for Technical Education) is empowered to regulate all relevant domestic and foreign provision, but finds it difficult to persuade on-the-ground foreign providers to comply (let alone foreign online providers). The Knowledge Village in the United Arab Emirates (UAE) is a good example where both online and face-to-face foreign providers exist in a special regulatory zone, while foreign providers in UAE proper are under different regulations (but neither regime significantly inhibits e-learning).

There are other variants of cross-border regulation that might impact the future development of cross-border e-learning. For example, an institution from country A, marketing to countries B-D, gains accreditation in country E. An example would be the Arab Open University (a distance institution), now accredited by the British Accreditation Council, or UAE University now with candidate status with Southern States in the U.S.. Some countries regulate the export of online higher education. For example, Australia's University Quality Agency reviews all cross-border activities of Australian universities, including country visits. The U.K.'s Quality Assurance Agency has a similar remit, as do some U.S. accreditation agencies. Genuinely non-national accreditation options for cross-border e-learning are essentially non-existent (or very small scale). Efforts such as Glenn Jones' Global Alliance for Transnational Education were conspicuous failures.

In line with data on campus-based cross-border delivery (i.e., program/student mobility dominated by face-to-face delivery), one consequence of greater cross-border e-learning may be a narrowing of subject concentration. Seeking to maximize income and meet mainstream demand, much cross-border higher education has concentrated on strongly career-oriented provision (notably: business, IT, healthcare and education). The broader subject mix typical of the comprehensive university not been widely replicated. With notable exceptions, there is little evidence of constructive relationships between cross-border providers and host governments and, thus, little apparent connection between provision and perceived national skills needs. By focusing on more lucrative programs, cross-border delivery may cut across domestic higher education in negative and unpredictable ways.

It is premature to gauge the significance of cross-border e-learning at a higher education level. As online learning becomes normalized in the minds of potential students, as technology access/bandwidth improves, and as online offerings grow more sophisticated, the market will emerge much more strongly. If current nationally oriented quality assurance mechanisms do not adjust to explicitly encompass cross-border delivery (whether import or export), then significant growth of cross-border e-learning would fundamentally disrupt higher education norms and structures. Such a trajectory would also challenge providers to adequately support large numbers of non-local learners across multiple jurisdictions and manage varying intellectual property and cultural regimes.

***Suggested further research & case studies.*** One option would be to study a sample of leading cross-border online providers to gauge market penetration, delivery models, and quality assurance. Another option would be to review past and current attempts at genuinely international accreditation.