Chapter 8

Information Technology and Human Development
People are the real wealth of nations. Development is thus about expanding the choices people have to lead lives that they value. And it is thus about much more than economic growth, which is only a means -if a very important one -of enlarging people's choices. Fundamental to enlarging these choices is building human capabilities -the range of things that people can do or be in life. The most basic capabilities for human development are to lead long and healthy lives, to be knowledgeable, to have access to the resources needed for a decent standard of living and to be able to participate in the life of the community.

Without these, many choices are simply not available, and many opportunities in life remain inaccessible. This way of looking at development, often forgotten in the immediate concern with accumulating commodities and financial wealth, is not new. Philosophers, economists and political leaders have long emphasized human wellbeing as the purpose, the end, of development.

As Aristotle said in ancient Greece, "Wealth is evidently not the good we are seeking, for it is merely useful for the sake of something else." In seeking that something else, human development shares a common vision with human rights. The goal is human freedom. And in pursuing capabilities and realizing rights, this freedom is vital. People must be free to exercise their choices and to participate in decision-making that affects their lives. Human development and human rights are mutually reinforcing, helping to secure the wellbeing and dignity of all people, building self-respect and the respect of others.

Human development challenges remain large in the new millennium. OECD countries more than 130 million people are income poor, 34 million are unemployed, and adult functional illiteracy rates average 15%. The magnitude of these challenges appears daunting. Yet too few people recognize that the impressive gains in the developing world in the past 30 years demonstrate the possibility of eradicating poverty. A child born today can expect to live eight years longer than one born 30 years ago.
Many more people can read and write, with the adult literacy rate having increased from an estimated 47% in 1970 to 73% in 1999. The share of rural families with access to safe water has grown more than fivefold. Many more people can enjoy a decent standard of living, with average incomes in developing countries having almost doubled in real terms between 1975 and 1998, from $1,300 to $2,500.

The basic conditions for achieving human freedoms were transformed in the past 10 years as more than 100 developing and transition countries ended military or one-party rule, opening up political choices. And formal commitment to international standards in human rights has spread dramatically since 1990. These are only some of the indicators of the impressive gains in many aspects of human development. Behind this record of overall progress lies a more complex picture of diverse experiences across countries, regions, groups of people and dimensions of human development.

All regions have made progress in human development in the past 30 years, but advancing at very different paces and achieving very different levels. East Asia and the Pacific has made rapid, sustained progress in most areas, from expanding knowledge to improving survival to raising standards of living.

South Asia and Sub-Saharan Africa lag far behind other regions, with human and income poverty still high. The adult literacy rate in South Asia is still 55% and in Sub-Saharan Africa 60%, well below the developing country average of 73%. Life expectancy at birth in Sub-Saharan Africa is still only 48.8 years, compared with more than 60 in all other regions. And the share of people living on less than $1 a day is as high as 46% in Sub-Saharan Africa and 46% in South Asia, compared with 15% in East Asia and the Pacific and in Latin America.

The Arab States also lag behind in many indicators, but have been making the most rapid progress. Since the early 1970s life expectancy at birth has improved by 14 years and the infant mortality rate by 85 per 1,000 live births,
and since 1985 the adult literacy rate has risen by 15 percentage points - faster progress than in any other region.

Differences among regions and countries are particularly marked in economic growth, which generates public resources to invest in education and health services and increases the resources people have to enjoy a decent standard of living and improve many other aspects of their lives.

In 1975-99 per capita income quadrupled in East Asia and the Pacific, growing 6% a year. The growth rate in South Asia exceeded 2%. Two countries that together account for a third of the world population did well: per capita income in China grew at an impressive 8% a year, and in India at an average rate of 3.2%. OECD countries had average growth of 2% a year, raising already high incomes to an average of more than $22,000 (PPP US$).

But in the Arab States and Latin America and the Caribbean growth has been slower, averaging less than 1%. Most devastating has been the performance of Sub-Saharan Africa, where already low incomes have fallen; in 1975-99 GDP per capita growth in the region averaged -1%. Madagascar and Mali now have per capita incomes of $799 and $753-down from $1,258 and $898 (1999 PPP US$) 25 years ago. In 16 other Sub-Saharan countries per capita incomes were also lower in 1999 than in 1975. In Eastern Europe and the Commonwealth of Independent States (CIS) too, incomes have dropped sharply. Since 1990 per capita incomes have declined in 16 countries-in 4 by more than half.

