2002

Advertising, Technology and Digital Divide

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October 22, 2001

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ABSTRACT

The primary purpose of this paper is to examine the digital divide so advertisers recognize opportunities, threats, and responsibilities in their use of the Internet to promote goods and services worldwide. Through data collected by a variety of international organizations and in cooperation with the United Nations, this research explores the diffusion of information and communications technology within the context of vast socioeconomic inequalities across and inside nations. The paper opens with a brief discussion of the impact of the technological revolution on advertising, followed by a look at the digital divide. Data descriptions are presented in the next section, along with findings that provide regional comparisons. The paper closes with implications for advertising practice as well as global policy.

ADVERTISING AND THE TECHNOLOGICAL REVOLUTION

> *People lack many things: jobs, shelter, food, health care and drinkable water. Today, being cut off from basic telecommunications services is a hardship almost as acute as these other deprivations, and may indeed reduce the chances of finding remedies to them.* United Nations Secretary-General Kofi Anan (in Norris 2000, p. 5)

There is little doubt that the field of advertising is changing as a result of technology innovations introduced towards the end of the 20th century. For example, the introduction of high-resolution/high-definition television, fiber optic transmission of sound and video, and computer integration of entertainment systems have transformed dramatically the quality of TV programming (Morgan and Cameron 1990). According to Rust and Oliver (1994), the convergence of the computer, consumer electronics, cable, telecommunications, and information and entertainment services industries is causing the demise of advertising as historically practiced, spawning a whole new way of communicating with potential consumers.

One outcome of the technological revolution is a significant increase in consumers' ability to access information, leading to a fragmentation of media and markets (Rust and Oliver 1994). The new multimedia will become increasingly interactive, empowering consumers through greater viewing options (Berthon and Pitt 1996). Consumers will no longer be constrained by place and time—sources of information will be available on demand, transforming advertisements from involuntary and intrusive to voluntary and sought out (Rust and Oliver 1994).

Taken together, these new media have formed what Rust and Oliver (1994) refer to as the "network of networks" or the information superhighway. Other common designations include the World Wide Web, cyberspace, and the Internet (or Net).

Without a doubt, this phenomenon represents the greatest challenge and opportunity for advertisers in the new millennium.

Nonetheless, there is growing uncertainty whether the Internet will become the global electronic supermarket envisioned by some scholars (e.g., Rust and Oliver 1994). While Bogart (1990) believes that advertisers use of the Net will continue to grow in the U.S. as the penetration of home computers approaches one-hundred percent, others suggest that the initial cost of hardware and software will preclude many consumers from becoming connected (Fox and Geissler 1994). Even Rust and Oliver (1994) concede that the new media will be user-supported and at rates beyond the ability or willingness of lower socioeconomic groups to afford.

The Digital Divide

Recent research conducted by the United Nations reveals that Internet usage has grown exponentially during the previous decade (UNDP 2001). From a mere 16 million users in 1995 to over 400 million users by the close of the decade, it is now predicted that one billion consumers worldwide will be online by 2005. Global spending by public and private sources on information and communications technology also will advance from $2.2 trillion in 1999 to $3 trillion by 2003. Access through wireless devices, including mobile/cellular phones, will continue to grow rapidly and will surpass personal computers as the primary connection mechanism within a few years.

This explosive growth notwithstanding, the Internet has yet to reach a non-elite mass audience (Bucy 2000). In a global community where less than half of all citizens have ever made a phone call, Internet access is a distant dream (Hammond 2001). Norris (2000) reports that only four percent of the world's population is currently online. These

users are concentrated within postindustrial Western democracies, which contain ninety-seven percent of Internet hosts, ninety-two percent of computer hardware and software consumers, and eighty-six percent of all online connections (also see Godlee, Horton, and Smith 2000).

