CHAPTER I.
UNDERSTANDING DEVELOPMENT

Development is about change. Change for the better. Development is about making a better life for everyone. “A better life for everyone” might mean different things in different countries and contexts, and the concept is not restricted only to the developing world. In a world full of inequalities, a better life means first of all, the meeting of basic needs of food, shelter, education, health and a safe environment, and where all people can live with dignity and respect. A better life or development is not merely about money and wealth; it is also about ethics and values that all societies hold dear.

1.1 Understanding Human Development

What do we mean by development? The term is not new; it is highly complex, contradictory, and full of debates and discourses. The term means different things to different people, based on economic, geographic, political, social, cultural, religious and ethnic contexts. And finally, development can be viewed from the perspectives of a number of “academic disciplines”. Because it means different things to different people, it is a term difficult to define and understand.

Development has been a field of study extensively explored from various perspectives especially in the second half of the twentieth century. To establish the link between current development perspectives and the use of ICTs to address development, it is necessary to understand how development discussions coalesced into the human development framework.

Current development perspectives originated from the post World War II era when the term “development” was used as part of a rationale for post-war reconstruction in Europe and the “underdeveloped parts” of the world. These perspectives also emerged from the immediate post-colonial experience where most of the newly independent countries of Asia and Africa were, according to Western values, left far behind in terms of progress.

Mowlana and Wilson[2] argue that “development” as a conceptual framework for a number of individual, institutional, national and international changes is essentially a post World War II phenomenon. The term became synonymous with growth, modernization, change, democracy, and many similar Western values, and in the beginning was focused largely on economic development.

There are three dominant political perspectives to the study of economic development, dependent to a large extent on their origin. Within the neoliberal Western economies, the perspective of a free market economy with little or no state intervention prevails. In leftist, socialism dominated political systems, planned economies with extensive state intervention in the planning and management of the economic processes prevails. And in many of the developing countries, a model of a mixed economy prevails, with both a private sector market led engagement present alongside state intervention, regulation and participation in the economic activities of the country.

Economic Development

Since it was in development economics that the concepts of planned social change first emerged soon after World War II; much of the early discussions centred on economic growth. The assumptions that current economic development is based on is about the inherent nature of human beings—that free individuals operate in free markets, with competition as its defining

2 Hamid Mowlana and Laurie J. Wilson, *Communication Technology and Development* (Paris, UNESCO, 1988).

feature. There is little or no state intervention in the working of the economy. Economic indicators such as Gross National Product (GNP)[3] and GNP per capita,[4] Gross Domestic Product (GDP)[5] and GDP per capita,[6] and per capita income formed the indicators of development that they studied. Therefore, as the GNP and GDP grew, and as per capita income increased, development would gradually percolate, move or "trickle down"[7] to the larger population and the poor.

Much of the policy and advocacy of the World Bank Group of institutions, including the International Monetary Fund (IMF), has been based on this economic theory since their formation in the immediate post World War II era. New paradigms have emerged since, such as the Washington Consensus,[8] structural adjustments, and a view that poverty could essentially be alleviated through increased private sector generated growth. Many countries adopted the economic reforms proposed in the Washington Consensus with varying results, but there was extensive criticism of the social and political consequences of such reform, especially in the context of growing globalization. The Asian financial crisis of the 1990s and more recently, the 2008 global financial crisis ended the era of the belief that economic change alone through private sector led growth could, by itself, trigger development.

The second major perspective to economic development came from the planned economies of the erstwhile Soviet Union and Eastern Europe, and China. The state became the major, often, the only player in the economy, and development took a Marxist-Leninist approach[9] to economic development. Other countries such as India followed a middle path, with planned economic development through extensive state intervention in the economy operating parallel to private sector growth.

Social, Psychological and Cultural Theories of Development

Schooled in Western political and social philosophy, a parallel group of scholars focused more on the modernization of individuals and groups to understand the forces that would bring about change and development at an individual and a larger societal level. Teams of political scientists, sociologists, and psychologists from many of the West's elite institutions tried to draw contrasts between the "traditional" and the "modern" individual and societies in terms of social traditions and personality traits.[10] Modernization and development for these scholars meant a move from traditional, community-based, feudalistic societies to ones that stressed innovativeness, education, political participation and access and exposure to information that changed people's way of thinking.

The perspectives described here are neither mutually exclusive nor exhaustive. None of them explain in totality the phenomena of development; each brings a different value addition to the discussions. They each intersect and overlap with other perspectives such as the basic needs

3 GNP is the total value of all final goods and services produced within a nation in a particular year.

4 The GNP per capita of a country shows the average value of goods and services produced by each person each year.

5 GDP is the total market value of all goods and services that are produced within a country.

6 GDP per capita is the approximation of the value of goods produced per person in the country.

7 Proponents of the trickle down approach argued that the wealth created by industry and other successful parts of the economy would gradually benefit everyone in a society. See http://web.mit.edu/sanyal/www/articles/Myth%20of%20Dev.pdf; and http://www.investorwords.com/5075/trickle_down_theory.html.

8 The term Washington Consensus most commonly refers to an orientation towards free market policies that from about 1980-2008 was influential among mainstream economists, politicians, journalists and global institutions such as the IMF and the World Bank. The term can refer to market friendly policies that were generally advised and implemented both for advanced and emerging economies. See http://en.wikipedia.org/wiki/Washington_Consensus.

9 Marxist-Leninist political theory is an entire system of political and economic analysis of society. It served as a counterpoint to liberal and individualist economics of the industrial society in the nineteenth century. While there are many arguments as to whether the economic system of the erstwhile Soviet Union reflected Marxist thought in its purity, it has often been interpreted as an economic system where the state, rather than the market, is the major player in the economic development of a society.

10 Among this group of scholars were people like the political scientists, Everett Hagen in his book, *On the Theory of Social Change* (1962); Samuel Huntington, *Political Order in Changing Societies* (1968); S.N. Eisenstadt, *Tradition, Change, and Modernity* (1973); rural sociologist David Lerner, *The Passing of Traditional Society: Modernizing the Middle East* (1958); communication scholar Everett Rogers, *Modernization Among Peasants* (1969); and Wilbur Schramm, *Mass Media and National Development* (1964).

approaches, the sustainable development perspectives and the women and development perspectives—all introduced in the early 1970s.

Criticisms of these early approaches quickly emerged. Macro-level statistics collected in many countries often hid the ground realities. Improved economic growth did not necessarily lead to the eradication of poverty; instead it sometimes led to greater inequalities in the distribution of income. Empirical evidence continued to point to the failure of growth theories to alleviate poverty and reduce hunger. Instead, there were often high growth rates alongside large scale poverty and deprivation, inequalities, social disorder and environmental degradation. The dissatisfaction of countries with existing theories of development came from a realization that these theories did not really address or translate into improving the quality of people's lives. Human rights groups and grass-roots movements continuously drew attention to the failure of economic models to address core issues concerning people all over the world, and especially in the poor, developing countries.

1.2 The Human Development Framework and Global Development Goals

Parallel to all the activity in development discourse and practice taking place throughout the 1970s, 1980s and the 1990s, in the work of eminent economists and thinkers, Mahbub ul Haq[11] and Amartya Sen,[12] a new paradigm on development emerged that looked at the process of development through a more people-centred and humane approach. Mahbub ul Haq argued in his seminal publication, *Reflections on Human Development*[13] that increase in income is treated as an essential means, but not as the end of development, and certainly not as the sum of human life. Haq offered a new vision of human security for the twenty-first century where real security is equated with security of people in their homes, their jobs, their communities, and their environment.

Couple this with the work of Amartya Sen, a new paradigm for development emerged. In his book, *Development as Freedom,*[14] Amartya Sen argues that in individual freedom lies the capacity for political participation, economic development and social progress. The goal of all development is the enabling of the exercise of such a freedom—the freedom to make a choice, and consequently the empowering of an individual so that he or she is able to make the choices that determine his/her quality of life. Haq and Sen's work were a strong influence in terms of expanding development discussions to include new indicators that focused on social development and freedoms, and giving greater importance to people-centric approaches to development. For the poor, the exercise of the freedom of choice is limited by a poverty of income; education, health care, and equality in a society. Sometimes, but not always, these limitations are also a result of socio-economic status, gender, religion and ethnicity.

The failure of economic models to address issues relating to development led to the search for a new approach that placed people at the centre of the development process. Pioneered by Haq and Sen, the human development approach was introduced by the United Nations Development Programme (UNDP) in 1990 and supported later by other international organizations. This approach has both interest and merit because it stresses human well-being as an end for any process of economic and social development. It does so by overturning the view that focuses on material progress as the sole end. Instead, the new approach focuses on the well-being of individuals as the ultimate objective.

11 A world renowned Pakistani economist whose work focused on social realities and who is acknowledged as the originator of the HDI, a composite statistic used to rank countries by level of "human development".

12 Amartya Sen is the Indian Nobel laureate whose perspectives on development as freedom underpins current development theory and approaches in the MDGs today.

13 Mahbub ul Haq, *Reflections in Human Development* (Oxford University Press, 1995).

14 Amartya Sen, *Development as Freedom* (New York, Alfred A. Knopf, 1999).

Currently, the Human Development Report (HDR) developed by UNDP is an important document through which the debate on human development is understood. The annual HDRs are intended to open the development debate through well researched scientific and policy analyses followed by recommendations for action. The HDR combines annual thematic presentations, preceded by definition, measurement and analysis of indicators of education, health and income sufficient to ensure adequate living standards, to develop the Human Development Index (HDI).

The HDRs are based on five development indices: the HDI; the Human Poverty Index 1 (HPI 1) for developing countries, and the Human Poverty Index 2 (HPI 2) for selected member countries of the Organisation for Economic Co-operation and Development (OECD); the Gender Related Development Index; and the Gender Empowerment Measure. Each of these is developed using different dimensions and indicators.[15]

The HDI is the average of measures of three indices: life expectancy, education/literacy and standard of living. It is purported to be a way of comparing the level of development of a particular group of people (as in, developed, developing, underdeveloped) based on the availability of options. The logic is that the more developed a group of people are, the more options are available to them.

To study change and progress in different countries, it is not enough to look only at one year's report. Which is why a look at the composite trends from 1970 to 2010, as analysed in the HDR 2010, is useful and sheds light on important trends. Table 1 shows the composite trends in the HDI from 1970 to 2010.[16]

15 For a detailed explanation of how the calculations are done, see UNDP, "Technical Note 1: Calculating the human development indices", in *Human Development Report 2007/2008* (New York, 2007), http://hdr.undp.org/en/media/HDR_20072008_Tech_Note_1.pdf.

