



The Lebanese Center for Policy Studies

The Digital Initiative for Development (DID) Agency

International Consultative Workshop
held in Beirut, September 11-12, 2001

in collaboration with
the Centre for Global Studies, University of Victoria, Canada

Final Report
January 2002

THE DIGITAL INITIATIVE FOR DEVELOPMENT (DID) AGENCY

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I. WORKSHOP REPORT

INTRODUCTION

The Lebanese Center for Policy Studies (LCPS), in collaboration with the Centre for Global Studies at the University of Victoria (Canada) held a meeting of ICT experts, consultants and practitioners, in Beirut, on September 11-12, 2001. Among the 20 participants, several belonged to major institutions dealing with ICT for development (World Bank, UNDP, UNESCO, IFIP), while others came from NGOs or university and research background. The participants formed a cross-section of a wide geographical area, and came from ten countries (Dubai, Egypt, India, Lebanon, Morocco, Senegal, South Africa, the United States, Uruguay). The main objective of the meeting was to discuss the nature, the mandate and the areas of intervention of an international agency dedicated to fostering the use of ICT for sustainable development.

A. BACKGROUND

The DID agency meeting is one component of a larger project managed by the Centre for Global Studies (CFGs). This project (Managing Interdependence) aims to propose possible policy initiatives to enhance the impact of global governance institutions, and to promote practices of accountability, transparency, and participation. ICT for development is one of the fields identified that need to be assessed and studied for the purpose of possibly establishing a new dedicated international agency. This report presents the proceedings of the meeting where these issues were first discussed.

The participants reflected on a background paper drafted by the LCPS that was distributed prior to the meeting (see Discussion paper). The paper comes in four sections. The first part discusses **the existing and ongoing international initiatives and programs that address the digital divide**, digital opportunities and digital bridges. International initiatives can be grouped in four types: the policy framework approach (DOT force, UNDP's DOI), the global gateway approach (macro portals), the international special fund approach (SBEM), and the private sector approach (WEF taskforce). Programs are mainly being promoted by UN development agencies and by donor agencies, international NGOs as well as by professional associations, corporations and business groupings. They target a variety of fields such as school networking, distance education, telecenter development, ICT skills development, and databases. The paper surveys two of those set of programs: those launched by the World Bank Group since 1995, promoting ICTs for economic and social development (InfoDev, worLD, AVU, GDLN, GDN, GDG), and those established by the UNDP as early as 1993 dealing with

ICT for networking, awareness raising and solutions for sustainable development (SDNP, ICT for development, WIDE, DOI).

The second section of the paper discusses **the reasons for establishing a new ICT for development agency**. Several justifications are presented: the need for a fully **dedicated institution on an international level**, that would contribute to field building and that would act **as an accountable and responsible agency**; as well as the need for **a coordination facilitating agency** and for a **user-oriented decentralized service provider**.

In its third section, the paper details the proposed functions of a Digital Initiative for Development (DID) agency. First, the LCPS suggests that the DID agency would act as a **monitoring, research and resource center** for the numerous on the ground initiatives and programs concerned with ICT and development. Within this perspective, the agency could create an international observatory on ICT and development, and start an international ICT initiatives monitor. It could also conduct empirical research and comparative studies, and contribute to the establishment of sets of international indicators, indices and other methodological and analytical tools on e-development.

The second function of the DID agency would focus on a delimited and manageable field, **ICT for learning**. The LCPS proposes to work on the interface between technology and pedagogy, to enhance the capacity and the efficiency of educational systems in the developing countries. The agency could develop significant programs in this respect: a) supporting educational systems in the use and incorporation of ICT tools and applications (cataloguing existing multimedia products, establishing standards, encouraging regional and linguistic e-networking, etc.); b) promoting ICT-based teacher training programs, to improve the quality of education; c) helping development of distance education; d) supporting national telecenters initiatives.

Third, the DID agency could provide **support for appropriate technology and local content development**. In this perspective, the DID agency would be promoting an appropriate use of ICT, taking into account the economic, social and technical conditions of developing countries. The agency could act both as a technology monitor and a technology advisor; it could play a leading role as a research and development promoter, and as a supporter of appropriate technology, for example in the field of radio for learning and development. The agency could also expand the innovative initiatives of committed local entrepreneurs and scientists.

Finally, the DID agency fourth function could target **facilitating surplus recycling and exchange programs**. There are millions of computers in industrialized countries that are dumped each year; recycling even one percent of them into developing countries could make a significant contribution to reducing the digital gap.

The report ends with **suggestions for the parentage and governance features** of the DID agency, with a set of criteria to bear in mind in selecting options. The main idea is to create an accountable institution, with a defined mandate and state-of-the-art governance features, going beyond the major existing international organizations, with the objective of inducing an incremental progress. This must be done through associating a variety of stakeholders and partners for cooperation, across cultures and institutions.

B. DISCUSSED TOPICS

The participants to the Beirut workshop discussed thoroughly the LCPS report about the feasibility of a DID agency. The workshop started with two introductory sessions where the participants reviewed the international initiatives and programs on the digital divide and raised the question of the value-added potential of a DID agency. The meeting focused afterwards on the four proposed functions of the agency: monitoring, research and resource center; ICT for learning, appropriate technology and local content development, as well as surplus recycling and exchange programs. Each function was comprehensively and methodically examined. The main considerations raised will be presented below. The workshop closed with a session dedicated to the governance features and institutional design of the DID agency, and a general synthesis of the main issues debated over the two days.

Institutional Design of DID

The issue of institutional design of the DID agency was raised early on in the meeting, and discussed at various sessions of the workshop. The participants examined the pros and cons of having either an **independent** or an **affiliated** institution. The idea of an independent agency was strongly favored, especially if it were to play an evaluation and monitoring role for existing ICT for development initiatives and programs. The need for an **independent evaluation of activities and projects** was largely agreed upon. The point of having **a unique interlocutor** of governments in ICT for development acting as **a global clearinghouse** was also made.

The issue of having **parents and affiliates** was discussed. Would they be international, national and/or regional networks of ICT for development institutions? Moreover, would the agency be a new separate legal entity? Having an independent agency brought up the issues of long-term **sustainability** and **funding** opportunities. Several participants discussed the choice of the agency to be **proactive** or to be **demand-driven**. Others discussed the choice of funding the agency mostly through **capitalization** or through **contractual work**. Several arguments addressed the necessity not to replicate nor duplicate existing efforts made by the Development Gateway Foundation and the UN ICT task force. The agency should channel demands

not pilot them. Some suggested that having a **small international NGO acting as a network-coordinating center** might be the most suitable approach, and focused on the necessity of **finding significant niches** for its operations.

Discussions also focused on the nature of the agency, and the **constitution of the international board**. Identifying general criteria to determine **the eligibility of possible major stakeholders** was an issue that was raised but not sufficiently addressed. A majority of the participants stressed the need for insuring **North-South parity**, and also **South-South cross-fertilization**, especially among leading countries such as India, South Africa and Brazil, since there is a strong need for more voice from the South in international organizations. Some participants proposed to think of other **institutional models, such as IDRC** in Canada, which operates as a legal national entity with an international board of governors in which the South is represented, and has an equal say with the North. Others pointed that **UNESCO could be an interesting host** for the DID agency. Finally, an alternative **name** for the agency was suggested: the Development Institute for Global Information Technology – DIGIT.

The DID Agency Mandate

Function 1: Monitoring, Research and Resource Center

There was considerable agreement on the function of monitoring and research for the DID agency. Several participants emphasized the importance of the agency doing independent **evaluations** of programs and initiatives, and measuring **impacts** of change empirically, and on the long term. In this respect, it is highly necessary to devise documentation **methodologies and indicators**. This function would also have the benefit of helping countries and institutions to **compare and share experiences, regionally**. Participants emphasized moreover the importance of **creating incentives**. The discussion also stressed the value of **pro-active information dissemination**; some pointed that while information is widely available, **data mining** and **knowledge building** in the ICT field is still lacking.

The issue of **transfer of experiences** was widely covered: suggestions for establishing **an information service center** were discussed, where concerned players would come with 'shopping lists' for needed items. The DID agency could thus act as both a **coordination** center and a **service provider**. Some participants suggested focusing also on **training local groups** so they are able to do themselves the design, management and evaluation procedures of their information and research needs.

Function 2: Promotion of ICT for Learning

Most participants approved that ICT for learning should be a priority field of intervention of the DID agency because new technology might be the only tool that would allow to bridge the gap in education between developing and developed countries. Supporting ICT for learning could be a challenging function for DID to address, especially since **learning has to be contextual**. Also, the agency could promote **research and development (R&D)** activities, and focus on encouraging **innovative methods of teaching** through media ICT, and the **design of learning materials**.

In this respect, the problem of **local languages use in ICT** was mentioned, and a suggestion was for the DID agency to play a role in **translating content**, since there is a wide availability of interesting educational software but their accessibility is limited by most of them being in English. In addition, some participants raised the possible role of the DID agency in promoting **university programs and curricula** relating to ICT and education. Others had reservations about the agency involvement in education, as this entails a long-term commitment, and complex procedures, which raises issues of sustainability. They also emphasized that the agency **should not duplicate existing policy initiatives** and programs, but should rather act as a **coordinator** and an **intermediary** between providers and users.

Function 3: Support for Appropriate Technology and Local Content Development

The need for the promotion of local content development was largely acknowledged. Issues of **penetration, cost and availability** were main key words in this session. Some participants mentioned the difficulties created by **national and global regulations and legislations** (the policy environment) that would limit development and dissemination of locally designed software. Others referred to successful experiences in **digitizing printed content**, and highlighted the potential role of the **private sector**. There was also concerns that the DID agency should not be a producer of content, but rather **develop interfaces and portals** through which it promotes **networking** among existing initiatives that operate in the field of local content development. Suggestions were made to think of **creative methods of funding** to make dissemination possible, such as micro-loans for innovative start-ups, according to the market availability. In this respect, providing advice and information on **alternative business models** and financing formulas to support ICT for development, such as prepaid phone cards, could be interesting options to investigate. Specific **"how-to-do" models and ideas to package ICT projects** could be among the services proposed by the agency.

