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Robin Mansell

Global access to information & communication technologies (GAIT): priorities for action

Discussion paper

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GAIT

Global Access to
Information & Communication Technologies

Priorities for action

Professor Robin Mansell
Director
INK@SPRU
University of Sussex

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SPRU
Science and Technology
Policy Research

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Executive Summary

Global access to information and communication technologies - or 'GAIT' - requires the progressive extension of sustainable access to new technologies and services and support for their effective use within developing countries and regions, beyond the margins of what is currently considered viable.

New initiatives through public and private sector partnerships are needed that will secure universal access to information and communication technologies (ICTs) as tools for innovative forms of knowledge-based development.

This was the consensus that emerged from a series of meetings and discussions initiated by IDRC during 1998 and 1999. Many government, private sector, and donor organisations participated together with NGOs and other stakeholders. The consultation process was intended to seek new forms of action to promote sustainable investment in ICTs and to promote universal access to the new technologies and services.

Promoting universal access requires pushing the margin of feasibility for sustainable investment in ICTs and in the capabilities needed to use them. Stakeholders must be encouraged to focus where conditions are likely to sustain effective public or private demand for access to ICTs. To achieve this, governments, donor agencies, local stakeholders and NGOs need to be alert to every opportunity to draw upon global networks of experts and organisational resources to catalyse progress towards universal access.

This document highlights the observations that emerged from the consultation process on how universal access can most effectively be promoted. Key observations were as follows:

Mobilising for Action: high priority needs to be given to mobilising the resources of stakeholders to promote universal access to ICTs and to reduce the spread of new forms of information poverty.

Focused efforts are needed to harness and integrate credible and comprehensive resources of information to identify successful and unsuccessful approaches to universal access and to support their replication. Universal access issues need to be put onto the agendas of international and national agencies and other stakeholders.

Greater Interaction between Existing Networks of Expertise: Interaction is needed to avoid duplication of effort and to capitalise on synergies to promote: 1) ICT capability building through training programmes and mentoring of ICT entrepreneurs; 2) encouraging the design and deployment of ICTs that are appropriate for the cultural, economic and geographical conditions in developing countries; 3) implementing ICT infrastructure to achieve connectivity through innovative financing arrangements and encouraging appropriate regulatory and policy frameworks; and 4) monitoring the impact of universal access policy and strategies and encouraging rigorous evaluation of development projects that focus directly or indirectly on universal access.

The Double Challenge for Developing Countries: Most countries must attract investment in the ICT infrastructure *and* promote appropriate use of ICTs in distinctive contexts. There is a need to identify gaps in knowledge about how to promote universal access through: 1) encouraging independent synthesis of research on universal access; 2) initiating practical problem-oriented research; and 3) stimulating practical action to encourage new partnerships between the public and private sectors and other stakeholders within developing countries.

Multi-Institutional Stakeholder Networks: Experience in promoting universal access is growing but it is often retained within networks of expertise. New knowledge about universal access needs to be exchanged so that more stakeholders can benefit from integrated efforts. Specific mechanisms are needed for setting priorities for universal access at the local level and ensuring that regional and national priorities are consistent with local initiatives.

What Needs to be Done?

There is a growing need to ensure that existing networks of organisations find new ways to enhance the scale and scope of their efforts. This can be achieved by capitalising on synergies within the networks of expertise that currently exist.

There is a broad consensus on the need for clarification about which organisations have the resources to play an 'intermediary' role to promote learning and investment in partnerships to reduce the universal access gap.

One or more of the universal access stakeholders should take the lead in helping to build synergies between the growing number of organisations that are involved directly or indirectly in promoting universal access. Leadership would produce a step shift in the scale of action oriented to reducing universal access gaps. It would provide a stronger basis for ensuring that global access to information and communication technologies - 'GAIT' - becomes a reality for many more people in developing countries.

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1.   Introduction

> We are profoundly concerned at the deepening mal-distribution of access, resources and opportunities in the information and communication field. The information and communication technology gap and related inequities between industrialized and developing nations are widening: a new type of poverty - information poverty - looms.
>
> UN General Assembly, December 1997

This quotation from the United Nations General Assembly signalled growing alarm about the impact of inequalities in the accessibility of information and communication technologies (ICTs) and services. Concerns about the potential effects of information poverty are coupled with the realisation that, without access to ICTs, many people in developing countries will not be able to define and act upon their own priorities for knowledge-based development.

The necessary tools are not in place and the skills and capabilities that make it possible to transform digital information into usable knowledge are absent for large segments of the population in developing countries. This is profoundly inequitable. It poses threats to the global economy and thus to both the industrialised and the developing countries.

The International Development Research Centre (IDRC) Canada, initiated consultations to tackle the growing gap between developing and industrialised countries in access to ICTs with policy makers, the private sector, non-governmental organisations (NGOs), and donor organisations and development agencies within and outside the UN system with expertise in the ICT field and economic and social development. The consultations took place in 1998 and 1999.

The discussions focused on how to catalyse action that would help to achieve the goal of universal access to ICTs for developing countries. It was recognised that there are a growing number of organisations who see activities relating to promoting universal access as falling within their remit. For some institutions like the International Telecommunication Union (ITU), universal access is a core responsibility. For other organisations, universal access issues are less central to their remits but they have important knowledge and resources to contribute to closing the universal access gap.

Initially, it was envisaged that a new institutional mechanism would be needed to integrate the activities of a growing number of organisations since many of the problems of ICT access are cross-cutting and overlapping. For example, a new global network of nodes of concentrated research and practical projects to promote universal access might help to catalyse the resources of stakeholders. Networking would enable more organisations to interact, pool ideas and resources, and to advance the objective of universal access.

IDRC commissioned a number of studies to test the feasibility of a new mechanism and the ITU hosted a meeting of stakeholders to discuss the possible launch of a new network that was to be called 'GAIT' - global access to information and communication technologies. In January 1999, the author of this document was commissioned by IDRC to prepare a formal prospectus for GAIT. Over the next few months it became clear that there was full agreement on the urgent need to find a way to catalyse available resources to tackle the growing universal access gap. It

also became evident that a formal network would not be the appropriate mechanism as it might produce further fragmentation of existing efforts.

The Consultation Process: The initial round of consultations was undertaken by a GAIT Working Group led by IDRC in 1998 and included meetings in the United States with The World Bank's InfoDev Programme, the Global Information Infrastructure Commission (GIIC) representing most ICT multinational corporations, the Centre for Strategic & International Studies (CSIS), USAID, and IBM. Consultations took place in Europe with ITU, IFAD, FAO, the Swedish, Norwegian, Dutch, French and British governments as well as the European Union. Further discussion took place during the ITU Africa Telecom '98 conference in Johannesburg, with UNDP, the Ford, Rockefeller, Kellogg, Carnegie and Soros foundations and other parts of The World Bank (EDI, IFC, GK Partnership and World Program). The ITU hosted a Consultative Meeting in Geneva in the autumn of 1998 bringing together a cross-section of donors, multilateral agencies, private sector representatives and NGOs, with strong representation from developing and industrialised countries. Participants included the ITU, UNCTAD, FAO, IFAD, UNDP,CIDA, GIIC, Commonwealth Telecommunication Organisation, Japan Telecom, the Development Bank of Southern Africa, South Africa Telkom, SRTelecom, Datacom (Mongolia), Industry Canada, and NGOs including APC. Various reports were commissioned (see references) including this document.

