



ICT, Education & Innovation

Framework on Education For All in the Digital Age

Publications Of Global Alliance for ICT and Development

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Framework on Education For All in the Digital Age

*Multi-Stakeholder Partnership on Quality Education for All and
MDG Achievement in the Digital Age, Formed Under the
Auspices of the UN GAID*

Executive Summary

This Framework for the UN GAID Partnership on Quality Education for All in the Digital Age emanates from discussions and insights of Partners from world-leading organizations convened by the UN GAID. It reflects the dynamics of cultural, social, and institutional factors, and principles of sustainability in environmental, social, economic, and cultural contexts. In coordination with local stakeholders, Partners may provide policy support and resources to governments in developing countries to advance the attainment of the MDGs by creating an “enabling environment” for large-scale ICT integration into their education and learning systems. Partners may also provide (i) knowledge sharing and capacity building programs for educators, educational institutions, and policy-makers, (ii) coordinated infrastructure deployment, (iii) assistance in the selection and dissemination of software and content, and (iv) collaborative research, follow-up and evaluation.

“Enabling environments” for ICT integration in education (ICT4E) involve both strategic and tactical inputs which should be considered from each of two vital vantage points: Enabling Side and Supply Side. The enabling side refers to the readiness of institutions and educators to utilize ICT in education. The supply side refers to the availability and affordability of hardware, software, training, content, and services which determine access to ICT. Results of the latest global analyses have shown that the challenges in ICT4E are concentrated on issues of readiness more than on issues of supply. Partners agree on the following aspects of education systems from both perspectives:

1. Policy / Cultural Factors: New policies, standards, and regulatory frameworks to enable the innovative use of ICT in education, learning, and innovation
2. Social / Societal Factors: New institutional arrangements for educational transformation

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3. Human Factors: New, innovative learning and teaching methods to enhance teachers' skills
 4. Software: Selection and deployment of new tools, content, training, and services
 5. Hardware: Deployment of, and access to, ICT infrastructure for education and learning

Developing countries are at varying stages of readiness for deployment and integration of ICT into their education systems. There is much variance among goals, needs, policies, standards, tools, methodologies, content, delivery mechanisms, focus areas, and other local preferences. Countries also differ with respect to the relative degrees of maturity of their enabling environments supporting educational transformation and integration of ICT with learning. Thus, it is critically important that ICT4E initiatives be tailored to address local needs, preferences, and objectives in each developing country. Local governments and other stakeholders must take the lead in recognizing their level of preparation for ICT4E inputs, and utilizing toolkits to identify the inputs that would be most advantageous in advancing their efforts to achieve their goals. The support of global Partners can be instrumental in facilitating this evaluation process and assisting local stakeholders with the decisions that will accelerate their path toward ICT4E deployment and integration.

The selection of ICT4E resources provided to governments in developing countries should be correlated to their degree of readiness for those resources. Countries without an enabling environment that can support large-scale integration of ICT could benefit most from policy support and capacity building at the institutional levels, rather than starting unsupported and unsustainable large-scale ICT implementations.

A financially and environmentally sustainable ICT business model is also vital to long-term success. Countries with established enabling environments could benefit most by receiving business-based support from global Partners to ensure that their locally-defined needs, and local skills, will correlate with the global supply of affordable hardware, software, training, and content for transformation to a 21st century workforce and economy.

This Framework represents Partners' consensus on ICT4E that was discussed prior to and during the UN GAID Forum in Monterrey, Mexico (September 2-4, 2009). The Forum advanced the GAID "Community of Expertise" in ICT4E, solicited additional inputs and perspectives, and elicited insights on the varying maturity levels of the enabling environments in developing countries. Success in implementing this Framework will depend upon active involvement from a broad array of GAID and other stakeholders, as well as augmentation of the activities and inputs that it

enumerates, in order to expand the strategic and tactical options for successful ICT4E outcomes in developing countries. This Framework is not intended to be a “finished product”. Instead, it is an iterative process. In other words, it is a Framework that naturally lends itself toward augmentation, as stakeholders offer their goods, services, resources, and additional input.

The “Action Items and Inputs for ICT4E Implementation” in this document are especially dynamic, as they should be supplemented with an identification of stakeholders who are willing to contribute their efforts / resources / inputs within the methodology. GAID members and others are strongly encouraged to join in one or more of the “Action Items” – and add others -- that correspond to the goods, services, resources, and/or knowledge that they can offer. In this way, the operational value of the specified strategies will be maximized, the “community of practice” of Partners collaborating in these efforts will be expanded, and the Framework can be utilized as a blueprint for tangible impact.

Rationale for Integration of ICT and Education to Advance MDG Achievement

Most international agreements related to educational progress regard education as a key factor for development. Education enables the improvement of countries' social, economic and cultural conditions. There is a strong correlation between the elevation of a population's educational level and improvement in other key aspects of its development and welfare, such as productivity, social mobility, poverty reduction, citizenship and social identity construction and, in sum, the strengthening of social cohesion. The recognition of education as a right that can be judicially required has been embodied in recently ratified major pacts and international agreements, including the World Declaration on Education For All, adopted in 1990, and the Millennium Development Goals (MDGs), adopted in 2000 by 189 UN member countries.

Educational infrastructure and school equipment are fundamental to creating an environment that is conducive to student learning and achievement. School equipment, such as libraries and computers, are especially important for children of low socioeconomic background, who come from homes where educational resources are scarce. Since research has demonstrated that home-based educational resources (such as desks, books, and computers) are among the most important factors that determine student learning results, their absence poses consequential disadvantages. Thus, schools play a key role by compensating for deficiencies in home-based educational resources that are so vital for the improvement of children's learning and achievement.

The use of ICTs and, in particular, access to computers and the Internet, are innovative resources that have become recognized as vital tools for school-based and lifelong learning in the modern and globalized world of today. Social inclusion and workplace effectiveness are increasingly dependent on access to knowledge, network participation, and the use of ICT. Educational institutions and learning environments play a key role in providing these tools, training, and knowledge that promote meaningful use of ICTs, given that they enable mass access to connectivity and the use of electronic networks.

Education systems provide strategic opportunities for reduction of social inequities, and, when integrated with ICTs, they can overcome the digital divide and improve school educational quality. Therefore, the incorporation of ICT in the education field is not just to offer access, but rather also to promote the effective inclusion of ICT in the teaching-learning process and school management. This requires that both school authorities and teachers acquire new skills, which implies profound changes in the traditional school culture. Initiatives to use ICT for development – especially in the education field – carry with them the imperative that technologies are a means, not an end, i.e., a tool for achievement rather than an outcome in and of itself.