Two important points were finally made: about the possible **brain drain** following training for local content development; and about **the difficult role of the DID agency as a technical advisor** in a field where changes are very fast.

Function 4: Facilitation of Surplus Recycling and Exchange Programs

There was considerable debate about this function of the DID agency. Several participants raised the **problems of transportation costs and customs** that recycling and exchange programs have to deal with. National regulations, taxation systems and complex bureaucracy are key variables in this respect. Hence, it is crucial to address issues of **appropriate regulations** and intellectual property rights, when dealing with technology transfers. The discussion also focused on the need to consider maintenance costs in ICT recycling programs. Furthermore, a major consideration related to **cultural issues**, since local groups could reject what could be viewed as an 'obsolete' technology; moreover distributing hardware and software for free can seriously **disturb local economies**.

Interesting suggestions to facilitate rural accessibility to ICTs were made, promoting for example '**caravans**' equipped with PCs and other "mobile" projects. Most participants emphasized the **coordination and mediation role** a DID agency could play in this area, matching donors, institutions and players, and also promoting **job opportunities**.

C. OTHER DEBATED IDEAS FOR THE DID AGENCY

Sustainability

- Operating in a club-like form: members would benefit from sharing experiences and, in exchange, would provide information to the agency.
- Enhancing the networking function, and developing niches programs.
- Functioning as an international agency with country offices of other agencies as relays, at the regional and local levels.

Research and Resource

- Bridging research and policy making.
- Need to establish hard evidence that ICT can make a difference in development.
- Need for trend analysis in ICT for development.
- A solution identification center based on a networking model.
- Producing indicators, data, innovative ideas, methodologies, and action-oriented knowledge.
- Constructing legal and financial templates for ICT in development work.

Information Sharing and Dissemination

- Information service center, mapping issues, identifying the players, sharing the lessons, giving responses.
- Need for demand driven, pro-active data mining of the wealth of information available.
- Dissemination of existing initiatives, ideas, and projects.
- Need for more systematic sharing of experiences.
- Establishing an efficient and sustainable portal.

Capacity Building and Training

- Helping to build capacity of researchers in the different regions of the South.
- Addressing the issue of professional mobility and brain drain.
- Identifying and training local human resources.
- Training trainers, helping them develop their own pedagogic tools; reject the formula of imported infrastructure and content.
- Training in multimedia production and local content development.
- Proposing a 'Computer driving license' that would promote job opportunities.

Networking, Participation and Partnerships

- Bringing together initiatives on ICT volunteering (where and how to go...).
- Assembling a pool of ICT professional (including diasporas ICT professionals from the South).
- Linking emerging regional centers on ICT for development (West Africa, East Africa, India...).
- Enhancing the role of private sector.
- Working with local groups.
- Match making between requests and supply.

D. PERSPECTIVES AND OPTIONS FOR A DID AGENCY

The workshop ended with a consensus on the need for establishing an international agency working in the field of ICT for development. However, the nature and mandate of such an agency needs to be further researched and discussed, in more specific details, as this first meeting was mainly for brainstorming purposes.

A rich set of elements came out from the workshop that paved the way for future discussions, especially in the frame of forthcoming international events (such as the World Summit on Information Society, Geneva 2003 – Tunisia 2005). In conclusion, a variety of challenges will have to be addressed in the establishment of a DID agency: its precise institutional nature, its specific mandate, its long-term sustainability, its resources and funding, as well as political issues, and coordination problems.

The LCPS suggests provisionally the following mandate for a DID agency, based on the four components presented in the discussion paper, and developed in relation to the Beirut international workshop. **The agency**

would mostly be monitoring initiatives and conducting research, offering project and training support, and operating as a global clearinghouse and a referral center.

Proposed Mandate for a DID agency

- 1) Monitoring
 - Monitoring and data mining of projects, initiatives and experiences

- 2) Research
 - International set of indicators and measurement tools
 - Independent evaluation of activities
 - Impact assessments studies
 - Comparative research
 - Trend analysis of ICT for development

- 3) Support
 - Support for ICT project development
 - Support for specific training programs (local content development, multimedia)
 - Support for specific R & D niches
 - Pool of ICT professionals

- 4) Clearing-house and referral
 - Systematic sharing of experiences
 - Facilitate recycling and e-volunteering
 - Supply of alternative business models, technical solutions...
 - Match making between requests and experiences

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II. DISCUSSION PAPER

A. BACKGROUND

In many ways, the year 2000 has come to be known as the “year of the digital divide”.

From the Secretary General of the United Nations at the UN Millenium Assembly to the President of the United States at a White House Global Leaders Conference, from Davos January 2000 to Davos January 2001, and from the G8 Okinawa summit to the Asia Pacific Economic Cooperation Forum in Brunei, the world suddenly started to realize that some of it, five to ten percent, was going digital fast and the rest was being left out in the pre-digital cold.

This recently discovered gap was quickly superimposed on all the previous structural gaps, such as the power gap, the resource gap, the knowledge gap, the education gap, the governance gap and others. It was invested with high-level visibility and sense of urgency. Each week, somewhere in the world, representative of different actors, mostly from the North, met to try to define it, assess it and discuss ways of partnering to resolve it. The motto, “bridging the digital divide”, entered the international vernacular and became a “legitimate” part of the development discourse. A crowd of conferences, web-sites and new programs were competing to appropriate the new banner or some its variants.

The protagonists of this new global conversation would generally agree on the broad terms of the divide: A heavy concentration in few countries; an access along the fault lines of national societies, including wealth, education, gender, age, urbanity, and minority status; a large deficit in the three dimensions of connectivity, capacity and content; a dualistic world society with a minority of connected, having plentiful information at high speed and low cost and the unconnected majority, locked out by high barriers of capacity, cost, uncertainty and outdated information.

International reports and media review articles highlighted some spectacular indicators of the divide: The Internet links over a hundred million computers, but that represents no more than two percent of the world population; the monthly connection cost for the Internet in Africa exceeds the monthly income of a significant proportion of the population; eighty percent of the world population never made a phone call; the poorest 20 percent of the world population account for 0.2 percent of the world’s Internet user, whilst the richest 80% make up 93.3% of users; there are more telephones in New York than in the whole of rural Asia; there are more Internet accounts in London and cellular phones in Thailand than the whole of Africa.

Participants to the global debate would, however, disagree on the short and medium terms potential of the expanding ICT's in alleviating poverty, promoting sustainable development, and creating a more equitable world.

Cyberprophets and cyberhopefuls have been underlining the tremendous creative potential for change, real progress and prosperity in the technological revolution we are witnessing. They see a wide developmental potential in the Internet and bundled communications services reaching formerly remote, poor and disenfranchised areas of the world. From health care to school systems, and from democratic participation to local empowerment, and from global markets for local producers to job creation and enhanced productivity, ICT, in their views, could give a formidable leverage and leap frogging possibilities to world wide development efforts.

But cybersceptics and cybercritics have been emphasizing that reform, access or equity are not inherent in the new technologies, or, in any technology for that effect. Their impact cannot be meaningful without continued and significant investment in fundamental needs from literacy and education to basic health services and sanitation systems. This impact will remain marginal if availability and accessibility is not progressively provided to broad population groups, starting by reliable electric power and extensive telephone wiring.

The cybersceptics would note that the poor need penicillin not Pentium; that you can't eat computer or prevent malaria with software. Some would remark for example that with the money invested in projects such as the African Virtual University, hundreds of African lecturers could have been trained or supported to return back to African Universities. Others would add that if hygiene, safe drinking water and illiteracy are the priorities, they want to know exactly how having access to the Internet is going to change that. These reactions might seem anecdotal or bitter, but they do reflect serious concerns about the current hype around ICT's and raise significant issues of priority, best use of scarce resources, marginality of impact, and quasi randomness of experimentation, projects and programs.

A consensus should gradually emerge, assuming that if ICT's are certainly not a magical solution and may be not the highest priority for developing countries, they are most probably part of the solution. Well focused, carefully thought off and effectively coordinated, ICT's could become a growing and strategic component of a world wide comprehensive development strategy to move us faster from the frightening and dangerous slide into a two-world system of haves and have-nots, toward a more reconciled and converged one-world system, in which individuals share the technology and the prosperity.

B. INTERNATIONAL INITIATIVES AND PROGRAMMES

The year 2000, as we noted, witnessed a flurry of activities and initiatives to address the suddenly growing awareness of the digital divide.

The call for digital bridges, digital opportunities, and other digital dividends was at its highest. Unfortunately, many of these turned out to be, or might turn into, talk-fests with few concrete results achieving little beyond platitudes and occasional cross-sector collaboration, and could soon create a new divide between spectacular promises and announcements as well as effective commitments and delivery.

