THE VIRTUAL COLOMBO PLAN – ADDRESSING THE ICT REVOLUTION

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Abstract

The impact of the Information and Communications Technology revolution on education and knowledge acquisition, although considerable now, is only just starting to be felt. Developing countries will be deeply affected by the exploding demand for IT literacy and English language for accessing knowledge on the Internet. In quantitative terms, expenditure by international aid agencies in responding to these demands will be small compared to spending by governments and the private sector. However, the qualitative role of international agencies - through impacts on policy, and on the strengthening of regulatory frameworks - promises to be important. AusAID in conjunction with the World Bank has recently launched the Virtual Colombo Plan as a strategic response to the anticipated demand for both education and knowledge from developing countries.

INTRODUCTION

IN RECENT YEARS, the Information and Communications Technologies revolution has been sweeping the world. There have been dazzling new developments – digital cameras, email, the Internet, small Palm handheld computers, and so on. These changes have brought innumerable benefits across many sectors of the economy. Costs have fallen dramatically. Productivity has risen markedly. These developments amount, with no exaggeration, to one of the most important technological revolutions ever seen. The new knowledge networks that are in the process of being created represent a major step into the future. One key goal for policy-makers in the world foreign aid and development community is to use the new technologies to promote structural changes to help overcome poverty.

However, with the advent of the information age and the so-called new economy, a new divide is opening up both between and within countries. The world is dividing into groups of people who are technology and information-rich, and those who are technology and information-poor. This is the new "digital divide".

There is now a danger that many of the benefits of the new technologies will bypass the poor in developing countries. For aid agencies such as AusAID, an important question that needs addressing is how can the new technology be used to tackle poverty – to help the world's poor?

The international development community needs to focus on ways to bridge the digital divide.

