# Preface

_To Be Online or not to Be – Is that the Question Tomorrow?_

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**Members of the Global Society Dialogue**

**Observers**
The new Information Society Technologies (IST) have created a worldwide web which contains a steadily growing quantity of information. All we need to use it are a computer, software and affordable access. Yet, often this is just the problem. An average American, and many Europeans, can purchase the necessary resources from their monthly salaries. However, people in the Eastern European countries are in a worse position. In Russia and in the Ukraine, for instance, only relatively few can use the advantages of the new media, and access in the developing world is even more restricted. The information society can bridge gaps, but it can create new divisions at the same time. The difference between rich and poor is deepened by the Digital Divide; the haves are now the "knows", and the have-nots might become the "know-nots".

The mega-trends, today, are globalisation and rise of the knowledge age. Integrating these mega-trends in sustainable development is a crucial challenge for this century. Information technologies lead to opportunities, but also to risks for sustainable development. They offer many chances for more social inclusion, cultural diversity, protection of nature, and economic growth. However, via rebound effects (the computers become smaller and more effective, but the drastically increasing number of computers overrides any resource savings), the information technologies might also create new environmental stress. They might reduce cultural diversity, and exclude more people than ever. It is a matter of building political frameworks to prevent that.

A decisive factor for the future will, therefore, be to set adequate frameworks of global governance. Governments, business, and the civil society all have to contribute to make this happen. In this context, questions of co-financing for worldwide development also have to be addressed. These frameworks cannot be set on a national level for reasons of competition; they have to be dealt with on the global scale. The Global Society Dialogue intends to discuss framework issues that make sustainable development possible, and ensure adequate living conditions for all humans on Earth.

This document begins with an examination of facets of the Digital Divide. The already existing gaps between rich and poor, the gaps between old and young, and the gender gap might be deepened. In a technology chapter, the possibilities for closing the Digital Divide are shown, which mobile communication, including open source software and adequate standards could offer. The third chapter focuses on the political dimension of the Digital Divide. Representatives from various countries and regions present their problems and views. Finally, how the Digital Divide can be bridged in a sustainable way is addressed, and suitable strategies for these issues are discussed.

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The Divide between Rich and Poor – the Need for Africa’s Digital Inclusion

Where does Africa’s communication infrastructure stand?

Although there has been an increase in the African communication infrastructure in recent years, it still remains further down than the rest of the world. A comparison can be made in terms of tele-density (number of telephone lines per hundred people), telephone demand (average waiting time for a private telephone), number of Internet users, and number of Internet hosts. There are also large differences between African states. For example, tele-density in South Africa (10.5 lines per 100 people), Libya (10.0) and Egypt (7.5) is much higher than in Chad (0.1), Nigeria (0.4) or Angola (0.8 lines per 100 people).
Challenges for further development

The challenges in improving communications in Africa lie mainly on two interrelated issues. One is improving the regulatory environment (including policy), and the other is improving the physical communications infrastructure. These are the prerequisites for Africa entering the information age and many countries are working on the topics. Under the auspices of the African Information Society Initiative (AISI), the Economic Commission for Africa (ECA) is assisting 21 African countries to develop their National Information and Communication Infrastructure (NICI) plans and policies. Once clear plans and policies are developed, they are expected to pave the way for the development of favourable regulatory environments that encourage building an improved infrastructure. Countries that have completed their NICI plans are already creating separate ministries, or other relevant bodies dealing with information technology related issues. Even though Africa is behind the global average, there are examples how information technologies can improve the situation.

For future development of the African Information Society, programmes have to consider the need for strategic collaboration between private sector, civil society and governments; linkages on regional, national and international levels; the need for support by the highest level of government; and for measuring the impacts of information technologies.

For more details please see “Africa’s digital inclusion: A pressing need to bridge the widening gap between Africa and the rest of the world” by Makane Faye and Assefa Bahta from AISI (African Information Society Initiative, Addis Ababa) on the GSD website http://www.global-society-dialogue.org

Information technology is a “colossal technology”, like of this was not witnessed even when steam engines, light bulbs, or air crafts were invented. Information technology provides services of e-mail, e-phone, e-banking, e-trading, e-markets, etc., all rolled into one with a universal infrastructure encompassing many services. It can provide many of the services provided earlier with expensive infrastructure such as planes, posts, railways, and it provides even faster and better communication.