The changing world always brings new challenges, and the past decade has seen serious setbacks and reversals. At the end of 2000 about 36 million people were living with HIV/AIDS -95% of them in developing countries and 70% in Sub-Saharan Africa. More than 5 million became newly infected in 1999 alone.
In Sub-Saharan Africa, mainly because of HIV/AIDS, more than 20 countries experienced drops in life expectancy between 1985-90 and 1995-2000. In six countries—Botswana, Burundi, Namibia, Rwanda, Zambia and Zimbabwe—life expectancy declined by more than seven years.

The spread of HIV/AIDS has multiple consequences for development. It robs countries of people in their prime, and leaves children uncared for. By the end of 1999, 13 million children were AIDS orphans. In Eastern Europe and the CIS the disruptive impact of the transition has exacted a heavy toll on human lives, with adverse effects on income, school enrolment and life expectancy, particularly of males.

Personal security continues to be threatened by crime and conflicts. Globalization has created many opportunities for cross-border crime and the rise of multinational crime syndicates and networks. In 1995 the illegal drug trade was estimated at $400 billion, and an estimated 1.8 million women and girls were victims of illegal trafficking.

And because of conflict, the world now has 12 million refugees and 5 million internally displaced people. Democracy is fragile and often suffers reversals. Elected governments have been toppled in such countries as Côte d'Ivoire and Pakistan.

Human Development Reports, since the first in 1990, have published the human development index (HDI) as a composite measure of human development. Since then three supplementary indices have been developed: the human poverty index (HPI), gender-related development index (GDI) and gender empowerment measure (GEM).

The concept of human development, however, is much broader than the HDI and these supplementary indices. It is impossible to come up with a comprehensive measure—or even a comprehensive set of indicators—because
many vital dimensions of human development, such as participation in the life of the community, are not readily quantified.

While simple composite measures can draw attention to the issues quite effectively, these indices are no substitute for full treatment of the rich concerns of the human development perspective.

The HDI measures the overall achievements in a country in three basic dimensions of human development - longevity, knowledge and a decent standard of living. It is measured by life expectancy, educational attainment (adult literacy and combined primary, secondary and tertiary enrolment) and adjusted income per capita in purchasing power parity (PPP) US dollars.

The HDI is a summary, not a comprehensive measure of human development. As a result of refinements in the HDI methodology over time and changes in data series, the HDI should not be compared across editions of the Human Development Report. The search for further methodological and data refinements to the HDI continues.

While the HDI measures overall progress in a country in achieving human development, the human poverty index (HPI) reflects the distribution of progress and measures the backlog of deprivations that still exists. The HPI measures deprivation in the same dimensions of basic human development as the HDI. The HPI-1 measures poverty in developing countries. It focuses on deprivations in three dimensions: longevity, as measured by the probability at birth of not surviving to age 40; knowledge, as measured by the adult illiteracy rate; and overall economic provisioning, public and private, as measured by the percentage of people not using improved water sources and the percentage of children under five who are underweight.

Because human deprivation varies with the social and economic conditions of a community, a separate index, the HPI-2, has been devised to measure
human poverty in selected OECD countries, drawing on the greater availability of data. The HPI-2 focuses on deprivation in the same three dimensions as the HPI-1 and one additional one, social exclusion.

The indicators are the probability at birth of not surviving to age 60, the adult functional illiteracy rate, the percentage of people living below the income poverty line (with disposable household income less than 50% of the median) and the long-term unemployment rate (12 months or more).

The gender-related development index (GDI) measures achievements in the same dimensions and using the same indicators as the HDI, but captures inequalities in achievement between women and men. It is simply the HDI adjusted downward for gender inequality. The greater is the gender disparity in basic human development, the lower is a country's GDI compared with its HDI.

The gender empowerment measure (GEM) reveals whether women can take active part in economic and political life. It focuses on participation, measuring gender inequality in key areas of economic and political participation and decision-making. It tracks the percentages of women in parliament, among legislators, senior officials and managers and among professional and technical workers - and the gender disparity in earned income, reflecting economic independence. Differing from the GDI, it exposes inequality in opportunities in selected areas.

In Cambodia in 1999 the HDI for the poorest 20% was 0.445, well below the national average of 0.517 and, more important, nearly one-third less than that for the richest 20%, at 0.623. In Guatemala in 1998 the rural HDI, at 0.536, was well below the urban HDI, at 0.672.