The purpose of this document is to capture the essence of the rich debate among numerous organisations and individuals on the importance of taking action to reduce the spread of information poverty. The participants in the consultation process identified priorities for action to promote universal access and they discussed ways of stimulating new sustainable partnerships for investment in ICTs and services as well as in people.

They also highlighted the outstanding task of introducing measures that will:

- Secure a better foundation for exchanging information and accumulating knowledge about building new ICT capabilities;
- Select ICT applications that are useful to local stakeholders in developing countries;
- Extend the underlying telecommunication infrastructure; and
- Implement and monitor appropriate ICT policies and strategies for development.

2.   Promoting Universal Access

> Promoting global access to information and communication technologies - or 'GAIT' - means seeking progressively to extend sustainable access to ICTs and services and to support their effective use within developing countries and regions, **beyond the margins of what is currently considered to be economically viable**.

Promoting universal access means encouraging catalytic activities in areas where there is either too little investment by existing organisations, or where new knowledge for using ICTs effectively is accumulating within separate networks of experts, practitioners and users, but it is not being shared very effectively.

It means pushing the margin of feasibility for improving access to ICTs. It means encouraging stakeholders to focus on areas where conditions are likely to sustain effective public or private demand for access to ICTs. It also means ensuring that governments, donor agencies, local stakeholders and NGOs are alert to every opportunity to draw upon global networks of experts and organisational resources to catalyse progress toward universal access. Figure 1 shows the target region for action by those who seek to promote universal access.
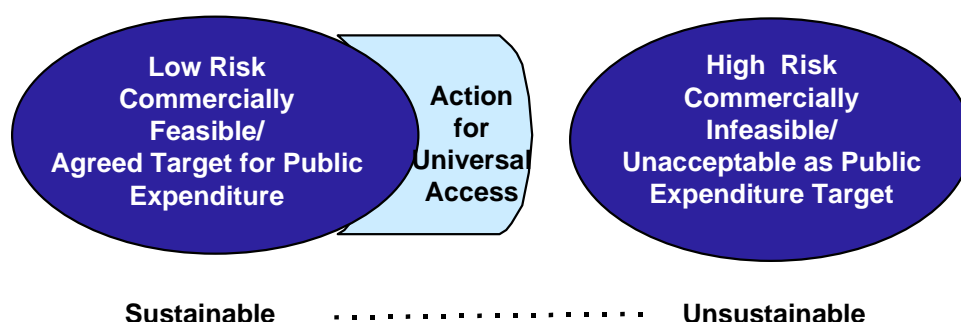
Figure 1 Pushing the Margin of Sustainable Investment

Innovative partnerships are needed to secure universal access to ICTs. Integrated action on the part of credible stakeholders and sponsors who recognise the need for flexibility and careful selection of priorities is needed to achieve global access to ICTs. It is crucial that stakeholders dedicated to research, training and the implementation of ICTs support the priorities established by developing countries.

Initiatives are needed urgently to extend the margin of sustainable access to ICTs. There is no need to target areas where market demand for ICTs is strong and suppliers are active in low risk, commercially sustainable markets or where government funding is available to support the provision of ICT applications and services.

2.1   Why Promote Universal Access to ICTs?

If no action is taken, a substantial majority of people in poor countries will be excluded from contributing to, and benefiting from, the new forms of knowledge-based development that are taking hold on a global scale. Given favourable

conditions, people in developing countries can be empowered to develop policies and strategies for implementing ICTs and applying them for the benefit of the businesses and citizens in their societies.

By promoting measures to universalise access to ICTs, the goal is to help empower stakeholders within developing countries to shape the use of ICTs in support of their distinctive approaches to knowledge-based development.

'Universal access' means that 'everyone, at home or at work, should be within a reasonable distance of a telephone'. The ITU's definition is concerned primarily with promoting connectivity to networks but it is also believed that there is an increasingly compelling case for developing countries to promote community access to information services as well.

Several interrelated components of universal access need to be put on the agendas of international and national agencies and other stakeholder organisations.

- ICT capabilities
- ICT applications
- ICT infrastructure
- ICT policy and strategy

By developing an improved understanding of each of these components, the actions initiated by governments, donor organisations, firms and other stakeholders are likely to be more consistent with local, national and regional social and economic development priorities. Each of these components is discussed in greater detail below.

Improving the foundation for harnessing and integrating credible sources of information about ICTs and action that can be taken to achieve universal access to ICTs is a high priority for many stakeholders. Better integration of numerous sources of information could provide new opportunities for learning how to replicate success in extending the margin of sustainable investment in ICTs.

Systematic efforts are needed to strengthen the capacity within developing countries to absorb the results of existing efforts to promote access to ICTs and to feed this experience into priority setting and action plans. Gaps in knowledge need to be identified through problem-oriented research and practical measures to encourage the accumulation of skills for using ICTs. Action is needed to catalyse sustainable partnerships for ICT implementation and use.

2.2 Mobilising for Universal Access

There are many benefits of mobilising stakeholders to encourage synergy between those seeking the expansion of the use of ICTs in developing countries.

> Mobilising means setting the stage for new partnerships that can help firms, donor agencies and other stakeholders concentrate on what they do best, while they also benefit from each other's skills and activities. New ways of doing things are needed to achieve sustainable access to ICTs by building on the strengths of the public and private sectors and other stakeholders.

Mobilising for universal access means supporting innovative local, sub-national, national and regional strategies for using ICTs in ways that increase the benefits for developing countries. In the face of present inequalities between those who can access ICTs and those who cannot, some argue that market forces should be left to run their course. When conditions are right to attract investors, they claim that private funds will flow into currently high risk areas and the ICT infrastructure will be built up. The phenomenal growth rate of the Internet and the speed-up in investment in telecommunication networks in some developing countries are often used in support of this position.

The social and economic costs of information poverty are far too great to simply 'wait and see' position. Private investors will move to close some of the gaps in access to ICTs for people in developing countries but it is clear that more action is needed. Closing these gaps requires that all stakeholders work towards establishing the conditions for attracting financing for the ICT infrastructure and the related components of universal access. Creative associations and partnerships between the public and private sectors are needed to expand demand for ICTs and services.

> There is a need to seek innovative ways of achieving universal access through a commitment to complementary private and public sector initiatives aimed at using ICTs as tools for contributing to sustainable development.

3.   Why are ICTs Important?

It is easy to be excited about the opportunities offered to developing countries by the Internet and its associated technologies. However, hard decisions remain, particularly for policy makers and other decision makers faced with many competing priorities. …In the money-strapped health care sector, where tough trade-offs must be made, should clinics buy Pentiums or penicillin? …Whatever the argument or scenario, the importance of being able to identify, analyze, and quantify the impacts of the Internet [or related technologies] on the development of a country is critical to policy design and implementation.

<div align="right">

Office of International Affairs
‘Internet Counts: Measuring the Impacts of the Internet’
US National Research Council, Washington DC, 1998.

</div>

ICTs are enablers or tools that can be applied in support of many social, cultural, political and economic activities. These tools are provided by the telecommunication and computing hardware and software industries and the information content industries, including the broadcasting, film and publishing industries. ICT systems increasingly incorporate digital technologies that enable the creation, storage, and processing of enormous amounts of information. These systems support new electronic commerce services and a wide variety of service applications for citizens.