The most significant initiatives of 2000 could be classified into four kinds of approaches:

- The *global study group and policy framework approach*: It is best represented by the G8 Okinawa Charter on the Information Society (July 2000) and the establishment of a Digital Opportunity Task Force (DOT Force) including tri-sectoral representation of government, business and civil society in G8 country delegations, representatives of nine developing countries, and participation of international organizations and business groupings. The final report of the DOT Force proposed mostly a list of generic actions to the July 2001 G8 Genoa summit, to be taken towards bridging the international digital divide. About the same time, UNDP, partnering with Accenture and the Markle Foundation in the Digital Opportunity Initiative (DOI) proposed a Strategic Policy Framework to help development stakeholders take advantage of the potential of ICT for development.
- The *global gateway approach*: It would be best represented by the competing investments of international organizations and others in creating Macro Portals, by bringing together, in spectacular ways, information and documents, mostly already available on existing sites and in other electronic locations. Although these initiatives are useful, they might really cater to the already connected and would probably affect the existing divide in a limited way.
- The *international special fund approach*: It is best represented by the partnering of Soft Bank, a Japan-based global Internet company, and the International Finance Corporation of the World Bank Group, in creating Soft Bank Emerging Market (SBEM). Announced in February 2000, SBEM will invest an initial USD 200 million in incubating Internet-related businesses in developing countries. SBEM will nurture new Internet enterprises both by investing seed money and by providing an array of technological, legal and management support to turn ideas into business in dozens of developing countries. World Bank officials hope that investment through the establishment of a Global Incubation Center will accelerate the inclusion of developing countries in the information

revolution by transferring technologies and fostering sustainable new local businesses.

- The "*let's engage the private sector*" approach: It is best represented by the great emphasis that the World Economic Forum in Davos 2000 and 2001 gave to the international digital divide. WEF established a global digital divide taskforce to develop and test a framework for action and to engage world business leaders and others on ways that ICT can transform the digital divide into an opportunity for economic growth in the developing world. Another example would include the digital dividend conference organized in October 2000 by the World Resource Institute, a Washington based think tank, in collaboration with Business Week. The idea here is also to make the business case, by bringing together business leaders, key technology providers and potential users to explore novel business models and market developments strategies that extend connectivity and can potentially create significant social benefits. Predicated on the idea that bridging the digital divide is good for business, and what is really sustainable is profitable enterprise, the WRI project is another attempt at mobilization, dialogue and advocacy among the major IT corporations and other business leaders around the world.

In the last few years, almost all major development agencies within the UN system, as well as major multilateral and bilateral donor agencies, international NGOs, international professional associations, international business associations and multinational corporations launched and promoted their programs. All have been working to position themselves and create their own niches in this emerging developmental field (or should we say market).

A number of alliances and partnerships were also created, often at the initiative of the large international agencies, bringing together international and regional players, older and newer players, general developmental and sectoral specialized players, international agencies and multinational corporations, in field such as school networking, distance education, telecenter development, ICT skill development, databases and super site development, or the funding of pilot applications of ICTs for development. We will survey briefly below, two of the most important actors.

Not surprisingly, the most determined and well-funded strategy has been developed by the **World Bank Group**.

The Bank started its moves in 1995, with the establishment of *InfoDev*, as a multi donor grant facility to "promote innovative projects that use ICTs for economic and social development". The Bank was able to mobilize, in addition to its own contribution, a group of over twenty donors to contribute to the InfoDev trust fund. Thus, in the last six years, InfoDev was able to spend over 60 million dollars. InfoDev received hundreds of applications and funded more than 250 projects in more than a hundred countries.

Integrated since 2000 in a new, consolidated Global ICT group of the Bank, InfoDev supported a very large spectrum of projects: workshops, assessments, electronic fora, feasibility studies, data bases and indexing for other global initiatives (Global Knowledge for Development), conference scholarship funds, planning grants and over fifty pilot projects, demonstration projects and best practice projects (with an average grant of \$ 200,000) promoting ICT in health, education, environment, government and e-commerce.

This diversity and flexibility certainly allowed InfoDev, in the first phase, to experiment with different approaches, to explore a number of grant-making areas and to test a large number of applicants and grantees. It remains difficult however, to ascertain if this all-out funding strategy represents today the most cost-effective approach in making a difference where it really counts, in having a cumulative effect that would produce a significant change, and in supporting actors in the South that are really in need of support.

Two years later, in 1997, the World Bank Institute (WBI) and the Education Group of the Bank, launched each a significant initiative.

A *World Links for Development* program (worLD) was started by the Institute to facilitate school connectivity, provide teacher training in ICTs and promote collaborative projects between schools in developing and industrialized countries. Within a few years, World was expanded to over 20 developing countries, reaching about 500 high schools (an average of 25 school per country) and arranging for collaboration with more than a thousand schools in over 20 industrialized countries.

worLD certainly helped cultivate pockets of innovation in a selected number of developing countries high schools, using ICT to improve education and contributing to the professional development of a few thousand teachers by enhancing their technological and pedagogical skills. The program also contributed to exploring and testing alternative technological solutions (internal web server and proxy web software; various wireless connectivity solutions) in the context of low level and unreliable connectivity in many developing countries. However, four years into the program, it was becoming clear that serious barriers were emerging, hindering the sustainability and further expansion of this pilot initiative: continuing lack of computer hardware and software and reliable access in schools; lack of local technical support; weak coordination with the Ministries of Education; lack of continuous funding sources; lack of integration of the technology into the general curriculum and the development of basic skills; lack of time in busy school schedules.

In a move that will be repeated in other Bank initiatives, the program was partly spun-off in 1999 to a non-profit organization, separate from the WBI, the World Links for Development organization. Today, the future of the program relies very much on its ability to work more closely with Ministries of

Education and to think more strategically about the use of scarce educational resources. Only then could it possibly extend its limited reach and become more rooted, and owned by the community of educators in developing countries.

In the same year 1997, after a feasibility study funded by InfoDev, the Education Group (Human Development Unit) moved to establish an *African Virtual University* (AVU). Defined as “an interactive–instructional telecommunication network”, AVU operated from sites that extended to over twenty African universities from an uplink and rerouting central hub in Clarksburg, Maryland.

Integrating satellite and Internet technologies, AVU connected professors from a variety of high standard universities to a dispersed group of several thousand African students. In its pilot phase (1997 – 1999), which cost over 13 million dollars, AVU delivered over 2500 hours of non credit instructional programs, registered over 12,000 students in semester-long courses, and enrolled 2,500 professional in business seminars. Courses offered were mainly in math and sciences, computer science and language instruction. World Bank projections in 2000 expected AVU, by the years 2002-2003, to offer degree courses to over 5,000 undergraduates and seminars to over 65,000 professionals, and to generate 15 million dollars in revenue and make its first operating profit.

AVU is the only institution offering technology–based distant education to the whole African continent. As a very wide and complex pilot project applying modern ICT to provide quality higher education services in response to a huge and dispersed demand, AVU is an emblematic initiative in the new field of digital development. It remains to be seen however, if AVU will succeed in raising the substantial new funding needed to develop it to scale, in integrating successfully the university–based and the private licensed learning centers, in reaching cost–effectiveness and fee-based sustainability over the long-term, in offering courses mostly developed and delivered from within the continent and in consolidating its spin–off on the organizational, financial and academic levels.

Again, two years later, around 1999, the World bank Institute and the Education Group each started outreach and net working initiatives in the field of distant learning. WBI engaged in building a *Global Distance Learning Network* in partnership with developing countries agencies, foundations and private companies. The targeted audience was leading practitioners, development decision makers and community leaders and the purpose was to share “cutting-edge development related knowledge and experience across boundaries in real time”.

Through a combination of courses, seminars, and global dialogues, GDLN set out to provide cost effective learning activities to the development community, to improve decision making through learning based on real-life

experience, and to facilitate regular exchanges among practitioners and experts. WBI was hoping to establish by 2002 a network of around fifty Distance Learning Centers, housed, owned and operated by local training and educational institutions.

Although the initiative was officially targeting to set out an independently operated network and to provide courses, seminars and discussion opportunities from a variety of sources and partners facilities around the world, it remains to be seen how much GDLN will really become a self sustaining, multilaterally fed, and jointly owned international network. The alternative outcome is that GDLN could become a sort of WBI - online and a powerful outreach instrument for a centrally generated and managed development learning production.

At the same time, the Education Group established "a Task Force on Bridging the Digital Divide through Education". It focuses on how to help countries make decisions regarding technology to improve access, quality and equity of education and will develop tools and assist in pilot interventions based on country specific needs and approaches. The Task Force started developing a *Global Distance Education Network* as a knowledge guide to current information about distance education and training from around the world. Focusing primarily on the design and implementation of institutional systems of distance education, the Network, in a classical approach, is mainly an on-line publishing operation, scanning the global environment, collecting literature, case studies and other information relevant to distance education and development, and making selection available on a core site located at the World Bank. The initiative mentions the possibility of regional sites and the development of versions in Spanish and Chinese.

The most interesting aspect of the Global Distance Education Net is that WBG successfully enlisted as partners several of the oldest and most established players in the field of international distance education. The International Center for Distance learning of the Open University (United Kingdom) and the Commonwealth of Learning (based in Vancouver), the most active international association for distance learning. In addition the partnership included distance learning centers, institutes on networks from Hong-Kong, South Africa, Indonesia and Mexico. However, apart from positioning WBG as the center of a potentially powerful web of distance education knowledge, the value added effect of the new initiative in terms of additional resources and effective promotion and facilitation of distance education initiatives in the developing countries remains to be seen.

Finally, from 2000 on, the WBG engaged into two major initiatives to use ICTs and networking tools to lead development related knowledge generation and knowledge dissemination on a global level.

The *Global Development Network* (GDN) launched in June 1999, regrouped already existing regional research networks and enlisted hundreds

of research and policy institutes involved in the field of development. Using WB funding and additional resources, GDN aim to develop research through competitive peer review grant mechanisms and build capacity of research and policy institutes in the developing countries through training for researchers, joint activities, networking opportunities and services to improve institutional practices.

The *Global Development Gateway* (GDG), launched in July 2001, is based on the premise of the need for a macro-portal, a one-stop super-site to access, in a systematic and vetted way, a selection of the wealth of information, resources and products available on the World Wide Web. This super-site is proposing to filter and catalogue material from all perspectives on development, divided into 30 major topics and 130 sub-topics. Features include a comprehensive aid projects database, a set of guided pages to development information available on-line, resources for e-government and e-business and information about funding, commercial opportunities, product review, jobs and directories. In addition, a roll out of 50 Country Gateways, within three years, will replicate the feature of the Global Gateway at the national level, building a large share of the content from the contribution of local partners.