In the United States in 1999 the HDI for white Americans was 0.870, ahead of the 0.805 for African Americans and well ahead of the 0.756 for people of Hispanic origin.
The HDI for untouchables in Nepal, at 0.239 in 1996, was almost half that for Brahmins, at 0.439. Another way to look at the distribution of national achievements in human development is to estimate the human poverty index (HPI), a multidimensional measure of poverty introduced in 1997.

The United Republic of Tanzania and Uganda, for example, have very similar HDI rankings, but Uganda has higher human poverty. Similarly, the 17 OECD countries for which the HPI has been estimated have nearly identical HDIs, yet their HPIs range from 6.8% in Sweden to 15.8%. In the United States. Disaggregating a country's HPI by region can identify concentrations of impoverishment.

In the Islamic Republic of Iran in 1996 the disaggregated HPI showed that human deprivation in Tehran was only a quarter that in Sistan and Baluchestan. The HPI for urban Honduras in 1999 was less than half that for rural areas. For English speakers in Namibia in 1998 the HPI was less than one-ninth that for San speakers. Similar differences exist in the developed world.

Because the HDI assesses only average achievements, it masks gender differences in human development. To reveal these differences, the gender-related development index (GDI), introduced in 1995, adjusts the HDI for inequalities in the achievements of men and women. This year the GDI has been estimated for 146 countries.

With gender equality in human development, the GDI and the HDI would be the same. But for all countries the GDI is lower than the HDI, indicating the presence of gender inequality everywhere. The extent of the inequality varies significantly, however.

For example, while in many countries male and female literacy rates are similar, in 43 countries -including India, Mozambique and Yemen -male rates are at least 15 percentage points higher than female rates. And while there has been
good progress in eliminating gender disparities in primary and secondary enrolments, with the ratio of girls to boys in developing countries 89% at the primary level and 89% at the secondary level in 1997, in 27 countries girls 'net enrolment declined at the secondary level between the mid-1980s and 1997.

The gender empowerment measure (GEM), also introduced in 1995, helps to assess gender inequality in economic and political opportunities. The GEM values range from less than 0.300 to more than 0.800, showing the great variation across the world in empowering women. Only 3 of the 64 countries -Iceland, Norway and Sweden -have a GEM of more than 0.800. As many as 25 countries have a GEM of less than 0.500. So, many countries have far to go in extending economic and political opportunities to women.

Some developing countries outperform much richer industrial countries. The Bahamas and Trinidad and Tobago are ahead of Italy and Japan. Barbados has a GEM 30% higher than Greece's. The message: high income is not a prerequisite to creating opportunities for women.

Disaggregations of the GEM in national human development reports show that differences within a country can also be large. For example, the GEM for the Puttalam district in Sri Lanka in 1994 was less than 8% of that for Nuwara Eliya.

There is much to improve in women's economic and political opportunities. Women's share of paid employment in industry and services has increased in most countries, yet in 1997 women working in these sectors typically earned 78% of what men earned.

In only eight countries do women hold 30% or more of the seats in parliament. And in only four -Denmark, Finland, Norway and Sweden -have there been simultaneous achievements in the female secondary enrolment ratio, in women 's share of paid employment in industry and services and in their share of parliamentary seats.
Income is a very important means of enlarging people's choices and is used in the HDI as a proxy for a decent standard of living. Income growth has varied considerably among countries in recent decades, more so than trends in many human development indicators. The distribution of the world's income, and the way this is changing, are thus a vital issue deserving special consideration.

Income levels across countries have been both diverging and converging - with some regions closing the income gap and others drifting away.

In 1960 there was a bunching of regions, with East Asia and the Pacific, South Asia, Sub-Saharan Africa and the least developed countries having an average per capita income around 1/9 to 1/10 of that in high-income OECD countries. Latin America and the Caribbean fared better, but still had just 1/3 to 1/2 of the per capita income of these OECD countries.

The impressive growth in East Asia and the Pacific is reflected in the improvement in the ratio of its income to that of high-income OECD countries, from around 1/10 to nearly 1/5 over 1960-98. The relative income in Latin America and the Caribbean stayed about the same. Income in South Asia - after worsening in the 1960s and 1970s, then improving significantly in the 1980s and 1990s - remains about 1/10 of that in OECD countries.

In Sub-Saharan Africa the situation has worsened dramatically: per capita income, around 1/9 of that in high-income OECD countries in 1960, deteriorated to around 1/18 by 1998. Despite a reduction in the relative differences between many countries, absolute gaps in per capita income have increased. Even for East Asia and the Pacific, the fastest growing region, the absolute difference in income with high-income OECD countries.