While these numbers suggest disparities between developed and developing nations, other findings demonstrate that differences also exist within countries. For example, a variety of investigations found that access to the Internet in a sovereign state depends upon race/ethnicity, education, age, income, location, and head of household (Abbott 2001; Feldman 2000/2001; Phillips 2000). For example, Bucy (2000) notes that Internet usage is lower for female-headed households as well as older consumers. Crandall and Cunningham (2001), using recent U.S. Census data, reveal that white households are almost twice as likely to contain a personal computer and nearly three times as likely to be connected to the Net than black or Hispanic households. Finally, Norris (2000) shows American households with incomes above $75,000 are twenty times more likely to have Internet access than households at the lowest income levels.

These disparities are captured by the term "digital divide," which recognizes the yawning gap in accessibility to the Internet among and within countries. Implicit in this definition is two distinct sets of issues (Harrington 2001). The first set reveals differences in the diffusion of technology innovations within a population as well as the level of development of the necessary infrastructure. For instance, while high-income Organization for Economic Cooperation and Development (OECD) countries make up only fourteen percent of the world's population, they constitute approximately eighty percent of all Internet users (UNDP 2001). The second set is made up of socioeconomic

gaps that must be bridged before a society can take advantage of the information technology revolution. For example, within the developing world alone, nearly nine hundred million citizens are illiterate and close to three billion people live on less than $2 a day. Unfortunately, the digital divide that separates rich from poor continues to grow, condemning consumers and entire countries to even greater poverty (Hanshaw 2000; Persaud 2001).

Research Objective

This research examines the digital divide so advertisers may recognize opportunities, threats, and responsibilities in their use of the Internet to promote goods and services worldwide. Utilizing data collected through a variety of international organizations and standardized by the United Nations, this paper explores the diffusion of information and communications technology in the midst of socioeconomic inequalities across and within nations. Descriptions of these data are presented in the next section, followed by a presentation of the findings. The paper closes with ramifications for advertising practice and global policy implications.

TECHNOLOGICAL DIFFUSION, HUMAN DEVELOPMENT, AND INEQUALITY

Data Description

The UN assesses the state of human development worldwide through the activities of the United Nations Development Programme (UNDP). Founded in 1965, this organization has an annual budget that exceeds $1.5 billion to support field offices around the globe in their conduct and assimilation of hundreds of individual data-collection projects (Hill and Adrangi 1999). Major sources of standardized data include

the International Monetary Fund, World Bank, World Health Organization, and a wide variety of UN supported agencies such as the United Nations Educational, Scientific and Cultural Organization. These efforts culminate in its annual publication of the *Human Development Report*, which has updated the status of the international community of nations for the last eleven years. The focal topic of the most recent volume is "Making Technologies Work for Human Development" (UNDP 2001), and it is the source of all data in this research.

For the first time, the UNDP presents human advancement from technology worldwide through its technological achievement index (TAI). This index is a composite of several indicators involving the creation of technology, diffusion of recent innovations, and diffusion of older innovations. Additionally, the UNDP provides data that is specific to investment in technology creation, diffusion of agricultural and manufacturing technology, and diffusion of information and communications technology. It is the latter that is most relevant to this project.

The diffusion of information and communications technology is captured by two distinct factors. The first represents the diffusion of the Internet within a country and is measured by the number of Internet hosts per one thousand citizens. The second reveals the necessary infrastructure to utilize the Internet by a nation through the number of mainline and cellular telephones per one thousand citizens. These data sets were collected by the International Telecommunication Union in 2000 and 1999, respectively (ITU 2001a, 2001b).

Socioeconomic differences among nations are operationalized by the UNDP through the human development index (HDI). This composite contains three individual

indices that measure longevity (life expectance), knowledge (adult literacy and combined primary, secondary, and tertiary school enrollments), and standard of living (real gross domestic product per capita). The resulting index is reduced to a scale between 0 and 1, with larger fractions representing higher levels of human development. The UN (2001), a supporting agency (UNESCO 2000, 2001), and the World Bank (2001) assembled the input data for these indices, and the values represent the year 1999.

Socioeconomic inequalities within countries are determined by the UNDP based on share of income or consumption of the richest ten and twenty percent of the population as well as the poorest ten and twenty percent. In order to create inequality measures that allow for cross-country comparisons, the ratios of the richest to the poorest ten and twenty percent of the people within nations were calculated. Additionally, the Gini index is presented and measures inequality over the entire distribution of income or consumption, with values closer to zero representing greater equality and statistics closer to 100 reflecting greater inequality. This index was selected for the purposes of this research, and the original source of the data is the World Bank (2001).