Preamble

The Partners of this UN GAID Partnership agree to work together for achievement of the MDGs before 2015 through the creation of joint initiatives and concrete actions related to ICT Integration, Knowledge Generation, and Innovation in Education. The Partners recognize the concepts of quality and sustainability as fundamental to the achievement of the MDGs and Education For All (“EFA”) goals and targets. Even if universal access to ICT is achieved by 2015, what is more important for longer term poverty reduction and the enhancement of the quality of life of learners is that: (a) they stay in school and complete the education cycle, and (b) they receive a quality education which is sufficient to enable them to become productive citizens and independent lifelong learners as a result of having been in school ⁽¹⁾. The Partners agree to the principles described in this document for more sustainable development and better coordination of the initiatives.

Mission

To enable continuous dialogue and coordinated action among global education Partners to empower ICT use in education and academic activities, in order to advance and improve teaching and learning, promote excellence, and enhance accessibility and quality of education and learning.

Objective

Create a global Partnership to enable learners, educators, and other stakeholders to recognize and harness the potential of ICT to enhance access to, and quality of, education and learning; reduce barriers to using ICTs in education and the learning process; share knowledge and good practices about successful use of ICTs in educational environments; and develop policies, strategies, and tactics for ICT integration with education and the learning process.

¹ Yates, C. 2007. *Teacher education policy: International development discourses and the development of teacher education*. IN: *Teacher Policy Forum for Sub-Saharan Africa November 2007, UNESCO Paris [Online]*. Available from UNESCO at: <http://unesdoc.unesco.org/images/0016162798/0016271e.pdf> [Accessed 8 April 2009]

Goals

- Increase use of ICT to improve the access to, and quality of, education services and the effectiveness and relevance of ICT in learning and the education system.
- Improve ICT infrastructure and technology applications to increase access to educational resources and services.
- Establish partnerships among organizations and individuals for the development of resources and tangible action plans (with indicators / metrics) to promote ICTs in education.
- Develop guidelines for policies, regulations, & standards to catalyze the adoption of ICT4E.
- Evaluate ICT implementations and disseminate good practices pertaining to ICT resources, services, data usage, uniform educational objectives, and the successful use of ICT in education and learning through a highly-accessible repository of knowledge.
- Facilitate Web publishing of ICT4E materials and sharing of ICT4E products and services.
- Support development of a global “Community of Practice on ICT in Education” to enable communication and sharing of resources.

Core Principles of the Framework and Partnership

A. Global Resources / Local Decision-Making and Implementation

The Partners reaffirm (as in the Paris Declaration on Aid Effectiveness) that development must be driven by local governments, local institutions, local business organizations, and local people. The sustainable development of education cannot be based upon the supply-side views of donors and their donations, but rather, must be based on the demand-driven needs and actions of developing countries. The global development community can assist local partners in realizing the goals that local stakeholders have set for themselves, and may suggest existing successful models of ICT integration in education from various developing countries that can be expanded and replicated. Thus, it is very important that all actions and subcomponents within this Framework supporting ICT innovations in education must be organized in collaboration with local leaders such as Ministries of Education, education and research institutions, civil society organizations, local businesses, and other local entities, within the policies and strategies set by local Governments (Ministries of Education, Higher Education, Science & Technology, Communication, Planning and Finance, etc).

Education systems are very complex social systems, embedded in the local cultural context, and they play a critical role in the development of the whole society. It is through inclusive, high-quality education-for-all programs, regardless of gender, ethnicity, religion, age, disability, or language, that the benefits to individuals, businesses, and public entities will be enjoyed by all.

Inputs or interventions that attempt to impose foreign models and solutions on education systems are destined to fail because only contextually relevant and locally supported solutions can take root and become sustainable. At the same time, global ICT and education solutions, based on uniform educational standards, are very important, as long as they are selected and implemented by local decision-makers, are locally appropriate, and satisfy local needs and objectives. Partners will be mindful of cultural, social, and institutional dynamics, existing “good practices” in integration of ICT with education / learning, and local primacy in decision-making when planning ICT innovations and education initiatives. All relevant aspects of an education system must be earnestly considered to ensure sustainable development. Global education

and ICT resources are to be provided in the context of local decision-making, control, and implementation.

B. Sustainable Development

As research and experience shows, the problems of ICT integration and penetration in developing countries is not always the lack of computers or other equipment, but also the absence of other necessary elements for development. Electricity and human skills development are two examples. Supportive policies and capacity building programs are also required. Another critical requirement is coordination of the plethora of global programs and initiatives that seek to implement ICT-based activities, especially in their delivery phases. Computers and other equipment continue to be donated directly to schools that are not necessarily prepared to receive them. This leads to underutilization of computers by educators who do not have the necessary support or training to actualize the potential of the technology. Often, after only a minor technical glitch, computers are discarded and even dumped without careful recycling of valuable and hazardous components.

The real costs for maintaining such expensive resources can be substantial in terms of the discretionary budgets of under-resourced schools. These costs are over and above the expense of the original hardware and software ‘donation’. The return on investment is often negligible in terms of actual learner access and impact on educational or pedagogic practices. Therefore, the Partners establish that the Principles of Sustainability must be followed, including the following:

Social and economic sustainability emerges from support of local socio-economic structures, rather than creating new ones. Initiatives must utilize and coordinate with local businesses, local institutions, and local government in all aspects of development. Partners can help build local capacity by preparing local businesses to deploy and support ICT equipment on a much larger scale and more effectively than previously possible. By cooperating with Ministries of Education to develop enabling environments with the capability to absorb ICT on a system-wide and national scale, Partners can apply efficient economies of scale to effectively process computers and other access devices from end-to-end, sustain their usage, maximize the optimal use of the technology for all parties, and accelerate the skills transfer process to enhance career mobility.

Cultural sustainability is vital when developing and selecting content to be used in education. The content must always respect the local cultural context, language,

and values. The Partnership will diversify priorities beyond the present emphasis on putting hardware into schools, to instead include facilitating the creation and selection of locally-relevant and valuable content and software that meets the needs of the varying education objectives in developing countries, while mapping to the good practices of unified educational and testing objectives. The Partners agree that donated or commercial educational content provided through the initiative will always be locally appropriate.