Several NGO's and development practitioners raised a number of questions: About the Gateway privileging the perspective of global development professionals and large institutions; about top-down editorial policies and structure; about a donor's taxonomy in the definition of topics; about filtering the material on the basis of a selective definition of "quality"; about the emphasis on English content and a strategy of translation; about country Gateways representing an unfair competition to existing country - oriented portals; about the governance structure and the institutional design (the setting up of an "independent" Gateway Foundation to manage the initiative) where a number of seats on the Board will be allocated on the basis of financial contribution. Many observers recognized however that the Gateway initiative could become a very useful repository of data with numerous links to people, organizations, projects and documents and that it could contribute to better information and equipment for development workers and professionals.

In any case, the WBG seems determined to continue investing significantly in this new line of work, seen as essential for its transformation into a "Knowledge Bank".

The **United Nations Development Programme (UNDP)** is the other major player in the ICT for Development field.

UNDP was an early adopter and initiator of ICT for networking, awareness raising and solutions for sustainable development in a large number of developing countries, quite before the current hype.

Through the *Sustainable Development Networking Program (SDNP)* that started in 1993, as a program to implement some of the Rio conference recommendations, UNDP progressively developed a large network of country-owned, non-profit, thematic networks, including each a diversity of stakeholders, with a primary focus on environmental and gender issues.

SDNP, over the next seven years, contributed to connecting more than 15 countries to the Internet for the first time, to deploying the first internet networks in more than 40 countries, to creating more than 5000 websites for government units and civil society organizations and to providing ICT basic training for over 25,000 organizations.

Today, as this initiator role has been overtaken in most places by the development of national markets, national ISP providers and hundred of local initiatives, SDNP, which still operates in 45 countries, has largely shifted to piloting telecenters and to developing initiatives on e-governance and e-commerce for development.

In 1997, UNDP started its *ICT for Development Program* with a focus on generating ICT strategies at the national levels, deploying Technical Access Community Center in pilot locations (UNDP's name for telecentres) and managing a portal site on ICT and development.

In 1998, through its Special Unit for Technical Cooperation among Developing Countries (TCDC), UNDP launched the *Web of Information for Development (WIDE)*, as a global data-base of institutions, capacity, expertise, knowledge and innovative experiences in development.

The two last initiatives seem to have suffered, the first from a heterogeneity of objectives and lack of sustained funding and the second from a rising competition from more powerful portals, the last but not least of course being the Global Development Gateway of the Bank.

In search of a new role for the coming decade and in the face of somehow diminishing core and trust funding, UNDP decided to move boldly in the direction of building partnerships with resourceful allies at the global level and of becoming more of an intermediary and a technical assistance provider at the country level.

In partnership with Cisco, UNDP helped establish the *NetAid. Org Foundation* as a one stop e-Action site to facilitate aid through on line donation to specific poverty alleviation programs, on line volunteering with non-profits in developing countries and on-line purchase of fair trade arts, crafts and food from around the world.

In partnership also with Cisco, UNDP contributed to a *Least Developed Countries Initiative* to extend the Cisco Networking Academy Program to 27 of the world's 49 least developed countries. The program has until now trained

over a hundred instructors, mostly from LDC's and launched Networking Academy programs in cooperation with over 15 learning institutions in LDC's.

In partnership with the Markle Foundation, IBM and the Center for International Development, at Harvard University, UNDP is working on a *Global Network Readiness and Resource Initiative*. Through this partnership, UNDP aims at acting as a lead agency for a network readiness initiative worldwide, offering country level assistance to build national information strategies, community initiatives, local entrepreneurship, regulatory environment and rural connectivity.

In partnership with the Markle Foundation and Accenture, UNDP established the *Digital Opportunity Initiative (DOI)*. Its main contribution to date has been to provide strategic input to the DOT force and to produce another global report in July 2001, "Creating A Development Dynamic", that assesses the implications and potential of ICT for development and proposes a strategic policy framework for national and social actors, to enhance their cooperation in this field.

Leveraging its broad experience, its brand name in the field of development, and its unrivaled asset of country offices in 130 developing countries, UNDP has been recently engaging major public and private partners to work mainly on stimulating and enabling the global environment on ICT and on delivering some targeted training and technical assistance services.

C. THE NEED FOR A NEW AGENCY

While acknowledging the possible relevance and usefulness of many of the above mentioned approaches, the present project and this workshop are predicated on the uncovered need for an international agency focusing entirely on the best ideas, ways, means and partnership to foster the most cost-effective, efficient and scalable uses of ICT for sustainable development.

In the context of the apparent flood of international initiatives, what would justify the creation of such a new agency? On the basis of the preceding review and of opinions expressed by several analysts, practitioners and stakeholders, a number of arguments could be advanced to make the case for the establishment of a Digital Initiative for Development (DID) agency:

- 1) Beyond the necessarily limited and often unrelated ICT special programs of the general developmental agencies, and the topical ICT added-on programs for the sectoral international agencies, there is a need for a **fully dedicated international agency**, entirely focussing on ICT for development in an integrated, flexible and extensible way.

- 2) Beyond the current fad and after the end of special programs, support for pilot or exemplar projects, and funding of experimental phases, there is a need for a **field building institution**. The novelty, challenges and complexity of the field and the huge unmet demand require a sizable and sustained institutional investment for at least the next two decades.
- 3) Beyond an emerging networking ideology and e-development mythology, there is a need for a **concrete, visible, responsible agency**, with a defined workplan and clear accountability to its stakeholders and to the public.
- 4) Beyond competing, overlapping and energy scattering international initiatives, there is a need for a **synergy and coordination facilitating agency**, acting to obtain at least a reasonable convergence of efforts between the various international actors.
- 5) Beyond "grand" project approaches (potential white elephants) and centralized, top down production of Global Policy Frameworks, Plans of Action, Macro Portals, and Resource Networks, there is a need for a **decentralist, user-oriented, easy to access service provider**, working to support, fertilize and energize the thousand and one on the ground initiatives and the struggling national actors in the developing countries.
- 6) Beyond the waste of good ideas and orphaned proposals, that never got the opportunity to be really tested and implemented, there is a need for an international agency to **give a second chance to**, adopt and market **the best already available idea** on bridging the digital divide.
- 7) Beyond the dispersion of attention and the multiplicity of confusing banners, claims and domain names, there is a need for one **international focal point**, an easy to use **international address**, where all interested actors, contributors, users and new comers to ICT and development, could start their search, raise their questions, promote their work, or publicize their needs.
- 8) Beyond the merit and benefits of existing programs, there is a need for a new international agency to seriously work **to make good on some of the new wide promises** made in the most recent international plan of action of the Digital Opportunity Task Force, presented to the G8 summit in July 2001. Some of the DOT force's more specific proposals such as the *International Development Resource Network* of regulatory, policy and strategy expertise, could find their natural home in a DID like, dedicated international agency.

Advocating for a new international agency, it is important to underline what **this agency should avoid to be:**

- A heavy, expensive and cumbersome additional international bureaucracy.
- A new actor striving to reinvent the wheel, to substitute players on the ground or compete with existing successful international initiatives.
- A Northern driven, supply driven, donor driven body with a traditional or revamped "I know better" and "let me help you" mindset.
- A completely autonomous new structure, hanging in the air and without the benefit of existing infrastructures, accumulated institutional knowledge, and stock of expertise.

On the contrary, it would be crucial for **the new agency to strive to be:**

- An agency embodying in its governance, orientations, workplan and funding, a North-South parity with explicit mechanisms for multi-stakeholders participation (see last section).
- An agile, flexible and task oriented unit able to rapidly deploy, expand and contract as needs and opportunities emerge and shift.
- An agency with a well thought institutional affiliation, which could possibly be a joint affiliation, based on the interface between knowledge and development.
- An agency grounded in the solid, years-old work of early investors, be it development agencies, international professional associations, national programs, or on the ground initiatives.
- An agency that would contribute to expand the outreach, and help build up a larger Southern component in ongoing successful projects on a national, regional or developed country basis.

Based on the preceding rationale, the following sections briefly present tentative suggestions to frame a discussion about the possible functions of a DID agency.

D. FUNCTIONS OF DID

1) Monitoring, Research and Resource Center

A primary function of the DID Agency could be to constitute a monitoring, research and resource center for the expanding universe of **on the ground initiatives**, development workers, and actors concerned with ICT and development.

Such an international center could also benefit a variety of **specific constituencies** and communities of practices such as:

- The growing web of education networks (schools, universities, training centers etc...)

- The older and now expanding distance and open learning traditions and practices.
- The telecenters movement and other community access experiences around the world.
- The concerned international professional associations particularly in their North-South cooperation and professional development programs.
- The producers of creative, customizable and affordable applications and multimedia contracts related to development.
- The innovators working to develop and adapt new approaches to low-cost or quasi-free connectivity in the developing world.
- The designers and implementers of national IT strategies, E-readiness assessments, regulatory frameworks and incentive measures in the developing countries.
- The relevant decision-makers, opinion shapers and community leaders in the South.

The following are possible activities that DID, as an international resource center, could initiate, support or expand:

- Creating an **international observatory** on ICT and development:
 The observation would systematically document and follow-up on successful and less successful initiatives and projects at the local, national, regional and international levels. The observatory could build-up, harmonize and consolidate existing partial listings and databases (such as the lists of InfoDev applicants, Stockholm Challenge finalists, Dot Force consultations, One World net's list of partners, Benton Foundation's digital divide list and listing develop by UNDP, IDRC, Bridges.org and may others).
 The observatory would aim to go beyond superficial description based on websites "about", organizational claims, program documents and promotional literature. The purpose would be to develop progressively in depth profiling of the most important initiatives. The observatory could develop templates to usefully characterize, compare and learn from the included projects from various perspectives. It could conduct trend analysis at the quantitative and qualitative level, to assess the development of the field.
- Starting an international **ICT initiatives monitor**:
 Since the mid-nineties, the field is littered with programs, action plans, and announcements of international or regional actors. Many of these have been even accompanied by specific goals, target figures or time frames. As for the UN international conferences and country compliance, DID could start a monitoring of implementation and follow through of international actors announcements and promises. The monitoring could include signaling the dead links and old updates in many of the web pages of international actors sites. DID could thus hopefully contribute to more rigor and accountability and better adequation between claims and possibilities in the field of ICT and development.