The developing countries have great hopes in information technology. It is rather inexpensive, but not yet cheap enough for the poor. It has much to offer in terms of job opportunities, livelihoods, enhancement of productivity, and the possibility of leapfrogging.

The Brundtland definition of Sustainable Development emphasises intra-generation and inter-generation equity. This means that equity among current generations and their welfare is important. A large portion of the 4.5 billion people in the developing countries require basic needs such as food, water, and shelter with sanitation. While the “privileged” in the industrialised states may demand what information technology services supply, a large number of people with low income are likely to demand the basic needs first; e.g., food, water, health services, and sanitation. It may appear that these cannot be provided by information technology, but information technology services could mobilise financial and technical assistance; and with its far-reaching capability, connect with the concerned people willing to help. It could also help those who wish to assist the poor, and make them effective; for example, information about food and water scarcity could be heard before it is too late.

However, the poor do not only have physical needs such as food and water, but they need to be included in the decision-making and governance. They need to take advantage of many government programmes which are for their benefit. They do not get these benefits, due to corruption and lack of information. E-connectivity can inform them about these benefits and how to access them for their own use.

There have been good practices in many countries and communities. New technologies, and even old solutions, are crying out for more details please see “Poverty, Sustainable Development, and Information Technology” by Jyoti Parikh, IGIDR (Indira Gandhi Institute of Development Research, Mumbai) on the GSD website http://www.global-society-dialogue.org
In the global society, more men than women connect to the Internet, enter technological fields in the workforce, and enroll in computer science programs at the university level. According to the International Labour Organization’s World Employment Report 2001, among Internet users, women consist of 38% in Latin America, 25% in the European Union, 19% in Russia, 18% in Japan, and 4% in the Middle East. In the United Kingdom and the United States, the proportion of women studying computer science courses at both undergraduate and postgraduate levels is less than 20%, while a mere 11% of students enrolled in Microsoft-certified training courses are women.

Before we begin to address the gender gap, we must understand its origin. The gender gap in the information society stems from traditionally defined gender roles, which are unconsciously enforced in schools and learning environments. Gender bias in teaching styles, gender stereotypes in co-educational classrooms, and the content of some software exclude girls from an entrance to the technological world. Lack of participation by girls in the computer sciences has its roots in an old, neglected problem of female exclusion in education, especially in the mathematics and sciences. Girls need the foundation in these areas in order to excel later in life.

We need to foster an environment of inclusion, meaningful software content, and a style of teaching that targets girls as well as boys. We must cater girls to Information Technology and the Information Technology must be catered for girls. Although it is easier to institute computer literacy in the younger generations, elderly women must not be forgotten. There are initiatives that have begun to address the gender gap, yet more must be created.

For more details please see “The Gender Gap in the Information Society” by Kendra Bartsch from YOIS - Europe (Youth for Intergenerational Justice and Sustainability, Frankfurt) on the GSD website http://www.global-society-dialogue.org

For some years, the middle generation has dominated Internet usage. Presently, the young generation, especially the 14 to 29 year-olds, is leading when it comes to Internet access. As statistics from Europe, the US, and Japan show, around 75-80% (up to 99% among college students) are online. 65% of those under age 30 have Internet access, 59% of those between the ages of 50 and 64 do not go online, and 87% of those 65 and over do not have Internet access.

Since the Internet, with its contents and communication possibilities, has become such a phenomenon in society, the Digital Divide between generations may threaten the inclusion of older people. Many older people, especially those not involved in the labor market, do not see the personal benefits of computer use. Additionally, they rarely come in contact with computers in their everyday life. Usually, this leads to barriers when it comes to getting involved with computers voluntarily.

Although retired people do not need computer skills for work anymore, these skills can enable contacts and facilitate integration into social life. Since older people stay home a lot more, and lack the personal contacts aligning the participation in working life, often media can become a substitute for them. As reports show, seniors with Internet access stated that learning how to use a computer strengthened relationships with friends and family, stimulated their mind, and gave them something in common with younger people.