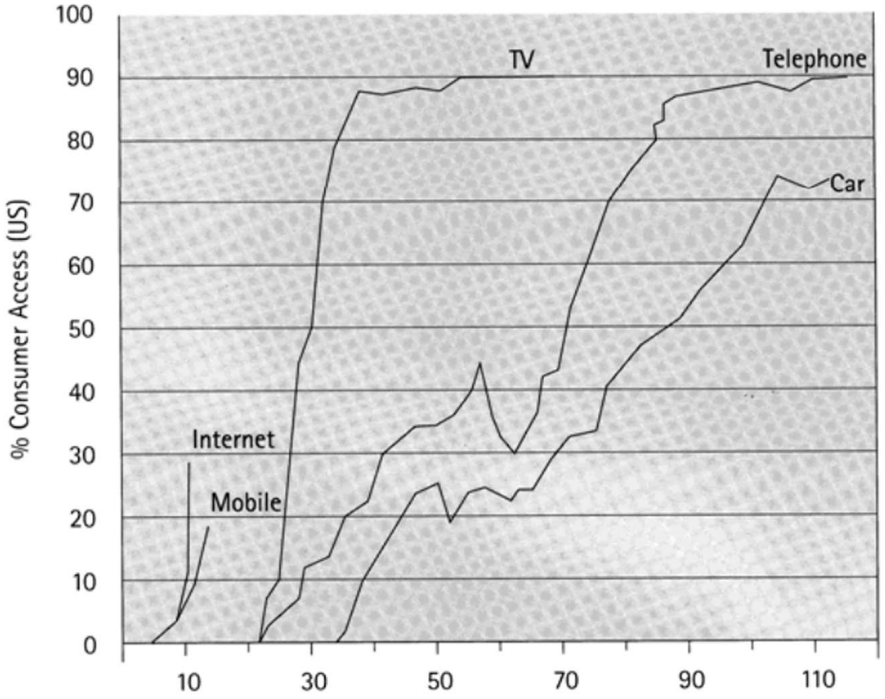
CHARACTERISTICS OF THE ICT REVOLUTION

The paper is presented in the context of changes that amount to a worldwide technological revolution. Although at a comparatively early stage, this revolution is now proving very significant for developing countries. Various other forms of new technology have swept into developing countries in recent decades, and indeed throughout the entire 20th Century. Electric power was first installed in many developing countries in the 1890s; all kinds of gasoline and electric motors were increasingly used in the Asia-Pacific region and in Africa during the 20th Century; and more recently the Green Revolution dramatically boosted productivity in agriculture during the 1970s and 1980s. But current prospects are that the information and communication technology (ICT) revolution now spilling over into the developing world promises to promote more far-reaching changes, and in a much faster way, than any of these previous technological changes. As Figure 1 shows, although at an early stage, the take-up rate for ICT has been dramatic and is expected to accelerate dramatically over the next decade.

The ICT revolution will have major impacts in a range of ways, some of which are summarised below.

Structural change. The ICT revolution will lead to much structural adjustment within developing countries. Changes of this kind bring widespread benefits for many people, but there will be losers as well. Social and economic costs will most likely fall upon disadvantaged groups.

IT REVOLUTION HAS FURTHER TO GO



- The benefits will include greater access to information, better organisation in key sectors of the economy, better communications, and higher productivity.

- The costs will include the disappearance of jobs in some sectors, social dislocation as individuals and families try to cope with the changes, and feelings of helplessness and loss on the part of those who reap few or no benefits from the changes.

Policy challenge. At the broadest level two key challenges for the world development community in responding to the ICT revolution are those relating to efficiency and to equity. Specifically, the international community can assist developing countries to (a) prepare policy responses necessary to facilitate effective structural change, and (b) assist with steps that could improve access to the new technologies flowing from the ICT revolution.

Chaotic change. The impact of ICT in developing countries is bound to be widespread and profound. One main effect will be to lift productivity – in some cases dramatically. But at present, the change process is rather chaotic. Technologies – both hardware and software – are in a state of rapid flux. Developing countries are acutely short of people with skills to respond to the changes.

Pro-market change. During the 1990s, across the developing world the trend was for governments to adopt more market-oriented policies. The result is that today, markets in developing countries are much more open than previously to the impact of external influences such as globalisation. The ICT revolution will speed up the impact of globalisation, and this can generate considerable resistance. Policy makers need to work to ensure that the process of change in developing countries brings genuine and widespread benefits to the peoples of these countries, and that the changes do more good than harm.

The private sector. Much of the process of ICT-supported change in developing countries during the next decade or so will be driven by developments in the private sector. This will require that donors monitor changes in the private sector closely, and design projects that are strongly demand responsive. Donors will need to ensure that their activities augment, and strengthen the operation of effective private markets in the ICT sector.

Appropriate technology. The issue of choice of technologies is an important one for policy makers across all major sectors of the economy. Technological choices in the ICT areas are wide, and changing rapidly. Unit costs are falling rapidly. It is hard for policy makers in developing countries to keep abreast of the pace of change and to make informed decisions. Depending on the local situation, the appropriate technologies will vary. In the communications sector, for example, it may be appropriate to aim to rely on broadbanding technologies quickly in some situations, but in others it might be better to aim to rely on more limited facilities for some time to come. Policy makers in developing countries need assistance in devising strategies to take best advantage of the opportunities that the ICT revolution offers.

Access. Access is a key issue for policy makers. Policy decisions about such issues as the choice of technologies and pricing arrangements will affect access. It is true that it will not be possible to provide access for all quickly. Past technologies have taken time to spread across developing countries - doubtless the same will be true during the ICT revolution. Nevertheless good policies can facilitate improved access.

Most of the conditions that contribute to gender gaps in the developing world apply when considering access to ICTs by women and girls. Strong policy and regulatory frameworks are necessary to ensure that the digital divide does not develop into another gender divide. Concentration on opening up opportunities for females as ICTs are introduced will facilitate female participation.

Skills Demand. As people have become aware of the potential and scope of the internet and of other facilities associ-

ated with the new technologies (such as email, data management) the demand for access has exploded. Access requires new skills, of which IT literacy and 'English for the Internet' would appear to the most in demand.