Affordable access to ICTs is very unevenly distributed throughout the world. In many of the poorest and rural areas of developing countries there is simply no access to an ICT infrastructure. Where ICTs are in use, they are supporting information systems for decision-making within organisations and communication between distant locations. Software applications are embedded in retail, manufacturing and natural resource control systems and in financial services. ICT applications for health care, education, small-enterprise development, and agricultural management are being developed.

The ICT producing sectors including hardware, software, and content are forecast to generate annual revenues of around 3.5 trillion USD in the next few years. Production capacity is heavily concentrated in the industrialised countries and in a few wealthier developing countries. It is unlikely that production capacity will shift dramatically from its current pattern of concentration. This means that the majority of ICTs and information content will be developed primarily for people in the industrialised countries or for those in low risk, financially attractive developing country. Even if the costs of accessing ICTs decline, in many cases, the products and services are not responsive to the needs of people within developing countries.

There is a double challenge for developing countries - attracting investment in the ICT infrastructure *and* promoting the use of ICTs in ways that are appropriate in developing country contexts. This challenge must be met in the face of enormous disparities in access to the ICT infrastructure and at a time when increasing emphasis is being given to the role of ICTs in supporting development.

3.1   ICT Infrastructure Access

The explosion of Internet connectivity in the latter half of the 1990s is enabling communication by electronic mail and the use of World Wide Web browsers to access huge stocks of digital information. These opportunities for new forms of communication and information access are available only to those who have affordable access to the ICT infrastructure. The very substantial disparities in the accessibility and quality of the ICT infrastructure for low income, lower and middle income, and high income countries are shown in Table 1. These aggregate statistics mask within country disparities between the wealthier and the poorest communities and regions.

	Low Income	Lower Middle Income	Upper Middle Income	High Income
Distribution of Population and Income				
Pop. (millions) 1997	3,324	1,178	449	914
GDP per capita US$ 1996	663	1,930	5,045	25,726
Telephone Access and Service Quality				
Main Telephones (per 100 population 1997)	2.99	10.43	14.43	54.72
Telephone Subscription Cost (as % of GDP per capita 1997 [1])	21.5	4.4	2.1	0.9
Public Telephones (per 1,000 population 1996)	0.56	0.91	2.68	5.17
Telephone Service Faults (per 100 main lines per year 1996)	184.1	56.7	29.2	7.0
Mobile Telephone Access				
Cellular mobile subscribers (per 100 population 1996)	0.23	0.53	2	13.17
Broadcast Media Access				
Televisions per 100 population 1997	13.1	22.7	26.3	61.9
Personal Computers (PCs) and the Internet				
PCs per 100 population 1997	0.23	1.34	2.92	22.28
No. Internet Hosts Jan. 1999	195,862	791,162	1,104,999	41,406,675
Internet Host Density per 10,000 pop Jan 99	0.59	6.70	24.59	462.35
Est. Internet Users per 10,000 population 96	0.89	19.00	55.87	498.70

Note: (1) 20 hours of off-peak use for Monthly Estimate of Internet Access Cost, Some data are for nearest year available. Source: ITU (1999) *Challenges to the Network: Internet for Development*, Geneva; ITU (1998) *World Telecommunication Development Report 1998 - Universal Access*, Geneva

Table 1 ICT Access Disparities

The gaps in the accessibility of ICTs, especially for voice telephony are the most widely publicised. They are further illustrated in Figure 2 which shows that for 141 of 187 countries, the penetration rate for telephones per 100 inhabitants is 27.8 or less. For 48 countries it is less than 1.3. These levels of penetration of the ICT infrastructure are simply not consistent with any vision of global access to ICTs.

■	27.8 to 68.3 (46)
■	8.3 to 27.8 (46)
■	1.3 to 8.3 (47)
■	0 to 1.3 (48)
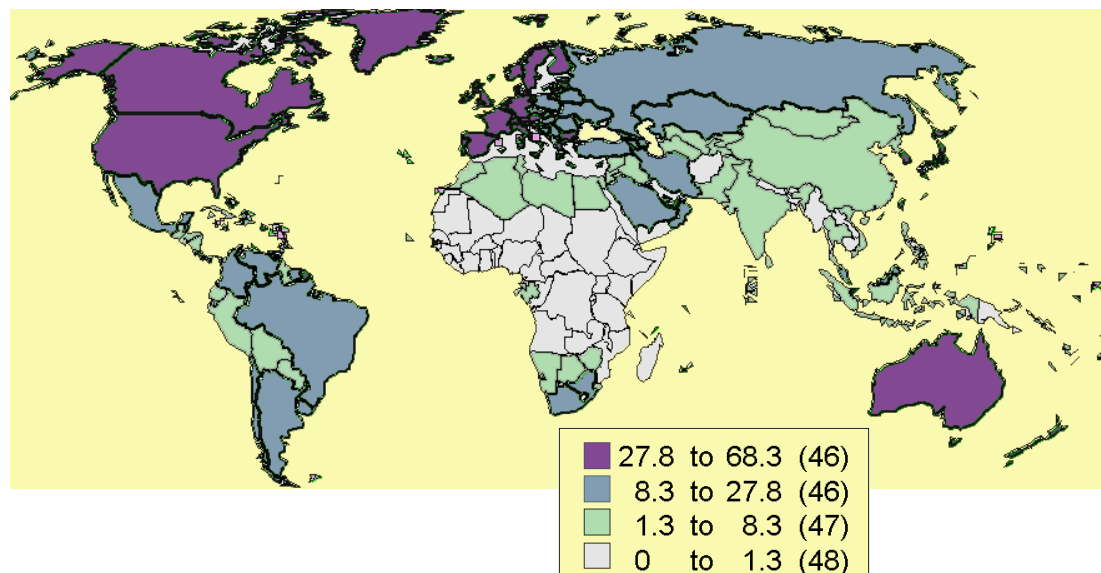
Source: T. Kelly, ITU, GAIT Programme Meeting, Geneva, 1998.

Figure 2 Teledensity Disparities

Table 1 also illustrates the uneven penetration of personal computers (PCs). By 1997 the PC penetration rate exceeded an average of 22 per 100 population in the high income countries (in the United States penetration had reached 40%) as compared to 0.23%, 1.34%, and 2.92% for low income, lower middle income and upper middle income countries, respectively. These enormous differences mean that the capabilities to design, manage, maintain and use software applications are concentrated in the industrialised countries, in some of the newly industrialising countries, and within the ICT export-oriented communities in countries like India and Malaysia. For most other developing countries, the tools needed to build new capabilities for using ICTs are absent or unaffordable.

Users are more likely to share a PC to access the Internet in developing countries and the aggregate data shown in Table 1 for Internet users may underestimate actual use. Nevertheless, the 'catching up' process is very slow and access gaps are growing, rather than declining. Where access to networks is available, speed and convenience of use vary substantially depending upon the quality of the local telecommunication infrastructure.

For example, the infrastructure may not support high speed communication, it may be subject to higher fault rates in maintaining connectivity, and it may not be feasible to upgrade for digital signals. The difference between slower and higher speed network connectivity is comparable to that 'between driving a Porsche and a Mini' as one respondent to a survey by the Commonwealth Higher Education Management Service survey put it.

The direct costs of Internet use are also non-trivial as shown in Table 2. There are also considerable costs associated with electrical power, hardware and software, and the maintenance of equipment and training.