Findings

A review of the data on the diffusion of information and communications technology shows great disparities in Internet hosts and infrastructure support through telephony around the world. On a global basis, there are 243 telephone mainlines and cellular mobile subscribers and 15.1 Internet hosts per one thousand people. However, among the relatively wealthy OECD countries, the number of telephone lines jumps to 831 and Internet hosts to 75 per thousand. In contrast, the developing countries of the world have 103 main and cellular phone lines and only 1 Internet host per thousand.

Within the least developed countries among this group, these numbers drop to 6 lines and less than .1 Internet hosts. (Table 1 provides a complete listing of countries and the development and geographic categories to which they belong.)

Insert Table 1 about here

Further examination of the developing world reveals differences across geographic boundaries. For example, Latin America and the Caribbean have the greatest diffusion of technology, with 213 telephone mainlines and cellular mobile subscribers and 5.6 Internet hosts per thousand. East Asia and the Pacific are next and currently have 130 telephone lines and .6 Internet hosts for each one thousand citizens. Arab states follow and the number of telephone main and cellular lines drops to 86 and Internet hosts to .4. South Asia, one of the least developed regions of the globe, contains only 31 lines and .1 hosts per thousand. (Data reports from Sub-Saharan Africa include too many missing responses to estimate telephony, but this region contains .6 Internet hosts per thousand.)

For the purpose of comparison across socioeconomic differences among nations, countries of the world are divided into three development categories: high human development (HDI values of .800 and above), medium human development (HDI values of .500 to .799), and low human development (HDI values below .500). Forty-eight countries are categorized as high human development with an average HDI of .914, and they are located primarily in North America, Western Europe, Scandinavia, and Australia. Seventy-eight countries are in the medium human development category with

a mean HDI of .684, and they are found principally in Latin America and the Caribbean, Eastern Europe, East Asia and the Pacific, and the Arab States. Thirty-six countries are considered low human development with an average HDI of .442, and this category is dominated by nations in Sub-Saharan Africa and South Asia. Analysis of variance (ANOVA) shows that statistically significant differences exist among the three development categories ($F = 462.91, p < .01$).

A review of the amount of telephony and number of Internet hosts suggests critical differences across development categories. For example, high human development nations boast 889 telephone mainlines and cellular mobile subscribers along with 80.5 Internet hosts per thousand. In contrast, medium human development countries have only 107 phone lines and 1 Internet host for every one thousand citizens. Low human development nations report a paltry 11 connected telephones and less than .1 Internet hosts per thousand. ANOVA results confirm these differences as statistically significant (phone lines: $F = 276.45, p <. 01$; Internet hosts: $F = 43.62, p <. 01$).

In order to examine socioeconomic inequalities within nations, countries across the globe once again are split into three groups: less income or consumption inequality (Gini index values below 35), moderate income or consumption inequality (values between 35 and 45), and greater income or consumption inequality (values above 45). Thirty-eight nations are categorized as less inequality with an average Gini value of 29.1, and they are situated primarily in Scandinavia, Western Europe, Eastern Europe, and wealthier Asian nations. Forty-two countries are of moderate inequality with a mean Gini of 37.0, and they are located mostly in North America, Australia, East Asia and the Pacific, South Asia, and the Arab states. Thirty-one nations are deemed of greater

inequality with an average Gini of 52.8, and their predominate locations are Latin America and the Caribbean and Sub-Saharan Africa. Once again, ANOVA demonstrates that statistically significant differences exist among the three Gini categories ($F = 18.70$, $p < .01$).

An examination of the telephone infrastructure and Internet hosts suggests real differences across Gini categories. For instance, low income or consumption inequality nations have 568 telephone mainlines and cellular mobile subscribers as well as 35.3 Internet hosts per thousand. However, moderate inequality countries have just 246 combined phone lines and 16.4 Internet hosts for every thousand citizens. Finally, greater inequality nations report having only 118 connected telephones, with 1.7 Internet hosts per thousand. ANOVA verifies that these differences as statistically significant (phone lines: $F = 22.73, p <. 01$; Internet hosts: $F = 8.21, p <. 01$).