Sectoral Considerations. The new technologies are having a great impact in many sectors. The question, then, is where should development agencies such as AusAID concentrate their efforts?

THE EDUCATION SECTOR

A well-educated population with access to appropriate knowledge is the most powerful tool of the developing world in its fight against poverty.

Despite modest progress in recent years, the world faces seemingly intractable problems in delivering even basic education to all of its children. In 1998 113 million primary school children were out of school, and one child in three did not complete five years of schooling in developing countries. Gender disparities are marked, with many fewer girls than boys in schools (although the gap is closing).

Even when developing country children are in school, the quality of their education is often poor. Under-trained teachers are provided with too few resources and inappropriate curriculum. Progression rates into secondary education are low. Few opportunities exist for further formal education or training. These deficiencies also greatly limit the ability of people in developing countries to access and analyse the types of knowledge that might be used to tackle development challenges.

This ICT-related disparity between developed and developing countries has led to development agencies such as the World Bank to recognise the emergence of a new, additional 'knowledge divide' between the developed and developing world. The digital divide encompasses both physical access and human capacity constraints to utilising the new ICTs in developing countries. The latter constraint, otherwise known as the knowledge divide, is a particular concern of this paper.

However, the paper also looks at the opposite perspective; that is it looks at the opportunities presented by new ICTs to make inroads into the seemingly intractable problems of education provision and access to knowledge in developing countries.

Another premise for this paper is that Australia has a particular expertise in delivering education via a range of modes and technologies. This expertise will be valuable in assisting developing countries to use new ICTs in education. Australia's history of delivering distance education since 1918 provides a rich experience of innovative and cost-effective approaches that has continuously incorporated new ICTs. Australian universities and TAFEs are major exporters of higher education services. Some are at the cutting edge of the use of new technologies in the provision of higher education by distance learning. Australian education systems are currently actively testing the appropriate use of new ICTs at all levels.

THE VIRTUAL COLOMBO PLAN

AusAID and the World Bank have agreed to launch a new global program, the Virtual Colombo Plan, which will use the new information and communication technologies to promote access to both education and knowledge in developing countries across the world. The name refers to the original Colombo Plan, which began just 50 years ago this year, and emphasised education as fundamental to development.

The goal of the VCP is to use the opportunities presented by Information and Communication Technologies to improve education and access to knowledge in developing countries.

The Virtual Colombo Plan focusses on education and knowledge. In the education sector, Australia has a wide range of education institutions that provide world-class services across the entire education sector. Australian institutions have, for example, extensive skills in the provision of distance education, on-line delivery of courses, computers in schools and education systems, all of which may become important aspects of the Virtual Colombo Plan.

Australia's Commitment

The Virtual Colombo Plan will focus on using the new technologies to promote education and knowledge, thus combatting international poverty. Australia's contribution, within the normal budgetary requirements, will be $A200 million over a five-year period. This money will be spent through the Australian aid program within a designed package of activities. The World Bank has earmarked US$1.3 billion over the same period as its contribution.

There will be three stages in the Australian project package.

Stage 1 – *The Foundations* – will emphasise basic education and ICT infrastructure. The two generic outputs from this stage are expected to be: improved training for and skills of teachers involved in basic education; and strengthened partner government policies for the introduction of ICTs in the education sector.

Stage 2 – *Delivering Knowledge* – will utilise the World Bank's knowledge infrastructure, supported by Australia in Stage 1, to improve access to knowledge for development.

Stage 3 – *Higher Education* – will build on Stage 1 achievements to improve the quality of higher education, through distance education and through assistance with the development of policies, strategies and pilot projects. The output will be an increased spread of ICTs throughout higher education systems in developing countries, with emphasis on teacher training and technical and vocational education.

The Four Ps

In looking at the overall emphasis on education and knowledge, it is useful to think of the Virtual Colombo Plan as working to strengthen four Ps – People, Pipes, Policies, and Partnerships, as the key elements in progressing the overall goal. A successful approach to the use of new technologies in developing countries needs to combine all of these elements.