- Conducting **empirical researches and comparative studies** in the field of ICT for development:
 The last two years have seen an accumulation of global assessments, general overviews, and review articles that repetitively make the case for ICT as a potentially powerful tool for development. Many of these have been a mix of analytical assumptions about the field, illustrations with a number of exemplary cases or stories (often the same “famous” cases) and a menu of generic recommendations.
 The field is now mature enough for substantial in-depth case studies, rigorous evaluations of practices and experiences (not based mainly on the beneficiaries asked to report on and evaluate the program) and cost effectiveness studies trying to evaluate the trade-offs and the real return on ICT for development investments.
 Of course, a few in-depth studies have already been conducted, but DID could go a long way in helping the international community develop a better understanding of what worked and did not work, what are the opportunity costs of a high priority for ICTs or how to better design and implement ICT for development projects. Among other contributions, DID could build on the systematic and interesting work of IDRC on Telecenters evaluation.

- Contributing to define, standardize, refine and test a set of international indicators, indices, **measurement and analytical tools** on E-readiness, E-policies and E-development:
 DID would build on the many existing public or private attempts in this field. (Bridges. org identified and compared 9 e-readiness assessments tools developed by public and private agencies). DID could develop and try to build a consensus around a set of coherent, comprehensive and operational ICT and development assessment tools.

- Producing a regular **International Report** (or Annual year book) on ICT and Development:
 DID’s report would examine the state of the field, analyse the emerging trends, highlight problems and needs and feature some of the Agency's studies, indicators and monitoring results.
 The International Report could help in building the field and accompanying its development through carefully selected thematic foci, statistical time – series and stakeholders point of views. DID could build on existing partial attempts, including the yearly State of the Internet, sponsored by the US Internet Council. But DID should target mainly a developing countries audience, give priority to multilingual versions, and use the clearest possible language, away from the international development jargon.

- Supporting developing countries governmental units, academic units and NGO’s in **ICT project development**:
 DID could help in project proposal formulation, in matching with donors and existing sources of funding, in project monitoring and evaluation, and

in post project knowledge sharing and dissemination. To the largest possible extent DID should rely on national, regional or Southern expertise in its project development support.

DID could also help in twinning and bilateral cooperation arrangements with comparable actors from the North or the South and with similar, more mature projects.

- Facilitating or co-organizing **specialized training programs:**

The programs would include face-to-face workshops, on-line training, training modules and cyber-mentoring. As a priority, DID would target specific strategic categories such as governmental units' IT managers, Telecentres managers, school IT support staff, head librarians, NGO leaders, teachers as trainers and others. DID programs could be organized on an national, regional or inter-regional level.

2) Promotion of ICT for Learning

An international development agency could have a broad mandate, a narrow mandate or a wide enough but delimited and manageable mandate. It is recommended here that a DID agency should mainly focus on the field of ICT for learning, leaving to other specialized international agencies the support of areas such as ICT for health care, environmental management, agricultural development or E-commerce.

It is in the application of ICTs to enable more widespread and more creative learning and to develop productive linkages between new technologies and renewed pedagogy that a DID agency could hope to have the most effective impact on bridging the divide.

DID could coordinate a developing countries oriented international effort to develop ICTs as powerful tools for better initial learning, renewable learning and life long learning and for easier access to a worldwide basis of knowledge. The adapted set of ICT tools could be applied to all possible sites of learning: formal educational sites, distance learning sites, workplaces, community centers and homes. They could be harnessed to improve the efficiency, accessibility and quality of the learning process in developing countries.

Within that larger context, a DID led international effort could more effectively concentrate on the newer generations, on the community of educators, and on the local producers of learning content and methodologies. This might mean initially avoiding apparently universalistic all-out attempts at spreading ICT literacy in all levels of developing countries' societies.

DID could develop a particular focus on the interface **between technology and pedagogy** as a powerful tool to enhance broadly and decisively the capacity of students and the efficiency of fundamental education systems in the developing countries.

Among the many possible points of entry to this area, the agency could consider contributing to:

- The development of affordable software education products responsive to local needs, including possible translation and customization of existing products.
- The innovative approaches to developing and upgrading teaching skills in ICT.
- The creation of repositories of study materials that can be transmitted and reproduced at very low cost.
- The setup of regional production centers for educational products to exploit economies of scale.
- The initiatives to enlist and enhance the mass media as a tool for learning.
- The efforts to reconceptualize educational processes in developing countries to include an appropriate balance between investment in skills related to the use of ICT's and in generic competencies for participating in emerging knowledge societies.

A DID agency could develop some major programs to consolidate and expand strategic fields of application of ICTs for learning:

- ICT in Education Program:

The DID agency could help governments, Ministries of Education, school systems, and ICT for learning initiatives in the South identify, sort-out, test, translate, and adapt a selection among the expanding and sometimes pedagogically dubious and confusing universe of ICT tools and applications for education.

DID could promote and support further research into effective means of incorporating ICT technologies into developing countries' school curriculum and efficient approaches for using these facilities to reform traditional teachings functions, develop cognitive process and promote collaborative learning.

DID could promote international level efforts for a systematic cataloguing of available educational multimedia products as well as the establishment of standards for production, selection and evaluation of educational software.

DID could finally facilitate collaboration between developing countries on a regional and / or linguistic areas basis, to share limited resources and address common problems concerning the progressive introduction of ICT's into educational systems and the development of culturally, economically, and linguistically appropriate educational material.

- ICT-based Teacher Training Program:

Support for teachers is one of the most important requirements for improving the quality of education in any society. Teachers in developing countries mostly receive low salaries, work in schools with poor infrastructure and tight budgets and have little access to opportunities to further their learning and enhance their teaching skills.

Traditional classroom-based teachers' training programs are irregular, not feasible on a large scale, limited by the pool of available trainers, not usually supplemented by consistent follow-up and involve costly transportation and accommodation costs and undue disruption of school schedules and community life. In addition, many developing countries are increasingly experiencing teachers shortages and teacher college output might not be able to follow the rate of expansion of the school aged population.

DID could develop a program to explore the potential of ICTs to deliver a large scale, consistent and high quality level of support for teachers in developing countries. DID could draw on the practical experiences of the few developing countries that have experimented with computer mediated professional development programs for teachers training and build on pilot projects such as the ones implemented by the Academy for Educational Development and others. The Agency could help Ministries of Education and school systems design and implement ICT based teacher training, in collaboration with institutions such as UNESCO, the Institute for International Education or the Commonwealth of Learning.

- Distance Education Capacity Initiative:

Distance education has already been developed in the last two decades in several large developing countries (China, India, Indonesia, Iran, South Africa, Thailand, Turkey, Mexico...) to extend educational services to underserved segments of the population, remote communities and dispersed individual learners at the tertiary or secondary level of education. Mega distance only universities and some conventional universities have operated mainly with print-based correspondence (what some have called nicely P-mail (postal mail)). Many have also developed extensive air-correspondence (radio and/or television). Distance education programs have been generally less expensive than residential universities and allowed thousand of additional students to obtain higher education at their own pace while they work to support their families.

Satellites and the Internet have the potential to transform the world into a borderless educational arena. The scope of distance education could be dramatically expanded and contribute to addressing the huge unmet demand of learners in developing countries. The AVU experiment in Africa is a good

example of the possibilities (and limitations) of the newer technologies in distance education.

The DID agency could help developing countries and school systems explore the potential of the newer approaches in terms of educational quality and effectiveness, affordability, sustainability and the availability of efficient delivery modes. DID could extend support to the countries that have determined a need to build their capacity to conduct distance education in various formats and models.

- Telecenter Development Initiative:

For over a decade now, numerous multilateral and bilateral development agencies and international NGO's have supported the establishment of community based ICT access centers in a variety of forms, models, sites and names (Technical Access Community Centers, Multipurpose Community Centers, Telecentres.....). UNDP, ITU, UNESCO, IDRC, USAID, InfoDev, to name a few, have engaged in piloting, funding, assisting, networking or evaluating telecenters.

Telecentres were promoted as primary facilities or entry points to provide local access to a variety of ICT based information and social, educational and governmental services at affordable costs. Low income communities, local organizations, rural poor, geographically marginal regions and other underserved groups were seen as the major potential beneficiaries of the expanding telecenter movement in the developing countries.

The DID agency could lead an international level learning and development effort to assess more rigorously this much touted formula. DID could ascertain the additional need and effective demand for supplementary international assistance from developing countries.

Should governments of developing countries determine that telecenter implementation is a national priority for a wider and more equitable access to ICTs, DID could help them set up country-wide telecenters programs. The Agency could help mobilize start up and revolving funds, and provide technical assistance, knowledge transfer, linkages to similar programs and monitoring systems. DID could also selectively extend support to large-scale NGO-based networks of telecenters.

3) Support for Appropriate Technology and Local Content Development

The penetration, dissemination, and effective use of ICT's for development depends, to a large extent, on the availability of affordable, cost-effective technologies, appropriate to the economic, social and technical conditions prevailing in developing countries.

A DID agency can play several roles in promoting that availability:

- **Technology Monitor:** DID could monitor new developments in the rapidly evolving ICT technological field, identify promising innovations and help accelerate their early adaptation and application to the needs of ICT for development. It could help link some of the innovators and small producers from the North and the South to key actors and potential users in developing countries.