DISCUSSION AND IMPLICATIONS

Summary of Findings

Using data collected by the United Nations, its affiliates, and other international organizations, this research investigates the digital divide through an examination of information and communications technology diffusion among the nations of the world. Results demonstrate significant disparities in telephony and Internet hosts, with more developed countries boasting greater diffusion than less developed countries. Additionally, nations that maintain less inequity in income or consumption experience greater diffusion of telephony and Internet technology than those nations that tolerate greater inequity.

Across all data points, findings suggest more diffusion of information and communications technology within northern countries than in southern nations. Regions of the world that stand out with regard to telephony and Internet hosts include Scandinavia, Western Europe, North America, and Australia. Eastern Europe, East Asia and the Pacific, and Latin America and the Caribbean dominate the next level of diffusion, representing some possibility of greater penetration for the future. Sub-Saharan Africa, South Asia, and the Arab States occupy the lowest rung, with little or none of the necessary infrastructure or advanced communications technology to partake in this global revolution.

Implications for Advertisers

The rapid diffusion of the Internet among the most developed nations represents an expanding opportunity for advertisers who are eager to reach and persuade consumers worldwide. These countries possess the necessary telephony infrastructure to allow for the widespread dissemination of increasingly affordable computers that will create a nearly universal connection to the Internet throughout Western society. Additionally, most citizens from these nations are schooled in and comfortable with written language and the technological devices required for most Internet access, and they typically are savvy consumers who seek a connection to and a sophisticated relationship with the global marketplace.

On the other hand, the developing and least developed countries worldwide possess none of these characteristics. Their telephony infrastructure is poor by Western standards, and the cost of service, as well as associated hardware, is beyond the reach of average consumers (UNDP 2001). Universal access at a reasonable cost, a concept that

propelled the distribution of telephone service throughout much of the developed world, is not part of their political landscape. Thus, connection to the Internet is a rare commodity and available only to the most wealthy citizens. However, even if access was more widespread, the income, education, and lifestyle of typical consumers in these regions of the globe make use of the Internet for need satisfaction almost superfluous.

These problems notwithstanding, a recent push for improved and cheaper telephony has increased the possibility of connection to the Internet throughout the less developed world. High capacity and fiber optic linkages now span most continents, broadening the potential for access within China, Latin America, and many African countries (Hammond 2001). Additionally, technological advances, especially with spectrum radio, low-orbiting satellites, microwave, and laser connections, increasingly will bring wireless telephone service to remote locations, rendering traditional infrastructure problems irrelevant (Godlee, Horton, and Smith 2000). The famous Grammen network of organizations has begun to exploit these opportunities by pioneering a new model for telephony (Yunus 1998). Based on shared usage of one wireless connection within a rural community, Grammen Telecom provides a profitable entrepreneurial venture for the "wireless women" and more affordable access to low-income consumers.

Of course, infrastructure problems are only part of the dilemma. Internet usage in developing countries also is stalled by the cost of personal computers. To resolve this issue, several academic institutions have worked to develop low-price Internet accessible technology designed for mass distribution. For example, scientists at the Federal University of Minas Gerais in Brazil recently produced a basic computer at a cost to

consumers of approximately $300 (Rich 2001; SiliconValley.com 2001). A prototype quickly was developed that includes a modem, color monitor, speakers, mouse, and Internet software. The Brazilian government hopes eventually to install this device in public schools, providing improved access to seven million students throughout the country. Additionally, the Indian Institute of Technology developed a low-price Internet access device that requires no modem and eliminates costly copper wiring (Anand 2000). At its center is a wireless local system that is uniquely designed for Internet usage within low-income communities that lack the necessary telephony infrastructure. This technology has been licensed to manufacturers in India and China, and it is already in use in Yemen, Nigeria, and Tunisia.

