

# The Future of Global Learning Networks

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*There's nothing more frightening  
than ignorance in action.*

—Author Unknown

**I**N THE DEVELOPING WORLD, national wealth used to be proportional to the value of minerals, precious metals, and oil buried in the ground. If that were true today, Iraq, Nigeria, Venezuela, and South Africa would be very rich countries. Small countries such as Singapore, with nothing of value under its soil, would be very poor. But quite the opposite is true. Why? Because a nation's most precious assets are no longer buried under ground; rather, they are between the ears of its citizens. A solid educational infrastructure is the key to a nation's success. Investment in education creates stability and economic value, and increases overall satisfaction among citizens. Tiny Singapore, with its population of 3.5 million, is an example of the value of investing heavily in education.

One of the most valued assets in the United States is its educational system, sometimes maligned, but unsurpassed in its

ability to produce an educated population. Its colleges and universities are the envy of the world. In much of the developing world, education is unavailable to huge portions of the population. In some cases this is intentional. For example, until recently national policy in Afghanistan forbade the education of girls and women. But most often the lack of education is due to lack of resources, such as qualified teachers and necessary infrastructure. In most of the developing world, less than 5 percent of the population receives postsecondary education, in contrast to nearly 50 percent in the U.S. Illiteracy rates of 30 to 60 percent and more are not uncommon, compared with low single-digit illiteracy rates in Western Europe and the U.S.

### Current Initiatives

Developing nations need many types of infrastructure, but perhaps none is more important than an infrastructure against ignorance. Recognizing this need, in the past year or so many countries have announced plans for national “virtual universities,” leveraging 21st century technology to bring quality education to knowledge-impooverished populations. These countries span the planet and include Ireland, Tunisia, Pakistan, Jordan, Indonesia, South Korea, Syria, and Uzbekistan. The United Arab Emirates, Saudi Arabia, Algeria, and Iran are also actively pursuing initiatives in distance learning. In sub-Saharan Africa, the African Virtual University has recently begun operations in 15 regional sub-Saharan countries (with

support from the World Bank). South Africa has undertaken major initiatives in distance learning. China's massive distance learning programs, historically delivered primarily by satellite television, are now transitioning to the Internet. In addition, the large and successful effort by Mexico's Monterrey Institute of Technology is bringing its Virtual University to many learners throughout Latin America.

To enable more educational dialogue with the developing world, the World Bank recently established the Global Development Learning Network, a satellite and ISDN-based network linking both developed and developing countries in a collaborative network for learning. Going forward, the World Bank is committing \$800 million to promote online learning in developing countries. The Australian government recently announced its decision to spend \$100 million on distance programs for developing countries, and several universities in India have created e-learning collaborations with Western universities. These are but a few examples of efforts to bring much needed education and training to under-served regions, which in turn may lead to greater mutual understanding.

Modern computers and telecommunications systems can be used either to exacerbate current inequities in the distribution of knowledge that leads to prosperity, thereby accelerating the "digital divide," or to bring world-class educational opportunities to people of the developing world by creating a digital bridge.

U.S. President George W. Bush has placed education as a top priority on the national and international agenda. As Tom

Friedman wrote in the New York Times, “The real war for peace in [Pakistan], though, is in the schools. . . . When we return, and we must, we have to be armed with modern books and schools—not tanks.”<sup>1</sup> Furthermore, Bush recently pledged an additional \$500 million for support of education in Sub-Saharan Africa.

There are many compelling reasons for continuing and expanding e-learning efforts throughout the developing world:

- The number of openings in brick-and-mortar universities cannot grow at the same rate as that of the population that requires education. To retain the current proportion of those now enrolled worldwide in undergraduate degree programs, it is estimated that an average size new university would have to be built every two weeks. Technology-delivered education can be delivered at a fraction of the cost of traditional classroom education if designed in a way that fully leverages economies of scale.
- Developing countries do not have sufficient numbers of qualified professionals to serve as teachers, faculty, and mentors in the traditional educational structure. New technologies would potentially allow qualified professionals to teach larger populations.
- While studying overseas at universities, students from different countries often see each other as supportive friends and collaborators, even when the countries from which they originate are hostile toward each other. Our hypothesis is that teaching students through

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e-learning across national boundaries in a collaborative environment may enhance mutual understanding and prepare the next generation of leaders for taking steps toward world peace.