Seniornet, an internet platform for people older than 50, asked its users how they learned to use the Internet. Many got help from relatives, peers, or took classes and at the same time taught themselves. There need to be initiatives to offer guided first steps with the Internet. These have to be actively brought into the lives of older people, by promoting them through the media and organisations which are usually in touch with older people. Luckily, this is happening more: There are Senior Internet Cafes and Learning Centers; networks offer support with toolkits for new initiatives; and the integration of computers and the Internet in retirement homes is being seen as an enrichment.

At the same time, steps are being taken to adjust the design of hardware and content, in order to meet physical challenges (e.g., sight, motion) older people may have. There are predictions that there will be a breakthrough of the Internet in all segments of society, when handling it will be as easy as using a TV remote control.

For more details please see “The Generation Gap in the Information Society” by Maja Göpel from YOIS-Europe (Youth for Intergenerational Justice and Sustainability, Frankfurt) on the GSD website http://www.global-society-dialogue.org
Universal Communication: Power to the People or Pathway to Destruction?

Throughout history, “mobile” communications have played a fundamental role in our development. The Egyptian God, Thoth, is accredited as being the winged messenger who invented script as a means of communication, and it was Thoth who had the power to ensure that the wishes of Ra were carried into effect (this is the first example of global governance made possible by mobile communications). The printing press was a quantum leap in communication technology, because, for the first time, information could be transpor- ted en mass and delivered to the individual. The emergence of the popular press and better education led to massive dis- semination of knowledge and ideas, which, in turn, shaped opinions and built commerce.

The lesson to be drawn from history is that all quantum leaps in social and economic development have been driven by advances in communication technology. Each advance brings with it increased human interaction and, most signi- ficantly, commerce and consumption of resources. In the past, most advances in communications were based on a broadcast model, with citizens being consumers of informa- tion and, therefore, largely “governed” by those in control of the technology.

Today’s mobile communications technology is fundamentally different than any previous quantum leap, because it places the power to communicate in the hands of the individual citizen, and shifts the balance between consumer and pro- ducer. We are moving towards a situation where technology will empower individual citizens to communicate with anyone, anything, anytime, and anywhere. There is already strong evi- dence that the effects on society by such individual empower- ment can also be a threat to sustainability and stability. The disenfranchised individuals in society now have the tools to cause dramatic, global, and unpredictable impact; and terro- rist networks can easily use the new infrastructure as well.

Visible effects of citizen empowerment in the network society are:

> Empowerment and increased independence for the individual
> Disintermediation in many areas (cutting out the middle man, e.g. in eCommerce by direct inter- action between producers and consumers)
> Flattened organisational structures
> Increase of mobility
> Possible breakdown in loyalty and affiliation

In many countries, mobile communications are seen as being key to access to the information age. The possibility of leap-frogging the technology telecommunications chain has led to fairly rapid build-out of some amount of wireless network in most countries, albeit with varying quality and coverage. This growth has, in turn, supported price decli- nes, but the current costs of network deployment, equip- ment, and service all continue to pose serious access problems for most of the world’s population still lacking telecommunications access.

In summary, the new communication technologies are pre- senting challenges to a sustainable global society. We have to find a new balance between citizen empowerment and social responsibility; value and costs; culture of inter- dependence and individual independence; consumption and preservation of resources; and free market and inter- vention. We will have to discuss, on the one hand, access to communications as a fundamental right, and on the other hand, control mechanisms like netizen unique ID or positioning systems.

for more details please see “Universal Communication. Power to the People or Pathway to Destruction” by David Wortley from Computer Professionals for Social Responsibility, on the GSD website http://www.global-society-dialogue.org
The list of available IP addresses is dwindling rapidly. At the current rate, there will be no numbers left by 2005. Currently, 75% of the available IP addresses are assigned, and the controlling organisations are loath to hand any more out. Those addresses that have been assigned are being used on a 10-to-1 ratio: 10 users, or devices, for each address. Third-generation wireless services will be hamstrung, if a massive number of additional IP addresses are not made available.