People

Aid programs are designed to benefit people. Activities delivered through the Virtual Colombo Plan will involve people, and they will provide benefit for people. Examples of where the Plan will provide benefit include:

- *e-scholarships.* Beginning in the year 2002 Australia will provide 200 new Virtual Colombo Plan scholarships annually for teachers and teacher trainers in the basic education subsector. The special, new aspect of these scholarships is that they will be for distance education studies, available to teachers who wish to enroll in courses provided through the Internet from Australian education institutions. They will, in effect, be electronic scholarships. Teachers enrolling in these courses will thus be able to study while remaining in their home countries. These scholarships are expected to be especially useful for female primary school teachers who often have family commitments that make it difficult for them to undertake studies overseas.

- *Teacher skills.* In up to 12 countries, AusAID will support improvement in the quality of teaching by providing skills upgrading programs using distance education. These programs will strengthen basic computer literacy for participating teachers. As a first step, during 2002 AusAID will support the establishment of multi-purpose learning centres in Primary Teachers Colleges in Papua New Guinea, each equipped with around 30 computers.

Pipes

Reference to 'pipes' has become part of the language of the new technology. What is really meant is ICT 'infrastructure', which includes both the hardware and the software needed to ensure that the new technology works well. Pipes are needed to connect people. Examples of pipes enhancement in the Virtual Colombo Plan include:

- *International networks.* Australian support for the expansion of the international network of pipes. AusAID will work with the World Bank to strengthen the Global Development Learning Network (GDLN), which is one part of the international pipes. The Australian end of the GDLN will be established through the Australian National University, and delivery of Australian content onto the GDLN is expected to begin before the end of 2001. AusAID will also work with the World Bank to promote the increased use of the GDLN system - especially in the Asia-Pacific region. In 2000/2001 AusAID supported the establishment of GDLN centres in Viet Nam and East Timor, and it is planned to support the extension of the GDLN into Papua New Guinea and the South Pacific. AusAID is also assessing the viability of assisting the expansion of the network to provincial centers in partner countries such as Thailand and Indonesia.

- *Virtual University.* The African Virtual University (AVU), based in Kenya, is an important addition to the pipes in Africa. This is an imaginative venture that has Australia's strong support. The provision of Australian content will strengthen the capacity of the AVU to provide distance education and $6 million has been set aside for this activity. This funding will enable teams of Australian education specialists to design undergraduate courses for use through distance education by universities in such countries as Ethiopia, Ghana, South Africa, and Zimbabwe.

Policies

While the potential opportunities that the new technologies bring are exciting, the rapid expansion of their use has thrown up a very large number of new policy issues at all levels – at the international and national levels in most countries, and within each sector in these levels.

- *Sectoral Assistance.* Teams of Australian education experts will be mobilised to work with education specialists in developing countries to improve their strategies for the use the new technologies in basic education. A total of $18 million has been set aside for these activities. In China, for example, Australia and the World Bank have agreed to work in partnership to develop policies for introducing new technologies in poor provinces in Western China.

- *Pilot Projects.* Australia will provide support to pilot projects to test new approaches, for example in the development and supply of CD ROMs to help teachers in a range of disciplines, including science, mathematics, language and literacy. An amount of $1 million has been budgeted for each of 12 countries for this purpose.

Partnerships

The central idea underpinning the use of new technologies in development is that of strengthening connections between people. Thus, partnerships are a crucial part of the Virtual Colombo Plan.

- *World Bank Development Gateway.* Australia's partnership with the World Bank underpins the approach to the Virtual Colombo Plan. As a joint activity with the World Bank, Australia will become a Founding Member of the new World Bank Development Gateway. AusAID is committed to an expenditure of A$5 million in 2001-2002, and a total of A$10 million over a 3-year period, to the Gateway activity.