Even with these dramatically reduced costs, individual ownership of the necessary hardware is impossible for most consumers within the least developed nations and many consumers within the most inequitable countries. One alternative that is spreading rapidly in poor regions is the use of cyber cafes and kiosks for connectivity to the Internet (Hammond 2001; Yunus 1998). Consistent with the village wireless phones, these connections provide income-generating opportunities for local entrepreneurs while simultaneously meeting the educational and informational needs of the community. Cyber cafes/kiosks allow for low-cost access to the Net through mobile connectivity, and they may include low literacy touch screens and prepaid chip-card software for e-business that overcome socioeconomic hurdles. The use of solar power to operate this technology makes Internet access a possibility even in the most isolated areas (see Attali 2000; Swaminathan 2000).

If these advances are to help society reduce the digital divide, they must be coordinated to ensure that multiple constituencies are operating jointly to accomplish overarching information and communications technology goals. The United Nations notes that success requires national governments "to establish broad technological strategies in partnership with other key stakeholders" (UNDP 2001, p. 5). Such coordination demands the pooling of public and private resources from all levels of government, nongovernmental organizations (NGOs) such as the World Bank, philanthropic institutes like the Bill and Melissa Gates Foundation, and a variety of private concerns (i.e. the Grammen conglomerate) (Godlee, Horton, and Smith 2000; Norris 2000).

One example involves the Ministry of Education in Argentina and "venture philanthropist" Martin Varsavsky, who donated $11.2 million to develop an Internet portal that will give ten million grammar, high school, and university students Net access (Hanshaw 2001). The company Educar was established to operate the portal and sell on-line advertising and e-business opportunities. While the use of advertising to sponsor this endeavor remains controversial, advertisers will continue to play a critical role in making such undertakings financially successful at low consumer costs.

Global Policy Implications

Regional and global cooperation that spans national and cultural boundaries also can improve the availability of the Internet (UNDP 2001). To this end, leaders of the Group of Eight (G-8) countries established the Digital Opportunities Task Force to coordinate their efforts to bridge the digital divide worldwide. Task force members are diverse in their associations and nations of origin, representing public, private, and

nonprofit organizations within G-8 as well as developing countries such as China, Brazil, and India. This collaboration is devoted to creating the necessary information and communications technology infrastructure within developing countries by improving coherence across conflicting policy initiatives, proactively seeking multinational public-private alliances, and increasing the level of official development assistance.

An essential ingredient for the success of this collaboration is the break up of state-run monopolies that control telephony infrastructure within developing countries (Persuad 2001). One viable policy option is the eventual implementation of key aspects of the United States Telecommunications Act of 1996 on a global basis. This bill represents the first significant change to U.S. information and communications law since the Communications Act of 1934, which reflected a period of time before television, personal computers, and the Internet were available (Andolfo 2001; Aufderheide 1999). Signed into law by President Clinton, this act resulted in dramatic expansion of financial investment industry wide, increased inter-type competition across traditional market boundaries, and improved access to and reduced consumer cost of the information superhighway. While some policy analysts fear a nationalist backlash to the influx of global communications firms (Comor 1997), a more likely scenario is the rapid expansion of private investment in technology that will advance citizens' quality of life through greater consumption opportunities (Whitman 1997).

Another important issue involves the implementation of the Trade Related Aspects of Intellectual Property Rights or TRIPS agreement. Hailed as the most important global initiative in intellectual property rights since the Paris Convention of 1883, it was designed to give computer software the same protection as copyrighted

works of literature (Blakeney 1996). Developed countries like the United States advanced this agreement in an attempt to stem the tide of pirated intellectual property by standardizing Western legal protections around the globe. Developing countries acceptance into the World Trade Organization (WTO) is dependent upon successful implementation of these rules, and failure to enforce these standards may result in trade sanctions from member states whose property rights are violated (Correa 1996; Smith 1999).