Charges	Zamnet System USD	Zamtel System USD
One-time connection charge	35.00	25.00
Monthly Fixed Charge	25.00	20.00
Each additional mailbox/month	1.50	1.00
Unchargeable Hours/Month	10	10
Charges in excess per hour	3.50	2.50
On-site installation charges	80.00/Outing	40.00/30 min
Optional software & guide	Not applicable	40.00

Note: There are four ISPs, Coppernet and AfricaOnline (not operational as of 29 May 1999).
Source: FDF Graphic Communications Ltd, Lusaka, Zambia, via gkd@phoenix.edc.org list.

Table 2 Zambian Internet Service Providers

Developments in wireless technology including cellular radio and rural radio systems as well as new generations of satellite technology offer the potential for more affordable access to telecommunication services for people in developing countries. Technological innovation is providing a basis for reassessment of the business case for equipment, networks and services in areas that have been regarded as commercially unsustainable. Initiatives are need to encourage reassessments of the business case for investment so that the margin of commercially sustainable ICT development can be extended based on new public and private partnerships.

Some of the telecommunication technologies that are providing a basis for such reassessments include:

- Wireline facilities such as Integrated Services Digital Networks; Digital Subscriber Line, and Hybrid Fibre/Coaxial Cable;

- Terrestrial wireless facilities including Wireless Local Loop, Mobile Cellular, Wireless Payphones, Multi-Access Radio, and Cordless telephones;

- new generation satellite technologies and Very Small Aperture Terminals (VSATs);

- Satellite bandwidth enhancing systems, such as Demand Assignment Multiple Access; and

- Global Mobile Personal Communications Systems (GMPCS).

Rural switching exchanges together with digital compression techniques for voice and video are also offering possibilities for increasing the affordability of network access. Technological changes such as these can contribute to reductions in the prices of telecommunication services so that telephone connectivity is more affordable for households in development countries that currently cannot afford to subscribe as shown in Figure 3.

700
600
500
400
300
200
100
0

Without telephone service

Could not afford

With Service

On Wait list

Could afford

~1'500 million households in the world
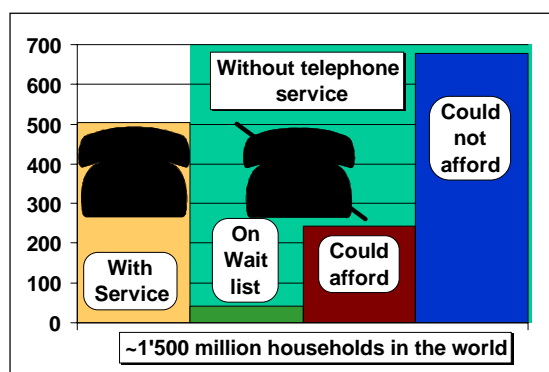
Source: ITU

Figure 3 Affordability of Connectivity

Even more important, innovations in technology and declining equipment costs mean that the extension of networks to unserved areas and community models of service provision are becoming more financially attractive to investors.

Developments in computing and software systems enable the provision of new services that generate traffic for the telecommunication network. This can make the case for provision of network connectivity more attractive to investors. These developments include:

- Internet protocol networks including Intranets and Extranets;

- Portal services to access content on the World Wide Web and related services provided by Internet Service Providers (ISPs);

- Customised and packaged software for business, government and civil society applications;

- Information creation and management applications such as computerised decision support systems; and

- Services supporting distance education, teleworking and electronic commerce.

The use of ICTs in any particular setting needs to be evaluated by potential users in other settings if services are to be adapted to local needs and conditions. ICTs can be applied to facilitate the circulation of information about the accumulating experience of users. By capitalising on the knowledge and experience of multiple stakeholders involved in promoting universal access, there will be greater opportunities to create attractive environments for public and private sector investors who can take advantage of innovative technologies to reduce the gaps in ICT access.

3.2 Accessing ICTs for Knowledge-based Development

ICTs are central in many ways to new strategies for knowledge-based development. Many of these strategies promote new combinations of local knowledge and information from external sources. They also emphasise greater sharing of existing knowledge through improved communication.

> Global markets, global technology, global ideas and global solidarity can enrich the lives of people everywhere. The challenge is to ensure that the benefits are shared equitably and that this increasing interdependence works for people - not just for profits (UNDP Human Development Report 1999)

In this context, the potential benefits of universal access include:

- Strengthening local capacities and the knowledge base through training and education;
- Creating opportunities for employment and generating new sources of income;
- Facilitating governance and enhancing service delivery for citizens; and
- Improving the management and cost-effective provision health care, environmental protection, etc., and services for business users.

Without access to ICTs, there is a real threat of exclusion, not just from global trade, but from the 'virtual' communities that are beginning to connect localities within and between developing countries. Without action to promote universal access educators, business people, civil society groups, and governments will be locked out of the communities that are using ICTs.

It is already difficult to participate in international trade without access to ICTs. Those who do have access to electronic information resources, even on a limited basis, have been able to benefit in many ways. If telecommunication services (voice or text) are unavailable, too costly to use, badly maintained, or do not fit within local cultural and organisational settings in developing countries, opportunities to share local experiences of using ICTs will be reduced and the potential benefits of ICTs will be lost.

Improving access to the technological tools is only part of the universal access story. Effective ICT use means enabling people to use ICTs in ways that are responsive to their local needs. This means enhancing skills, developing capabilities for evaluating ICT systems, and encouraging creative ways of using the new systems and services.

Country and regional strategies aimed at promoting the use of ICTs for developing are being put in place as more stakeholders realise the importance of universal access. As United Nations agencies and other donors become more aware of the need to reduce the polarisation between those who can access ICTs and those who cannot, there is a new risk of fragmented initiatives leading to duplication. Failure to exploit economies of scale may make the difference between a sustainable and an unsustainable business case.

Greater efforts to share experience can promote learning and help to avoid the promotion of competing technologies and inappropriate service platforms. An improved information base would strengthen the capacity to benchmark progress toward universal access and to assess the contributions of ICTs to social and economic development.

The World Bank believes that the ICT revolution could lead to 'an acceleration of the re-balancing of the wealth between nations in various stages of socio-economic development'. In spite of recognition of the valuable contribution that ICTs could make, many people in developing countries are being excluded from shaping their own knowledge-based development processes.

> **Global Access to Information and communication Technologies - 'GAIT' - is not progressing quickly enough**.
>
> The 'natural' rate of ICT diffusion is slow and uneven for some countries and global and local markets are enormously diverse. Traditional diffusion theories assume that demand for ICTs is expressed through price signals in the market. But it is now recognised that absorption capacity is enormously important. It is not enough to focus on supply-side market failures. The conditions for flourishing demand must be created if the margin of sustainable provision of universal access is to be extended.
>
> There is an urgent need for new insights and for the circulation of practical information within the networks of people with a stake in the use of ICTs.

ICTs are at a relatively early stage of diffusion in most developing countries. Substantial barriers to diffusion and the appropriate use of ICTs need to be overcome if universal access is to be achieved.

3.3   What are the Barriers?

ICTs 'promise to reduce that sense of isolation, and to open access to knowledge in ways unimaginable not long ago'. This emphasis by the World Bank on the role of ICTs in knowledge and development (World Development Report 1998/99) shows that ICTs are now being recognised as central contributors to improved prospects for economic and social development. There are major problems in harnessing these technologies to reduce poverty and to support sustainable development goals.