16 UNDP, *Human Development Report 2010 – 20th Anniversary Edition: The Real Wealth of Nations – Pathways to Human Development* (New York, 2010), http://hdr.undp.org/en/reports/global/hdr2010.

Table 1. Trends in the Human Development Index, 1970-2010

	Value	% change		Value	% change		Value	% change		Value	% change		Value	% change	
	2010	1970 – 2010	1990– 2010	2010	1970 – 2010	1990– 2010	2010	1970 – 2010	1990– 2010	2010	1970 – 2010	1990– 2010	2010	1970 – 2010	1990– 2010
Regional groups															
Developing countries	0.64	57	23	68	21	8	81	61	21	66	28	24	5,873	184	89
Arab States	0.66	65	20	70	37	10	74	149	41	64	89	22	8,603	66	44
East Asia and the Pacific	0.71	96	35	73	23	9	94	76	18	69	7	31	6,504	1,183	352
Europe and Central Asia	0.75	13	4	69	3	2	97	7	2	82	17	7	11,866	120	20
Latin America and the Caribbean	0.77	32	12	74	24	9	92	27	10	83	59	16	11,092	88	42
South Asia	0.57	72	31	65	33	12	66	113	46	59	64	29	3,398	162	119
Sub-Saharan Africa	0.43	53	21	52	19	7	65	183	43	54	109	42	1,466	20	28
Developed countries	0.89	18	7	80	13	6	99	2	1	92	33	14	37,185	126	38
OECD	0.89	18	7	80	13	6	99	2	1	93	33	14	37,105	125	38
Non-OECD	0.86	24	9	80	14	7	96	13	6	79	29	10	40,043	263	58
HDI groups															
Low	0.44	61	27	55	27	11	63	180	48	52	98	43	1,434	33	44
Medium	0.65	83	31	69	25	9	82	79	24	65	21	28	5,010	606	237
High	0.77	24	9	73	15	7	93	20	8	82	38	13	12,610	94	35
Very high	0.89	18	7	80	13	6	99	2	1	92	33	14	37,185	126	38
1970 hybrid HDI quartiles															
1 (lowest)	0.60	82	32	66	22	8	76	96	29	61	23	33	4,323	560	250
2	0.69	51	16	71	34	11	88	53	15	74	55	16	7,334	110	53
3	0.79	24	9	75	15	6	96	11	4	85	36	16	14,486	152	54
4 (highest)	0.88	16	6	79	11	5	99	1	0	91	29	11	34,585	122	36
World average	**0.68**	**41**	**18**	**70**	**18**	**7**	**83**	**39**	**15**	**70**	**26**	**20**	**10,645**	**107**	**47**

Note: All values are population weighted. Life expectancy is in years, literacy and gross enrolment are in percentages and income is in purchasing power parity 2008 US dollars. See *Definitions of statistical terms* for more detailed descriptions. The sample covers 135 countries, and thus the group aggregates may differ from those presented in statistical tables 1–17. The hybrid HDI is distinct from the 2010 HDI reported in statistical tables 1 and 2: it uses the same functional form but a different set of indicators that are available over a longer time period (see box 2.1). HDI groups are based on the 2010 HDI.

Source: HDRO calculations using data from the HDRO database.

Source: UNDP, *Human Development Report 2010 – 20th Anniversary Edition: The Real Wealth of Nations – Pathways to Human Development* (New York, 2010), p. 28, http://hdr.undp.org/en/reports/global/hdr2010.

By simply looking at the percentage of change between 1970 and 2010 in the Asia-Pacific region (rows 3, 4, and 6 in table 1), you will see that there have been improvements in all dimensions of human development in life expectancy, literacy and income levels. However, the gap between developed countries and developing countries remains high. In summarizing these indexes, the *Human Development Report 2010* stated that:

> The past 20 years have seen substantial progress in many aspects of human development. Most people today are healthier, live longer, are more educated and have more access to goods and services. Even in countries facing adverse economic conditions, people's health and education have greatly improved. And there has been progress not only in improving health and education and raising income, but also in expanding people's power to select leaders, influence public decisions and share knowledge.[17]

Adding a word of caution, the *Human Development Report 2010* also stated that:

> Yet not all sides of the story are positive. These years have also seen increasing inequality—both within and across countries—as well as production and consumption patterns that have increasingly been revealed as unsustainable. Progress has varied, and people in some regions—such as Southern Africa and the former Soviet Union—have experienced periods of regress, especially in health. New vulnerabilities require innovative public policies to confront risk

17 UNDP, *Human Development Report 2010*, p. 1.

and inequalities while harnessing dynamic market forces for the benefit of all.[18]

Since the 1990s, other international and multilateral agencies have also been producing annual reports on various development themes based on their areas of work and operation.[19]

The human development approach has changed the way that the world currently looks at development. This view is reflected both at international debates and underscores the commitment given by the global community to actively pursue development. In the current global scenario, it is hard to find a national constitution that does not guarantee equal rights for all its citizens regardless of ethnicity, sex, gender, colour, religious beliefs, political leanings, social and economic status. And if, indeed, all governments had succeeded in meeting these noble objectives, there would be no need for a discussion on global development.

1.3 The Millennium Development Goals[20]

In the year 2000, world leaders met at the United Nations headquarters to discuss the role of the United Nations at the turn of the twenty-first century. At this meeting, world leaders ratified the Millennium Declaration. At the Millennium Summit, 189 member States of the United Nations agreed to help citizens in the world's poorest countries to achieve a better life by the year 2015 through the framework of the Millennium Development Goals (MDGs).

The adoption of the Millennium Declaration and the MDGs by all 189 member States of the United Nations General Assembly in 2000 was a watershed in global cooperation. The Millennium Declaration sought partnership between rich and poor nations to make globalization a force for good. While the importance of human development had been reiterated for decades and at various platforms and global conferences throughout the 1980s and 1990s, it was the first time that all stakeholders—countries and governments, donor and development agencies, non-governmental and civil society organizations—recognized and accepted that unless there is common understanding and commitment, the goal of equitable development would never be reached. By the end of the Summit, the Millennium Declaration's eight chapters were drafted, from which the eight goals of the MDGs were developed and promoted in the years following the summit.

The MDGs are the most broadly supported and the most specific poverty reduction strategies that the world has committed itself to. They are, in a sense, the common denominator that all countries, irrespective of their ideological, political or cultural affiliations, have adhered to. Each and every stakeholder in the global community accepted the common goals, targets and strategies for achieving them. For the international system consisting of donor and technical aid agencies, the goals constitute a common agenda upon which development assistance is based. For countries, it means commitment to goals and measurable targets so that progress could be measured, tracked, monitored and evaluated. If the goals are met, it will mean that the more than 1 billion people living in poverty and deprivation will have a means to a more productive and poverty-free life.

These eight goals are given in box 1.

18 Ibid.

19 Almost all the United Nations agencies and those of the World Bank Group publish annual reports on various development themes. For instance, UNICEF brings out a State of the World's Children report; while UNESCO brings out a similar report on education; and the ITU brings out the annual ICT Development Report. Links to these reports are available at the respective websites of the organizations.

20 For a detailed analysis, see Usha Rani Vyasulu Reddi, *Module 1: The Linkage between ICT Applications and Meaningful Development*, 2nd edition, *Academy of ICT Essentials for Government Leaders* module series, (Incheon, UN-APCICT/ESCAP, 2011), http://www.unapcict.org/academy.

Box 1. The Millennium Development Goals and Targets

Goal 1:	**Eradicate Extreme Poverty and Hunger**
Target 1:	Halve, between 1990 and 2015, the proportion of people whose income is less than USD 1 a day
Target 2:	Halve, between 1990 and 2015, the proportion of people who suffer from hunger
Goal 2:	**Achieve Universal Primary Education**
Target 3:	Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling
Goal 3:	**Promote Gender Equality and Empower Women**
Target 4:	Eliminate gender disparity in primary and secondary education preferably by 2005 and in all levels of education no later than 2015
Goal 4:	**Reduce Child Mortality**
Target 5:	Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate
Goal 5:	**Improve Maternal Health**
Target 6:	Reduce by three-quarters, between 1990 and 2015, the maternal mortality rate
Goal 6:	**Combat HIV/AIDS, Malaria, and Other Diseases**
Target 7:	Have halted by 2015, and begun to reverse, the spread of HIV/AIDS
Target 8:	Have halted by 2015, and begin to reverse, the incidence of malaria and other major diseases
Goal 7:	**Ensure Environmental Sustainability**
Target 9:	Integrate the principles of sustainable development into country policies and programmes to reverse the loss of environmental resources
Target 10:	Halve, by 2015, the proportion of people without sustainable access to safe drinking water
Target 11:	By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers
Goal 8:	**Develop a Global Partnership for Development**
Target 12:	Develop further an open rule-based, predictable, non-discriminatory trading and financial system
Target 13:	Address the special needs of the least developed countries
Target 14:	Address the special needs of landlocked countries and Small Island Developing States (through the Programme of Action for the Sustainable Development of Small Island Developing States and the outcome of the 22nd Special Session of the General Assembly)
Target 15:	Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term
Target 16:	In cooperation with the developing countries, develop and implement strategies for decent and productive work for youth
Target 17:	In cooperation with pharmaceutical companies, provide access to affordable, essential drugs in developing countries
Target 18:	In cooperation with the private sector, make available the benefits of new technologies, especially information and communications

Source: UNDP, *Regional Human Development Report – Promoting ICT for Human Development in Asia: Realising the Millennium Development Goals* (New Delhi, UNDP, Elsevier, 2005), http://www.apdip.net/elibrary#rhdr.

Each of the eight goals has specific targets that countries will seek to meet as part of the progress toward achieving the goals by the year 2015. Within the MDGs are 18 targets and 48 indicators that are to be tracked as the global community moves toward achieving them. It is within this context of development as it is perceived today that we place this discussion. Even though governments recognize that the process of evolutionary change is slow, they are all committed to telescoping the change of centuries into a small, intensive period of 15 years (from 2000 to 2015).

