
ICT AND EDUCATION—POLICY, STRATEGY, AND FURTHER PROGRESS

A. ADB ICT Strategy and Education Policy

ADB ICT Strategy and Action Plan

ADB's *Toward E-Development in Asia and the Pacific: a Strategic Approach for Information and Communication Technology*, was issued in 2001. It is comprehensive and logical, following good practices developed over the years by peer organizations such as UNESCO, UNDP, and the World Bank. The incorporated Strategic Approach presents a concise background of the information revolution, the impact of ICT on development, and ICTs in the context of development in Asia and the Pacific. It also makes an excellent case for the need for an ADB strategic approach for ICTs, then recommends strategic thrusts compatible with current practices in the developed world, such as, (i) creation of an enabling environment, (ii) building of human resources, and (iii) development of ICT applications and content.

The ICT Strategy's Action Plan proposes a few carefully selected generic activities:

- Undertaking an e-readiness assessment in selected DMCs;
- Integrating ICT applications in ADB activities;
- Promoting strategic alliances and partnerships with existing

ICT initiatives at all levels in the region, and establishing principles of effective public-private partnerships; and,

- Establishing a center for learning, information, communication and knowledge for Asia and the Pacific.

The proposed initial approach is sound and appropriate. By helping DMCs assess their e-readiness, in conjunction with current and proposed ADB projects where ICTs could be profitably integrated, country work plans can be developed that will motivate government and private sector support. Further, a number of initial bankable projects could be identified to help introduce and stabilize early efforts. If an enabling environment is created, the government's major role becomes that of facilitator, with most ICT development initiatives undertaken by the private sector.

In the education sector, human capacity building takes on several dimensions. The first is too often neglected: attitudinal change. Since the benefits of training people to manage change successfully in their work environment are perhaps not immediately tangible, governments tend to ignore recommendations that emphasize the need to manage change and to develop hospitable attitudes. ADB may not place enough importance in asking the client governments to retain this element in a project. The human environment must be prepared and the support of stakeholders must be enlisted. Teachers and education system administrators can be the strongest agents of change, or they can very easily resist it. Investments that seek to implement infrastructure, computers, and specialized software without taking the necessary time to lay the human groundwork are doomed to a long and costly learning curve.

Some tangible signs of progress on a wide front might have been expected since adoption by ADB of the ICT Strategy in 2001. The previous review of ADB loans and TAs over the past 4 years reveals a few cases where the ICT Strategy has been useful in bringing much-needed leverage to projects in education, and to initiatives in other sectors. However, there are many more projects where the judicious use of IT could have brought substantial leverage. Does this mean that application of ICT Strategy is not a mandatory step in project formulation, or alternatively, that it was considered, but may not have been deemed relevant in some cases for one reason or another? It appears that the ICT Strategy is useful for those who are well informed

and aware of the potential benefits of ICT. It also appears that project officers are for the most part hesitant to consider the contributions of ICTs because of perceived local barriers that would require major corrective action in other fields, such as school infrastructure, energy, human resource capacity, administrative problems, or attitudinal issues at the national level.

Progress on the activities comprising the ICT Strategy Action Plan has also been modest. Although an excellent e-readiness assessment has been performed across various sectors such as health, education, governance, emergency communications, and e-commerce in some Pacific DMCs, there is little evidence that ADB plans to pursue this approach elsewhere.

As far as integrating ICT applications in ADB activities, it appears that beyond the normal software support applications found in an office suite—e-mail, word processing, spreadsheets, presentations, etc.—there are few other ICT applications in general use. Practical applications of immediate use to ADB clients in the education sector, such as Curriculum Development, Course Design and Writing, Educational Management Information Systems, Teacher Training Materials, Interactive Multimedia Courseware, Learning Assessment Instruments, E-Books and Journals, and Open and Distant Learning, are not seen in use. It is not easy to make effective recommendations on how best to make use of these technologies under difficult circumstances without familiarity with their performance in day-to-day situations. On the other hand, ADB's Web site is generally recognized as one of the very best among the Web sites of international financial institutions and donor agencies.

The promotion of strategic alliances and partnerships with existing ICT initiatives does not yet seem to have been implemented to an appreciable degree. There are notable exceptions, such as the Distance Education Modernization Project in Sri Lanka (see Appendix 1).