In the first place, at present the largest beneficiaries of the potential of ICTs are organisations and individuals within the industrialised and the newly industrialising countries. In most other developing countries, there have been few spill-over benefits for marginalised people from the export oriented ICT strategies that have been pursued, for example, in software services.

Secondly, in most developing countries, ICT-using sectors are underdeveloped and there is limited supply capacity or presence. Suppliers tend to focus on the minority urban elite who are able to pay for advanced products and services. Improvement is hindered by the limited availability of technologies and services; the high costs of equipment, software and content; and high charges for network use. The problems of building up skilled ICT entrepreneurs in the face of many other claims on public and donor agency resources are substantial. In addition, private investors often adhere to short term criteria for assessing the business case for investment in ICTs.

Thirdly, the spread of the new kind of information poverty is fuelled when low priority is given to promoting ICT applications and services tailored to the specific needs of people in developing countries. In addition, private sector plans for investment may be stalled by uncertainty about the impact of market liberalisation policies. Private investors may fail to take initiatives because they fear that new regulations will affect the 'bottom line'.

Initiatives taken by multiple organisations to promote universal access may fail to take advantage of synergies and the potential scale economies of more integrated action.

On its own, the private sector is unlikely to move quickly enough to invest in technologies and services in a way that tackles the growing universal access gap. Firms, public organisations, NGOs and community groups are accumulating experience of methods of introducing ICTs in ways that help to strengthen absorption capacity for ICTs and thus to build demand. Improving the information base on the potential of ICTs, for example, to help raise rural and urban incomes, to strengthen demand for goods and services, and to contribute to local market expansion is essential for encouraging new investment in ICTs.

The barriers to universal access can be reduced through multi-stakeholder efforts aimed at:

- Harnessing and integrating credible and comprehensive resources of knowledge and information by drawing upon the strengths of numerous organisations world wide;

- Identifying successful approaches to universal access and supporting their replication;

- Building capacity to achieve universal access especially through mentoring ICT entrepreneurs; and

- Mobilising resources for universal access through innovative partnerships and alliances.

Reducing the barriers to universal access means constructing new bridges between many organisations and stakeholders who are actively promoting sustainable investment to achieve universal access.

3.4   Public and Private Resources for Universal Access

Universal access issues need to be tackled on a more integrated basis if action is to be taken to reduce the gap between those who can access ICTs and those who are excluded. Figure 4 shows the key problem areas that are being addressed by many different organisations and stakeholders.
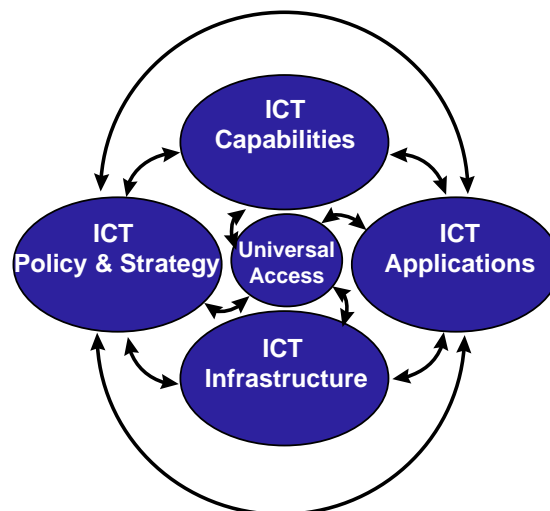

Figure 4 Promoting Universal Access

Only by taking action in each of these areas is it likely that universal access can be achieved. In each of these areas, the existing effort is either too thinly spread or

activities fall between the remits of existing organisations. The following sections highlight some of the key issues and problems.

3.4.1 ICT Capabilities

Universal access cannot be achieved without focused efforts to build new capabilities for using ICTs. Providing physical access to a telephone or a computer is not a sufficient condition for strengthening demand for ICTs. Other conditions need to be met to extend the margin of commercially sustainable public-private partnership schemes. Initiatives also need to take into account the costs of organisational changes and training for effective use of ICTs. Capability building for using ICTs in business, in the health care and education sectors, or in public administration, requires understanding of needs and resource constraints and a whole new set of skills for using ICTs.

Many developing countries have major difficulties in building and keeping an ICT skilled labour force because national governmental institutions are weak, uncoordinated and lack basic skills to manage domestic programmes. The domestic private sector has been more successful in mobilising and maintaining a skilled ICT workforce, but it often suffers from many of the same problems as the public sector. Innovative approaches to capability building for specialised and generic skills are required to pursue universal access goals.

> The new skills include technical competencies for selecting, using and maintaining ICTs and services covering hardware, software, standards and system support resources as well as the knowledge to train other users at various levels of education including adult education. Skills also include those for managing and assessing the need for organisational change as well as those for designing programmes for promoting effective use of ICTs.
>
> Skills for policy and strategy implementation include business management (business planning, financing and product pricing, marketing, franchising, and human resource management); policy development and government systems (telecommunication, software, computing and services); leadership and community motivations; and organisational development.
>
> Research skills for evaluation include those for using ICTs to support R&D and research skills for using the Internet, databases, etc.; communication and presentation techniques; and negotiation, networking and marketing skills.

A major obstacle to universal access in developing countries is the weakness of human and institutional resources in the public and private sectors to develop, manage and implement ICTs. Efforts are underway by institutions such as the ITU to address this problem, but the magnitude of the challenge outweighs available resources. Traditional approaches to capability building are failing to generate timely results.

> New and expanded capability building programmes oriented towards extending sustainable access to, and effective use of, ICTs are urgently needed.

Training programmes should stimulate and support participatory action involving ICT users and their organisations. The emphasis needs to be on practical learning that can be used immediately to promote or provide universal access in commercially sustainable and cost-effective ways. Integrated efforts on the part of all stakeholders are needed to: build on existing skills and training programmes supported by international and private sector organisations as well as national education authorities; and to fill gaps in training and skills development where they are identified.

Efforts are needed to promote training programmes that concentrate on mentoring new generations of ICT entrepreneurs in the public, private, community and NGO domains. Such training is needed to encourage people to experiment with new market-based approaches to universal access. Informal and formal approaches are necessary and they must be extended to both men and women.

- Informal mentoring initiatives will strengthen capabilities for research synthesis, practical problem-solving, and assessment and evaluation of ICTs.
- Formal mentoring in the form of fellowship programmes will encourage a new generation of entrepreneurs who can facilitate delivery of universal access to ICTs.

Reviews of training programmes in the ICT sector and in other sectors such as environmental protection, and electricity and gas, suggest that greater effort is needed to promote:

- Specialised short-term formal training at regional or international levels offering tools and *skills for ICT entrepreneurs;*
- Curriculum development focusing on competencies central to developing ICT entrepreneurs;
- Placements and internships with firms and other ICT organisations; and
- Community-level participatory actions as models of capacity building.

Multi-stakeholder initiatives are needed to encourage:

- Partnerships between industry and government for sponsoring and funding specific universal access activities internationally and within participating countries;
- Greater involvement of sectors including business, government, NGOs, and others;
- The engagement of national institutions in designing new mentoring programmes;
- The involvement of distance learning and local educational institutions; and
- The development of new financing systems, for example, loan systems for organisations at the local level to support their participation, and scholarships, subsidies, or development bank credits.

Building ICT capabilities in these ways would help to strengthen initiatives aimed at reducing the universal access gap.