Environmental awareness and sustainability is a priority for the Partners. Environmentally Sound Management (ESM), with a life-cycle approach to product management, is becoming a central operational issue, since environmental awareness and conscientiousness is growing in all sectors. In the ICT4E context, the bad legacy of refurbished computers being “dropped” into developing countries has created e-waste and other sustainability problems. Often, “computer graveyards” have been created in developing countries, and the e-waste problems of industrialized countries have become the problems of developing countries. This has created tremendous ecological challenges for developing countries that lack the necessary e-waste recycling systems. Therefore, the full life-cycle of ICT equipment must be taken in account in education initiatives. The distribution of used and refurbished computers in developing countries should conform to the same standards and principles as those for new donated computers.

With the increasing stringency of international regulation governing the disposal of e-waste, partners must not only keep abreast of new regulation, but also anticipate it. The 1992 Basel Convention is the most comprehensive global environmental agreement on hazardous and other wastes, including e-waste, and it has been widely ratified by governments worldwide. This Convention, coupled with stimulus packages and regulatory frameworks due to be agreed upon in December 2009, creates timely incentives and imperatives for Partners to collaborate in promoting **Sustainable and Green ICT for Education**, and refrain from shipping refurbished end-of-life equipment to countries lacking proper recycling policies and infrastructure. Also, support for ICT4E initiatives by private sector social responsibility programs would be enhanced if Partners can trust that the hardware they give for educational use in developing countries will be sold, used, and supported professionally, and recycled properly at end-of-use. Environmental considerations such as e-waste, climate change, and energy efficiency of products are increasingly integral to corporate decision-making and responsibility. Thus, companies that anticipate this trend and act accordingly in the ICT4E context will mitigate stakeholder concerns on these issues in the future.

C. Focus on Learning, with an Outcome-Oriented Approach

The objectives of this Framework emphasize that ICT is a vital tool for education and learning for the purposes of knowledge enhancement and improving the process by which people learn. The use of computers and other access devices in schools and other educational institutions is a critical component, but it should not be viewed as the end result, nor should ICT be super-imposed onto existing educational structures and institutions. Effective use of ICT in education depends on integration of ICT into the learning process by trained and experienced educators and other professionals, to maximize the power of ICT for improved learning and knowledge outcomes.

ICT4E initiatives in developing countries are optimally crafted by evaluating the overall learning environment and its desired outcomes, and then holistically reconstructing a national pedagogy for ICT integration with education and learning. Training, content, applications, and information resources should be strategically chosen by local leaders to magnify the impact that ICT-based learning can have on education, stimulation of curiosity, and learning outcomes. Seamless integration of ICT-based tools and curriculum into educational and learning processes is essential to ensure that ICT does not become a disjointed or isolated supplement to educational curriculum.

Learning takes place outside of the classroom as well, and thus, the integration of education and ICT should be designed to improve the overall learning processes of society, for the continuing accretion and use of knowledge. Strategies and initiatives should be adopted for shared-use computing environments that are similar to those for ICT in schools, to provide similar access to ICT and learning for those who are no longer within the educational system. Just as with schools, ICT should be integrated into the learning environment, locally appropriate training and content should be selected and provided, and supportive structures should enable continuous access to ICT-based learning in these settings. A broader, societal view of ICT4E integration and access enables lifelong learning and national transformation to a knowledge-based society.

D. Use of Toolkits

One of the key activities of the Partners will be the coordination of their resources and support to developing countries that seek to develop and implement ICT4E initiatives, in accordance with the “Action Items and Inputs for ICT4E Implementation”, below. These activities involve aggregation of an array of resources and inputs, ranging from policy frameworks and strategic knowledge, to hardware and training content. In each case, there is a vast array of global resources from which a developing country may choose, and it is very important that the selected inputs be locally appropriate, affordable, and tailored to the specific objectives of the initiative.

To facilitate this process, and to provide a broad range of input options that will ensure local appropriateness, toolkits are available to provide considerable guidance. By referring to toolkits, local implementers can identify resources and solutions that correspond to their needs and objectives. Toolkits can function as directories of providers, sources of goods and services, access points to useful knowledge, and repositories of good practices, guidance, and strategic advice that can be instrumental in both the development and implementation phases of an initiative. Even when collaborating with Partners, the toolkits can be useful in identifying necessary inputs that augment the range of inputs provided by the Partners.

Toolkits have already been developed by some international organizations and other stakeholders. Partners are encouraged to contribute information about their resources, and other resources of which they are aware, to augment the toolkits and increase their impact. The UN GAID may increase awareness of the accessibility of existing toolkits, and encourage peer-to-peer counseling for their effective use. The UN GAID encourages use of the toolkits on three levels:

1. policy development, to help a developing country define and develop supportive policy and regulatory environments and strategies for ICT4E integration;
2. resource development, to select and coordinate global resources with local decision-making and implementation, and structure the roles in a global – local framework; and
3. implementation development, to deploy resources in a locally appropriate manner with project timelines, accountability, and maximization of impact on communities.

Implementation of the Partnership on ICT in Education for 2010 - 2015

In coordination with local stakeholders, the Partners will be encouraged to provide support and resources to governments in developing countries, in order to prepare an “enabling environment” for large scale ICT integration in their education and learning systems. The “enabling environment” will combine strategic elements (e.g., helping governments to recognize the value of ICT4E, define the ICT4E objectives for their country, and establish supportive policies) and tactical or operational elements (e.g., helping governments and local stakeholders select appropriate technologies, standards, and educational content to best achieve their objectives). Partners may offer policy support and resources, knowledge sharing and capacity building programs for educators and education institutions, coordinated infrastructure deployment, software and content selection and dissemination with local support, and coordinated research, follow-up and evaluation. The experience gained from each “enabling environment” interaction will also feed the Partners’ need to learn from their own actions, so that future interactions can gain therefrom.

The Partners recognize that countries and regions are at different levels of readiness for ICT utilization and integration in their education systems. As such, the selection of ICT interactions, resources, and initiatives will address different aspects of the education system in different countries, correlated to the readiness of each country. The focus shall be placed on local and country needs and objectives, rather than on supply-side-driven technology solutions.