The CLICK initiative was uncertain for some time, but appeared (at the time this is being written) to be back on track for implementation. CLICK was one of the first proposals approved by the Japan Fund for Information and Communications Technologies (JFICT). JFICT was established with a grant of \$10 million from the Government of Japan, and was administered by ADB. Its basic objective was to help bridge the growing digital divide in Asia and the Pacific. JFICT was launched on 31 July 2001 with a roar, but then slipped into a fairly cumbersome bureaucratic process. Imaginative proposals were left

in limbo for lengthy periods since final decisions were made outside of ADB. The Fund was designed to provide support activities to improve environments for ICT development in ADB DMCs, such as policy initiatives for the development of ICT infrastructure and human resource capacities, and to help establish CLICK.

The JFICT was originally to be replenished over a number of years. It was decided, however, to limit the fund to its original \$10 million, and to end it in October 2004. It is hoped that ADB will have access to an alternative mechanism for seed funding to explore the feasibility and sustainability of innovative technologies in its DMCs, perhaps something similar to the World Bank's InfoDev.¹⁶⁵

One important theme that is not yet implicit in the ICT Strategy is the desirability of coordination in the development of national ICT strategies in DMCs to ensure there is some harmonization in those strategies in the region—especially in neighboring countries that share cultures and languages. It would be helpful for ADB to monitor and support such a process because the ICT environment is evolving rapidly in DMCs.

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Although the ICT Strategy paper was released in June 2001, the subsequent *Policy on Education* of August 2002 does not even allude to it, placing in further question the relevance of the ICT Strategy.

The *Policy on Education* does offer some very well written sections on ICT in education, but the concept is not fully integrated into the underlying theme of education itself. The benefits of contemporary technology should be woven as an integral element of the policy document. Instead, ICT seems to be acknowledged graciously, but one is not quite sure where it fits in.

Today, we are in the middle of an accelerating information revolution that, for at least 15 years now, has completely modified the way most humans get things done. Information is the motive force of the current global economy. Current and reliable information is the single most critical element of business, health, politics, the arts, economics, and education—basically, in almost every field of human

¹⁶⁵ See Information for Development at <http://www.infodev.org/>.

ADB will provide more support for the application of appropriate forms of ICT to leapfrog conventional means of providing instructional resources. ADB will support development of information technology policies and strategies for the education sector, and seek to link these to improving the efficiency and quality of education at all levels. ICT, for distance education, offers enhanced opportunities to improve quality in teacher training and higher education. Connecting educational institutions to the Internet, coupled with appropriate investment in training and equipment maintenance, should be even more important than traditional support for library development. Facilitating Internet linkages between regional and non-regional universities, for example, can expand access to higher education while improving the quality of instruction in local institutions. ICT can also be used to support regional cooperation through existing networks to facilitate exchange of education experiences, methodologies, and ideas. Experiments in many countries have also demonstrated the potential of the Internet to bring immediate change to the lives of the poor by providing them with direct access to needed information. The challenge for ADB is to systematically incorporate ICT strategies into the education sector component of country assistance programs that are suitable to the context, sustainable and affordable, and directly promote access to and quality of education.

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endeavor. Education could be interpreted as the means to convey useful information to people in a way that makes it easily understood and usable by them to improve their condition. If the digital dimension is incorporated in this interpretation, then we must add... regardless of distance, location, gender, status, language, culture, religion, and time.

It is important to bear in mind is that IT is holistic. It cannot be limited to the field or discipline where it is introduced. Doing a good job of bringing ICTs into a process will require the participation and buy-in of stakeholders in other fields who may not have been involved or directly interested in traditional education projects. Planners and decision makers in education must plan their projects on a more horizontal scale, across sectors, in close consultation with colleagues in such sectors as health, business, and finance. Most resources influenced or delivered in the education sector can become common assets to the greater benefit of all, in addition to the targeted clients.

Education leveraged with appropriate technologies, or vice versa, has not been a vertical and self-contained discipline for many years in the developed world.