3.4.2 ICT Applications

Universal access to ICTs encompasses telecommunication facility systems, software, information content and value-added communication services, as well as policies and regulations. In some developing countries there are weaknesses in all these areas; in others, there are strengths only in particular areas. The successful use of ICTs also depends upon innovations in technical design and upon changes in organisational processes.

ICTs are often introduced in developing countries where no legacy system is in place. For example, there may be no network connectivity or no access to computers or software. In other cases, legacy systems need to be replaced, interconnected or made interoperable with new technologies and applications. This means that technology configurations must be appropriate to the specific conditions within developing countries. Stakeholder resources need to be combined to establish what enabling structures are needed to encourage investment.

Distance no longer presents a technical barrier to accessing and using electronic information or to the provision of communication services because of rapid innovations and improvements in ICT system cost/performance ratios. However, distance is a major factor for other reasons. For example, distance to access is an important element of sustained financial feasibility for operators using terrestrial network technologies. Proximity to concentrations of activity that produce scale economies for operators are important factors that influence the business case. Despite the cost insensitivity of wireless technologies to distance, regulations may prevent price reductions for wireless services when they compete with fixed networks.

Geographical distance is also associated with issues of control over the means of communication and content, the cultural aspects of the exchange of knowledge, and the financial sustainability of ICT based interaction. All these aspects draw to some extent on 'distance' as a factor in the equation of promoting sustainable access.

Greater effort is needed to accumulate evidence about the factors that influence the selection, deployment, maintenance and use of new infrastructure technologies and services. Attention needs to focus upon innovative network architecture designs and services and on incentives for modifying ICT systems for local conditions in developing countries.

Improved awareness of innovative strategies for reducing capital and installation costs for ICTs through incremental growth strategies is needed as is information about existing patterns of local communication.

Comparative studies are needed of factors contributing to the successful deployment of new services such as Virtual Telephone Services; Electronic Mail systems, and applications such as prepaid calling cards, and services especially for use by micro, small and medium sized enterprises.

The criteria that should influence the selection, implementation, and operational characteristics of ICTs in settings in developing countries need attention as do the optimum configurations of technology that would promote easier access. The selection of a technological system affects other areas of ICT use. Compromises are inevitable and these influence the cost and usability of new network and service applications.

The ITU's Telecommunication Development Advisory Group is tasked with providing information on projects to develop technology for rural applications and with recommending new measures to achieve such developments. The ITU has observed that it is 'likely that the efforts of private manufacturers to develop suitable technology … will be limited without specific and active encouragement from the public sector'. Enabling organisations with core capabilities in different areas to integrate their knowledge is crucial to promoting universal access in developing countries.

Promoting innovative technologies and service applications and encouraging entrepreneurial activities leading to sustainable commercial services and cost-effective public sector applications is a task for all universal access stakeholders.

3.4.3 ICT infrastructure

Implementing the ICTs infrastructure (defined here as the underlying network) requires integrated efforts across the boundaries of existing organisations and their fields of expertise.

Implementing ICT infrastructures to achieve universal access requires innovative approaches by organisations in the public, private, community and NGO sectors. High priority needs to be given to monitoring new approaches that have been adopted; evaluating the impact of measures to promote universal access; and creating new opportunities for collaborative financing of projects that include ICT use and that respond to the needs of users.

> Focusing on universal access to the ICT infrastructure can yield new inputs and information for decision makers. These can arise from improved research using comparable methodologies, the pooling of resources for evaluating investor risk and developing new business cases, and strengthened practices for managing collaborative projects with multiple stakeholders.
>
> Integrated programmes across key organisations concerned with universal access would contribute to understanding of market evolution, technological opportunity, and the policy and regulatory measures that are appropriate for the conditions within developing countries.

New models for infrastructure and service provision are emerging with changes in domestic market structures and policies for public sector institutions including labour relations practices. Alongside these changes, there is a need to assess innovative financing arrangements aimed at extending universal access, reducing risk for investors, and new ways of strengthening demand.

Universal access issues fall centrally within the remit of the ITU, but the convergence if ICTs means that these issues are also of concern to organisations responsible for policy and regulation of the content industries and to forums for standardisation in the audiovisual, computing and software industries. Regulation and policy for ICTs have substantial impact on ICT infrastructure deployment. The best approaches will vary for different countries. In some countries, service operators are undergoing privatisation and there is inward investment by one or more new entrants. In other countries, the ICT market is attracting little attention. In addition, commitments to international agreements through the World Trade Organisation or the World Intellectual Property Organisation differ between countries. There are also substantial variations in the way Internet-based services are being introduced. In some countries traditional mechanisms for international and regional service provision are being bypassed, while in others, the dominant telecommunication operator manages Internet access.

In order to promote the implementation of ICT infrastructure and universal access, there is a need to encourage:

- Innovative ways of supporting ITU and other institutions to ensure the widest circulation of information about universal access;

- Collaboration to provide advice and assistance to governments seeking to undertake national impact studies on the economic or social effects of market liberalisation and privatisation;

- Targeted studies of market entry opportunities and new commercially viable opportunities for domestic or foreign entry into telecommunication markets as well as software and computing service markets;

- Analysis of the impact of technological convergence on broadcasting, film and interactive information service markets; and

- Policy research and assistance and training for new regulatory bodies.

These are not matters solely for telecommunication regulators. Decision makers with interests in social, cultural, and trade and competition policies, and with sector responsibilities for agriculture, education, the environment, health, natural resource management, or manufacturing often need to be involved. ICT infrastructure investment may raise issues about tariff and export strategies, the speed of market liberalisation, and the desirability of strengthening intellectual property rights enforcement. It may also have implications for funding education and training and for governance process and legislation aimed at the protection of civil liberties.

3.4.4 ICT Policy and Strategy

Policies and strategies for universal access may produce unexpected outcomes for economic, political, social or cultural developments. Methods of impact assessment and evaluation are essential for monitoring the impact of measures to promote universal access. The results can inform national governments, donors, the private sector, community-based organisations and NGOs about the practical aspects of promoting universal access. The goal of universal access has to be translated into specific actions at the local, national, and international levels. The results of evaluations can help sensitise governments and other public actors to the need for ICT initiatives.

It is extremely difficult for many groups in developing countries to use ICTs to facilitate the exchange of experiences about successful (or failed) initiatives to promote universal access. Opportunities for learning can be created by encouraging the circulation of the results of ICT evaluations that use sound methodologies.

Success in promoting universal access is often claimed without evidence or verification. Methodologies for evaluation often lack rigour and it is difficult to verify claims about the roll-out of new services, commitments of provisions for training, or whether facilities like telecentres are really responsive to local social and business needs.

> Provisions for learning and knowledge accumulation about ICTs need to be strengthened. Much can be learned from systematic monitoring of the quality and adaptability of start-up kits for smaller scale ICT users.
>
> Attention to monitoring and evaluation using rigorous methodologies would produce better insights into whether ICTs are meeting criteria such as those for adaptability, maintenance and skill requirements, user interest and needs, and cost effectiveness.

The results of evaluations provide a foundation for learning and replication. Many initiatives are underway with the goal of reducing the universal access gap. These include the ITU's Multi-purpose Community Telecentre projects and projects under the World Bank's InfoDev programme. There are also many pockets of entrepreneurial activity. The main focus is usually on implementation and delivery and the lessons from these initiatives are often neglected or they are difficult to find.

