

# Information and Communications Technology (ICT) and Alternative Technologies\*

*“Globalization, as defined by rich people like us, is a very nice thing... you are talking about the internet, you are talking about cell phones, and you are talking about computers. This doesn't affect two-thirds of the people of the world.”*

*-- Former President Jimmy Carter*

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## Introduction

Technology is defined as human innovation to solve problems using tools and crafts. Currently two of the most talked about and influential types of technology are Information and Communications Technology (ICT) and Alternative Technology. Information and Communications Technology has changed the face of the world in which we live. ICT is defined as computers, software, and telecoms, such as mobile and fixed phones—the internet and satellite technologies. It enables people to communicate and gain access to information and resources, such as connection to family, global news, and increased information on almost any topic. Alternative technology is a term that is often used by people who study the environment to describe innovations and inventions which do not harm the planet, and which use renewable resources such as wind power. While this briefing paper discusses both types of technology, it focuses primarily on ICT because of its wide-reaching influence over the global population and young people in particular.

The “digital revolution” has changed the way people work, interact and live. However, unlike past technological revolutions, ICT took only four years to reach an audience of 50 million people. There are a number of reasons for this. In many countries the cost of technologies such as cell phones, computers and landline phones has declined, increasing their accessibility to people from all economic brackets of the world. Secondly, ICT uses knowledge and information as its core products instead of material resources. Therefore information and knowledge are available for multiple uses and users simultaneously; this is best described in the example of your classroom. Think of how you can gain information about an assignment on the internet and then share this information with your classmates in just a few minutes. This makes ICT a valuable tool in increasing education, health care and awareness of environmental issues

Information and Communications Technology is truly global. Technology does not distinguish between gender, age, social or economic standing. With access and the requisite skills, ICT offers all people the same resources and digital opportunities.

### CRITICAL THINKING

*In what ways do you use technology every day? What would happen if you could not use a computer for a week?*

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\* This briefing paper was adapted from the United Nations Cyber School Bus and can be found at [www.un.org/cyberschoolbus/briefing/technology/index.htm](http://www.un.org/cyberschoolbus/briefing/technology/index.htm)

## Background

### *Knowledge as Empowerment*

When harnessed, ICTs can be a key tool for human and economic development. By opening up opportunities to boost a nation's economy, standards of education and health can be improved. Similarly, ICT can help a community or a nation monitor, learn about and protect the environment. ICT can work toward eradicating poverty, through awareness of action taken against poverty to increasing access and education through online opportunities. However, there is debate over how much funding and importance ICT should receive from the international community. Should ICT be a priority when people live in extreme poverty and do not have enough to eat? This is an important question for people concerned with the role that ICTs play in development. Unfortunately, 25,000 children die each day from complications due to poverty. Over one billion people in developing countries lack access to clean water. An estimated 790 million people in the world go hungry every day.<sup>i</sup> ICT can also enable wealthier nations to learn about the challenges and issues other countries face, and potentially connect with them to offer assistance through nongovernmental organizations, education and direct aid.

Through distance learning and telemedicine, ICT considerably increases the possible number of educated, trained and healthy people in a nation. In 1995, more than 2.2 million people in developing countries educated themselves through online courses. At the same, time initiatives, such as the Health InterNetwork, opened up communication lines and provided physicians and patients with up-to-the-minute medical information and access to resources.

ICTs have been very important in overcoming health challenges in developing countries. Mali, a country in West Africa, is one example. Approximately 35% of the population lacks basic health care and so medical researchers at the University of Mali began the Keneya Blown medical network. This network links the hospital to other online resources, journals and research. In 2002, the Keneya Blown medical network began broadcasting "tele-teaching" lessons taught by doctors as far away as Geneva.<sup>ii</sup>

ICT also enables people to learn about the environment and how to care for and protect the world we live in. For example, in countries such as Peru, the government has placed governmental laws and policies on the internet, giving all citizens the opportunity to read and learn about their country's laws, including environmental laws. Therefore, the internet provides people with the means to evaluate how well their governments are protecting the environment.

### **Making the Connection**

*Zulfendi Zulhisam, a 13-year old living three hours from Kuala Lumpur in Malaysia can learn to build web sites and surf the internet at the same time as Mama Dominica Lacombi, who is 57, uses ICT to find information on modern techniques for breeding livestock in Cameroon.*

## *The Technology Gap*

The technology gap is the gap “between nations and communities in their abilities to access, diffuse and use scientific and technical knowledge.”<sup>iii</sup> This gap contributes to the large economic and social divide between rich countries and poor countries. While some countries and people have benefited greatly from ICT, many parts of the world still do not have internet access or access to computers. This gap is also called “the digital divide” or “information poverty.” This divide also makes it difficult for developing countries to “catch-up” to industrialized countries that have harnessed ICT and are moving ahead even more quickly.

Some examples of the technology gap include equal access to the internet, improved medical technology and availability of alternative technologies such as solar panels or wind farms. The United Nations reports that “a person living in a high-income country is over 22 times more likely to be an internet user than someone in a low-income country.”<sup>iv</sup> Additionally, the quality and speed of internet connections in low-income countries are typically slower and less reliable than internet connections in the United States, for example. The cost of internet is also markedly higher in lower-income countries, putting many citizens at a disadvantage as they are unable to access this technology because it is too expensive.<sup>v</sup> While internet in the home is a luxury in many parts of the world, countries such as Ghana are increasing access through the use of internet cafes, places in which adults and youth can pay a fee for time to use the internet.