The Internet will undergo a major re-addressing process; akin to modern postal services, everybody is ‘always-on’ the Internet, those addresses will have to be assigned permanently. However, the Internet works with a variety of cheats and compromises to keep everyone accessing the net. One of these is known as ‘library mode’—a library is a group of addresses on the receiving side that is configured to respond to a request by sending data to the address associated with that library. If that address is not available, then the data is sent to the next address associated with the library. While this makes it possible to assign IP addresses to more devices, it also makes it easier for network administrators to keep track of the devices.

The operating system Linux, that stems from the origins of Unix, is also a server operating system. From the beginning, the multiuser-, network- and internet-ability, and a lot more have been integrated into the system. Linux, in its first years, gained a high degree of popularity, especially as a platform for development and as an experts system. It was not very suitable for beginners because it was lacking “easy to use” graphic interfaces.

The recent distributions of Linux can also be used by non-professional users. With the introduction of graphic user interfaces, Linux is easier to handle for people who are less specialized. The whole peripheral and system settings can be managed with graphic tools comparable to the known Windows systems. The feature that Linux is available for free makes the system very interesting for people who cannot afford the usual commercial software, both in developing and in developed countries.

All of the existing tools might be useless without the necessary documentation. Today, Linux is a system which is very well documented and provides a huge amount of tips and tricks. With detailed documentation, a Linux user is never left alone with problems.

StarOffice is gaining more significance and popularity, too. On Linux and Unix, it is the most used office product, and it is also becoming very popular on Windows. One reason may be the price; it can be downloaded for free from the web and it is integrated into almost every Linux and Unix distribution. Sun’s office suite is a complete and integrated product, which provides all features offered by competing office products, today. The user is provided with various features, including a text editor (StarWriter); a spreadsheet programme (StarCalc); a presentation tool (StarImpress); an integrated Adabas Database (StarBase); graphic tools (StarImage and StarDraw); tools for e-mail, web-browsing, news, and chat; HTML-editing; and an address book. Lots of import and export filters guarantee an exchange of data, and manage a high compatibility between StarOffice and other office products, e.g. Microsoft Office. Also, interfaces to PDA, like the Palm Pilot, are being provided. StarOffice offers all that a user needs at work and also at home. And this for free.

Linux combined with StarOffice can be seen as suitable for the reduction of the Digital Divide. Linux offers a high amount of user friendly tools, which are expanded by combination with StarOffice and other comparable products. This provides a high degree of efficiency, which makes this system interesting for private use as well as for business use. With the provided tools, users can gain qualifications which make them more attractive for business opportunities.

for more details please see “Open Source and Free Software for the Closing of the Digital Divide” by Armin Hehl from Sun Microsystems, on the GSD website http://www.global-society-dialogue.org
Nepal’s Gross National Product (GNP) is approximately US$ 4.8 billion and its per capita income is US$ 210. It is one of the poorest countries in the world, and nearly half its population is living below the poverty line. Agriculture is the mainstay of the economy, and this occupies 80% of the population, accounting for 41% of the GNP.

In 1985, television arrived in Nepal, and there were less than 500 TV sets in the country. When Nepal Television went on air, the number of TV sets increased dramatically. Nepal Television now covers about 42% of the country’s population and 32% of the land area.

Around 100 companies are selling computer equipment in the country, with hardware imported. This includes brand units such as IBM, Dell, Compaq, and non-brand parts that are then assembled in Nepal. There is only one computer manufacturing company, HighTech Pioneer P. Ltd, which was established in 1985. Statistics, compiled by an industry association, show that the value of computers and parts imported into Nepal for the 1998 fiscal year was US$ 6.26 million.

In 1995, the Internet arrived in Nepal and caused a sharp rise in computer imports. Conversations with various sources suggest that the number of PCs sold in Nepal in 1999, was between 10,000 to 15,000 units, and that the stock of PCs in the country could be as high as 100,000 units. This places PC penetration in Nepal at 0.27 per 100 inhabitants, slightly lower than India and Pakistan, but above Bangladesh. According to one estimate, there are around 25 companies engaging in software development.