Monitoring ICT policies and strategies means drawing together existing expertise to develop and apply evaluation methodologies. Successes and failures need to be identified and information must be made available to stakeholders. In particular, there is a need for:

● Systematic auditing and monitoring of progress toward alleviating the universal access gap including measures aimed at the supply and the demand side;

- Exchanging information about the minimum set of elements that should be considered in evaluating the impact of ICT policies, programmes, and projects with a view to promoting sustainable progress toward universal access.

4. Catalysing Stakeholder Action

Efforts to promote universal access could be substantially enhanced by improving opportunities for learning by all stakeholders including people who are involved in managing projects in the ICT field. Discussions among universal access stakeholders indicate that the goal of promoting universal access could be furthered by concerted efforts to promote new partnerships.

Learning opportunities can be facilitated through access to credible and comprehensive resources of knowledge about universal access. This means finding ways to strengthen the capacity for independent synthesis of research results on universal access issues and to initiate problem-oriented research on topics that are in urgent need of attention. It also requires practical means to stimulate new partnerships.

4.1   Synthesis of Research on Universal Access

Focused efforts are needed to monitor, assess and synthesise research by the academic community, consultants, governments, private sector representatives and NGOs on the experiences of promoting universal access. Building capacity within development programmes for monitoring and accessing progress could be encouraged through integrated action on the part of the various stakeholders.

Integrated action in this area would stimulate:

- The collection of relevant, high quality information in selected topic areas;

- Support the assessment of information in terms of its contribution to analysis and understanding of universal access issues; and

- Encourage the packaging of this information in accessible ways for interested parties.

Accessible repositories of research results on universal access issues would draw attention to common features and differences in stakeholder experiences, as well as to factors contributing to success or failure. Local actors and governments could draw upon such repositories to help in establishing priorities.

An inventory of universal access initiatives would need to include information about the expertise of globally dispersed universal stakeholder organisations and their capabilities. It might also encompass information about ICT capabilities, technologies and services, implementing the ICT infrastructure, and monitoring ICT policy and strategy.

4.2   Initiating Problem-Oriented Research

Problem-oriented research is urgently needed on many universal access issues. There is also a need to strengthen the pool of researchers within developing countries who can undertake work of this kind.

Research by academic and independent research institutes and by consultancy firms, sponsored by public or private sector funds, is needed on the practical aspects of developing technical expertise for selecting ICTs, on the skills needed to implement

business plans, and on the work necessary to assess the barriers and opportunities for promoting universal access.

Teams of collaborating researchers are needed to:

- Identify major gaps in existing knowledge and areas where comparisons of experience can yield new insights;

- Establish effective research methodologies for addressing universal access problems including quantitative or qualitative approaches; and

- Assess and implement an appropriate balance of research at the macro and micro levels using a range of disciplinary perspectives.

4.3 Practical Action to Stimulate Partnerships

New partnerships and alliances between all universal access stakeholders are needed. New alliances are essential to harnessing the resources of diverse public and private actors, planners and funders, network and service providers, and final users. Extending universal access through multi-stakeholder collaboration will require assessments of the reciprocal benefits for those involved in collaborations.

Investigations of gaps and weaknesses in the initiatives of international and national agencies and other stakeholders to promote partnerships are needed. Table 3 illustrates a matrix of activities that would help to catalyse action by public and private stakeholders to reduce the gaps in the accessibility of ICTs.

Activities → Principal Components of Universal Access	Synthesis of Research Findings and Experience	Problem-Oriented Research to Promote Universal Access	Practical Action to Stimulate Partnerships
ICT Capabilities			
ICT Applications			
ICT Infrastructure			
ICT Policies and Strategies			

Table 3 Measures to Catalyse Stakeholder Action

A matrix of this kind could be used by universal access stakeholders to identify their main areas of activity that are in line with their core competencies and mandates. It could provide a framework for systematic review of existing activity and for assessing strengths, weaknesses and gaps. Several examples of the types of activities that might fall within the cells of the matrix are given below.

4.3.1 ICT Capabilities

Codes of Practice for Mentoring ICT Entrepreneurs: Work is needed to develop Codes of Practice on the foundation elements of mentoring schemes with the aim of promoting and strengthening the quality of mentoring in ICT fields associated with universal access. The implementation of such Codes would provide a stepping stone towards integrated efforts to establish new mentoring programmes.

International Availability of Training Programmes for Universal Access: Independent assessments of the strengths and weaknesses of formal training and skills development

programmes based in public and private organisations are required. This would provide a basis for targeting resources to areas where there are gaps in the availability of capacity building programmes focusing on technological, and policy and regulatory, capabilities.

4.3.2 ICT Applications

Women Accessing ICTs for Sustainable Development: Research is needed to determine how ICTs are contributing to value chains involving women and entrepreneurial activities, especially in rural areas. There are few studies of the direct and indirect benefits of universal access for women. Systematic reviews are needed of the factors contributing to the commercial sustainability of ICT use by women within micro and small enterprises.

4.3.3 ICT Infrastructure

National and Regional ICT Policy and Regulation: Systematic reviews are needed of key features of national and regional ICT policies and strategies including: their location within government, arrangements for multi-stakeholder participation, financial resources for new initiatives, the involvement of private sector investors, and the development of capacity for universal access. Information about the commercial sustainability of ICT initiatives and the interactions between policy, regulation and the private sector that favour successful partnerships would help to promote new initiatives.

4.3.4 ICT policy and strategy

Monitoring Universal Access: Indicators are needed to monitor how ICT infrastructure, experience and the skills base in developing countries are changing over time. A basis for regular comparison between countries (and within countries) is needed to monitor progress toward universal access and to provide evidence for decision makers. There is an urgent need to go beyond aggregate statistics on the diffusion of technologies to capture how and why they are used.

Evaluation Methodologies: Critical reviews of methodologies for the evaluation of practical universal access projects initiated by donor organisations and other agencies are needed to promote network connectivity and to encourage use of ICT applications. Rigorous methodologies for assessing the ICT components of projects that are not centrally concerned with universal access are also needed.

In summary, initiatives are needed to map existing research and practical activity and to identify the gaps that must urgently need to be addressed. Identifying areas for practical action is an ongoing task that can be done by all universal access stakeholder organisations. The big task identified by the GAIT consultations is to ensure that all possible opportunities are taken to scale up universal access initiatives through collaborative action and information sharing.

5.   Promoting Universal Access Partnerships

5.1   Networks of Expertise on Universal Access

When progress toward universal access is slow, it is very difficult to take advantage of ICTs as tools for social and economic development. Once the strengths and weaknesses within a country (or region) are identified firms, governments, and other stakeholders can apply their resources to catalyse measures to promote universal access.

The core strengths of the organisations involved in promoting universal access differ considerably and no single entity has a remit covering all the components of universal access.

> Partnerships can reduce problems created by gaps or weaknesses in the core competencies of key universal access stakeholder organisations. Each partner can benefit from others' skills and activities. Rather than trying to do everything but being constrained by skills deficits, over-stretched budgets or political issues, partnerships offer a way of inspiring collaboration.

Although experience in promoting universal access is growing, it is often being retained within separate networks of expertise. New knowledge needs to be exchanged so that more stakeholders can benefit from the accumulating base of experience.

Many of these organisations are seeking better ways to launch ICT-related initiatives that are consistent with developing country priorities.

> New partnerships will add to the existing capacity to promote universal access by integrating, validating and communicating new knowledge to support effective policies, strategies and practical activities aimed at using ICTs.