Also part of the global commitment is a strategy and plan of action to address each of the goals and targets that foresees action at global and national levels, supported by activities at the regional level. At the global level is the United Nations system, which will, through core elements such as monitoring, analysis, campaigning and mobilization, work towards the achievement

of the goals. At the national level, it is essential that there be enabling policy frameworks, partnerships, country studies and activities, done through the policy dialogue and country-driven strategy setting process envisaged through the Poverty Reduction Strategy Papers (PRSPs) or other similar national plans and strategies. Promoted by the World Bank Group of institutions, the PRSPs are essentially policy and position documents that describe the individual country's macroeconomic, structural and social policies over a period of at least three years. These are prepared by the member countries through a participatory process involving domestic stakeholders and in some instances, with support from international development partners.[21] A good example of such kind of work is India's Five Year Plans and the Approach Papers to the Five Year Plans (prepared since 1952) in India.[22]

There have been several mid-term reviews of global and regional progress in meeting the targets in different parts of the world, beginning in 2004. By 2007, halfway through the defined period of 15 years, the alarm bells were ringing and it was clear that while there had been some progress, it was not enough. The *Millennium Development Goals Report 2007*[23] shows that global progress is uneven. So does the report in 2011,[24] which shows that there have been some visible and widespread gains as poverty continues to decline in many countries, and every region has made progress in improving access to clean drinking water. Yet, the most vulnerable failed to be reached, and disparities in progress between urban and rural areas remain daunting. Moreover, a World Bank study reports that the economic crisis of 2008 has adversely impacted progress toward achievement of the MDGs in many parts of the world.[25] Recovery from the crisis has been slow and the outlook for achievement of many of the goals in the developing countries is cause for serious concern. Large parts of the world may miss the targets to be achieved by 2015. At the same, there is cause for optimism since there have been vast improvements in some basic sectors such as education and gender equality.

As a result, what is important is that the MDGs, and the date of 2015, have to be seen today more as milestones rather than as end posts or final goals in themselves. These goals may or may not be achieved by 2015, yet they will remain to serve as a road map toward development. The crossing of the target date of 2015 will not diminish their importance as commitments from a global community.

Points To Remember

- The human development approach is a new development paradigm that looks at the process of development through a more people-centred and humane approach.
- This approach is best exemplified in the HDI and the Human Development Reports.
- Global development goals are currently based on the human development approach.
- Even after 2015, the MDGs have to be seen more as a road map toward progress rather than end posts in themselves.

21 PRSPs from different countries are available at http://www.imf.org/external/np/prsp/prsp.aspx.

22 India's PRSP is available at http://eeas.europa.eu/india/csp/07_13_en.pdf.

23 DESA, *The Millennium Development Goals Report 2007* (New York, 2007), http://www.un.org/millenniumgoals/pdf/mdg2007.pdf.

24 United Nations, *The Millennium Development Goals Report 2011* (New York, 2011), http://www.un.org/millenniumgoals/pdf/MDG%20Report%202010%20En%20r15%20-low%20res%2020100615%20-.pdf.

25 World Bank, *The Global Monitoring Report: The MDGs after the Crisis. 2010* (Washington, D. C., 2010), http://issuu.com/world.bank.publications/docs/9780821383162.

1.4 Managing Human Development

Management of development in a developing country is a political and ethical process, a matter of the use of power and good governance to bring about desired goals in contexts characterized by conflicts of interests, values and agendas, and shrinking resources. It consists of policymaking and setting development goals, identifying priorities, developing and establishing enabling legislations and regulatory practices, working with different governmental and non-governmental organizations (NGOs); engaging with citizens both to provide access to and provision of services and to promote social accountability; and monitoring and evaluation to ensure that there is progress.

Development is as much about economic growth, as it is about values, many of which are the foundation upon which current human development discussions and debates are built. Some of these values include:

- Inclusiveness – A pattern of growth that allows all people to contribute to and benefit from the development process.
- Equality – A state of being equal, especially in status, rights and opportunities. But there is inherent inequalities in any society. Therefore, a policy that enables systematically disadvantaged and vulnerable groups to share in development through positive discrimination is necessary to ensure that benefits reach them.
- Quality – The general excellence of standard that goes beyond just the provisioning of services, but ensuring that these services are of good quality.
- Accountability – A state of being accountable to citizens, partners, stakeholders, etc. in the effort to promote and maintain openness, responsiveness, fairness and trust. It includes government's active engagement with citizens and other stakeholders.

These are values that have emerged from political thought and philosophy over several centuries, and the managers of a development process in any country need to incorporate these values in their management in one way or another.

The development process has become more complex in a world interconnected by technological innovation—a networked world linking people and areas of diverse resources, concerns, and levels of development into a common globalized space.

An event in Brazil can trigger a response in Asia, and a crisis in an African country can produce a response in the far Pacific. The economic crisis of 2008 in the United States and Europe and its subsequent impact on smaller countries in Asia, Africa and Latin America is the best example of how interdependent and globalized today's world is. To some extent, the cross border flow of goods and services facilitated and sped up by innovations in ICTs has created a networked world.

Case 1. Bhutan and Gross National Happiness

Bhutan, a country about the size of Switzerland, is located on the eastern ridges of the Himalayas between India and Tibet. Bhutan has important geopolitical significance as it borders two Asian giants. The country has a population of approximately 682,000 and in 2008 shifted from being an absolute monarchy to a multiparty parliamentary democracy. Seventy per cent of Bhutan's population live in rural areas and mostly farm for a living, although like in many other countries, rural to urban migration is a growing trend in Bhutan.

The concept of Gross National Happiness (GNH) was first introduced in 1972 by the fourth King of Bhutan, H.M. Jigme Singye Wangchuck. For years following the introduction of the concept, GNH served as a guiding philosophy for the absolute monarchy that is based on four pillars: Equitable Economic Development; Environmental Preservation; Cultural Resilience; and Good Governance.

Having absolute power, the King used the four pillars of GNH to guide the construction and implementation of policies in Bhutan. In recent years, however, with more Bhutanese students pursuing education in India, the United States, and elsewhere, and with Bhutan slowly opening up to the world, the concept of GNH has been scrutinized and sometimes criticized for not being measureable or statistically sound. GNH first came to public global attention in 1986 when H.M. Jigme Singye Wangchuck told the Financial Times, "Gross National Happiness is more important than Gross National Product" in an interview in London.

Bhutan is indeed a living example of a society that has actively opened a dialogue that addresses the questions of: What is progress? What matters to us as a society? How do we measure it? How do we use statistics to shape institutions and policies? As any other country in the South Asian region and other developing regions of the world, Bhutan faces many social, economic and political challenges. But what does differentiate Bhutan from other nations is that it has fully embraced an alternative, more holistic, and more sustainable approach to development in using GNH as their metric of progress and as the driver for policies in the country. However, GNH is potentially problematic on various dimensions.

Source: Adapted from Alejandro Adler Braun, "Gross National Happiness in Bhutan: A Living Example of an Alternative Approach to Progress", Wharton International Research Experience, 24 September 2009, http://www.grossnationalhappiness.com/OtherArticles/GNHPaperbyAlejandro.pdf.

Practical Exercise

1. Read the article:

   Alejandro Adler Braun, "Gross National Happiness in Bhutan: A Living Example of an Alternative Approach to Progress", Wharton International Research Experience, 24 September 2009, http://www.grossnationalhappiness.com/OtherArticles/GNHPaperbyAlejandro.pdf.

2. Review the material presented in the article in terms of the current approaches to human development.

3. In a decreasing order of priority, list what you consider to be the most important values and benefits from development that you would like to see in your country. Compare your list with that of fellow students sitting on the immediate left and right of you.

4. What is common in the three lists? What is different? Along with your fellow students, make a new list—once again prioritizing the values and benefits from development you would like to see in your country. Present to your class how you discussed and arrived at the final list and how you compare "happiness" to increased economic wealth.

Test Yourself

1. The human development approach introduced by UNDP in 1990 focuses largely on:

   a. Material progress
   b. Material well-being of countries
   c. Well being of individuals
   d. All of the above

2. Which of the following is not an index upon which the Human Development Reports are developed?

   a. Human Development Index
   b. Gender Empowerment Index
   c. Human Poverty Index
   d. Sustainable Poverty Index

3. The MDGs reflect the global community's commitment to:

   a. Economic growth in developing countries
   b. Poverty reduction strategies worldwide
   c. Reducing the divide between different political systems
   d. Climate change

4. A country's Poverty Reduction Strategy Papers usually reflect:

   a. Individual country's economic and social policies over a three year period
   b. Banking policies in a country
   c. A country's national health and education plan
   d. None of the above

5. Managing development is about:

   a. Balancing economic, political and social development priorities
   b. Reducing abject poverty in countries
   c. Using political power to achieve economic goals
   d. Providing for equality and human rights

1.5 Communication and Development

The imperatives of using ICTs are well delineated in any number of documents. Evidence abounds of the transformational changes that these technologies have brought about in society; their potential for meeting the human resource development needs of societies; and their catalytic role as agents that can propel and accelerate change.

We have already discussed the concept of development. An understanding of communication is a must before proceeding further. Communication is a process as old as human society itself and is a process in which all of us are engaged, from the time we awaken in the morning to the time we sleep at night, whether speaking, reading or writing; watching, hearing, listening to radio or television (TV), interacting through e-mail or live on Internet. We are constantly either receiving or sending messages, non-verbal (i.e. without sound) or verbal through sound signals.

At a very basic level of understanding, communication can be described as a process whereby someone sends a message to someone else through a channel and gets a response or feedback. This process can have interference (physical, psychological or environmental), which is also called noise. However, communication takes place in cultural and social contexts, which give a shared meaning to messages that form part of the process. For this reason, it is impossible to think of communication as simply a process of information transmission alone. Communication is inseparable from the institutions of communication, of culture, and of development.

Communication can be interpersonal and face-to-face, that is an individual addressing another or a group directly; in which case there can be direct response or feedback. In such a situation, the process can be equal and interactive. Sometimes, when an impersonal channel or carrier is used, as in the use of mass communication media, the initiative and ability to communicate is overwhelmingly with the sender, and the communication is an impersonal, one-way flow of messages. This is the case with mass media such as newspapers, magazines, radio, TV and films, where these media create and disseminate messages. Early models of the Internet and website development have some of these same features as the mass media of communication. Feedback or response from such impersonal one-way flow of communication is very weak or non-existent. However, given the sheer size; reach (in terms of numbers and geographical spread); speed of delivery across the world, it is but natural that early theories and pioneers in communication assumed that mass media had considerable power to inform, and consequently influence behaviour. The perceived role of mass media of communication was one of informing, educating and entertaining; and in this process, influencing attitudes and changing the behaviour of individuals and societies.