ADB Policy on Education does recognize that:

Innovation, of course, means more than supporting ICT. It means developing and adapting new approaches to deal with a range of issues. Often, the problem is not identifying a new approach, but adopting it and integrating it with the education system. The region abounds in examples of good practices that have been developed on a small scale—often by NGOs—but never expanded or mainstreamed. Reasons for this include higher costs, lack of trained staff, unwillingness to accept change, and lack of understanding. ADB should seek out and evaluate innovative practices, and ensure support for incorporating them in the education system, especially innovations that will improve access and quality of education for the poor.

To better illustrate such interrelationships and linkages, consider microfinance, where development vectors such as education, finance, and poverty alleviation merge. In such countries as Nepal, India, Pakistan, and Bangladesh, the strongest economic and social bond poor women may share is their belonging to a Grameen Bank-like financial community. The need to belong, to be accepted, and the desire to improve their lives is so strong that it is the group that becomes the de facto judge and arbiter of members' behavior in the community—stretching its influence far beyond the sphere of financial interests, which brought them together in the first place. In this context, the microfinance institution becomes the ideal channel to deliver knowledge to members and their children. It can bring them numeracy, modest technology to manage their finances, and information on hygiene, health, governance, and many other fields. If a community access center is brought into this fertile ground, facilitating several crosscutting development themes, the poor can feel that they are the ones influencing change.

Key considerations for Asia and Pacific countries are the linguistic, cultural and religious influences that define each country's character. Stakeholders in ADB, other donors, and those in client countries must be extremely sensitive to these issues to ensure that multimedia instruction materials preserve and enhance these national and local attributes rather than render them meaningless for the learner. Great care must be taken to ensure that languages and cultures are not relegated to home and village settings only. In almost every country of Asia and the Pacific, there are major efforts underway to convert local dialects and their alphabetical characters to a format that can be used on a keyboard and for display graphically on a monitor or in print. Obviously, investments supported by ADB should bolster these efforts and make use of it in supporting the development of indigenous learning materials.

In North America, education has often been the locomotive that justified the early investments in information technology. Schools, libraries, and universities (and their research arms) are currently some of the biggest consumers of Internet services. The collective and individualized movement of massive amounts of information for education and learning has required the deployment of bigger and better data carriage pipelines and local distribution systems. Once these backbone networks are operational, such as CANARIE,¹⁶⁶ other users are quick to piggyback on the infrastructure and thus help enhance the viability of the investment.

A key advance in the ADB education policy is the potential involvement of the private sector, especially in the tertiary and skills development layers of the education portfolio. There may come a time for a more formal segregation of themes between public and private education, since the private sector is often seen as focusing too much on high-yield knowledge in technology and business, and neglecting the less remunerative humanities. In many countries today, the physical location of the source of knowledge, such as a campus or a classroom, is far less important than access to information and support through reliable, affordable connectivity, and results of quality and credibility. In an ideal—but not impossible—education world, the student should be able to pick from both public and private sources and assemble a bouquet of courses that will count toward a degree.

¹⁶⁶ Arguably, the world's highest capacity transcontinental network. See <http://www.canarie.ca/>.

A strong argument exists for governments to focus their role on creating a supportive policy environment for private sector provision, determining and assessing standards of performance, setting broad national policies, and developing an accreditation mechanism... Where demand for higher education can be met by the private sector, little justification exists for the government to compete with the private sector by providing subsidized higher education at unit costs often higher than those in private institutions.

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Where a good case for business can be made, the private sector has been very quick to introduce ICTs into the classroom, or to expand its client base by reaching into the remote learning environment, commonly known as distance education. In pursuing such opportunities, however, the private sector often comes up against the barrier of poor performance of the public networks (e.g. in Sri Lanka, India, and Pakistan), or monopoly interests that discourage the introduction of private networks for the carriage of knowledge (e.g. in Fiji Islands and the Marshall Islands). In such instances, the ADB can play a significant role as facilitator and financier in helping to bring about a healthy enabling environment, as highlighted in the Bank's ICT Strategy.

ADB's Policy on Education and Toward E-Development in Asia and the Pacific: a Strategic Approach for Information and Communication Technology are mutually supportive, but they are not interdependent. In future revisions, it may prove useful to ensure much stronger linkages between these documents.