A. Education and ICT Factors to Consider in Evaluating ICT4E Inputs

It is important to distinguish between two different, vital vantage points from which policy and enabling environments for ICT integration in education should be considered. The **Enabling Side** refers to the readiness of institutions and educators to utilize ICT in education. The **Supply Side** refers to the availability and affordability of hardware, software, training, content, and services which determine access to ICT. According to the latest global analyses (e.g., UNCTAD’s LDC development reports, and World Bank global economic prospect reports), the challenges in ICT4E are concentrated on issues of readiness more than on issues of supply. The Partners agree that at least the following aspects of the education system, from both perspectives, must be addressed:

Enabling Side: ICT integration into education, and bolstering human capacity to utilize ICT

1. Policy / Cultural Factors: New policies and regulatory frameworks for innovation

- ICT and telecommunication policies benefitting education institutions (e.g., affordable telecommunication rates for education)
- ICT policy for education & education policy using ICT (e.g., infrastructure standards, integration of ICT usage in teaching and learning methods, nationally appropriate educational and testing objectives that are informed by international uniform standards)
- National curriculum framework for ICT and its educational applications (e.g., ICT as a tool for learning and as content, mapped to internationally recognized standards)
- Teacher-development policies and frameworks
- National curriculum framework for skills development through ICT4E (based on a national vision for industrial and commercial development & innovation policy, science & technology skills development policy, and transformation to a Knowledge Society)
- National ICT skills standards, based on international good practices
- Cross-cutting policies on inclusive education, gender, and support of local cultures

2. Societal Factors: New institutional arrangements for educational transformation

- ICT integration into the Curriculum (as set in national curriculum frameworks and benchmarked to international standards) for teacher training and for student learning
- ICT-based learning environments: open & distance learning, e-learning, home learning
- School collaboration networks, virtual schools

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- Regulatory support for extension of electricity to schools for use with ICT

3. *Human Factors: New innovative learning and teaching methods for teachers' skills*

- Teacher capacities on technology and learning methodology, pedagogy
- Collaborative learning, inquiry learning, project learning, etc (as set in curriculum)
- Use of internationally-recognized ICT, educational, and testing standards against which teachers' abilities can be benchmarked and skill development plans can be mapped.

Supply Side: Making ICT resources, and access to ICTs, available

4. *Software: Selection and deployment of new tools, content, training, and services*

- Software and network tools to store, disseminate, search, and process information
- Electronic content suitable for schools and education institutions (as determined by local curriculum needs and guidelines)
- Identification of existing training and professional development tools for possible selection and adaptation, including multilingual resources used in other countries

5. *Hardware: Deployment of, and access to, ICT equipment for education and learning*

- School buildings (safety, suitability, reliable source of electricity)
- Communication networks that are appropriate to the local context
- Affordable servers, desktops, laptops, mobile devices, TV, radio, fax, phone, and other low-cost access devices that are appropriate for use in education and management
- Service infrastructure to deliver hardware to schools, provide maintenance and repair

B. Choosing the Right Inputs to Meet Local ICT4E Needs

Developing countries are at varying stages of readiness for deployment and integration of ICT into their education systems. There is much variance among the goals, policies, methodologies, tools, content, delivery mechanisms, focus areas, policies, and other local preferences and needs. Countries also differ with respect to the relative degrees of maturity of their enabling environments supporting educational transformation and integration of ICT with learning. Thus, it is critically important that ICT4E initiatives be tailored to address local needs, preferences, and objectives in each developing country. Local governments and other stakeholders must take the lead in recognizing their level of preparation for ICT4E inputs, and specifying the inputs that would be most advantageous in advancing their efforts to achieve their goals.

Yet, the support of global Partners can be instrumental in facilitating this evaluation process, and assisting local stakeholders with the decisions that will accelerate their path toward ICT4E deployment and integration. The global Partners involved in the UN GAID's "Communities of Expertise" and "Flagship Partnership Initiatives", as well as the global and regional policy forums and initiatives of other international organizations, can play an important role in this process. The Partners of these and other existing constructs are encouraged to coordinate with, and participate in, one or more of the initiatives and actions described below.

C. Initiatives and Actions to Meet Varying Local Situations and Needs

1. Actions in Developing Countries Without Basic Policies and Capacities

Countries which do not yet have basic enabling environments for large-scale integration of ICT (i.e., policies and basic institutional and human capacity) would benefit most from receiving support and capacity building at ministry and institutional levels. Such support will prepare these countries to deploy and utilize ICT in their education systems. Countries with the following characteristics are mainly targeted for capacity building and policy support actions, rather than starting unsupported and unsustainable large-scale ICT implementation programs:

- numerous separate uncoordinated ICT-in-education initiatives in the country;
- insufficient policies and/or practices in place pertaining to the integration of ICT in education and teacher training in ICT4E;
- absence of technical standards for equipment in schools and shared-computing locations;

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- absence of uniform educational and testing objectives for education and teacher training;
 - insufficient capacity in place to create ICT4E policy and an ICT4E integration plan;
 - insufficient electricity available for the large majority of the schools in the country; and
 - no local certified businesses for delivery and maintenance of ICT equipment in schools.

Countries with these characteristics should receive prioritized attention from Partners who can provide policy support and resources for Ministries of Education, and/or ICT training programs for educators and education institutions, including the following types of support:

Action Items and Inputs for ICT4E Implementation

a. Development and up-scaling of innovative ICT4E models, and providing support to policy-makers for the creation of enabling ICT4E policies, regulations, and objectives

The Partners in this effort will aim to facilitate and conduct research in monitoring and evaluation processes, and test innovative solutions, in collaboration with other stakeholders, including national, regional, and global research communities, as well as research institutions in north-south and south-south partnership networks. Good practices and innovative solutions should be tested and evaluated prior to large scale deployment, and supportive policies should be based on the results of such evaluation and research. The Partners maintain that the monitoring, evaluation, and testing process is a good practice that should be routinely applied in educational development and in initiatives that integrate ICT and learning.

Results of research programs, and guidelines of good practice, will be disseminated to policy-makers and education communities through local, regional, and global forums. The “good practices” of existing, successful models for ICT4E integration should also be highlighted, and be replicated in other locales, where appropriate. The Partners, as

well as the relevant UN GAID “Communities of Expertise”, will offer strategic advice to Ministries of Education on policy matters and the acquisition, deployment, and integration of ICTs in their education systems. Innovative research and development efforts --- as well as existing, successful models for ICT4E integration --- will be presented through various platforms to assist governments, organizations, companies, and educators in developing local solutions for ICT integration. This effort will be engaged in conjunction with:

- expansion of TAGorg “Knowledge Societies” model in the Arab region;
- expansion of GeSCI’s research and policy facilitation partnership program to ten large-scale evaluation engagements and many small innovative joint research programs, for the purpose of evaluating what works in practice;
- dissemination of “good practices” developed by national iEARN networks in Africa, Asia and Latin America, and iEARN’s SchoolNets initiatives;
- expansion of GeSCI’s African Knowledge Exchange throughout Africa;
- creation of GeSCI Knowledge Forums in Asian and Latin American countries jointly with local partners; and
- establishment of indicators, metrics, implementation methodologies, accountability measures, and impact assessment methodologies for monitoring and evaluating the implementation and use of ICT in education and learning, which shall be applied to the activities of the Partners in implementing this Framework (and may be applied to the activities of other ICT4E stakeholders), to enable benchmarking to international standards and to facilitate global replication.

b. Teacher capacity-building frameworks (developing, localizing, testing, and researching frameworks for building teacher capacity)

There is a need to shift the focus from ‘Education for ICT’ to the use of ‘ICT for Education’ (2). The UNESCO (2008) Information and Communication Technology - Competency Standards for Teachers (ICT-CST) project, launched in 2008, presents a holistic framework for a modular continuum of ICT integration in Professional Development programs - moving from technology literacy, to knowledge deepening, to knowledge creation. Global e-Schools and Communities Initiatives (“GeSCI”) has developed an “ICT-TPD Matrix” to enable professional development organizations and providers to plan ICT development paths for professional development programs

based on the UNESCO continuum. Key tools in this arena include UNESCO's Teacher Capacity Framework that has been localized and tested in twenty countries and further developed in the GeSCI's matrix, the Basic Digital Literacy / Teacher Training Project sponsored by the Digital Alliance Foundation, and other international and country-specific ICT4E localization guidelines. This effort will include:

- establishment of an internationally recognized accreditation system for teacher training modules that would be developed in connection with the UNESCO teacher development standards.

c. Educator and institutional empowerment in the utilization of ICT as a tool to enhance the quality of teaching and learning.

The Partners that have programs and expertise in teacher training and capacity-building will focus on global programs for 'ICT in Teacher Professional Development' that develop educator capacity to use desktop computing, multi-media, and networking technologies. The objectives of these efforts will be to familiarize teachers with the potential of ICTs to improve the quality of learning, to train them in the usage of ICTs, and to guide them in teaching ICT usage to their students. There would then be a high multiplier effect from the number of teachers benefiting from these efforts to the number of students impacted by the teachers' efforts, which could also become a metric for this Action Item. Schools can have all the technology that is available, but if educators are not clear about how it fits into their teaching and into student learning, then ICT will be underutilized or misused.

The Partners will use the GeSCI "ICT Matrix" and other competency frameworks, in order to localize and legitimate teacher ICT competencies in accordance with national educational objectives. Existing and successful models for ICT integration with education should also be supported as "good practices" to replicate the models which have demonstrated how ICTs can impact student achievement and motivation to learn. Key tools in this effort will include the teacher training and capacity-building programs and resources offered by private companies (e.g., Cisco Systems), and civil society organizations such as the iEARN (International Education and Resource Network) network of NGOs in 130 countries, and the Digital Alliance Foundation. The global objective will be to train and certify, at a minimum:

- one million teachers annually at the "technology literacy" level,
- 250,000 teachers annually at the "knowledge deepening" level, and
- 100,000 teachers annually at the "knowledge creation" level.

2. Actions in Developing Countries With Basic Enabling Environments

Many developing countries (some LDCs and many middle-income countries) have established the foundations of an enabling environment -- through ICT and educational policies, and capacity building -- which have prepared them for the deployment of hardware, software, and education content. The adoption of ICT4E in these countries should be designed to help solve educational problems and, therefore, contribute to the development process. The use of computers and other access devices in schools and other educational institutions is a critical component, but it should not be viewed as the end result, nor should ICT be super-imposed onto existing educational structures and institutions. Effective use of ICT in education depends on integration of ICT into the learning process, to maximize its power for improved learning and knowledge outcomes.

The global Partners can be called upon to support business-based development in these countries, which will ensure that the locally-defined needs, and local skills, will coordinate with the global supply of hardware, software, and content in the most appropriate ways. Local businesses are the key to ensuring that the local support mechanism is in place to enhance the sustainability and maintainability of donated hardware and software. In the absence of support, sustenance, and maintenance for the donated infrastructure at the local level, direct donation of computers does not lead to sustainable development. Without local support, if a computer or other access device does not operate properly, there is nobody who can or will repair it. In such cases, it will be dumped, and instead of education development, only an e-waste problem will be developed.

Donated and affordable equipment, software, and educational content would be made available by the Partners in the case of developing countries that meet the following conditions:

- The country has a policy and/or practices in place for ICT integration in education, including minimum standards for equipment, software, and building capacity of teachers.
- There are local qualified suppliers who can distribute the equipment and other resources provided by the Partners, and provide the required technical support and training for institutions and teachers receiving equipment (see below).
- There is an agreement between the Partner and the local supplier for organizing the recycling of the equipment when it reaches the end of its life-cycle.

2 Unwin, T. 2004. *ICT and Education in Africa: Partnership, practice and knowledge sharing. Review of African Political Economy* [Online]. Available from InformaWorld at: http://pdfserve.informaworld.com.remote.library.dcu.ie/234534_750429245_713946970.pdf [Accessed 02 June 2009]

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- There is a sustainable business model in place for ICT4E in the country, which may include a web-based marketplace, and must include a certification system for local dealers.

Countries with these characteristics should receive prioritized attention from Partners who can provide – without favoring certain technological solutions – ICT hardware and software, educational content, and the frameworks for their successful implementation, including the following types of support and resources:

Action Items and Inputs for ICT4E Implementation

a. Development of sustainable business models

ICT4E initiatives need to be based on financially and environmentally sustainable business models. Partners will collaborate with local stakeholders in developing business models based on the coordinated supply of new and used, affordable and donated equipment, and a certification system for local business partners. The business models should address the whole life-cycle of the equipment. Refurbished computers that are supplied by global sources may only be distributed through local business partners who must be certified for compliance with environmental sustainability rules, and the equipment must be made available at affordable prices, without any undue profiteering. Customer support may be provided through these same or other local entrepreneurs. The technical specifications for equipment must always follow the local national standards, which is vital for technical support and compatibility with learning programs and materials. Business models can be operated through a web-based virtual marketplace.