## *The Gender Divide: Women and Technology*

Not only is there a technology divide among different countries, but there is sometimes a technology divide between men and women. In many parts of the world, both in rich and poor countries, women face discrimination in society because of their gender, and access and ability to use technology is one example of this discrimination. Many internet users can gain access from their workplace, but women are often in the home, or at workplaces without internet access. “Globally, women’s access to information is a major concern. The United Nations places lack of access to information as the third most important issue facing women globally, after poverty and violence against women.”<sup>vi</sup>

According to Oxfam, (an international non-governmental organization), women do not have equal access to technology because, “on average, women have less income, education, time, and mobility...”<sup>vii</sup> Access to technology is access to power. Women can use access to technology as a means to organize into community groups, raise funds to run for political office, start their own business or finish their education. In this way, women can use technology as a means to put an end to organized discrimination in their communities and homes.

One example of how technology can also provide economic advancement is the Grameen Bank, which gives women small loans to start their own businesses. The Grameen Bank, located in Bangladesh, focuses on the use of cell phones as an effective way for ICTs to open up communication to rural villages. As an added benefit, the Bank gives cell phones to select women who then rent those phones out to villagers. The women make a profit while the villagers gain access to valuable information.<sup>viii</sup>

## *Innovation and Technology*

Technology is more than access to a computer. Technology includes looking at solutions to problems in new and innovative ways. At one time, the map was an example of current technology used to solve the problem of how to get to new places; today the Global Positioning System (GPS) offers a new solution to the same problem. Innovation and technology, in the form of ICT or alternative technology, seeks to solve problems and answer questions.

Alternative technology is a phrase often used by environmentalists to describe technology that is more environmentally friendly and takes the place of traditional resources. One example is the growing use of wind farms to harness energy over the declining use of coal as an energy source. There are many examples of alternative technology that range from solar panels to heat homes and businesses, to portable suitcases of electricity and irrigation systems that collect rainwater for farms. <sup>ix</sup>The concept of alternative technologies is inventive and questioning, often lending itself to design by people all over the world. It is important to examine this type of technology in the United Nations for several reasons. Much of the pollution and environmental degradation comes from countries where the population is still growing, such as India and China. Also, people who have daily concerns over how to access clean water and enough food have a large stake in developing new and creative ways to solve these problems. In addition, this type of technology has received much attention through its use of ICT to market and educate people on new inventions.

### **CRITICAL THINKING**

*Name one example of an alternative technology you are familiar with? Is alternative technology more important for Western countries or those with higher rates of poverty? Why?*

## *Connectivity, Capacity and Content*

Without access to computers, people cannot use technology or its benefits. Efforts to achieve universal access require innovative approaches, such as wireless connections and low-cost access devices such as prepaid cell phones. Partnerships are also important, especially between governments and local groups such as nonprofit groups, religious groups, and school groups. Education emphasizing technology and science is very important. Universal access to technology is meaningless if citizens are not able to use it. Technology education should be central in citizens' lives from primary education onward. The development of local content on the internet will help foster a culturally and linguistically diverse cyberspace.

Additionally, the Secretary-General has outlined three key initiatives to be undertaken by the United Nations and its partners around the world to help countries maximize the benefits of technology. First is a "volunteer corps," which would train groups in developing countries in the uses and opportunities of the internet and information technology.

Second, it is recommended that a “Health InterNetwork” be established which would use the internet to connect hospitals and clinics all over the world to up-to-date medical information, as well as doctors.

Third and finally, the Secretary-General suggests that technology be used to provide quick responses in disaster situations. Through collaboration, dedication and effective strategies, nations can ensure every individual’s access to digital opportunities and the ability to benefit from science and technology.

### CRITICAL THINKING

*What actions do you think would bridge the digital divide? In what ways do you see alternative technology and ICT working together to solve problems?*

### QUESTIONS TO CONSIDER WHEN WRITING YOUR RESOLUTION

1. What is the level of internet usage in your country?
2. Can you find out how much a computer costs in your country?
3. Can you find a case-study (story) about how ICT is used in your country?
4. What kind of alternative technologies would benefit people in your country?
5. Why is it important to focus on more than just computers when discussing technology at the Model United Nations?

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<sup>i</sup> Anup Shah, “Poverty Facts and Stats,” Global Issues, accessed from: [www.globalissues.org/article/26/poverty-facts-and-stats](http://www.globalissues.org/article/26/poverty-facts-and-stats)

<sup>ii</sup> UNCTAD, *Digital Divide: ICT Development Indices*, (Geneva: UNCTAD), 2005

<sup>iii</sup> U.N. Economic and Social Council (ECOSOC), “Bridging the Technology Gap Between and Within Nations”, Report of the Secretary General, May 2006, pg. 3

<sup>iv</sup> Ibid, pg. 14

<sup>v</sup> Ibid.

<sup>vi</sup> (Gender Issues in the Information Society, 2004, <http://unesdoc.unesco.org/images/0013/001329/132967e.pdf>)

<sup>vii</sup> *Gender and ICTs for Development: A Global Source Book*, Oxfam, (eds) Minke Valke, S.J.R. Cummings & Henk Van Dam, June 2005, accessed from: <http://publications.oxfam.org.uk/oxfam/display.asp?ISBN=0855985658>

<sup>viii</sup> “Village Phones”, Grameen Bank, accessed from [http://www.grameen-info.org/index.php?option=com\\_content&task=view&id=301&Itemid=288](http://www.grameen-info.org/index.php?option=com_content&task=view&id=301&Itemid=288)

<sup>ix</sup> Design for the Other 90%, Smithsonian Institute, 2007.