This agreement was the result of tense negotiations between developed and developing countries, with the least developed nations fearing high socioeconomic costs due to greater dependency on and financial obligation to the West (Smith 1999). As an incentive for their eventual acquiescence, the final document contains provisions that allow for the delay of implementation for a period of five years for developing countries and economies in transition, and for eleven years for the least developed nations in the world (Correa 1996). While this concession may support the dissemination of Internet software in the short term, developing open-source programs that provide the same level of accessibility at little or no cost is a preferred long-term solution for poor nations and regions (UNDP 2001).

Concluding Comments

The opening remarks of this paper by the Secretary-General of the United Nations eloquently state the importance of information and communications technology to the human condition worldwide. Intricately connected to inequalities across and within nations, the spread of the Internet and supporting telephony infrastructure must be a priority among nations that work in partnership to achieve greater levels of technological

diffusion. While advertisers may not be the primary catalysts for change, they can play a meaningful supporting role. One of the greatest hurdles to the dissemination of the Internet is a lack of funding, especially within the least developed nations. The continued commercialization of the Internet may remain controversial, but the increasing financial investment by the advertising industry will be of strategic importance to how, when, and where the Internet is available in the 21st century.

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TABLE 1*
Listing of Countries** by Development and Geographic Categories

	HDI Category	Development Category	Gini Category	Geographic Category
Norway	High	OECD	Less	Scandinavia
Australia	High	OECD	Moderate	Australia
Canada	High	OECD	Less	North America
Sweden	High	OECD	Less	Scandinavia
Belgium	High	OECD	Less	Western Europe
United States	High	OECD	Moderate	North America
Iceland	High	OECD	NA	Scandinavia
Netherlands	High	OECD	Moderate	Western Europe
Japan	High	OECD	Less	Asia
Finland	High	OECD	Less	Scandinavia
Switzerland	High	OECD	Less	Western Europe
Luxembourg	High	OECD	Less	Western Europe
France	High	OECD	Less	Western Europe
United Kingdom	High	OECD	Moderate	Western Europe
Denmark	High	OECD	Less	Scandinavia
Austria	High	OECD	Less	Western Europe
Germany	High	OECD	Less	Western Europe
Ireland	High	OECD	Moderate	Western Europe
New Zealand	High	OECD	NA	Australia
Italy	High	OECD	Less	Western Europe
Spain	High	OECD	Less	Western Europe
Israel	High	NA	Moderate	Middle East
Greece	High	OECD	Less	Southern Europe
Hong Kong, China (SAR)	High	Developing	NA	Asia
Cyprus	High	Developing	NA	Southern Europe
Singapore	High	Developing	NA	East Asia/Pacific
Korea, Republic of	High	Developing	Less	Asia
Portugal	High	OECD	Moderate	Western Europe
Slovenia	High	NA	Less	Eastern Europe
Malta	High	NA	NA	Western Europe
Barbados	High	Developing	NA	Latin America/Caribbe
Brunei Darussalam	High	Developing	NA	Middle East
Czech Republic	High	OECD	Less	Eastern Europe
Argentina	High	Developing	NA	Latin America/Caribbe
Slovakia	High	OECD	Less	Eastern Europe
Hungary	High	OECD	Less	Eastern Europe
Uruguay	High	Developing	Moderate	Latin America/Caribbe
Poland	High	OECD	Less	Eastern Europe
Chile	High	Developing	Greater	Latin America/Caribbe
Bahrain	High	Developing	NA	Arab States
Costa Rica	High	Developing	Greater	Latin America/Caribbe
Bahamas	High	Developing	NA	Latin America/Caribbe
Kuwait	High	Developing	NA	Arab States
Estonia	High	NA	Moderate	Eastern Europe
United Arab Emirates	High	Developing	NA	Arab States
Croatia	High	NA	Less	Eastern Europe
Lithuania	High	NA	Less	Eastern Europe
Qatar	High	Developing	NA	Arab States
Trinidad and Tobago	Medium	Developing	Moderate	Latin America/Caribbe
Latvia	Medium	NA	Less	Eastern Europe