In situations where refurbished and/or donated access devices will be involved, the business model must include a certification system that establishes qualifications for local suppliers of refurbished equipment. A certification system is an essential element of a sustainable business model in order to allow international businesses to donate refurbished computers and other access devices that are environmentally and socially sustainable. Certification entitles the local supplier to place orders at the web-based market place for donated, discounted, and purchased equipment, and sell it (at reasonable, affordable prices) locally to educational institutions. Certification would ensure that businesses adhere to local technical standards and policies, such as those to prevent the proliferation of irresponsible e-waste disposal. Certification will apply service standards, including for support and repair services related to new and refurbished equipment, as well as for collecting computers, other access devices,

and ICT hardware at the end of their life-cycle, for proper handling by recycling centers. Global hardware providers will support the creation of the system for the final processing and reuse of the recyclable equipment components as agreed in other international agreements on recycling of ICT equipment.

An organized and collaborative marketplace approach brings many benefits to Partners, such as economies of scale, efficiency, brand exposure, and profit. By requiring partners in each developing country to meet certain criteria before purchase, the Partners are adding value to the product and to the education process itself. With an enabling environment in place that has appropriate policies, a developing country can ensure that computers and other access devices can be optimally utilized to meet educational objectives, and ICTs can be integrated on a massive scale, even resulting in the demand for upgrades and new technology over time.

b. Providing hardware and software for computing and network connectivity

Developing countries that have prepared an enabling environment which is sufficient to sustain a large-scale deployment of ICT equipment (including computers and other access devices, servers, mobile devices, networking equipment, software, etc.) are in position to receive new and used, affordable and donated equipment. These goods should be deployed in schools by utilizing local businesses and personnel who are capable of installing, maintaining, and conducting basic repairs of such systems. Key Partners in this effort will include large-scale computer manufacturers (e.g., Hewlett Packard, Dell), providers of specialized education-oriented computers (e.g., One Laptop Per Child, Intel), providers of refurbished computers, providers of other affordable access devices (e.g., NComputing), providers of networking equipment (e.g., Cisco Systems), and providers of basic software that enables full functionality of computers and other access devices in an educational context (e.g., Microsoft).

c. Providing educational content to meet local needs and objectives

In the case of each ICT4E initiative, the selection of educational content is a critical factor in the success of the initiative. Content can be locally developed in the country where it is to be utilized, or it can be locally chosen from among many international sources that correspond to recognized standards. In either case, the government of the deploying country should be the leader in the decision-making process (although the government may wish to delegate the authority to local stakeholders, the country's education sector, or other experts). In so doing, the development and selection of the content should be conducted locally, to ensure relevance, appropriateness, cultural propriety, applicability to the local economy, educational standards, and other factors on a local basis. Whether content is open source or proprietary / licensed, the selection of content should seek to access the best quality content for the least cost.

Where appropriate and financially sustainable, business models for local educational content development, and local sourcing of internationally-standardized content, can be created.

The delivery mechanism for content can include e-learning, distance learning, ICT-based tools to facilitate learning in the classroom environment, curriculum which facilitates home study, etc. Partners providing locally relevant educational content, and content-related services, should develop a coordinated initiative following these principles and approach. Key Partners in this effort include e-learning providers of basic K-12 curriculum, providers of job skills training courses (e.g., International Commission on Workforce Development's 1,500 "e-Skills360°" courses in ICT, business, and professional development), providers of university-level learning (e.g., in sciences, social sciences, etc.), providers of specialized skills of particular relevance to the country in question (e.g., water system construction and maintenance, preventive health practices, electricity infrastructure), and the Basic Digital Literacy / Teacher Training Project on the use of ICT in education and learning, sponsored by the Digital Alliance Foundation.

d. Providing network connectivity at affordable rates for educational institutions

Network connectivity and affordable rates for educational institutions are related to overall connectivity development of the country and region. Telecommunication regulation is a key determinant in promoting or restricting this development. The global suppliers of connectivity, marine cables, national back-bone infrastructure, and "last-mile" / "middle-mile" connectivity solutions are crucial components in ICT4E development. Therefore, programs that include collaboration between Ministries of Communication and Education, telecommunications regulators, businesses that provide network connectivity, and civil society organizations are the best positioned to advance connectivity for educational institutions. Also, the supply of affordable electricity must be taken into account when extending connectivity to schools. Among the key stakeholders in this effort are network infrastructure providers (e.g., Cisco Systems), local and regional Internet Service Providers, the International Telecommunications Union (e.g., the "ITU Connect A School" initiative), and the relevant national ministries of developing countries that seek to accelerate ICT4E initiatives.

d. Next Steps in Implementing the Partnership and Framework

This section describes the near-term next steps to be taken by the global Partners, under the auspices of the UN-GAID, in order to implement the Partnership and the Action Items that are delineated within the Framework, above. Rather than creating

additional programs, objectives, or partnerships, this section provides a process and mechanisms for acceleration of the operational impact of the Action Items. First, it describes the activities under the Framework, along with the manner in which they will be initiated, managed, and coordinated. Secondly, this section suggests various activities to promote the Partnership and the principles of the Framework in order to be adopted more broadly as “good practices” in programs which integrate ICT with education and learning, and in education development programs. Finally, it describes how the Partnership will organize the monitoring and evaluation of the activities, so that the Partners can learn from each other’s, and their collective, activities, and the Framework can be further developed in the future.

1. Partnership Development, Coordination of Activities, and Leadership

In order to effectuate this Framework, the UN GAID shall coordinate a “call to action”, aided by the Partners and other international organizations, to urge GAID members and other ICT and education stakeholders to join the Partnership’s “community of practice”, as Partners in this initiative. The “call to action” shall be disseminated by email, at conferences and forums, online through the GAID and other websites, and by each Partner’s communications to prospective Partners within their own networks of ICT and education stakeholders.

Each Partner and each member of the GAID (as well as other stakeholders) are encouraged to join at least one (and ideally more) of a set of consortia that are formed to implement each of the “Action Items and Inputs for ICT4E Implementation”. Partners and other stakeholders may also create additional Action Items; a consortium will be established for each. Partners in each Action Item consortia may jointly develop implementable Action Plans which they are willing to manage, fund, and implement. Partners may have a management role, implementation role, funding role, or some other role as agreed by the Partners of a specific Action Item consortia. Each Partner will identify the resources that they are able to provide to the consortia’s activities (e.g., hardware, software, training, content, services, funding, etc.), and the geographical areas in which they are willing to provide them. As appropriate, the Steering Committee of the UN-GAID will help advance and promote the good practices and successful implementations that emanate from the consortia and support Partner activity in connection with the consortia. All consortia Partners are also encouraged to join UN-GAID as a member.