- *Gateway Content.* AusAID will work with Australian knowledge-based institutions such as the CSIRO, the McFarlane Burnett Centre for Medical Research, the numerous cooperative research centres around Australia, and other research institutions, to seek their support in providing Australian content for these gateways. In addition, where support is needed, AusAID will sponsor the creation of country gateways in PNG, South Pacific countries, and partner countries in Asia.

It will be important for effective implementation of the Virtual Colombo Plan to also form partnerships with key stakeholders in Australia:

- the public education sector in Australia (such as the state departments of education) to take advantage of their vast experience with ICT in schools and on-line distance education services;
- the private sector, particularly with regard to the supply, installation and basic training on ICTs and the provision of technical advice;
- Non-government organisations.

RELEVANCE FOR EDUCATION PROVIDERS

First: *Impact and Preparedness*

There is no doubt that teachers, teacher trainers and students will be impacted upon by the new technologies and by the digital divide focus of the Virtual Colombo Plan. The extent to which the 'industry' or 'community' engages will depend on how individuals and institutions react to opportunities.

Relevant questions…

- *Are we computer and IT literate?*
- *Do we have routine access to the internet?*
- *Do we regularly access sites of relevance to our work?*
- *Are we aware of on-line services available in our field?*
- *Are we members of professional organisations that sponsor on-line learning in our field?*

Second: *Demand*

The nature of the demand for language services is likely to change. Under pressure for quick access, large populations will (indeed, do now) require a special type of ESP – English for the Internet (where the content is 80% English at present), ie enough EL to get into websites that contain the other material they need to increase skills. Under these conditions it is likely that face-to-face teaching will become less relevant and often give way to efficiency demands for quick access, as provided on-line. Teachers will be under pressure to develop new courses and acquire software design skills.

Relevant questions…

- *What are the skills that the demand for access to the internet will generate (eg IT literacy, English for the Internet)?*
- *In what markets will the demand be felt in developing countries? For instance, in what geographic markets, or in what sectors (private, public, education, health, etc).*
- *Which of these markets are likely to grow the most and fastest?*

Third: *Supply*

On the other side of supply-demand equation, the new technologies allow international players into markets that were previously segmented professionally or geographically, at least to some extent. The capacity to package products in a manner appropriate to the market will thus be increasingly important.

Relevant questions…

- *Are we in a position to be able to develop and deliver courses that will meet these new demands? For example do we have the skills and capacity to provide courses on: IT literacy, keyboard skills, English for the Internet, Vernacular/local literacy, ability to research – search for information?*
- *Are we already in a competitive market? If not, how likely is to become competitive and in what time frame might that happen?*
- *Are our products user-friendly and cost-competitive?*
- *Does our hardware have the necessary and appropriate capacity?*
- *Are we in touch with the current conditions in relation to the marketing of products in our field?*

Fourth: *The VCP and You*

The Virtual Colombo Plan is initially focussed on teacher training in basic education, and policy development in relation to access. Both these areas offer potential for the provision of services by the education community.

However, as the Plan unfolds program areas in AusAID will be looking at ways to increase access to ICTs in all activities, and particularly in new or revised designs. AusAID will be engaging experts to assist with this input - people who have the technical skills that can be applied to developing country contexts. The demand for this type of input will increase as partner governments become more aware of the advantages of ICTs and as unit costs come down to affordable levels.

CONCLUSION

The activities in the Virtual Colombo Plan will be implemented in several stages over a period of five years. AusAID has already begun working to incorporate the Virtual Colombo Plan into the Australian aid program on a country-by country basis, and will increasingly do so after detailed discussions with partner countries. More complete details on Virtual Colombo Plan activities are available on the AusAID web site.

There is no doubt that over time, the new technologies will become more and more a part of global development assistance efforts. From now on Australia is firmly committed to the use of the new technologies in the delivery of international development assistance. Australian support for the Virtual Colombo Plan, together with the World Bank is a clear demonstration of this turning point in the Australian international aid program.

For further information, see the Virtual Colombo Plan link on the AusAID website (www.ausaid.gov.au)

Biographies

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