For development economists concerned primarily with the world's poor countries, the central issues have been growth and poverty reduction, not inequality. And for mainstream economists during most of the postwar period of
the 20th century, inequality was at worst a necessary evil -helping to enhance
growth by concentrating income among the rich, who save and invest more, and
by creating incentives for individuals to work hard, innovate and take
productive risks.

But income inequality does matter. It matters in itself if people -and nations -
care about their relative income status. It may also matter for instrumental
reasons -that is, because it affects other outcomes.

Inequality can exacerbate the effects of market and policy failures on growth
and thus on progress against poverty. That makes inequality a special problem in
poor countries, where imperfect markets and institutional failures are common.

For example, where capital markets are weak, poor people, lacking good
collateral, will be unable to borrow. Their potential to start small businesses will
be limited -reducing overall growth and limiting opportunities for poor people.
Though growth is not always sufficient to advance human development and
reduce income poverty, the experiences of China, the Republic of Korea and
other countries of East Asia suggest that it makes a big contribution.

Finally, there is the arithmetic reality. Even if there is growth and poor
people gain proportionately from that growth, the same growth rate buys less
poverty reduction where inequality is high to start with. Concentration of
income at the top can undermine the kinds of public policies -such as support for
high-quality universal public education -that are likely to advance human
development. Populist policies that generate inflation hurt poor people in the
long run.

Artificially low prices for water and sanitation mean that bankrupt public
utilities never expand to poor neighbourhoods. If rich people support industrial
subsidies or cheap loans for large landowners, that may reduce growth directly
as well.
Developing and implementing good social policies is especially difficult where inequality takes the form of concentration at the top combined with substantial poverty at the bottom—and thus the absence of a middle class that demands accountable government. Inequality is likely to erode social capital, including the sense of trust and citizen responsibility that is key to the formation and sustainability of sound public institutions.

It can undermine participation in such common spheres of community life as parks, local sports leagues and parent-teacher associations of public schools. Street crime undermines communal life, and differences in income inequality across countries are closely associated with differences in rates of crime and violence.

Inequality may over time increase a society's tolerance for inequality. If global pressures lead to increases in wage differences (for example, as the salaries of the most skilled and internationally mobile people rise), the social norm for what wage gap is acceptable may eventually shift. If inequality matters for any of the reasons above, the possibility that it can worsen matters too.

Another measure of inequality looks both between and within countries—lining up all the world's people from richest to poorest (in real purchasing power) regardless of national boundaries. A study by Milanovic compares the poorest and richest people across the globe, giving a much more complete picture of world inequality than a simple comparison of country averages would. Based on household surveys for 1988–93. The study covers 91 countries and adjusts income levels using purchasing power parity conversions.

The disadvantage is that the study relies entirely on household budget survey data that are not necessarily comparable and are limited in their scope.

Two societies with the same income inequality could differ greatly in the mobility and opportunity facing individual members—and in the mobility and
opportunity that children have relative to their parents. A focus on mobility helps to identify the factors that block the opportunities of poor people and contribute to the intergenerational transmission of poverty. This approach is well suited to evaluating the effects of policy changes on poverty and inequality. The problem is that mobility is difficult to measure accurately. Still, the few studies that examine it are suggestive.

In South Africa 63% of households in poverty in 1993 were still there in 1998, while 60% of households in the highest income category in 1993 were still there in 1998, indicating limited income mobility.

In Russia downward mobility was extreme in the late 1990s. Among households in the top income quintile in 1995, nearly 60% slid to lower quintiles by 1998 -and 7% fell to the bottom quintile.

In Peru there has been a great deal of movement up and down the income ladder. Opportunities are increasing with market reforms, but so are insecurities. Between 1985 and 1991, 61% of households had income increases of 30% or more and 14% had income drops of 30% or more. Overall, downward mobility dominated in 1985-91, and upward mobility in 1991-97. In every country family background significantly influences the length of children's schooling. Children with wealthier, better-educated parents are always likely to do better. But there is substantial variation across countries and periods, depending on macroeconomic conditions and public education policies.

An emphasis on basic schooling in public spending enhances intergenerational mobility in Latin America. There, a person needs at least 10 years of schooling to have a 90% or higher probability of not falling into poverty or of moving out of poverty. And having just 2 years less schooling means 20% less income for the rest of a person's active life.
As the world entered the new millennium, heads of state and government gathered at the United Nations General Assembly to lay out their vision for the world. The leaders of the summit adopted the United Nations Millennium Declaration, recognizing their "collective responsibility to uphold the principles of human dignity, equality and equity at the global level ".