The process of communication has to be delinked from the technologies of communication. Communication is a process, while technologies are the tools or media employed in the process. Empirical evidence from many efforts over a time span of nearly six decades of applying communication media for different purposes in a society has pointed to the complexity of the process. What is known from these decades of deployment and research is the following:

- There are differential effects of the same media or content, and these effects are dependent on factors such as age, sex, predispositions, perceptions, social environment and past experience.
- There is no direct relationship between media, media content and users. Communication tools such as mass media are only one of several variables that influence attitudes and change behaviour. Interpersonal relations, access and exposure, channel characteristics, content, and social and psychological predispositions are intervening variables. The use of interpersonal communication is a must to bring about behaviour and attitude change.
- Users of communication tools are not passive, accepting everything that they are exposed to. They are active participants in the communication process and their use of communication tools and content are dependent upon their preference, familiarity and existence of other equally, more attractive, or easier alternatives, and the gratification or satisfaction they receive as a result of such use.
- The purpose for which users will attend to a given communication tool or content will depend upon a wide range of factors and the extent to which the tools meet an existing informational, social, psychological or economic need.

There is now a better understanding of the relationship between communication processes, tools, content and audiences. There is a also a better understanding of the need to take into account the differences in cultural contexts and conditions; histories and geographies; the diverse audience characteristics and demographics; and the varying psycho-social profiles of various groups of people especially among the marginalized. It is now known better how messages are constructed and packaged; when and how they should be delivered; what communication media are used in terms of their relative strengths and limitations; and why it is important to involve, rather than exclude, people in the communication process.

Advances in ICTs have also revealed their strengths and their flaws; and how it is necessary to mix and match content, technologies and communities for better results. There is today a better understanding of the power of communication media; for example in setting an agenda for discussion, in influencing public opinion, in changing attitudes and influencing behaviour, and in meeting the diverse needs and gratifications of individuals and groups of society.

Today, the field of communication has emerged as an independent discipline drawing from various social sciences such as psychology, political science, sociology, economics and development on the one hand; and the technologies, hardware and software on the other hand. Communication as a field now encompasses several other sub-disciplines such as advertising, social research, media production and delivery, public relations and advocacy, and development communication, which is the major focus of study in this primer.

“Development communication” scholars and practitioners approach the relationship between communication and development from two different perspectives. The first is a more broad and general relationship between communication and development. The second dimension is the organized use of communication to meet development objectives or development support communication.

The General Relationship

The theoretical foundation for the potential use of communication to meet the challenges of development started with the pioneering studies in the 1950s and early 1960s. Lerner's[26] pioneering study that showed the link between communication and modernization of individuals in Turkey was followed by a large number of studies in the early 1960s, and an equal number of projects where the role of communication was tested in developmental settings. The Radio Rural Forums of the 1950s and the classic study by Rogers and Shoemaker[27] set the stage for the incorporation of communication as a critical element of development programming. At the same time, initiatives led by the the United Nations Educational, Scientific and Cultural Organization (UNESCO) and Schramm[28] emerged in different parts of the world when countries such as Brazil, China, India and Mexico invested heavily in the use of media for educational and developmental purposes.

Much of the experimentation in the first two decades of development (during the 1950s and 1960s) focused on trying to understand the relationship between the two aspects. However, results from the field often yielded contradictory results—much at odds with planners' expectations and have, consequently, added to the debate on effective use. The conflicting results did not challenge the general link between communication and development; they did, however, give rise to the more action oriented or strategic "development support communication" perspective.

Development Support Communication

Development support communication essentially refers to the organized and systematic use of communication to support the development process, either at a national or location and project specific level. Specifically, it is the integration of communication (and in today's parlance) the use of ICTs as part of the planning, design, development, delivery and evaluation of developmental projects. This could mean large-scale experimentation as in Mexico's Telesecundaria[29] and Brazil's Telecurso.[30] It could also mean small-scale experimentation and use as in community radio initiatives globally or in the current use of multi-purpose telecentres located in remote villages.[31]

The adoption and use of ICTs in the practice of development is not new. It has been going on for decades, beginning with the use of radio in the middle of the twentieth century; and moving on to TV. In earlier decades, the use of the older technologies such as radio and TV for development support was extensive. Potential reach and access were the main drivers for using radio and TV. There was parallel support from donor and technical assistance agencies to exploit these technologies. Examples abound and one of the oldest successful applications in the Asia-Pacific area is the use of satellite-based radio and TV for education at the University of the South Pacific (USP). Other equally famous and often quoted examples include China's Radio and Television University,[32] and India's Satellite Instructional Television Experiment (SITE) in 1975-1976, and post SITE efforts.

26 Daniel Lerner, *The Passing of Traditional Society: Modernizing the Middle East* (New York, The Free Press, 1958).

27 Everett M. Rogers, et. al., *Communication of Innovations: A Cross Cultural Approach* (New York, The Free Press, 1971).

28 Wilbur Schramm, *Mass Media and National Development* (Stanford, Stanford University Press, 1964).

29 Telesecundaria is a system of distance education programmes for secondary and high school students created by the Government of Mexico and available in rural areas of the country, running successfully since 1968. See http://www.unesco.org/education/educprog/lwf/doc/portfolio/abstract8.htm.
See also Jose Calderoni, "Telesecundaria: Using TV to Bring Education to Rural Mexico", *Education and Technology Notes Series*, Vol. 3, No. 2 (1998), pp. 1-10, http://go.worldbank.org/18DR286ON0.

30 Claudio de Moura Castro, "Is Education by Television Just an Old Technology", Notes from the Education Unit, Inter-American Development Bank, January 2000, http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=1481484.

31 The set up of telecentres is one way of developing common facilities in rural and deprived communities to provide access to ICT facilities and resources that can meet the information needs of the local community. For more details on telecentres and the telecentre movement, see http://www.telecentre.org.

32 China's Radio and Television University, currently called China's Open University, is a dedicated technology-enabled higher education institution established since 1979. For more details, see http://www.edu.cn/20010101/21803.shtml.

Two factors spurred an increased interest in the use of ICTs for development in the late 1990s and the first decade of the twenty-first century. The arrival of the Internet on the global scene and technology convergence; and this blending with the global development agenda as visualized in the MDGs gave rise to renewed interest in using ICTs for development. The following key initiatives contributed to an increased investment in ICT infrastructure and projects:

- The World Bank's *World Development Report 1998/99*[33] recognized that knowledge made the difference between poverty and wealth
- The establishment of the Digital Opportunities Task Force[34] by the G8 countries[35] to develop an agenda for ICTD
- The World Summits on the Information Society in Geneva in 2003 and Tunis 2005.[36]

With very practical applications and interventions, the projects were typically in areas identified by the MDGs, including poverty alleviation, education, health, environment and sustainable development in poor communities. Given the still high costs of ICT devices and applications about a decade ago, and the fact that costs prohibited personal ownership of ICT devices, programmes and projects remained donor and government funded, focusing on delivering services through community locations, or telecentres.

During this period, a body of knowledge on ICTD, based on extensive studies of projects in developing countries, emerged so that there is now a better understanding of what works and what does not, and of key issues related to the financial and social sustainability of ICTD projects.

1.6 Linking ICTs to Global Development Goals

The focus of the global development agenda has been on two cross-cutting themes. The critical importance of the MDGs and their achievement by 2015 is one theme that has been accepted by the global community. The second theme relates to the importance of using ICTs in accelerating the development process.

The use of ICTs to meet development goals, as spelled out in the eighth MDG to develop a global partnership for development, needs to be played across a rich spectrum of actors that includes government organizations, the private sector, civil society and media agencies. The government remains the prime instigator of ICT policies to enable the creation of infrastructure and telecommunications hardware that are essentially the underpinnings of any effective use of ICTs. This is because without the infrastructure and hardware, access, reach and availability of ICTs is impossible. Private industry has a major role to play as instruments of investment to create the infrastructure in terms of the building of information highways, and the provision of Internet and mobile services. Government, industry, civil society, and media are important providers of the services that are "mounted" on the information highways. Citizens are the users and the ultimate beneficiaries of the deployment of ICTs.

Of particular importance to this primer on ICTD is Target 18 of the MDGs that specifically states:

> In cooperation with the private sector, make available the benefits of new technologies, especially information and communications technologies.[37]

33 The World Bank, *World Development Report 1998/99: Knowledge for Development* (Washington, D.C., 1998), http://go.worldbank.org/UF2JZG2IN0.

34 Jeffrey A. Hart, "The Digital Opportunities Task Force: The G8's Efforts to Bridge the Global Digital Divide", paper originally prepared for the Annual Convention of the International Studies Association, Montreal, Canada, 17-20 March 2004, and revised for a conference on Security, Prosperity and Freedom: Why America Needs the G8, Indiana, USA, 3-4 June 2004, http://www.g8.utoronto.ca/conferences/2004/indiana/papers2004/hart.pdf.

35 G8 or the Group of Eight is the forum of the eight major economies, formed as an economic council in 1975 (G6 at that time) and meets annually. After the 2008 economic crisis, the G20 replaced the G8 as the main economic council of wealthy nations.

36 See ITU, "World Summit on the Information Society", http://www.itu.int/wsis/index.html.

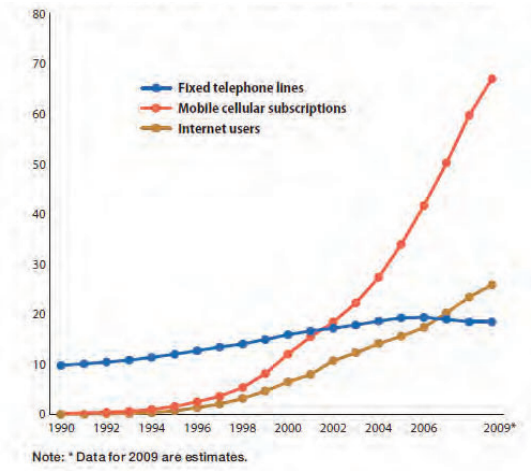
37 The United Nations Millennium Project, "Goals, targets and indicators", http://www.unmillenniumproject.org/goals/gti.htm.