Mexico	Medium	Developing	Greater	Latin America/Caribbe
Panama	Medium	Developing	Greater	Latin America/Caribbe
Belarus	Medium	NA	Less	Eastern Europe
Belize	Medium	Developing	NA	Latin America/Caribbe
Russian Federation	Medium	NA	Greater	Eastern Europe
Malaysia	Medium	Developing	Greater	East Asia/Pacific
Bulgaria	Medium	NA	Less	Eastern Europe
Romania	Medium	NA	Less	Eastern Europe
Libyan Arab Jamahiriya	Medium	Developing	NA	Arab States
Macedonia, TFYR	Medium	NA	NA	Eastern Europe
Venezuela	Medium	Developing	Greater	Latin America/Caribbe
Colombia	Medium	Developing	Greater	Latin America/Caribbe
Mauritius	Medium	Developing	NA	Sub-Saharan Africa
Suriname	Medium	Developing	NA	Latin America/Caribbe
Lebanon	Medium	Developing	NA	Arab States
Thailand	Medium	Developing	Moderate	East Asia/Pacific
Fiji	Medium	Developing	NA	East Asia/Pacific
Saudi Arabia	Medium	Developing	NA	Arab States
Brazil	Medium	Developing	Greater	Latin America/Caribbe
Philippines	Medium	Developing	Greater	East Asia/Pacific
Oman	Medium	Developing	NA	Arab States
Armenia	Medium	NA	Moderate	Eastern Europe
Peru	Medium	Developing	Greater	Latin America/Caribbe
Ukraine	Medium	NA	Less	Eastern Europe
Kazakhstan	Medium	NA	Moderate	Eastern Europe
Georgia	Medium	NA	Moderate	Eastern Europe
Maldives	Medium	Developing/Least Developed	NA	South Asia
Jamaica	Medium	Developing	Moderate	Latin America/Caribbe
Azerbaijan	Medium	NA	Moderate	Eastern Europe
Paraguay	Medium	Developing	Greater	Latin America/Caribbe
Sri Lanka	Medium	Developing	Less	South Asia
Turkey	Medium	Developing	Moderate	Southern Europe
Turkmenistan	Medium	NA	Moderate	Eastern Europe
Ecuador	Medium	Developing	Moderate	Latin America/Caribbe
Albania	Medium	NA	NA	Eastern Europe
Dominican Republic	Medium	Developing	Greater	Latin America/Caribbe
China	Medium	Developing	Moderate	East Asia/Pacific
Jordan	Medium	Developing	Moderate	Arab States
Tunisia	Medium	Developing	Moderate	Arab States
Iran, Islamic Republic of	Medium	Developing	NA	South Asia
Cape Verde	Medium	Developing/Least Developed	NA	Sub-Saharan Africa
Kyrgyzstan	Medium	NA	Moderate	Eastern Europe
Guyana	Medium	Developing	Moderate	Latin America/Caribbe
South Africa	Medium	Developing	Greater	Sub-Saharan Africa
El Salvador	Medium	Developing	Greater	Latin America/Caribbe
Samoa (Western)	Medium	Developing/Least Developed	NA	East Asia/Pacific
Syrian Arab Republic	Medium	Developing	NA	Arab States
Moldova, Republic of	Medium	NA	Moderate	Eastern Europe
Uzbekistan	Medium	NA	Less	Eastern Europe
Algeria	Medium	Developing	Moderate	Arab States
Vietnam	Medium	Developing	Moderate	East Asia/Pacific
Indonesia	Medium	Developing	Less	East Asia/Pacific
Tajikistan	Medium	NA	NA	Eastern Europe