Among the many objectives set out by the declaration are specific, quantified and monitorable goals for development and poverty eradication by 2015:

- Halve the proportion of people living in extreme poverty.
- Halve the proportion of people suffering from hunger.
- Halve the proportion of people without access to safe water.
- Enrol all children in primary school. Achieve universal completion of primary schooling.
- Empower women and eliminate gender disparities in primary and secondary education.
- Reduce maternal mortality ratios by three-quarters.
- Reduce infant mortality rates by two-thirds.
- Reduce under-five mortality rates by two-thirds.
- Halt and begin to reverse the spread of HIV/AIDS.

We are living in an age of knowledge and information, fraught with both opportunities and dangers. There are opportunities for the underprivileged and poor to become rich and strong. But at the same time there is a danger that the gap between rich and poor nations could widen. The message is clear. We must continue to develop our human resources. The success or failure of individuals and nations, as well as the prosperity of mankind, depends on whether we can wisely develop our human resources.
During the 20th century such tangible elements as capital, labour and natural resources were the driving force behind economic development. But in the new century such intangible elements as information and creativity will give nations a competitive edge.

Consequently, if we succeed in developing the potential of our citizens by fostering a creative spirit of adventure, individuals and nations will become rich, even if they are without much capital, labour or natural resources.

The Republic of Korea is not endowed with sufficient natural resources and capital, but its people have the spirit of challenge and the confidence that they can become a first-rate advanced country in the new century. The source of their confidence lies in their innate potential and their determination to develop themselves to the fullest. With their long-stand-ing enthusiasm for education, the Korean people have built up an impressive knowledge base. The percentage of high school seniors who go on to college in Korea is 68 percent, one of the highest rates in the world. Koreans also have a rich tradition in creativity, transforming imported cultures into their own, as exemplified by their own schools of Buddhism and Confucianism.

Based on this tradition, we are making a concerted effort to develop our human resources in order to take the lead in the age of knowledge and information. We are offering educational opportunities to all citizens, including students, farmers, fishermen, men and women in uniform and prison inmates, to enhance their information capabilities.

We have completed the construction of a nationwide information superhighway network and now provide high-speed Internet access to most elementary, middle and high schools for free. We are combining conventional industries, such as automobile manufacturing, shipbuilding, textiles and even the agricultural industry, with information capabilities. The number of Internet users in Korea recently topped 20 million, and some 28 percent of the population,
or 4 million households, have high-speed Internet access. And we plan to produce some 200,000 specialists in information and technology by 2005. All of this is part of our efforts to forge Korea into a nation with advanced knowledge and information capabilities in the 21st century.

Enhancement of information capabilities can bring affluence to us by increasing efficiency. But it is also widening the digital divide between the information technology have-s and have-nots. The whole world must cooperate to close the gap and seek co-prosperity. To that end, we must take "globalization of information" a step further to "globalization of the benefits of information ".

Developing nations should be able to participate in the process of furthering information capabilities and to receive their fair share of the benefits. We must make a joint effort, both regionally and globally, so that all of humanity can share the benefits of advanced information and communications technologies.

Korea will continue to support developing nations through the official development assistance programme, while actively participating in international efforts to help these countries enhance their information capabilities. It is the belief of this government that only through such efforts can all humanity share peace and prosperity.

Many of these are least developed countries in Sub-Saharan Africa. While 50 countries have achieved or are on track to achieve the safe water goal, 83 countries with 70% of the world's people are lagging or far behind. And while 62 countries are on track to reduce maternal mortality by three-quarters, 83 are lagging or far behind.

In income poverty, more than 40% of the world's people live in countries that are on track to meet the goal. But they are concentrated in 11 countries, including India and China, while 70 countries are far behind or slipping. Though these countries contain only a third of the world's people, they constitute more
than half of all developing countries. Without China and India, 9 countries, with 5% of the world's people, would be on track to halve the proportion of people living in extreme income poverty.

The situation is perhaps most serious for under-five mortality. While 66 countries are on track to meet the goal, 83 countries with around 60% of the world's people are lagging or far behind—and in 10 under-five mortality rates are increasing. While there is not comparable trend data on the prevalence of HIV/AIDS to do a full analysis, the global prevalence of HIV/AIDS among adults is still on the rise, with only a handful of countries, such as Uganda and possibly Zambia, showing signs of decline.