This is where the role of ICTs becomes important—as tools that governments can deploy in their poverty reduction programmes to accelerate growth. Indeed, within the last ten years, the ability to effectively use computers and the Internet has become a key driver of the rapid development of several Asian countries. ICTs can be used to:

- Provide improved and equitable delivery of services
- Facilitate complex planning processes and coordination across sectors
- Enable increased information sharing, outreach and monitoring of key efforts

Implementation problems have dogged efforts in key social sectors in developing countries. But when ICTs are used to facilitate integrated approaches and cost-effective scalable solutions, the total implementation and operational costs are likely to be lower.

Figure 1. Number of fixed telephone lines, mobile cellular subscriptions and Internet users per 100 population in the world, 1990-2009



Source: DESA, *Millennium Development Goals Report 2010* (New York, 2010), p. 71, http://www.un.org/millenniumgoals/pdf/MDG%20Report%202010%20En%20r15%20-low%20res%2020100615%20-.pdf.

Governments that use ICTs as part of an overall governance and administration role find that ICTs can help to:

- Facilitate complex planning processes
- Improve coordination across sectors
- Increase information sharing
- Promote outreach and monitoring of services
- Scale up access to education
- Link communities to markets
- Create disaster warning and decision support systems
- Provide a direct link with citizens thereby ensuring a greater degree of accountability and good governance

Good governance translates to better development outcomes, both at the individual and at the macro level. The link between ICTs and development therefore lies in the power of ICTs to help make reliable, timely and accurate information available to the people on the one hand, and to the government on the other, to make good judgements and choices in the decision-making processes.

Recognizing this, countries in the Asia-Pacific region have indicated their desire to harness ICTs for development. Some promising areas for ICT integration are the delivery of lifesaving drugs, scaling up of access to education and improving teacher training, supplementing rural extension by providing a direct link to farming communities, and creating early warning and disaster mitigation systems for geographically sensitive locations. In light of these, it is not an exaggeration to say that the achievement of development goals in general, and the MDG targets in particular, is inextricably linked to the use of ICTs.

1.7 Current Trends in ICTD

Experimentation in the first two decades of the ICT revolution has enabled a far better understanding of ICTD—the contexts and the conditions of their application and success. What has become clear is that it is not so much the technologies themselves but the increasing influence of these ICTs in economic and social progress that has made the difference in the shift from agrarian and industrial economies to systems that are built on knowledge as a key ingredient of growth and progress. From access to knowledge to sharing and participation in the creation and use of knowledge for economic and social advancement today differentiates advanced and emerging countries from the less developed.

As a result, there have been changes in the way that ICTD is reported. The early e-readiness indexes and e-government surveys from 2003[38] onwards have been benchmarking infrastructure, human capital, and e-connectivity, and ranking e-readiness across countries, based on six pillars of e-readiness:

1. Connectivity and technology infrastructure
2. Business environment
3. Social and cultural environment
4. Legal environment
5. Government policy and vision
6. Consumer and business adoption

However, the latest *United Nations e-Government Survey 2010* shows that governments are "ready" for e-government, and has replaced the e-readiness index with an e-government development index. The *United Nations e-Government Survey 2010* states that: "More countries than ever before are adopting national e-government strategies and multi-year action plans. From the most to the least developed, countries can be seen responding to expectations that governments both participate in and enable the information society by communicating and interacting more effectively with increasingly technology-savvy citizens. They are ready, and it is their level of development in this regard that must be assessed."[39]

Similarly, the Economist Intelligence Unit, the business information arm of The Economist Group that publishes an annual assessment of the world's economies in terms of their use of ICTs, has since 2010 replaced its e-readiness rankings with the "digital economy rankings" as they assess the quality of a country's ICT infrastructure and the ability of its consumers, businesses and governments to use ICT to their benefit.[40]

38 United Nations Public Administration Network, "UN e-Government Surveys", http://www.unpan.org/egovkb/global_reports/08report.htm.

39 DESA, *United Nations e-Government Survey 2010: Leveraging e-Government at a Time of Financial and Economic Crisis* (New York, 2010), p. 3, http://www2.unpan.org/egovkb/documents/2010/E_Gov_2010_Complete.pdf.

40 Economist Intelligence Unit, *Digital Economy Rankings 2010: Beyond e-Readiness* (2010), http://graphics.eiu.com/upload/EIU_Digital_economy_rankings_2010_FINAL_WEB.pdf.

Table 2. Digital economy rankings and scores in 2010

2010 rank (of 70)	2009 rank	Country	2010 score (of 10)	2009 score	2010 rank (of 70)	2009 rank	Country	2010 score (of 10)	2009 score
1	2	Sweden	8.49	8.67	36	38	Malaysia	5.93	5.87
2	1	Denmark	8.41	8.87	37	37	Latvia	5.79	5.97
3	5	United States	8.41	8.60	38	36	Slovakia	5.78	6.02
4	10	Finland	8.36	8.30	39	39	Poland	5.70	5.80
5	3	Netherlands	8.36	8.64	40	41	South Africa	5.61	5.68
6	4	Norway	8.24	8.62	41	40	Mexico	5.53	5.73
7	8	Hong Kong	8.22	8.33	42	42	Brazil	5.27	5.42
8	7	Singapore	8.22	8.35	43	43	Turkey	5.24	5.34
9	6	Australia	8.21	8.45	44	44	Jamaica	5.21	5.33
10	11	New Zealand	8.07	8.21	45	47	Bulgaria	5.05	5.11
11	9	Canada	8.05	8.33	46	45	Argentina	5.04	5.25
12	16	Taiwan	7.99	7.86	47	48	Romania	5.04	5.07
13	19	South Korea	7.94	7.81	48	46	Trinidad & Tobago	4.98	5.14
14	13	United Kingdom	7.89	8.14	49	49	Thailand	4.86	5.00
15	14	Austria	7.88	8.02	50	52	Colombia	4.81	4.84
16	22	Japan	7.85	7.69	51	50	Jordan	4.76	4.92
17	18	Ireland	7.82	7.84	52	51	Saudi Arabia	4.75	4.88
18	17	Germany	7.80	7.85	53	53	Peru	4.66	4.75
19	12	Switzerland	7.72	8.15	54	54	Philippines	4.47	4.58
20	15	France	7.67	7.89	55	55	Venezuela	4.34	4.40
21	20	Belgium	7.52	7.71	56	56	China	4.28	4.33
22	21	Bermuda	7.47	7.71	57	57	Egypt	4.21	4.33
23	23	Malta	7.32	7.46	58	58	India	4.11	4.17
24	25	Spain	7.31	7.24	59	59	Russia	3.97	3.98
25	24	Estonia	7.06	7.28	60	60	Ecuador	3.90	3.97
26	27	Israel	6.96	7.09	61	61	Nigeria	3.88	3.89
27	26	Italy	6.92	7.09	62	64	Vietnam	3.87	3.80
28	28	Portugal	6.90	6.86	63	63	Sri Lanka	3.81	3.85
29	29	Slovenia	6.81	6.63	64	62	Ukraine	3.66	3.85
30	30	Chile	6.39	6.49	65	65	Indonesia	3.60	3.51
31	31	Czech Republic	6.29	6.46	66	66	Pakistan	3.55	3.50
32	34	United Arab Emirates	6.25	6.12	67	69	Kazakhstan	3.44	3.31
33	33	Greece	6.20	6.33	68	67	Algeria	3.31	3.46
34	32	Lithuania	6.14	6.34	69	68	Iran	3.24	3.43
35	35	Hungary	6.06	6.04	70	70	Azerbaijan	3.00	2.97

Note: A four-decimal score is used to determine each country's rank.

Source: Economist Intelligence Unit, *Digital Economy Rankings 2010: Beyond e-Readiness* (2010), p. 4, http://graphics.eiu.com/upload/EIU_Digital_economy_rankings_2010_FINAL_WEB.pdf.

Essentially, there is a shift away from earlier perspectives where governments and the private sector engaged directly with the provision of services through ICTs for citizens. The emphasis is now on how ICT infrastructure and capabilities have been embedded within economic and social systems so that they can be effectively leveraged to convert an agrarian and industrial society to one that is based largely on the development of knowledge and knowledge products. What is clear from this data is that those countries in the Asia-Pacific region that have invested heavily in next generation Internet infrastructure (China, India, Japan, Republic of Korea, Singapore and Taiwan) have benefitted more than many countries in Western Europe and North America in terms of becoming leaders in the knowledge economy.

Specifically, the transforming impact of ICTs has been most visible amongst the small, medium and micro enterprises where they have been able to grow their businesses by:

- Improving the efficiency of internal business operations such as by reducing costs associated with communication and human resources
- Improving internal communication (with different internal departments)
- Maintaining better inventories to reduce storage space and deliver "just in time" products and services while reducing wastage, and consequently increasing profits
- Improving accounting and financial processes
- Improving external communication with clients for exploring new markets, developing a global client base, and increasing volumes of demand

The use of ICTs as tools to improve economies has the effect of providing individuals and systems with a new set of capabilities and competencies that go beyond the immediate use of the tools themselves. Essentially, the use of ICTs in a knowledge economy centred around knowledge-based products results in expanding the capabilities of individuals and institutions; developing not just economic, but more importantly, social and intellectual capital. Such ideas or intellectual capital, which form part of knowledge societies, are the new key to prosperity and to the wealth of nations.

1.8 From Knowledge Economies to Knowledge Societies

There is sufficient global evidence to show the relationship between ICTs and economic growth. Countries that have high levels of economic development also have high ICT penetration rates. There is evidence that business practices and private sector industry have benefited most from the fruits of the information revolution. There is also evidence that the growth in ICT infrastructure and human resources has catapulted countries like India into high growth rates and made them powerful economies in the information society.