The designated Partners of each Action Item consortium shall jointly select one of its participants to be the lead coordinator of Partners in that consortium. Lead coordinators will develop a roster of its participating Partners, the resources that each is willing to provide, and the geographical areas in which they are willing to provide

them. Lead coordinators may convene strategy sessions among its Partners to jointly develop templates of tools, inputs, and resources for use by Partners and developing countries in implementing the consortium's Action Plan for ICT4E initiatives. Models shall be designed with resources to facilitate country-based initiatives that are demand-driven, and satisfy local needs, objectives, or requests.

a. Collaboration and Coordination at the Country Level

Although ICT4E initiatives and implementations should be locally-driven by in-country stakeholders and demand-driven to meet local needs, there are also various important roles for global Partners at the country level. Through jointly developed country-specific activities, consortia and Partners may facilitate proliferation of good practices, resource identification, ICT4E advocacy, and support for in-country leaders. Some Partners may have a neutral advisory role while others may have commercial interests and capabilities, for which in-country decision-makers should engage in appropriate “due diligence” processes. Countries that have identified one or more consortia, or the Partnership as a whole, to be useful resources are encouraged to jointly develop plans with them to implement and accelerate the initiatives. In such cases, Partners may collaborate in identifying the needs of the country and providing assistance, helpful resources, knowledge, and partnership opportunities. Partners may also provide other resources and opportunities that can support a country's efforts to establish supportive policies and regulations, or catalyze their development of an appropriate enabling environment. The resources can include examples of policy and regulatory frameworks, packaged resources that correspond to the “Action Items of Inputs for ICT4E Implementation”, research documents that provide strategic and operational insights, case studies, and templates developed by the Partners. Partners, both collectively and individually, may swarm local leaders with follow-up meetings and communications to provide continuous support and ensure that any informational or other needs will be satisfied while the leaders establish an enabling environment and garner sufficient in-country consensus to advance an ICT4E initiative.

b. Supporting Peer-To-Peer Learning & Institutional Collaboration

Since developing countries lead their own efforts in ICT4E integration, the Partnership encourages them to learn from other countries, enable peer-to-peer learning through institutional collaboration, and introduce established good practices and successful models for the integration of ICT in education. Partners are encouraged to facilitate institutional pairings, or “twinning” relationships, between successful, instructive models for ICT4E integration and nascent ICT4E initiatives. Schools and educational systems in developing countries that have not yet developed models for ICT4E integration would benefit by visiting schools and educational systems in other countries that have already implemented ICT4E initiatives, as well as by exchanging informative documentation. In coordination with the UN GAID and UNESCO, Partners and

other stakeholders can provide information and resources for schools and educational systems that would benefit from “twinning”, as well as others that are models for ICT4E integration. “Twinning” relationships can involve both “north-south” and “south-south” pairings. Information on “twinning” of schools and educational systems in both categories should be maintained in an easily accessible repository that would facilitate the “twinning” process, both by self-selection and by suggested pairings.

c. Creation of Instructional and Assessment Standards for ICT Capacity-building Training and Certification

Although education and assessment are the responsibility of individual countries, the Partnership also recognizes that the outcome of educational and assessment programs must ultimately align with global vocational demands, which are influenced by international factors. In light of the pace of technological change and the growing digital divide, it is neither cost-effective nor realistic for each developing country to independently create their own internationally-recognized ICT educational and assessment programs without support from other experts.

Thus, to facilitate the development of internationally-recognized ICT training and certification standards that result in capacity-building and vocationally relevant outcomes, the Partnership will create and establish ICT instructional and assessment standards and objectives that can be utilized by countries as a foundation for the creation of their own national standards. The standards and objectives will also address impact assessment methodologies to determine the practical impact of ICT on student learning outcomes, and will consider such factors as the contents of training curricula, the use of latent educational models, the role of the teacher as a mediating agent in the learning process, and the effect of ICT on the context for learning and its impact on the processes that define the quality of education. These standards will be mapped to existing ICT-related training and certification programs in both the private and public sectors. The training and certification programs engaged in by the Partners will, as appropriate, map to the instructional and assessment standards developed by the Partnership.

2. Promotion of the Framework and Partnership

In order to garner sufficient support for the principles, objectives, and Action Items delineated by this Framework and the Partnership for its implementation, the Framework and Partnership should be advanced internally among the United Nations’ leadership for recognition and endorsement by the UN and its membership. Official endorsement of the policies and actions herein contained would dramatically increase visibility of the need for, and solutions toward, integration of ICT in educational systems and learning, and enfranchise additional stakeholders to become Partners in

this effort. Elevation of these issues and strategies to the UN leadership would also facilitate access to development funding at the country level that is vital for effective implementation of this Framework, and become a catalyst for Partner activities.

a. Website for Partnership Development, Coordination, and Facilitation of Communities of Expertise and Good Practices

The UN-GAID will facilitate the development of an interactive website for Partners to coordinate and facilitate the activities of the Framework and the Action Item consortia. The technical development and facilitation of the website will be provided by interested members of the UN-GAID on a pro bono basis. The consolidated resources, features, databases, and interactions of experts that are accessible through the website will create a critical mass of resources and expertise that can significantly help countries in planning and implementing their initiatives for ICT integration in education. The resources can also be utilized by Partners in their country-level collaborations, for example, if they seek to “swarm” local leaders with support and resources that the local leaders deem beneficial. Additionally, the website will bring together leading experts to debate the issues related to ICTs and Education. The website will include both open and secure sections.

The open section of the website will provide a public presence for the Partnership, facilitate outreach to additional prospective Partners, and provide tools and resources for ICT4E initiatives. The open section will contain the Framework document, a statement of the Partnership’s principles and objectives, resources for ICT4E implementations, resources for ICT4E advocacy, a synopsis of the Partnership consortia’s activities, lessons learned from monitoring and evaluation of the Partnership’s activities, and a “suggestion box” for public input. The open section will be designed to evolve into a “Virtual Center of Excellence”, which will showcase contributions from the Partnership’s community of experts and other thought leaders, and will maintain a repository of evaluated case studies and other resources showing replicable good practices, research, toolkits, knowledge, helpful templates, monitoring and evaluation outcomes, etc. Case studies will highlight appropriate and effective development of ICT4E enabling environments, and implementations of ICT4E that are achieving their intended objectives by utilizing both Enabling Side and Supply Side inputs and resources. As the open section evolves into a “Virtual Center of Excellence”, it should demonstrate adherence to the Core Principles presented in this Framework, illustrate the roles and dynamics of global Partners and local implementers, and showcase the holistic construction of a pedagogy for ICT integration with education and learning, rather than simply super-imposing ICT onto existing educational structures and institutions. The website will also provide links to other web-based resources and databases related to ICT and Education. The website will enable easy identification

and accessibility of resources by developing countries, in order to enable their use in initiatives integrating ICT with education systems and learning environments.