- **Technology Advisor:** DID could help developing countries and development stakeholders determine the costs/benefits, trade-offs and implications of the various technological choices and decisions they have to make:

- New technologies (Internet, satellite connections, cellular telephony...) versus "old" technologies (Radio, television, landlines...)
- Open source software versus commercial software
- Centrally based modular technologies versus diversified and localized solutions.
- Alternative connectivity solutions.
- Alternative distance education delivery modes.

- **R&D Promoter:** Building on pioneering initiatives and successful pilot cases, a DID agency could itself play a leading role in promoting and supporting R&D investments in ICT for development on an international scale. This could include promoting the growth of affordable and innovative hardware and of local application development capacities in countries of the South on a selective basis.

The role of DID as a **supporter of appropriate technology** could be illustrated by an apparently paradoxical example: DID could help revisit and promote the use of radio and particularly community radio, as a powerful technology for the delivery of mass education and critical information, with a wide potential reach.

The potential of radio for learning and development has been largely underutilized. Radio reaches a wider audience than any other media, particularly in least developed countries. It is widely available, cheap and portable; radio programs are cheap to make and can reach people that are isolated by language, geography, illiteracy or poverty; radio can be a group activity (discussions after an educational program); It can act as a community telephone, can play a role in local culture preservation and allow for focus on local needs through locally produced programming. Even in case of unreliable electricity supply, alternatives for radio stations have been tested based on solar and windup technology.

The advent of digital radio has reinforced the potential of radio and opened new opportunities for forms of delivery and easy access to a wide choice of national and international programming. Digital radio transmission can have

better geographical coverage through very low power repeaters, can share transmission between up to six services at once, has limited power requirements, and facilitates local rebroadcast of international and national education programming. Digital radios can carry text and graphic based information on a small screen and allow illiterates and learners written or graphic context for lessons in reading and writing.

Building on pioneering projects such as the Commonwealth of Learning Media Empowerment initiative on community radios, DID could help disseminate and scale up media models and technologies that stress local participation, provide real opportunities for disadvantaged groups and fully utilize the potential of already widespread and affordable ICTS for development

In another illustration, DID could support and help **expand the innovative initiatives** of socially committed entrepreneurs and scientists working to bridge the digital divide in their countries.

Known examples being currently developed are the \$200 handheld Simputer (Simple, Inexpensive and Multilingual) computer in India and the \$300 stripped down, modular, low-budget Volkscomputer in Brazil. Although Brazil has over 4 million regular internauts and both Brazil and India have a software booming industry, India has a very low personal computer base (five million PCs in a nation of over one billion) and 35% of citizens who cannot read or write and most Brazilians do not earn enough to have a phone line, let alone a regular computer. Both innovative technological initiatives, due to hit the market this fall, could help significantly expand the reach of ICTs to the rural population, low-income groups and public schools.

Another interesting initiative is the New Deal office software. Developed initially for the educational, small business and non-profit US market, New Deal is an integrated office suite. Sold for less than \$ 40, it could run on any PC (as old as a 286) and enable the user to access simply the major functions of computing and web browsing on older, obsolete or recycled machines. New Deal is working currently to expand its reach to Southern Africa, the Middle East, Brazil and India.

DID could scan for, identify and support Simputer, Volkscomputer and New Deal like- minded projects and initiatives.

4) Facilitation of Surplus Recycling and Exchange Programs.

Despite a significant decrease in prices of hardware, the purchase and maintenance of a computer, the necessary software and the Internet connection costs remain prohibitive for low-income families, most organizations with limited budgets and the overwhelming majority of the poor in developing countries. Even for the sectors and organizations that can afford the technology, real and efficient usage remain low, because of wide spread computer illiteracy and little mastery of basic ICT know-how.

DID could spearhead a comprehensive international effort and sustain campaigns to contribute to addressing this basic lack of hardware and ICT skills.

In that perspective DID could promote, support and expand international regional and national initiatives to **recycle surplus hardware and software** from governments, corporations and agencies to developing countries, institutions or sectors of societies in need.

It has been estimated that in the United States alone, the number of discarded computers between 1998 and 2000 may have reached over 70 million. Millions of computers in industrialized countries are dumped each year. Recycling even one percent of them for a new life in developing countries sites could make a significant contribution to reducing the digital gap.

In the past few years, in the USA, Canada, the UK, Australia and some other industrial countries, a number of not for profit organizations have focused on the tasks of collecting, refinishing and finding new homes for old computers. Several corporations have also been involved in recycling projects and in countries like the USA and Canada, governments have taken leadership roles in transferring federal surplus in computers and related equipment to schools and not-for-profit organizations. These efforts have gone a long way in addressing the internal digital divide within several of the industrialized countries.

International partnerships, efforts at creating a North-South recycling flow and initiatives within the developing countries themselves remain rare and limited. The US non-profit, PEP, in its National Directory of Computer Recycling Programs lists initiatives of US NGO's sending computers to Ghana and Kenya, and internal initiatives in India and Bahrain. The Computers for India Coalition is an umbrella organization bringing together US and Indian organizations working to recycle computers and promote the use of ICT for development in India. The British charity Computer Aid International has sent more than 5,000 computers to 30 developing countries. The American NGO, World Computer Exchange, has developed a pioneering program to provide disadvantaged youth in schools of over twenty countries with computers, some training and cross cultural exchanges, in collaboration with local NGO partners.

Although these and similar initiatives have considerable merit, they remain quite limited in their impact and possibilities. The largest operation did not ship more than 5,000 computers for a one-year period. DID could contribute by helping existing initiatives scale up their operations, find larger pool of donations, pay for the shipping costs, identify adequate grantees in the developing countries (schools, community development centers, Telecentres,

libraries, municipalities, health care centres, NGO's...), arrange for local installation and training and support the monitoring of the usage.

DID could also set up its own global operation, building partnerships with a few large key NGO's at the sending end in the industrialized countries, and with international organizations' country offices (UNDP, UNICEF ...) and representative NGO's at the receiving end in the developing countries. DID could also obtain sponsorship from and build alliances with large ICT corporations, already committed to significant e-giving programs. (IBM, Microsoft, HP and others).

DID, could, on another level, work with the new United Nations Information Technology Service, (UNITES), UNV and a broad coalitions of institutions from the South and the North, to expand the **recruitment of computer - and Internet - savvy volunteers** and contribute to their strategic placement for capacity building and project support in the South, including in projects and initiatives developed by DID itself.

In that respect DID and its partners could explore ideas such as ICT work-camps, ICT summer camps, ICT volunteers mobile units, on-line volunteering programs, and computer literacy campaigns: DID could also encourage and facilitate **direct exchange programs** between NGO's, schools, community development centers, and telecenters, from the North and the South. The Agency could develop a clearing-house for exchange requests and proposals, on a worldwide basis.

E. PARENTAGE AND GOVERNANCE OF A "DID"

(Prepared by The Centre for Global Studies)

The "location" of the "New Agency" and the decision on its "voting" shareholders is important, both symbolically and substantively. Control is a sensitive issue. Some believe that any form of government control is a guarantee of failure, or that paralysis will result if a multilateral agency has a parental role. The contrasting view is that if public money is involved, accountability concerns militate against excluding governments.

Shareholders could include any permutation and combination of existing multilateral units currently in the field (Dot Force, UNDP, World Bank, ECOSOC ICT Task Force, NetAid for example), national government agencies, NGOs, private foundations, and private sector enterprises or financial institutions.

There is a wide spectrum of options for the choice of "parents". Simplicity and administrative tidiness would lead to selecting one parent from amongst existing multilateral institutions. Coalition building concerns lead to a multiple parent model like CODEX (FAO/WHO) or the Global Environment Facility (World Bank, UNDP and UNEP). On the cutting edge is the public-private partnership, like UN NetAid (UNDP and CISCO). Current models of

international organization boards include examples where NGOs are provided full participation status like UNAids Program Coordinating Board and the World Commission on Dams.

Criteria to bear in mind in selecting amongst options include effectiveness, measured several different ways:

1. *Do not reinvent the wheel.* There is no need to duplicate functions currently being performed well. Ideally, the new “Agency” will bring resources to bear to expand, enhance and complement existing efforts by international and national efforts (for example, but not limited to, UNDP, World Bank, and NetAid);
2. *Access to the right skill mix and resources.* Organizations outside government have much to offer:
 - Operational effectiveness depends on the commitment of NGOs (Association of Progressive Communications (APC) and Bridges.org, for example);
 - Private multinational Telecommunications providers could bring resources and practical knowledge to the table;
 - Multinational enterprises, concerned about their corporate social responsibility, can contribute marketing and financial resources;
 - Multinational software, hardware, and consulting firms wishing to make a positive social contribution and access new markets could provide innovations.
3. *Team cohesiveness.* There must be good prospects for cooperative and positive relationships.

Some options for parents, i.e. Major Shareholders, include:

1. Sole parentage – an expanded mandate for existing World Bank or UNDP units, or a new facility under one of their auspices.
2. The GEF Model – A “New Agency” reporting jointly to the World Bank and the UN agencies most directly concerned.
3. The UNDP Netaid Model.
4. The Innovative Model – Something analogous to a partnership of four consortia with equal votes – including: i) a consortium of international organization; ii) a consortium of national governments; iii) a consortium of NGOs; and iv) one or more private multi-national enterprises.

The support for any new Agency will be increased to the extent that it incorporates progressive, state-of-the-art **governance features**. Whatever the eventual determination of its function and mandate, enhancing

participation, transparency and accountability are worthy objectives. Obviously, the governance mechanisms or approaches adopted must be appropriate for tasks set for the agency. Recommended features would vary with possible functions - researcher, service provider or advocate.