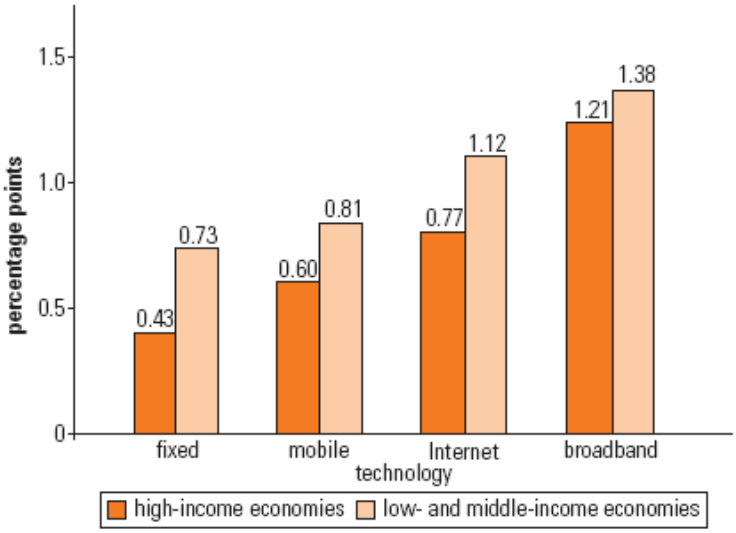
In the *Information and Communications Development Report 2009* of the World Bank, it is reported that for every 10 percentage points increase in the penetration of broadband services, there is an increase in economic growth of 1.3 percentage points.[41] Similar results were found in other studies which showed that an increase in Internet penetration by 10 per cent in emerging economies correlates with an incremental GDP increase of 1-2 per cent.[42]

This growth effect of broadband is significant and stronger in developing countries than in developed economies, and it is higher than that of telephony and Internet. The impact can be even more robust once the penetration reaches a critical mass.

41 Christine Zhen-Wei Qiang and Carlo M. Rossotto, "Economic Impacts of Broadband", in *Information and Communications for Development 2009: Extending Reach and Increasing Impact* (Washington, D.C., World Bank, 2009), pp. 35-50, http://go.worldbank.org/NATLOH7HV0.

42 Boston Consulting Group commissioned by Telenor, "Socio-economic Impact of Internet in Emerging and Developing Economies", in *ICT for Economic Growth: A Dynamic Ecosystem Driving the Global Recovery* (Cologny/Geneva, World Economic Forum, 2009), p. 3, http://www.weforum.org/pdf/ict/ICT%20for%20Growth.pdf.

Figure 2. Economic growth effect of ICTs

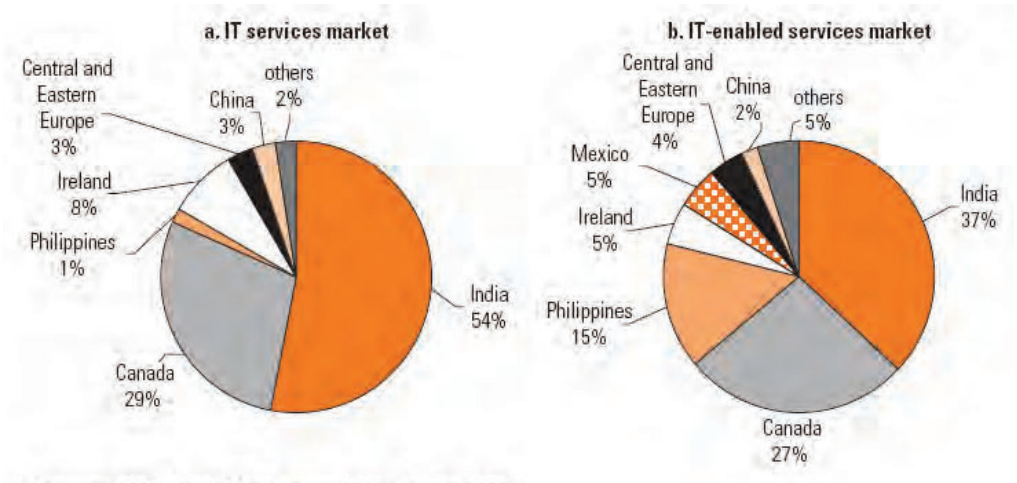


Note: The y axis represents the percentage point increase in economic growth per 10 percentage point increase in telecommunications penetration. All results are statistically significant at the 1 per cent level except for those for broadband in developing countries, which are significant at the 10 per cent level.

Source: Mohsen Khalil, Philippe Dongier and Christine Zhen-Wei Qiang, "Overview", in *Information and Communications for Development 2009: Extending Reach and Increasing Impact* (Washington, D.C., The World Bank, 2009), p. 6, http://go.worldbank.org/NATLOH7HV0.

Another way in which ICTs are making an impact on economic growth is in the information technology (IT) and information technology enabled services (ITES) sectors. ITES are services (such as call centres and back offices) that can be delivered remotely using telecommunications links. The market for these services is huge and growing and several developing countries, led by India, have been successful as players in the ITES sector.

Figure 3. Global distribution of offshore IT and ITES services



Source: Christine Zhen-Wei Qiang and Carlo M. Rossotto, "Economic Impacts of Broadband", in *Information and Communications for Development 2009: Extending Reach and Increasing Impact* (Washington, D.C., World Bank, 2009), pp. 35-50, http://go.worldbank.org/NATLOH7HV0.

Box 2. The story of Manju

Manju is a young Nepali woman, aged 23 and living in Hyderabad, India. Her family migrated as landless labour from Nepal to India. She is a first generation literate and learner, i.e. the first person in three generations in her family to get an education. Her parents and grandparents are illiterate and live on a monthly income of about USD 50.

Manju studied in English in a government school, and then pursued a degree in commerce and computers at a local government college. She gained some IT skills and then applied for a job in a call centre. From small local call centres where she learned the ropes, she now works in a call centre of a multinational and earns USD 300 per month, six times more than her father earns in a month. Work is hard, and the work hours and shifts are hard.

Yet, Manju has persisted because, with this work, she has been able to lift herself and her family out of poverty. She is able to help pay for the education of her siblings and is able to afford small luxuries. She is self-assured and self-confident and she sees a future where she can enroll in an online course and get an advanced degree, and a better job.

Source: Profile created by author, on the basis of an interview with Manju, a young woman working in an international call centre in Hyderabad.

The story of Manju is real and is representative of the experience of many who have improved their own lives and those of their family, and are engaged in a fast growing economy based on knowledge workers and knowledge products. At an individual level, it is the story of many young people, mostly women. When aggregated to a national economy level, it is an example of how investment in ICTs and ITES has spurred rapid economic growth and lifted large numbers of people out of poverty.

A knowledge society is different from a knowledge economy. The knowledge economy is based on the development and trade of knowledge products and services, dependent to a large extent on the innovations in ICTs made by others. The knowledge society is about a society's "capabilities to identify, produce, process, transform, disseminate and use information to build and apply knowledge for human development."[43] The link between knowledge and development is fundamental to the building of knowledge societies—where knowledge is both to achieve economic goals as well as to enable human development. Within such a context, access to knowledge is an intrinsic part of development, of the fundamental freedom of speech and the freedom of choice and empowerment.

While there is extensive evidence to show the link between ICTs and economic growth, and between ICTs and development, there is also a continuing debate among economists as to whether a focus on overall economic growth is enough to reduce poverty. In some cases, overall economic growth may have led to poverty reduction;[44] but in less developed countries, governments need to address poverty proactively and directly and not just through interventions in the economy to spur growth, hoping that this, in turn, will benefit the poor. Implicitly, this means that while the longer term goal would be to advance toward a knowledge society, more direct and functional interventions are necessary to address the digital divide, an underpinning cause of inequitable development.

43 UNESCO, *Toward Knowledge Societies* (Paris, 2005), http://unesdoc.unesco.org/images/0014/001418/141843e.pdf.

44 OECD, "Good Practice Paper on ICTs for Economic Growth and Poverty Reduction", an article prepared for the DAC Journal, Volume 6, No. 3 (2005), http://www.oecd.org/dataoecd/2/46/35284979.pdf.

1.9 Bridging the Digital Divide

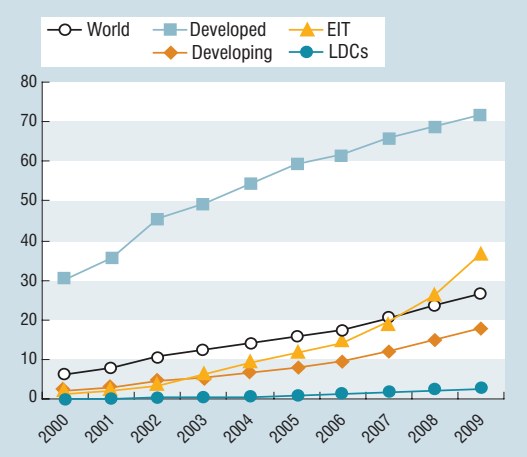
We draw attention to the digital divide, because it is of special significance when we speak of ICTD. One of the defining aspects of the development process is the gap between rich and poor countries and rich and poor people. This gap has been variously defined in development literature. In communication terms, this was earlier called the "knowledge gap"[45] and in the context of current ICTs, is defined as the "digital divide".

Box 3. The digital divide

The so-called digital divide is actually several gaps in one. There is a technological divide—great gaps in infrastructure. There is a content divide. A lot of Web-based information is simply not relevant to the real needs of people. And nearly 70 per cent of the world's websites are in English, at times crowding out local voices and views. There is a gender divide, with women and girls enjoying less access to information technology than men and boys. This can be true of rich and poor countries alike.

United Nations Secretary-General, Kofi Annan
Statement to the World Summit on the Information Society,
Geneva, 10 December 2003

Figure 4. Internet users per 100 inhabitants, by country group, 2000-2009



Source: UNCTAD, Information Economy Report 2010: ICTs, Enterprises and Poverty Alleviation, (New York and Geneva, United Nations, 2010), p. 22, http://www.unctad.org/en/docs/ier2010_embargo2010_en.pdf.

The term "digital divide" is used to describe the gap between individuals and societies that have the resources to participate in the knowledge economy and knowledge society and those that do not. Essentially it is a symptom of more profound inequalities in gender, income, development and literacy. As *The Economist* has pointed out, "Fewer people in poor countries than in rich ones own computers and have access to the Internet simply because they are too poor, are illiterate, or have other more pressing concerns, such as food, health care and security."[46] At the same time, the digital divide impacts on the persistence of social inequality. According to Chen and Wellman: "People, social groups and nations on the wrong side of the digital divide can be excluded from the knowledge economy. If pre-existing inequalities deter people from using computers and the Internet, these inequalities may increase as the Internet becomes

45 P.J.Tichenor, G.A. Donohue and C. N. Olien, "Mass Media Flow and the Differential Growth of Knowledge", *Public Opinion Quarterly*, Vol. 34 (1970), pp. 159-170.