The secure section of the website will provide a password-protected space for Partners' discussion and debate, with restricted access only for Partners. The secure section will also provide areas for Partners to propose new Action Items to implement the Framework, and issue calls for resources to enable their activities and programs. This section will facilitate Partner coordination and engagement by providing a networking venue for sharing information and knowledge related to their own activities, and allow for posting of announcements, conferences, workshops, and other useful information.

b. Workshops and Forums on ICT4E

Under the auspices of the UN GAID, the Partners within this Framework shall coordinate with other ICT4E stakeholders to jointly convene a series of regional workshops during 2010 that are designed to advance the Partnership. The workshops will also aim to build capacity for ICT4E program planning and implementation within Ministries of Education and Ministries of ICT of developing countries. The forums will share good practices, case studies, resources, and insights on (i) preparing enabling environments for ICT4E proliferation, (ii) selection of ICT4E inputs, (iii) strategies for planning and deployment of ICT4E infrastructure, and (iv) identification of Partners whose goods, services, and/or knowledge could propel the success of their initiatives. Ministers, Partners, and other stakeholders will also have networking opportunities to coordinate resources for the development and deployment of ICT4E initiatives. Participation and support will be solicited from UN Agencies (including UNESCO, UNICEF, UNIDO, UNDP, and ITU), as well as from other organizations supporting ICT4E (e.g., InfoDev, TAGorg, GeSCI, and Digital Alliance).

The joint forums shall explore such topics as: (i) the rationale for, and value of, integrating ICT and education, (ii) the anticipated results and metrics for measuring progress, (iii) the Return On Investment of ICT4E, (iv) key issues and factors for successful implementation of ICT4E programs and initiatives, including policy and funding issues, (v) "good practices" in the selection and deployment of hardware, software, training, and content, and (v) the role and value of partnerships, e.g., with local universities and other in-country stakeholders. Ministry officials from countries where ICT4E programs and initiatives have been successfully implemented will be invited discuss their models and experiences.

The principal outcomes that are anticipated from the forums would be improved

coordination of Partners and resources, and appropriate planning, sourcing, funding, and launching of programs or initiatives by the participating countries. The Partners will be encouraged to take active participatory roles in these programs and initiatives (at the discretion of each participating country) in the capacities of consultants, service providers, providers of ICT4E inputs (hardware, software, training, content, services, funding), and on-going providers of strategic documents and other information. The forums can be replicated, with additional forums in subsequent years in other regions and developing countries.

3. Monitoring, Evaluation, and Reporting of the Partnership and Its Activities

The Partnership is well positioned to learn and share important lessons from research initiatives and its consortia activities across multiple country contexts in its initial years. A plan for monitoring and evaluation of the Partnership as a whole, and a mechanism to monitor and evaluate Partnership activities, will be developed that allows each of the Partners to learn from their own Action Item consortia activities, and from the activities of others (as referenced in the Action Items, above, in VII.C.1.a.). The monitoring and evaluation mechanism will ensure that the Partnership:

- engages in evidence-based research when developing proof of concept models in order to ascertain how the models are contributing to developing country education and development priorities, and to determine how successful models can be taken to scale;
- identifies and utilizes standardized indicators, metrics, and statistical methodologies that advance policy design, development, implementation, assessment, and analysis, and will facilitate comparison, sharing of good practices, and replication among countries;
- utilizes the engagement models that are validated by evidence-based research when developing new ICT4E deployments and initiatives; and
- meets its consortia objectives for the creation and implementation of joint Action Plans for ICT integration with education and learning, for the benefit of stakeholders in the developing world.

The UN-GAID will help to coordinate a consultative workshop with Partners to develop indicators for the monitoring and evaluation mechanism (based on the Enabling Side and Supply Side elements delineated above, under Section VII.A.). Initial indicators that will be incorporated in deployments and be further developed

for country-level initiatives and broad-based global-level efforts include, but are not limited to, the following:

- presence of a system for transformation in education, integration of ICT, and change in institutions:
 - positive measures taken by government for education transformation;
 - active promotion and support by government of ICT integration in school systems;
 - initiation of actions for effective institutional change to catalyze transformation;
- use of ICT as a platform for new learning / teaching methods and increased access to educational resources on the Internet:
 - government investment in ICT resources, e.g., infrastructure, enabling environment elements, and network connectivity;
 - active engagement by schools in e-content development;
 - actions by schools to enable access to global digital resources;
- adoption of regulatory frameworks that are conducive to new policies, innovation, and digitization:
 - establishment of policy frameworks promoting eLearning and ICT-enabled curricula;
 - integration, teaching, and encouragement of innovation and entrepreneurship in schools;
- development of infrastructure for teacher capacity-building and support to facilitate delivery of quality education:
 - teacher access to training courses and capacity building programs; and
 - availability of framework that incentivizes skill development in teaching and learning.

Research, consortia, and proof of concept data that is collected for monitoring and evaluation purposes will be uploaded to the password-protected section of the

Partnership website, where it can be accessed, discussed, analyzed, and used by Partners to inform their larger scale activities and deployments. Research entities within the Partnership commit to producing an annual report based on the first full year of the Partnership's operations. The annual report will account for the Partnership's activities, and will be submitted to the UN GAID and other appropriate UN agencies.

APPENDIX

Multi-Stakeholder Partnership on Quality Education For All and MDG

Achievement in the Digital Age:

List of Partners in the Development of the Framework

United Nations Global Alliance on ICT and Development: UN GAID

United Nations Department of Economic and Social Affairs: UN DESA

Talal Abu-Ghazaleh Organization: TAGorg

Global e-Schools and Communities Initiative: GeSCI

International Commission on Workforce Development: ICWFD

Cisco Systems Corporation

Nokia Siemens Networks

Intel Corporation

NComputing Corporation

NIIT Limited

One Laptop Per Child: OLPC

iEARN: International Education and Resource Network

United Nations Economic Commission for Latin America and the Caribbean:
ECLAC

Korea University

Digital Alliance Foundation: ICTEFA

Global Catalyst Partners

Information for Development Program of the World Bank: InfoDev

United Nations Education, Scientific, and Cultural Organization: UNESCO

Ericsson Global

Nanyang Technological University: NTU