There are many governance best practices in the international system that may be applicable. Focusing on the goal of participation, the UN's NGO Liaison Service is a model of a dedicated unit to promote partnerships with NGOs. The UNAids Program Coordinating Board exemplifies how an inclusive committee of representatives of co-sponsoring organizations can provide for a diverse array of inputs into strategy. Internet Working Groups, based on the example of "UN Women Watch/Beijing +5 Global Forum," can expand and diversify the discussion of key issues and mobilize support. Web pages constructed by the Agency officials and governing board members, can provide a focal point for information exchanges about the Agency activities and allow for more informal and personal ways for the public and the constituency to interact with the Agency.

One apparently elementary tool is a comprehensive contact list allowing informed access to staff. The World Bank has a well-organized contact list of its experts and senior staff as well as its regional, country, and media contacts, available to the public on the Bank's web site. Their example could be emulated for a DID and the relevant representatives of its sponsors and shareholders.

To widen the net in gathering information and views in the policy formulation process, Internet on-line dialogues provide good promise. An excellent example is the Discussion with Scholars and Trade Experts, co-sponsored in October 2000 by the WTO and World Bank. Government officials, business representatives, students, NGOs and other interested parties participated in a month-long on-line forum on Trade and Sustainable Development.

Accountability is a sensitive and complex issue at the best of times. In the ICT field, with diverse types of organizations operating in widely differentiated cultures and economic circumstances, any central or "conditional" direction is problematic. There are governance features that could apply to the operations of the Agency itself. The model of the Compliance Advisor of the World Bank's IFAC/MIGA is a worthy example to adopt – especially the mode of recruitment of the person in charge by an external search committee. A forum comprised of several dozen practitioners, academics and government representatives, that meet once a year, to review results and future plans, is a possibility. The example is the Forum of the World Commission on Dams.

The DID could promote accountability in governance of technology dissemination activity at large. In this context, it could borrow ideas from the IMF – its Code of Good Practices on Fiscal Transparency – or from CIDA – its Compliance Standard on Gender Analysis. It could adapt the WTO's peer

review process by constructively examining the policies and performance of recipients of program funds by the DID.

There is a large inventory of good practices from which to draw. We are convinced that adopting good governance features is intrinsically worthwhile, and also will contribute positively to the reputation of a new DID, whatever its mandate and parentage, facilitating its tasks and the performance of its functions.

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III. WORKSHOP AGENDA

The Digital Initiative for Development (DID) Agency
International Consultative Workshop
held in Gefinor Rotana Hotel, Beirut, September 11-12, 2001

Tuesday September 11th, 2001

- | | |
|--------------------|---|
| 9h00-9h30 | Registration |
| 9h30-10h00 | Welcome & Introduction to the Workshop
Dr. Salim Nasr |
| | The Managing Interdependence Global Project
Dr. Barry Carin |
| 10h00-11h30 | Review of International Initiatives and Programs on the Digital Divide
Moderator: Mr. Robert Valantin |
| 11h30-12h00 | <i>Coffee Break</i> |
| 12h00-13h30 | Why a New Agency: The Value Added Potential of DID
Moderator: Ms. Magela Sigillito |
| 13h30-15h00 | <i>Lunch Break</i> |
| 15h00-16h30 | Functions of DID (1):
A Monitoring, Research and Resource Center
Moderator: Ms. Mary Fontaine |
| 16h30-17h00 | <i>Coffee Break</i> |
| 17h00-18h30 | Functions of DID (2):
Promotion of ICT for Learning
Moderator: Dr. SVS Chaudhary |
| 20h30 | <i>Dinner</i>
Hosted by The Lebanese Center for Policy Studies |

Wednesday September 12th, 2001

- 9h30-11h00** **Functions of DID (3):
Support for Appropriate Technology and Local Content
Development**

Moderator: Mr. Mike Jensen
- 11h00-11h30** ***Coffee Break***
- 11h30-13h00** **Functions of DID (4):
Facilitation of Surplus Recycling and Exchange
Programs**

Moderator: Dr. Gaston Zongo
- 13h00-14h30** ***Lunch Break***
- 14h30-16h00** **Governance and Institutional Design of DID**
Moderator: Dr. Barry Carin
- 16h00-16h30** **Closing discussion and wrap up**
Moderator: Dr. Salim Nasr
- 17h30** ***Departure to visit Byblos / Dinner by the sea***
Hosted by The Lebanese Center for Policy Studies

IV. LIST OF WORKSHOP PARTICIPANTS

NAME	AFFILIATION	ADDRESS
Dr. Gabriel Accascina	Director, IT4DEV	New York, USA
Ms. Zeyna Al-Jabri	Specialist, Sub Regional Resource Facility for Arab States	Beirut, Lebanon
Dr. Barry Carin	Program Coordinator, Centre for Global Studies / University of Victoria	Victoria, Canada
Prof. Sohan Vir Singh Chaudhary	Director - School of Education, Indira Gandhi National Open University	New Delhi, India
Dr. Florence Eid	Assistant Professor, School of Business, American University of Beirut	Beirut, Lebanon
Mrs. Effat El Shooky	Vice President and Director, Regional Knowledge Program at the Regional Information Technology and Software Engineering Center (RITSEC)	Cairo, Egypt
Mr. Jalal Fawaz	Vice President, Professional Computer Association (PCA)	Beirut, Lebanon
Ms. Mary Fontaine	Information Dissemination Specialist, LearnLink Project, Academy for Educational Development (AED)	Washington DC, USA
Mr. Pierre Hamouche	Information Management Assistant	Beirut, Lebanon
Dr. Wassim Harb	Chairman, Research and Study Firm in Informatics and Law SAL MADAMEK	Beirut, Lebanon
Prof. Heather Hudson	Director, Telecommunications Management and Policy Program, School of Business and Management, University of San Francisco	California, USA
Mr. Mike Jensen	Independent Consultant	Eastern Cape, South Africa
Dr. Salah Khelfaoui	Director, Institute for Technological Innovation, Zayed University	Dubai, United Arab Emirates
Dr. Raymond Khoury	Director, Technical Cooperation Unit, Office of the Minister of State for Administrative Reform	Beirut, Lebanon
Mr. Ewan McPhie	Policy Advisor, Bridges.org	Durbanville, South Africa
Dr. Salim Nasr	General Director, The Lebanese Center for Policy Studies	Beirut, Lebanon
Mr. Vikas Nath	Policy Analyst, Office of Development Studies, UNDP	New York, USA
Mr. Plamen Nedkov	Executive Director, International Federation for Information Processing	Laxenburg, Austria
Dr. Najat Rochdi	Consultant, Internet Initiative for Africa - Adviser, Moroccan Ministry for Information Technology	Rabat, Morocco
Dr. Olivier Sagna	Chef de projet délégué de formation en NTIC, Agence Universitaire de la Francophonie, Bureau Afrique de l'Ouest	Dakar, Senegal
HE Dr. Nasser Saidi	Central Bank of Lebanon	Hamra, Beirut
Dr. Paul Salem	Director, Fares Foundation	Jounieh, Lebanon
Dr. Magela Sigillito	Director, Red Chasque / Uruguay Total	Montevideo, Uruguay
Mr. Robert Valantin	Head, Country Gateway Coordination - Lead Information Officer, Development Gateway, The World Bank	Washington D.C, U.S.A.
Dr. Gaston Zongo	Consultant	Dakar, Senegal

V. INTERNATIONAL PARTICIPANTS BIOGRAPHIES

GABRIEL ACCASCINA has worked in information technology in the development context since 1992. He is currently the director of the consulting firm IT4dev and was the Regional Coordinator of the UNDP Asia-Pacific Development Information Programme, which assists countries in using information, IT and Internet to foster sustainable development activities. Between 1982 and 1991, Mr. Accascina worked in IT and media in Silicon Valley managing his own consulting firm. From 1992 to the present he worked in a number of developing countries combining information, technology and development in a wide range of environments including education, technical assistance and public policies. His clients include various UN Agencies, Governments, International Organisations and Financial Institutions. Mr. Accascina has started and carried out a number of initiatives, including the first public Internet connection in four countries, the Network Academies Project in partnership with Cisco Systems, the Mobile Internet Unit in Malaysia, the MIDAS IT grants programme in Mongolia and the IT Development Project in East Timor. Additional information on his work, papers and media articles are published at www.it4dev.net. Mr. Accascina holds a Masters degree in development communication and is a fellow at Harvard University, and can be reached at gabriel@it4dev.net

BARRY CARIN is Program Coordinator at the Centre for Global Studies, University of Victoria Canada. From 1996 to 2000, he was High Commissioner of Canada to Singapore. Prior to that he was Assistant Deputy Minister Trade, and Economic Policy with Canada's Department of Foreign Affairs and International Trade where his responsibilities included Foreign Affairs Sous-Sherpa for four G-7 Summits and leader of the branch responsible for the conduct of international trade and investments negotiations, including disputes settlement.

SOHAN VIR CHAUDHARY is a professor in the School of Education at Indira Gandhi National Open University (IGNOU) in India. He holds a Ph.D in educational television from the University of Delhi and a certificate in educational television from BBC- OUPC, UK. In 1995, he was awarded an Association of Commonwealth Universities Fellowship to study the role of new communications technologies in Canada. He has been a researcher for the Indian Space Research Organization and for *Doordarshan* (Television India) and joint Director (Media Research and Training) at IGNOU. He has also undertaken work for ADB-COL and UNESCO, and has contributed to various national and international publications.

MARY FONTAINE works with the Academy for Educational Development's (AED's) LearnLink project, a USAID-funded global communications program, where she manages telecenter activities in Africa and distills and documents lessons learned from 15 IT projects in different sectors around the world. Her

background includes 20 years of development work in many sectors with the Asia Foundation, Save the Children, the US Coalition for Education for All, and others in the Near and Middle East, South Asia, and Africa.