- Without some feasible system for improving education, developing countries are likely to fall further behind the developed world in terms of economic growth and prosperity. This could lead to even greater inequities in the distribution of wealth among nations and act as an agent that destabilizes world peace.
- The digital bridge envisioned welcomes two-way traffic. Educational content from the developing regions to the developed world will also enhance mutual understanding and provide a rich source for cultural studies.

In short, the need to build a digital bridge is essential.

### Global Learning Networks<sup>2</sup>

One way to visualize global learning networks is as follows: Instead of shipping oil from oil-rich to oil-consuming nations, a global learning network ships learning content from nation to nation; and e-learning becomes an important component of international trade. As with all international trade, some countries will have trade surpluses and others will have trade deficits. But, unlike one-time consumption of a commodity such as oil, which is burned once and lost forever, the use of

educational products and services represents an investment in the future. Thus, a short-term educational trade deficit should reap long-term dividends and benefits in terms of quality of life and standard of living. Eventually, near-term knowledge importers will become net knowledge exporters.

*Growth in Global Learning Networks*

Global learning networks have seen tremendous growth over the past five years. These networks are expanding in a variety of interesting ways.

*Peer-to-Peer Partnerships.* Global networks grow with peer institutions pairing up across oceans, fostering new and creative learning opportunities for their students. For example, the Massachusetts Institute of Technology (MIT) joined hands in 1998 with two peer institutions in Singapore, the National University of Singapore and Nanyang Technological University. The resulting program, the Singapore MIT Alliance<sup>3</sup> (SMA), now provides five engineering masters degree programs, presented live via Internet2 videoconferencing from Cambridge, Massachusetts to Singapore. These five programs are computer science, chemical engineering, advanced materials, manufacturing, and high-performance computing. In addition to both live and asynchronous online learning, the SMA program supports extensive collaborative research among faculty and students in North America and Southeast Asia. Its

campus is not fixed in a physical place, rather it is a virtual space not limited by geography or time zones.

MIT recently began its second such partnership, with the University of Cambridge in the U.K. This program, the Cambridge MIT Institute<sup>4</sup> (CMI), seeks to build on each institution's pedagogical models and course offerings to enhance the educational environment and options of students on both sides of the Atlantic. Both the SMA and CMI programs also involve limited student exchanges.

*Nation First, Region Second.* Learning networks also grow when a developing nation creates a virtual university for students within its own borders and then expands to other countries. Mexico's Monterrey Institute of Technology started its Virtual University to utilize the country's best (but limited in number) faculty to teach students in more than 25 geographically dispersed campuses throughout Mexico. The effort has been so successful that demand for its educational products and services has spread throughout Latin America. The institute now has learners from the majority of Spanish-speaking countries throughout the Western Hemisphere. The Monterrey Tech story is an example of how one country's investment in high-quality distance education can lead to the creation of a regional educational beacon that exports fee-based educational products and services to other countries within the region. Other nations, such as Singapore, are attempting to implement the same model. Fierce competition among nations will

no doubt occur as many seek to become beacons of knowledge within their regions.

*One-to-Many.* Many institutions of higher education, including some for-profits, are maintaining and growing markets in various regions of the world. These include open universities, private nonprofit universities heavily invested in distance learning, and for-profits, such as the largest private university in the U.S, the University of Phoenix<sup>5</sup>, which is now opening markets outside the United States.

*e-Transshipment Universities.* Some accredited universities are only Web servers or television satellites, collecting and concentrating educational content from traditional brick-and-mortar universities, relabeling it, and redistributing it to spatially dispersed learners. One example in the U.S. is the National Technological University (NTU), which began in 1969 to redistribute college courses to masters' degree candidates. NTU graduates about 165 masters' students per year; each graduate has taken courses from an average of seven brick-and-mortar universities via the transshipment model. The state of Virginia is planning a similar model for its residents, creating the "Virginia Virtual University," which physically will be a Web server. Ireland's new Hibernia College has a similar model in place for its first launch.

*Electronic Cross Registration.* Students in college X can now take courses in college Y, not only by traveling up the street to

attend classes in Y's classrooms, but through e-learning and electronic cross registration, regardless of the physical distance between X and Y. There are multiple benefits. For example, a student of foreign languages would not be constrained by the few languages taught at his or her home institution; he or she could select from well over 100 different languages taught by e-learning.