The growing emphasis on knowledge-based development will be an empty slogan unless substantial progress is made to reduce the universal access gap. Failure to reduce this gap will foster disillusionment with the potential benefits of ICTs and exacerbate poverty conditions.

Table 4 shows the diverse organisations in developing and industrialised countries that are involved in one or more aspects of ICT development and use.

Universal Access Components → / Universal Access promoters	ICT Capabilities	ICT Applications	ICT Infrastructure	ICT Policy and Strategy
Multinational Global				
► Commercial	x	x	x	--
► NGOs	x	--	--	x
► Intergovernmental	x	--	x	--
Private Sector Business				
► Manufacturers				
► Service Providers	x	x	x	x
► Information	x	x	x	x
Providers	x	x	x	x
	--			
National ICT Organisations				
► Private Sector	--	x	x	--
► Government	x	x	x	x
► Academia	x	--	x	x
International (country based)				
► Training	x	x	x	x
► Research	x	x	--	x
► Information	x	x	x	x
► Capacity Building	x	x	--	x
Regional Organisations				
► ICTs	x	x	x	--
► Economic and Trade	x	--	x	x
Sector Programmes				
► Development Sectors	x	x	x	x
► Commercial	x	x	x	x
Financial Institutions				
► Multilateral	x	x	--	x
► Bilateral	x	x	--	x
Philanthropic Entities	x	x	--	--

Source: Organisations are listed in Gilbert, 1998.

Table 4 Mobilising for Universal Access

5.2   Multi-Institutional Stakeholder Networks

Promoting universal access is a multi-stakeholder activity involving a large number of public and private sector organisations, NGOs and other stakeholders. There are increasing interactions between suppliers of ICTs, local ICT users, and policy makers. A complicated network of organisations is emerging as expertise on universal access becomes more widely dispersed. As a result, sources of relevant information are more difficult to access. There is a growing need for integrated efforts to create favourable conditions for ICT investment.

There is a need to:

● Draw upon global networks of expertise and to mobilise resources and experience so that they are accessible to, and can be interpreted by, people in developing countries;

● Work towards reducing inequalities in access not only to ICT infrastructure, but also to capabilities for using ICTs;

● Manage existing resources and knowledge sharing more effectively by public and private sector institutions, NGOs and other stakeholder organisations and individuals to promote universal access.

The network nodes and membership clusters shown in Figure 5 suggest a tendency toward separate clusters of universal access expertise. There is a risk of fragmentation and duplication of effort among the organisations and individuals represented within these networks.
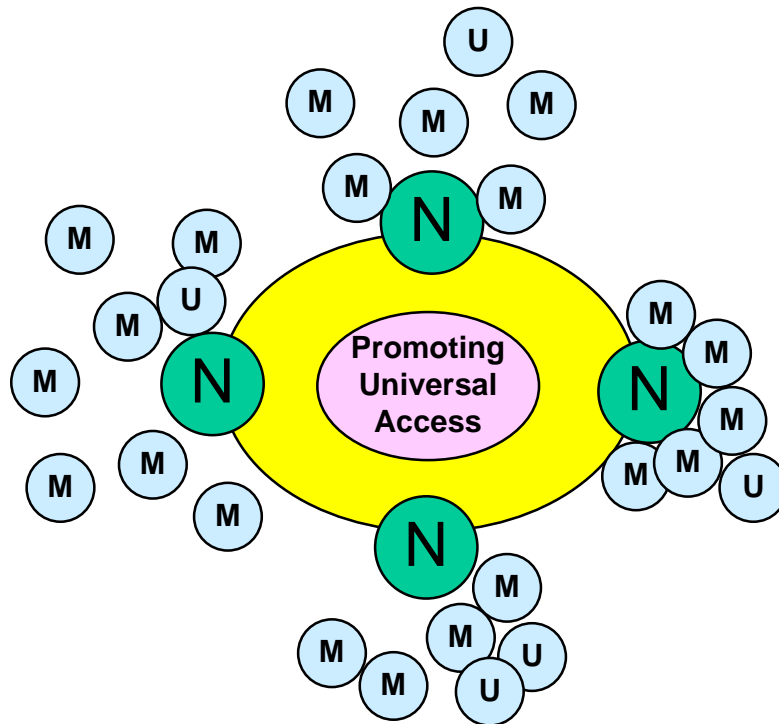
Figure 5 Networks of Expertise on Universal Access

Network Nodes (N in Figure 5) tend to be located in institutions with established reputations for excellence and strong commitments to promoting universal access. Figure 5 also shows that Members (M in the figure) of universal access stakeholder networks tend to cluster around nodes of expertise. They, in turn, are often linked with ICT users - or with potential users (U in the figure). The organisations within these networks have different kinds of expertise for promoting universal access. For example there are:

Organisations specialising in ICT capability building - These are recognised for their experience in developing informal and formal approaches to capacity building. These organisations have expertise in the design and implementation of skills and training programmes. They often draw upon interdisciplinary and practical expertise for ICT applications in commercial and public settings.

Organisations specialising in ICT applications and service development - These organisations are recognised for their experience in analysing and monitoring innovations in ICTs including their design, modification, maintenance, and implementation for developing countries. They have knowledge about equipment, network operation, service development, and applications for micro and small enterprises. They also promote exchanges of information between technical personnel and those responsible for organisational change.

Organisations specialising in ICT Policy and Regulation - Other institutions provide policy and consultancy advice to governments and businesses on issues including the impact of market liberalisation, competition policy and privatisation. They often have international links and their research competencies may be disciplinary or interdisciplinary covering issues on the supply or demand side of the market.

Organisations specialising in evaluation and monitoring - These often specialise in promoting the circulation of knowledge about universal access, especially information drawn from studies of impact assessment. Some are in close proximity to major ICT producers, while others are established in developing countries.

6. What needs to be done?

There is a growing need to ensure that existing networks of organisations find new ways to enhance the scale and scope of their efforts. This can be accomplished by capitalising on synergies within the networks of expertise that currently exist.

> Promoting universal access means adding value by focusing on those activities that will make a significant difference in closing the universal access gap.

Specific mechanisms are needed for setting priorities for universal access at the local level and ensuring that regional and national priorities are consistent with local initiatives. The practical means of maximising opportunities for learning and action may include:

- New partnership activities ranging from small-grant programmes for specialised research to large scale assistance packages in the form of grants, loans and technical assistance;

- Encouraging people with training in areas relating to universal access to share their knowledge across the boundaries of different networks of expertise;

- Ensuring that forums concerned with ICT applications, infrastructure, and knowledge for development, include discussion of progress toward universal access on their agenda;

- Integrated efforts to issue and distribute guidelines, working papers and reports on success (and failure) in promoting universal access through, for example, maintaining active Web sites and links; shared electronic work spaces and discussion groups; and provision of specialised information products and services.

There is consensus on the need for clarification about which organisations have the resources to play 'intermediary' roles in promoting learning and investment partnerships to reduce the universal access gap.

One or more of the universal service stakeholders needs to take the lead. Leadership would produce a step shift in the scale of action oriented to reducing universal access gaps. It would help to build synergies among stakeholders, avoid duplication, and stimulate new partnerships between the public and private sectors.

Action to integrate existing effort and to catalyse new initiatives is urgent. Without it, social and economic inequalities will be exacerbated by the lack of access to ICTs and the considerable potential contribution of ICTs for social and economic development will be lost.

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