46 "The Economist, "The Real Digital Divide", 10 March 2005.

more consequential for getting jobs, seeking information and engaging in civic or entrepreneurial activities."[47] Thus, addressing the digital divide is more than simply making ICTs available. It is trying to use ICTs to address and narrow gaps in many sectors towards the achievement of development goals and objectives.

The digital divide will not resolve itself; it cannot be left to technological evolution alone. There has to be an overarching development policy concentrating on strategies for poverty reduction with a clear and enabling national ICTD policy as a precondition to the setting up of infrastructure, institutions and tools that will narrow the digital divide and promote universal access. The strategy of investing solely in ICT infrastructure and neglecting other critical developmental priorities may be counterproductive. Many countries need to address more fundamental constraints to economic development, such as improving the basic infrastructure, opening up markets, breaking telecommunications monopolies, putting in place an effective legal and regulatory system, and providing education for all. Countries that ignore these problems in favour of computerization and Internet access may end up wasting scarce resources as capacity to take advantage of ICT remains undeveloped. In other words, efforts to bridge the digital divide need to be directed toward promoting universal access while creating opportunities for ICT use at the community level.

It is important to understand the concept of "digital divide" because of the importance given to this in current ICTD debates; and because international institutions as well as national governments are making concerted efforts to narrow the divide through policies, funding mechanisms, and implementation of programmes and projects in development.

Box 4. Meeting a Universal Service Fund obligation

Many countries have in place legislation to provide for a fund that promotes universal access and services in the telecommunications sector. For instance, Chile calls the fund the "Telecommunications Development Fund", and India calls it the "Universal Service Obligation Fund". The basic purpose of such a fund is to:

- Promote the availability of quality services at just, reasonable and affordable rates
- Increase access to advanced telecommunications services throughout the nation
- Advance the availability of such services to all consumers, including those in low income, rural, insular and high cost areas, at rates that are reasonably comparable to those charged in urban areas

Revenues for the fund are raised by requiring the telecommunications operators to pay a small share of their revenues into the fund to underwrite the cost of universal access. This is an effort to reduce the digital divide through the provision of access to basic telecommunications services.

There are other specific ways in which ICTs can be used to bridge the digital divide, and efforts need to be directed toward promoting universal access by policies and actions at a national level, and at the same time, creating opportunities for use of such access facilities at the community level.

Some of these specific ways could include the following:

- Given the high speed at which ICTs are being invented, converging and changing, governments in poor countries could focus more on channeling their scarce financial and

47 Wenhong Chen and Barry Wellman, "Charting and Bridging Digital Divides: Comparing Socioeconomic, Gender, Life Stage, and Rural-Urban Internet Access and Use in Eight Countries", 31 October 2003, p. 23, http://homes.chass.utoronto.ca/~wellman/publications/amd_ses/charting-divides_long.pdf.

political resources to developing social and human capital, building the basic infrastructure and creating a level playing field for the private sector. Encouraging the private sector will reduce the heavy burden on the government exchequer while at the same time speeding up infrastructure growth, driving down costs, and helping the government concentrate on those geographic and social sections that need public investment the most. In other words, the role of government is important to create the prerequisites for the ICT sector to flourish.

- Beginning modestly with such areas as data processing and teleworking, poor countries can gradually move to more sophisticated tasks of software development and hardware innovation. Notwithstanding the concerns voiced on the perils of being left behind in this digital age, developing countries should carefully balance between their conflicting needs of adopting modern technology and preparing the basic foundation for economic development.

- Investment in education, both formal and non-formal, is another priority. Whether to achieve the MDGs or simply to bridge the digital divide, education is important because it provides the skills required for creating, adapting and utilizing such technologies. While not denying that even the illiterate or near-literate can possibly take advantage of certain technological applications, education becomes increasingly important to go beyond basic applications. Indeed, international evidence suggests that education is a strong complement to the achievement of other MDG targets. Access to secondary and higher education will enable the creation of human resource, in turn spurring innovation and large-scale growth.

- In establishing physical infrastructure and telecommunications links, government investment is necessary because connecting the poorest of the poor is not necessarily attractive to the private sector for whom market demand is a key motivator, and the high cost of building rural infrastructure is a disincentive. Even assuming that the private sector is not shy of investing in rural infrastructure, the government has to play the role of regulator, establishing standards, creating a level playing field, and promoting more even growth through deregulation. Somalia is one instance where, in the absence of government role in regulating the telecommunications sector, a variety of mobile networks exists, creating a nightmare for any government that may seek to regulate *post facto.*

- At the community level, governments can look at the opportunities of creating common service facilities and services that can extend reach and provide local access. There are two parallel paths that need to be pursued in establishing common service facilities. At the provider's end, there is need to create portals as dynamic repositories where specific development knowledge is stored and updated. At the user end, the creation of community telecentres or kiosks can enable easy access to knowledge stored in such portals.

- In terms of content and services, overlapping technologies to enable access and use are essential. An example is the development of content for both the Web and mobile phones so that users can access the content in more than one manner, and in a way that is both easy and convenient for them.

1.10 The Role of International Development Frameworks and Organizations

From the immediate post World War II era, and with the increasing decolonization process, international donor, technical assistance and NGOs led the way in the practice of development and the use of communication for development. For a long time, the Western approach of introducing innovations (that worked in Western conditions) into developing countries took place. Some of the major international organizations that had adopted variations of this approach included UNESCO, the Food and Agriculture Organization of the United Nations

(FAO), the Rockefeller Foundation, the Department for International Development (DFID) of the United Kingdom, and the Ford Foundation.

With technology developments leading the change, global organizations began to look at different ways of addressing issues in ICTD. Following the World Bank's *World Development Report 1998/99* cited earlier and the inclusion of the engagement of ICTs among the targets in the MDGs, the ICTD approach began to take a different turn. On the one hand, organizations were founded specifically for the sole purpose of engaging in ICTD activities and on the other hand, commercial companies began experimenting with ICTD activities as part of their corporate social responsibility and even as part of their marketing activities.

Soon after the adoption of the MDGs, in 2001, the United Nations formed the United Nations Task Force on ICTs to address a variety of ICTD topics. The Task Force's mandate ended on December 2005 and a new group, called the "Global Alliance for ICT and Development" (GAID),[48] was created to continue much of the work of the Task Force, as a "multi-stakeholder forum" and a "cross-sectoral platform and forum that will bring together all stakeholders representing relevant constituencies". GAID includes a large number of stakeholders from government, development cooperation, foreign policy, finance, the social sector (health, education), regulatory agencies, industry and workers' associations, producers and consumers of ICT, the media, NGOs, community-based organizations, foundations, scientists, academicians, ICT professionals, and other individuals providing advocacy and oversight on Information Society issues and implementing programmes addressing the MDGs.

GAID is led by a steering committee, Strategy Council, a set of high-level advisors, and a "champions' network". GAID has held meetings to forge a partnership between governments, private sector, civil society and international organizations.

In November 2002, the United Nations Secretary-General Kofi Annan issued a call for Silicon Valley to create the computers and communication systems that would enable villages to leapfrog several generations of technology and enter the Information Age directly.[49] This provided the technical basis for the World Summit on the Information Society (WSIS) discussions at Geneva in 2003 and Tunis in 2005.

WSIS was a pair of United Nations-sponsored conferences about information, communication, and, in broad terms, the Information Society. The conferences took place in 2003 in Geneva, and in 2005 in Tunis. One of its chief aims was to bridge the so-called global digital divide separating rich countries from poor countries by spreading access to the Internet in the developing world. At the end of the Geneva Summit, delegates from 175 countries adopted a Declaration of Principles and a Plan of Action, although there was no agreement on how this plan of action would be achieved. The second Summit in Tunis resulted in agreement on the Tunis Commitment and the Tunis Agenda for the Information Society, and the creation of the Internet Governance Forum.[50]

Following WSIS I and II, the International Telecommunication Union (ITU) has been engaged in a stocktaking process by providing a publicly available register of activities carried out by governments, international organizations, the business sector, the civil society and other groups in order to mark the progress with reference to the 11 WSIS Action Lines. [51]

48 United Nations Global Alliance for ICT and Development, http://www.un-gaid.org.

49 Kofi Annan, "Perspective: Kofi Annan's IT challenge to Silicon Valley", *CNET News*, 5 November 2002, http://news.cnet.com/2010-1069-964507.html?tag=lh.

50 The Internet Governance Forum is a multi-stakeholder forum for policy issues on Internet Governance. See the forum's website at http://www.intgovforum.org. See also Module 5 of the *Academy of ICT Essentials for Government Leaders* module series that provides an extensive understanding of the framework and concepts of Internet Governance.

51 WSIS Stocktaking, http://www.itu.int/wsis/stocktaking/help-action-lines.html.

Figure 5. WSIS targets

Targets
1. To connect villages with ICTs and establish community access points
2. To connect universities, colleges, secondary schools and primary schools with ICTs
3. To connect scientific and research centres with ICTs
4. To connect public libraries, cultural centres, museums, post offices and archives with ICTs
5. To connect health centres and hospitals with ICTs
6. To connect all local and central government departments and establish websites and email addresses
7. To adapt all primary and secondary school curricula to meet the challenges of the Information Society, taking into account national circumstances
8. To ensure that all of the world's population have access to television and radio services
9. To encourage the development of content and to put in place technical conditions in order to facilitate the presence and use of all world languages on the Internet
10. To ensure that more than half the world's inhabitants have access to ICTs within their reach

Source: ITU, "Measuring Information and Communication Technology Availability in Villages and Rural Areas", May 2008.

Other international agencies are also actively involved in ICTD.[52] UNDP is the United Nation's global development network working in 165 countries that is advocating for change and connecting countries to knowledge. UNDP has been involved in ICTD since 1992. UNDP's ICTD strategy focuses on policy advice to help countries design a strategic approach to ICT as an enabler for development and to link it to PRSPs and related development processes. This is complemented by support to the implementation of ICTD priority programmes based on a multi-stakeholder approach, and innovative national and global partnerships to secure additional resources and expertise.