The bureaucratic procedures to facilitate smooth cross registrations are not yet widely in place, but we can expect major movements in that direction.

### *Creating and Operating Global Learning Networks*

There are several ways to create and operate global learning networks. Algeria's Université de la Formation Continue (University of Continuous Training, UFC), for example, is building its own domestic e-learning capabilities in infrastructure, pedagogy, and content. UFC is emerging as a sophisticated, stand-alone institution of higher education; it also expects to partner with the Arab Open University (financed by Saudi Prince Al Waleed Ben Talal), which is headquartered in Kuwait and has branches in at least six Arab countries. The U.K.'s Open University will provide the initial accreditation for UFC's courses and degree programs.

The UFC is joining a Euro-Mediterranean project called Avicenna, as well. The Avicenna Virtual Campus involves a consortium of 15 Mediterranean universities supported jointly by the United Nations Educational, Scientific, and Cultural

Organization and the European Commission. Students in the Avicenna consortium campuses will share an extensive virtual library and will be able to electronically cross register between campuses.

The UFC is also working closely with Centre National d'Enseignement a Distance and related French-speaking consortia to introduce a large number of campuses in France and French-speaking countries, especially in Africa, to various collaborative arrangements.

Finally, the UFC recently signed a letter of understanding to participate in the Learning International Network Consortium (LINC), described in the next section.

### The Need for a Global Consortium

The world's learning communities need a neutral, supportive organization that supports collaborative learning free from commercial pressures and using best practices. To fill that need, one alternative may be to create an international consortium of colleges and universities, foundations, government agencies, and private firms to support a new organization, LINC. Ideally, LINC will bring world-class educational opportunities to those who lack access to quality education. Much of its content will focus on science and technology. Equally important, teachers in developing countries will create learning opportunities for the developed world, focusing on culture, history, language, religion, philosophy, and more. Teachers in

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Iran, for example, will teach students and faculty in Europe and North America not only about its advances in science and technology, but also about Persia and its culture, languages, and history.

LINC will be assembled from the diverse efforts currently underway within many developing countries and will use best practices whenever possible. The effort, once fully funded, will require on-going support. Much of this funding will be internally generated in a sustaining manner from tuition, fees, and government subsidies that might otherwise have been directed toward traditional brick-and-mortar educational institutions.

### *LINC Goals*

LINC is envisioned as a voluntary super-network and resource center connecting and building upon individual, national, and international efforts already underway. Its goals are broad and diverse:

- To establish a sustainable international consortium supporting the creation and distribution of a variety of educational content, both domestically and internationally.
- To foster the mutual understanding of languages, cultures, history, and traditions. Students from widely disparate countries will work collaboratively on projects, learning not only course content but also to respect and bridge their cultural differences.
- To design systems and use technology to leverage scarce

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teaching resources within and between countries to reach a maximum number of learners.

- To establish international trade in knowledge services analogous to international trade in economic goods. Each region's contribution in the knowledge market will enhance learning elsewhere, thereby raising "knowledge standards" for all.

These goals, while enormously challenging, can be achieved if all concerned make a commitment to meet them. If not, disparities in education and income around the world, already at disturbing levels, will continue to grow, leaving a vast number of people with little hope for an education to improve their lives and global society.

## ENDNOTES

1. T. Friedman, "Foreign Affairs: In Pakistan, It's Jihad 101." *New York Times*, November 13, 2001. Late Edition—Final, Section A, Page 17, Column 1.

2. For an early discussion of global learning networks, see R. Larson, "MIT Learning Networks: An Example of Technology-Enabled Education," in *Forum Futures: 1998 Papers*, M. Devlin and J. Meyer-son, eds. (Washington, D.C.: Forum Publishing, 1999), pp. 59–74. This was originally presented before the Stanford Forum on Higher Education in Aspen, Colorado in September of 1997.

3. See <http://web.mit.edu/sma/>.

4. See <http://www.cmi.cam.ac.uk/>.

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5. For additional information about the University of Phoenix, see R. Larson and G. Strehle, “Edu-Tech: What’s a President to Do?” in *Technology Enhanced Learning: Opportunities for Change*, P. Goodman, ed., (Mahwah, NJ: Lawrence Erlbaum, 2001), pp. 21–59.

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