Bolivia	Medium	Developing	Greater	Latin America/Caribbe
Egypt	Medium	Developing	Less	Arab States
Nicaragua	Medium	Developing	Greater	Latin America/Caribbe
Honduras	Medium	Developing	Greater	Latin America/Caribbe
Guatemala	Medium	Developing	Greater	Latin America/Caribbe
Gabon	Medium	Developing	NA	Sub-Saharan Africa
Equatorial Guinea	Medium	Developing/Least Developed	NA	Sub-Saharan Africa
Namibia	Medium	Developing	NA	Sub-Saharan Africa
Morocco	Medium	Developing	Moderate	Arab States
Swaziland	Medium	Developing	Greater	Sub-Saharan Africa
Botswana	Medium	Developing	NA	Sub-Saharan Africa
India	Medium	Developing	Moderate	South Asia
Mongolia	Medium	Developing	Less	East Asia/Pacific
Zimbabwe	Medium	Developing	Greater	Sub-Saharan Africa
Myanmar	Medium	Developing/Least Developed	NA	East Asia/Pacific
Ghana	Medium	Developing	Moderate	Sub-Saharan Africa
Lesotho	Medium	Developing/Least Developed	Greater	Sub-Saharan Africa
Cambodia	Medium	Developing/Least Developed	Moderate	East Asia/Pacific
Papua New Guinea	Medium	Developing	Greater	East Asia/Pacific
Kenya	Medium	Developing	Moderate	Sub-Saharan Africa
Comoros	Medium	Developing/Least Developed	NA	Sub-Saharan Africa
Cameroon	Medium	Developing	NA	Sub-Saharan Africa
Congo	Medium	Developing	NA	Sub-Saharan Africa
Pakistan	Low	Developing	Less	South Asia
Togo	Low	Developing/Least Developed	NA	Sub-Saharan Africa
Nepal	Low	Developing/Least Developed	Moderate	South Asia
Bhutan	Low	Developing/Least Developed	NA	South Asia
Lao People's Dem. Rep.	Low	Developing/Least Developed	Moderate	East Asia/Pacific
Bangladesh	Low	Developing/Least Developed	Less	South Asia
Yemen	Low	Developing/Least Developed	Less	Arab States
Haiti	Low	Developing/Least Developed	NA	Latin America/Caribbe
Madagascar	Low	Developing/Least Developed	Greater	Sub-Saharan Africa
Nigeria	Low	Developing	Greater	Sub-Saharan Africa
Djibouti	Low	Developing/Least Developed	NA	Arab States
Sudan	Low	Developing/Least Developed	NA	Sub-Saharan Africa
Mauritania	Low	Developing/Least Developed	Moderate	Sub-Saharan Africa
Tanzania, U. Rep. Of	Low	Developing/Least Developed	Moderate	Sub-Saharan Africa
Uganda	Low	Developing/Least Developed	Moderate	Sub-Saharan Africa

Congo, Dem. Rep. Of the	Low	Developing/Least Developed	NA	Sub-Saharan Africa
Zambia	Low	Developing/Least Developed	Greater	Sub-Saharan Africa
Cote d'Ivoire	Low	Developing	Moderate	Sub-Saharan Africa
Senegal	Low	Developing	Moderate	Sub-Saharan Africa
Angola	Low	Developing/Least Developed	NA	Sub-Saharan Africa
Benin	Low	Developing/Least Developed	NA	Sub-Saharan Africa
Eritrea	Low	Developing/Least Developed	NA	Sub-Saharan Africa
Gambia	Low	Developing/Least Developed	Greater	Sub-Saharan Africa
Guinea	Low	Developing/Least Developed	Moderate	Sub-Saharan Africa
Malawi	Low	Developing/Least Developed	NA	Sub-Saharan Africa
Rwanda	Low	Developing/Least Developed	Less	Sub-Saharan Africa
Mali	Low	Developing/Least Developed	Greater	Sub-Saharan Africa
Central African Republic	Low	Developing/Least Developed	NA	Sub-Saharan Africa
Chad	Low	Developing/Least Developed	NA	Sub-Saharan Africa
Guinea-Bissau	Low	Developing/Least Developed	Greater	Sub-Saharan Africa
Mozambique	Low	Developing/Least Developed	Moderate	Sub-Saharan Africa
Ethiopia	Low	Developing/Least Developed	Moderate	Sub-Saharan Africa
Burkina Faso	Low	Developing/Least Developed	Greater	Sub-Saharan Africa
Burundi	Low	Developing/Least Developed	Less	Sub-Saharan Africa
Niger	Low	Developing/Least Developed	Greater	Sub-Saharan Africa
Sierra Leone	Low	Developing/Least Developed	NA	Sub-Saharan Africa

* Abstracted from Human Development Report 2001
** The listing of countries is from highest to lowest HDI values.