Table 3. Indicative list of ICT applications in developing countries and the international organizations involved in the Asia-Pacific*

Sector	Applications	Organizations
Agriculture and Livelihoods	• Telecentres • Information on pricing and weather for farmers • Sustainable livelihoods • Income generation	ADB, CGIAR, DFID, ESCAP, FAO, IDRC, IFAD, ITU, SOPAC, UNDP, WFP, World Bank Group
Education	• Distance education • Teacher training • ICT human capacity building	ADB, APCICT, ASEAN, COL, DFID, ESCAP, IDRC, SOPAC, UNDP, UNESCO, UNICEF, World Bank Group
Health	• Telemedicine • Digital publication and online resources • Continuing medical education	ADB, DFID, IDRC, SOPAC, UNAIDS, UNDP, UNICEF, WHO, World Bank Group
Business and Economy	• e-Banking • International trade • Globalization	ADB, ESCAP, OECD, SOPAC, UNCTAD, UNTPDC, WIPO, WTO
Media, Culture and Tourism	• Digital newsrooms • Culture and culture products • Archival technology • New media formats	ABU, AIBD, SOPAC, UNESCO, World Tourism Organization

52 See list of organizations in the Annex.

Sector	Applications	Organizations
Environment	• GIS mapping • Networking of activists • Environmental protection • Climate change	ADB, CEC, EEA, ESCAP, IPCC, SOPAC, UNDP, UNEP, World Bank Group
Governance	• Online citizen services • Social accountability • NGO development	ADB, ESCAP, SOPAC, UNDP, World Bank Group
Urban Development	• Urban planning • Service delivery • Urban telecentres	ADB, ESCAP, UN-HABITAT, UNDP, World Bank Group
Rural Development	• Rural community networks • Rural tourism • Health care	CGIAR, ESCAP, FAO, IDRC, IFAD, ITU, SOPAC, UNDP World Bank Group

*All organizations have a strong focus on gender and gender-related issues

Credit: Usha Rani Vyasulu Reddi, June 2011.

The United Nations Children's Fund (UNICEF) has been an active user of ICTs to meet its mandate of addressing the needs of women and children in developing countries. UNICEF has a long history of use, working with media such as TV and film in the highly successful Meena Communication Initiative.[53]

UNESCO[54] is an active player in the ICTD field by supporting actions designed to empower people so that they can access and contribute to information and knowledge flows in its Knowledge Society Bureau and its International Programme for Development of Communications initiative.[55] Its thematic areas of work include access to information, capacity building, and content development, freedom of expression and media freedom. At its Asia and Pacific Regional Bureau for Education, UNESCO manages an ICT in Education Programme that focuses on the ICTD aspects, including harnessing the potential of ICTs towards achieving quality education for all, and addressing the digital divide. Projects include "Bridging the Within-Country Digital Divide in Education: Improving Education in Western China through Innovative Use of ICT" and "Establishing Effective use of ICT in Education for All in Cambodia".[56]

The ITU has pioneered the World Telecommunication/ICT Development Report and is actively engaged in the WSIS stocktaking exercises. The *World Telecommunication/ICT Development Report 2010* focuses on monitoring the WSIS targets.[57]

Within the Asia-Pacific region, the Economic and Social Commission for Asia and the Pacific (ESCAP) is extensively involved, through its ICT and Development Section[58] in assisting ESCAP members and associate members to address economic and social challenges resulting from natural disasters and related risks through regional cooperative mechanisms, capacity building, knowledge sharing, better connectivity and increased access to ICTs. The work of the ICT and Development Section is organized around three pillars—economic connectivity, social connectivity and ICT for disaster risk reduction.

53 UNICEF developed the Meena Communication Initiative as a mass communication project aimed at changing perceptions and behaviour that hamper the survival, protection and development of girls in South Asia. See http://www.unicef.org/rosa/media_2479.htm.

54 UNESCO, "UNESCO's activities in communication and information by themes", http://portal.unesco.org/ci/en/ev.php-URL_ID=1645&URL_DO=DO_TOPIC&URL_SECTION=201.html.

55 UNESCO, "International Programme for the Development of Communication", http://www.unesco.org/new/en/communication-and-information/intergovernmental-programmes/ipdc/.

56 UNESCO Bangkok, "ICT in Education", http://www.unescobkk.org/education/ict/.

57 The report can be downloaded from http://www.itu.int/ITU-D/ict/publications/wtdr_10/index.html.

58 ESCAP, "ICT and Development Section", http://www.unescap.org/idd/ids.asp.

Following WSIS, ESCAP established the Asian and Pacific Training Centre for Information and Communication Technology for Development (APCICT)[59] whose mission is to strengthen the efforts of the member countries of ESCAP to use ICT in their socio-economic development through human and institutional capacity building. To meet this objective, APCICT's work is focused on three interrelated pillars—training, research and advisory services. Together they form an integrated approach to ICT human capacity building.

There are many other international organizations working in the field of ICTD. Some are donor and funding agencies such as the Asian Development Bank (ADB); others such as the Commonwealth of Learning (COL)[60] provide technical assistance; still, others support front line research work in the emerging discipline, such as Canada's International Development Research Centre (IDRC).[61]

Points To Remember

- The use of ICTs to meet development goals has been embedded in the MDGs in Goal 8 where governments have agreed to, in "cooperation with the private sector, make available the benefits of new technologies, especially information and communications technologies."
- ICTs can be used to provide improved and equitable delivery of services; facilitate complex planning processes and coordination across sectors; and enable increased information sharing, outreach and monitoring of key efforts.
- The active engagement of international agencies in the use of ICTs for development is now called ICTD. This began with the United Nations ICT Task Force that later became the United Nations Global Alliance for ICT and Development.
- To work out and to spell out a plan of action for the use of ICTs in development, two major conferences, WSIS I and II were held in 2003 and 2005.
- Following WSIS II in 2005, most international agencies have engaged with ICTs for development in their mandated areas of operation.

Summary

To summarize, there has been strong commitment among all stakeholders, international and national, and intense activity in using ICTs for development. Billions of dollars are spent every year to understand and apply these very powerful tools. This commitment is manifested in the many international agreements, including the MDGs, followed by the meetings of WSIS in Geneva and Tunis in 2003 and 2005 respectively.

Governments are now keen to exploit the latest technologies to extend reach and improve the quality of development activities. As a result, there are a range of ICT-based development efforts across the world, both sectoral and based on the WSIS agenda of action. These include policy work, human capacity building, infrastructure development, and citizen services.

59 APCICT, "About Us", http://www.unapcict.org/aboutus.

60 Commonwealth of Learning, http://www.col.org.

61 International Development Research Centre, http://publicwebsite.idrc.ca/EN/Pages/default.aspx.

Case 2. Connecting Nangi

Nangi is a mountain village of 800 inhabitants in the mid-hills of western Nepal at 7,300 feet elevation, near the Annapurna and Dhaulagiri ranges of the Himalayas. The hike into Nangi takes six to nine hours from the nearest large town, Beni, and includes an ascent through several mountain villages and forests. Nangi has no factories. All of its people are farmers whose tools are wooden ploughs, iron spades, axes, sickles, chisels and hammers. No machinery or automated tools are available. Ox and yak power, not tractor power, is used to plough the fields. The people are accustomed to carrying large loads on their backs, as they have been doing for centuries. Life in Nangi is very difficult.

Figure 6. Himanchal high school, Nangi village

Source: Himanchal Education Foundation, http://www.himanchal.org.

Led by Mahabir Pun, a village school teacher, about ten years ago, Nangi embarked on a long effort to take advantage of the Internet. Initially computers were built in wooden boxes, a small hydro-powered generator was developed and connectivity established through a robust WiFi network connecting four other villages and the Internet hub in Pokhara, a large city about 22 miles away from the nearest relay station. A dozen access points were connected to the dial-up Internet service provider (ISP) in Pokhara using equipment supplied at cost price by manufacturers.

Over the past eleven years, Pun and the villagers have constructed a secondary school (with a library), a plant nursery, a health clinic and its associated telemedicine video link to Pokhara, a carpentry facility, paper-making and sewing machine workshops, a camping ground for trekkers (which includes e-mail capability), a fish farm and a yak farm. The computer lab was a hodgepodge of equipment donated from many sources. When online processing was instituted some of the software used was freeware, saving on expense and complexity. Currently, Mahabir Pun is working with Open Learning Exchange, an NGO, to develop interactive educational contents using open source based on the government's curriculum for school students.

The availability of links to the outside world has made it possible for Nangi to have a rudimentary telemedicine system, interact with villagers in other locations, improve agriculture, and teach children the use of computers.

Many developmental projects, even in very poor countries, try to use the very newest and most complex equipment, reasoning that it will help the local project to "leapfrog" ahead. In Nangi the model was very different. Nangi did not have any funding available when it started the wireless project in 2002. Therefore, the emphasis was on using the simplest, cheapest, and used equipment and leveraging it to the maximum—and they have succeeded where other government funded initiatives have not taken off.

Practical Exercise

Go to Himanchal Education Foundation's website (http://www.himanchal.org) and review it carefully. Then answer the following questions:

1. What are the key development goals and objectives that this project in Nepal seeks to address? Make a list of the goals and try to prioritize them. Compare the list you have made with that of your neighbour in the class. Create a brief presentation explaining your and your neighbour's views for the entire class.

2. How have ICTs been used to address the different development objectives here? List the ICTs that have been used in this project. List the advantages and limitations of each of the ICTs listed. Organize the list in an order of importance. Add this list to that of question 1 in the presentation. Summarize the link between the development goals and the ICTs in this project.

Test Yourself

1. The link between development goals and ICTs:

   a. Lies in the power of the latter to make timely and reliable information for decision-making available
   b. Improves coordination between different sectors and planning processes
   c. Helps good governance translate to good development outcomes
   d. All of the above

2. The "digital economy rankings" that replace the older e-readiness indexes:

   a. Benchmark the extent of ICT skills development in a country
   b. Benchmark the quality of a country's use of ICTs for social and economic activities
   c. Rank countries according to their "knowledge products" outputs
   d. Rank countries according to their teledensity

3. The difference between a "knowledge economy" and a "knowledge society" refers to:

   a. Difference between "goods and services" in ICT to "capabilities in the use of ICTs"
   b. Access to information and knowledge among the poor
   c. Narrowing of the digital divide
   d. The ability of a country to develop back office operations for developed country

4. Which of the following is the best way to narrow the digital divide?

   a. By building up IT infrastructure
   b. Providing universal access
   c. Reforming the economic, educational and telecommunications system
   d. One cannot prioritize between the three alternatives

5. Which of the following is NOT an organization working in ICTD in the Asia-Pacific region?

   a. ADB
   b. ESCAP
   c. UNESCO
   d. ECLAC

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