HEATHER E. HUDSON is Professor and Director of the Telecommunications Management and Policy Program in the McLaren School of Business at the University of San Francisco. Dr. Hudson has consulted widely on telecommunications and development, and has planned or evaluated ICT projects in more than countries. In 1998-1999, she was Co-ordinator of Evaluation and Learning Systems for the International Development Research Centre's Acacia Programme, which supports projects and policies that extend access to ICTs in sub-Saharan Africa. She is the author of numerous articles and papers, on as well as several books including *Global Connections: International Telecommunications and Policy*, *Communication Satellites: Their Development and Impact*, and *When Telephones Reach the Village*, and co-author of *Rural America in the Information Age* and *Electronic Byways: State Policies for Rural Development through Telecommunications*.

MIKE JENSEN is a South African independent consultant with experience in over 30 countries in Africa assisting in the establishment of information and communications systems over the last 15 years. He works with international development agencies, the private sector, NGOs and governments assisting them in the formulation, management and evaluation of their Internet projects. Mr Jensen is a trustee of the African IT Education Trust, a board member of the South African Internet service provider for NGOs - SangoNet - and was a member of the African Conference of Ministers' High Level Working Group which developed the African Information Society Initiative (AISII) in 1996.

EWAN MCPHIE is Bridges.org's policy advisor. Bridges.org is an international non-profit organisation whose mission is to help people in developing countries use information technology to help themselves. Mr McPhie is on secondment to Bridges.org from the UK Government where he was an advisor to the Cabinet Office. A member of the UK's Senior Civil Service, he was involved in drawing up legislation on the Internet and e-commerce, and has chaired and served on a number of inter-governmental, EU and international committees addressing related issues. He has extensive experience in policy formulation and advice to government, and also has private sector experience in the UK and Far East. Since joining bridges.org he has participated in the World Economic Forum Task Force and other international policy initiatives, and is involved in policy work and on-the-ground initiatives. He is currently based in Bridges.org's Cape Town, South Africa office.

SALIM NASR, a Lebanese sociologist and graduate of the University of Paris, is currently Director of the Lebanese Center for Policy Studies, in Beirut. He has been previously Program Officer for Governance and International Cooperation, for the Ford Foundation's Middle East and North Africa programs from 1991 to 1998. He has held many academic positions including Research

Director at the Center for the Study of the Contemporary Middle East, Beirut; Professor of Sociology at the American University of Beirut; Visiting Professor at the Fletcher School of Law and Diplomacy; Mac Arthur Scholar at the Brookings Institution; Visiting Professor at Georgetown University; and Executive Director of the Center for Peace and Reconstruction in Lebanon, Washington, D.C. He has extensive publications on social movements, sectarianism, and the civil strife in Lebanon as well as labor migration, urban problems, social stratification and the democratization process in the Arab World.

VIKAS NATH is Policy Analyst at the Office of Development Studies, UNDP, New York. He has worked as Program Officer for the Sustainable Development Networking Program (SDNP) in India and as Policy Analyst for ActionAid, India. He has worked on many consultancy assignments including Evaluation of Tele-Access Community Centers (TACCs) project in Egypt, and e-governance applications in South.

PLAMEN NEDKOV has active involvement in the operations of the International Federation for Information Processing dates back to 1989 when he was appointed as IFIP Contracts Officer. In 1994 he was named IFIP-UNESCO Liaison officer and was appointed as the IFIP Administrator Manager with an important assignment to transfer the IFIP Headquarters and Secretariat from Geneva to Laxenburg. Since 1996 he is Executive Director and also represents IFIP on the International NGO-UNESCO Liaison Committee. Prior to his IFIP employment he was Head of Department at the Bulgarian Academy of Sciences and as such has coordinated several major international projects and events with specialized agencies of the UN system and non-governmental organizations.

NAJAT ROCHDI is an Engineer in computer Sciences and has a master degree in mathematics applied to Informatics. She is Director in charge of Cooperation and IT development in the Ministry of Post and IT in Morocco since July 2000. Since April 2000, she has also been a member of the panel of ICT experts set up by the Secretary General of United Nations, Kofi Anan, to advise on ICT policy for Economic and Social Development. Ms Rochdi was adviser to the Minister in charge of IT & Post in Morocco from September 1998 to July 2000. She has had extensive development experience working with Government, NGOs and International Organization (UNDP, UNFPA, FAO, USAID, IDNS,.....) and has led and organized a number of workshops on Policy formulation, Information Technology instruments & tools training, and project formulation. She has been senior adviser in many consultations for implementing Information Technology Policy for Economic and Social Development in Developing Countries, Team leader for the national action plan for Information Technology in Morocco as well as information systems and communication strategies to sensitise decision makers and policy makers to the strategic role of Information Technology in development. From 1995

until 2000, she was international consultant for the UNDP program "Internet initiative for Africa" and the "Sustainable Development Networking Program".

OLIVIER SAGNA is ICT Training Project Officer at the West Africa Regional Office of the Agence Universitaire de la Francophonie (AUF= Francophone Agency for Higher Education). He has also worked as Global Information Infrastructure Specialist for USAID/Senega and worked as a consultant for IDRC to design the Acacia National Strategy for Senegal. Prior to that, he was Associate professor at Ecole des Bibliothecaires, Archivistes et Documentalistes at University Cheikh Anta Diop of Dakar. He has held different responsibilities as Leland Initiative Coordinator for Senegal, General Secretary of OSIRIS (Observatoire sur les Systemes d'Information, les Reseaux et les Inforoutes au Senegal) and founder member of the Senegalse Chapter of Internet Society (ISOC-Senegal).

ROBERT VALANTIN is Head of the Country Gateway Coordination. He was previously a Senior Scientific Advisor, Information and Communication Technologies (ICTs), International Development Research Center (IDRC). His academic background is in computer science, mathematics and physics. He initiated and managed programs and projects providing support for developing- country policy and technology research and for applications development. He has worked closely with a wide variety of organizations including UN agencies, NGOs, developing country research institutes, universities and so on. Prior to working in development, he established and operated a successful private sector consulting firm based in Toronto.

GASTON ZONGO is a citizen from Burkina Faso (West Africa) and is a telecommunication engineer, graduate of the Ecole Nationale Superieure des Telecommunications de Paris (1976). He also holds a Masters in mathematics and a post graduate in Research and Development Economics, of Paris I University. He has been a managing Director of the Telecommunications Operator of Burkina Faso for 15 years, and simultaneously professor of mathematics and applied statistics at the university of Ouagadougou (Burkina Faso). He has been the Executive director of the African Telecommunication Observatory for two years before being appointed Executive Director of the IDRC/ Acacia initiative (Communities and information society in Africa) (July 1998). His main research interest is focused on policies and strategies to reach universal access and rural connectivity and in particular the community access. He is leading the Acacia programme out of the regional office of IDRC in Dakar (Senegal).

MAGELA SIGILLITO is the Director of the ICT operations of the Instituto del Tercer Mundo, an Uruguayan based NGO. These operations including the managing of Chasque, the oldest (1989) Internet Service Provider in Uruguay, and the coordination of Uruguay Total, the largest general interest portal in the country. She is vice-president of the board of the Association for Progressive Communicatins (APC) and was coordinator of NGONET, a project

started in 1991 to promote the use of ICTs by Southern NGOs. Ms. Sigillito holds a degree in Library Science.

SALAH KHELFAOUI, a graduate of the school of Engineering at the University of Massachusetts, is director of the Institute for Technological Innovation, born out of an agreement between Dubai Internet City and Zayed University in the United Arab Emirates. The goals of the institute are to promote ICT training, ICT related information dissemination, and ICT research. Prior to moving to Dubai, Dr. Khelfaoui has spent over twenty years working in the fields of IT and IS both as an executive and as a faculty member. His most recent experience includes having spent 6 years as a technology director in Western Massachusetts where he co-founded the Technology in Education Partnership. TEP is a consortium bringing together partners from higher education, K-12 School Districts and local businesses and industries in Western Massachusetts.

EFFAT EL-SHOOKY is the Vice President for RITSEC, the Regional Information Technology and Software Engineering Center since 1992 and the Director of the Global Distance Knowledge Center established jointly with the World Bank and the government of Egypt. Early 2001, she served as the Director of International Cooperation at the Cabinet of Egypt Information and Decision Support Center since its establishment in 1985. Previous to that she worked for the industry at IBM and for international organizations at the Arab League private sector. She has an average of 25 years of experience in ICT for development focusing on programs, projects, centers and networks formulation, design and management. She masters intergovernmental, multinational, international – national, public-private coordination for national regional and global projects. She represented Egypt as a member of official delegations to the GS, G15, G77, Euro-Mediterranean ICT initiatives and participated in a high number of international consultative and advisory missions organized by UNDP, World Bank, European Union, UNESCO, ITU, ECA, ADB. Her recent achievement is having in place operational 3 distance learning programs: academic "Global Campus", Professional "Learnnet" and Executive "GDLC-Egypt".

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VI. Annexes

Abbreviations

AVU African Virtual University
DOT force Digital opportunity task force
DOI Digital opportunity initiative
GDG Global development gateway
GDN Global development network
GDLN Global Distance Learning Network
GDN Global development Network
IFIP International Federation for Information Processing
SBEM Soft bank emerging market
SDNP Sustainable development networking program
WEF world economic forum
WIDE Web of Information for development
world World Links for development

Selected Background Documents

1. *Digital Opportunities for All: Meeting the Challenge*, Report of the Digital Opportunity Task Force (DOT Force) to the G8 Summit, May 2001.
2. *Donor Information and Communication Initiatives and Programmes*, OECD, March 2001.
3. *List of on the Ground Initiatives in the Developing World*, Bridges.org, June 2001.
4. *Landscape of Relevant Activities on the Digital Divide by the International Community*, Center for Global Studies, August 2001.