B. Recommended Measures for Expanding the Role of ICTs in ADB Education Projects

For ADB, it is not simply a matter of determining if and when to introduce ICTs into the equation, or waiting for conclusive and final proof of economic viability to emerge. The world is moving ahead relentlessly with ICTs, and it is impossible to consider coping without the Internet and computers in every facet of life. As seen in Chapter II, practically every DMC has identified key areas where the leverage and efficiency of ICTs will be most beneficial. In most cases, education is the lead target sector for improvement. With few exceptions, DMCs realize they must at least try and stay in the wake of developed countries—if not narrow the gap—for purposes of trade, governance, health, tourism, human resource development, and to protect and nurture their own culture and sovereignty. It becomes imperative that ADB give full consideration to DMCs' national ICT policies and strategies in its program planning and, as the major regional donor, support them not only with traditional funding mechanisms, but also with expertise, practical demonstrations, and guidance in areas where local officials may be most vulnerable to less than optimal sources of information.

- The education sector should be considered as part of the client country's enabling environment from a holistic perspective. Most human and material infrastructure invested for educational purposes can be utilized by other sectors of the economy, thus enhancing the viability and sustainability of the investment. Too few of the ADB projects reviewed started with an education core, then opened to services for health, government, and public services generally, and for the business sector.
- Most countries' education ministries procure software at full retail cost, or if their budgets are not adequate, they make use of pirated copies. Provision of expertise in software procurement and licensing for educational purposes should be an integral part of ADB education projects. Tremendous cost and efficiency savings are available since most major firms offer very generous discounts, and there are excellent arrangements in place for free software for education in poorer countries.

- A few less developed countries that appear to have a realistic and sustainable policy and regulatory framework in place, and have made the necessary political and budgetary commitments, such as Bhutan, present a fertile ground for successful pilot projects aimed at helping the host country and building models for replication.
- ADB education projects and other projects in each DMC should be dovetailed with that country's ICT policy and its education policy and strategy. Developments in ICT in each DMC should be monitored.
- DMCs and relevant regional organizations should be made aware of ADB's interest in supporting ICT development to ensure that representatives from ADB are invited to appropriate events. Closer linkages should be nurtured with regional stakeholders and donors who have complementary interests in ICT, such as UNESCO and the ITU.
- Familiarization sessions in ICT should be offered to ADB staff in the education sector.
- ADB should recruit senior level expertise in ICT in education, and expertise in ICTs that cuts across education, health, and governance sectors.
- ADB staff with expertise in ICTs should more often participate in project identification and formulation missions to help identify needs and opportunities, and provide information on the benefits of ICTs.
- ADB should include in the project development process a review to verify that the ADB ICT Strategy has been applied in future education projects as appropriate.
- A process for systematically monitoring significant ICT components in projects should be established by ADB so that best practices can be developed and corrective measures taken as appropriate in a timely fashion.
- ADB should consider developing some specialized sector mechanism similar to one of those of the World Bank—e.g. InfoDev—to carve a niche out for the ADB in Asia and the Pacific.

- ADB should participate more proactively in international events that determine, disseminate, and consolidate the field of knowledge in ICTs and education, such as, (i) World Summit on the Information Society, (ii) Digital Opportunity Task Force, (iii) Pacific Telecommunications Council (PTC), (iv) International Telecommunications Union Telecom and ITU ICT in Development, (v) seminars and workgroups, (vi) Center for Office and Information Technology ICT Trade Fairs (www.cebit-asia.com/all_c.html/s), (vi) World Council for Curriculum and Instruction World Conferences, (vii) International Workshop on Wireless and Mobile Technologies in Education (www.edna.edu.au/), (vii) Society for Information Technology and Teacher Education International Conferences (www.aace.org/conf/site/), (viii) IEEE International Workshops on Wireless and Mobile Technologies in Education (ltf.ieee.org/wmte2003/), (ix) International Conferences on Education and Information Systems, Technologies and Applications, (x) Pan-Commonwealth Forums on Open Learning (www.col.org/pcf3/), and (xi) SEAMEO-UNESCO Education Congress and Expo (www.seameo-unesco.org/).
- The ADB Library should seriously consider subscribing to some or all of the major ICT sources of research findings listed below so these are available online to staff, consultants and other appropriate individuals, e.g., (i) World Telecommunication Indicators Database—ITU, (ii) Database on telecommunication operators in developing countries ITU, and (iii) 2003 Information Highways and Telecommunications in Asia—Global Information Systems Inc.