In 1994, the first companies offering dial-up email service (via UUCP) appeared on the market. Mercantile Office Systems became the first Internet Service Provider (ISP) in July 1995. The legal status of these pioneering ISPs was vague until 1997, when the new Telecommunications Act formalized a licensing procedure. In January 2000, there were eleven licensed Internet Service Providers (ISPs), of which at least nine were operational. Besides providing service to residential and business users, these ISPs also resell service to specialized providers, public call offices, and cyber cafés. The number of Internet subscribers was almost 9,000 in January 2000. In August 2001, Internet users numbered approximately 100,000, and there were nearly 25,000 internet account holders. The majority of these people are utilizing primarily e-mail, rather than complete Internet services.

The relatively high cost of the Internet is a major barrier to its diffusion in Nepal. Though the overall cost of dial-up access in Nepal is among the lowest in the region, it is still unaffordable for the majority of the country’s inhabitants. The problem is exacerbated by the pricing structure, where dial-up calls for accessing the Internet also include local telephone usage charges (after the “free” calls included with the subscription are used up).

Furthermore, the concentration of ISPs in Kathmandu means that most people outside the capital would incur long distance telephone charges when using dial-up Internet access. To lessen the digital gap between the “knows” and the “know-nots”, Internet tariff should be reduced; the international donor agencies should help to develop the infrastructure of the information technology sector.

For more details please see “Development of IST in Small Countries: The Case of Nepal” by Lachhe Bahadur from Information Society Forum of Nepal, Kathmandu, on the GSD website http://www.global-society-dialogue.org
26% of the population in Japan currently access the Internet. A distinct characteristic of Japanese Internet use is access not only on the PC, but also a strong following of cellular phone Internet users. Although this may sound promising, there are still many obstacles that prevent a large population from accessing and using the Internet - stifling the promise of equal access to a powerful information source.

The following are some of the main reasons for not accessing the Internet: “Do not understand”; “Have no interest”; “The Internet is not necessary, and the services and/or contents are not interesting” ; “There is no incentive to start”; and “The hurdle to learn how to use cellular phones and computers is too high.”

A lack of incentive to begin, and the tremendous effort necessary to understand and operate the technology, are the two most frequently mentioned obstacles faced by non-Internet users. In reality, many young people are also struggling to use computers and the Internet. It is not solely a literacy problem. It is believed that the problem lies within the human machine interface itself; there is a dire need for more products to be designed with Universal Design consideration.

There are continuous requests by users who wish to learn the computer in a more accessible manner such as, “If only there were someone to casually teach me” (41.1%); and “If there were more free seminars” (32.4%). There were many requests, such as these, for more affordable and casual venues to learn. There are also continuous requests for a more easy-to-operate computer such as, “If it were as easy as using a television remote control” (28.9%); and “If it were as easy as using a telephone” (27.8%). From monitoring current non-IT user needs, it can be said that continued volunteer IT seminars and the fight for more accessible information technology may eliminate the Digital Divide.

Only 10% of the researched population answered that they would not use a computer or access the Internet under any circumstance. This was most prevalent in the senior population (17.2%); this age group feels a strong sense of rejection towards the Internet. This is a result of (1) negative information about the Internet circulated by the press, (2) product development ignoring features accommodating needs of the elderly population, and (3) lack of support for new technology.

There are two main strata of the Digital Divide in Japan. One layer consists of senior citizens and housewives; they are a population with very little interest and/or few incentives to become involved with information technology. The second layer consists of persons with disabilities, which also includes a significant portion of the senior population. Many citizens with disabilities recognize the importance of the Internet, and they desire to learn more about the available technology. This is a population that cannot use the Internet for reasons of "accessibility.”

There are two measures that should be enacted in order to improve this current situation. One measure is to continue the regional IT seminars that are taking place to support IT development. These seminars offer an environment where housewives and the elderly can drop by casually to learn and to ask questions about IT. A second measure that needs immediate attention is the cultivation of a deeper understanding towards Universal Design by production industries.

Compared to most countries, the average age of Japan’s population is undeniably high. We must realize that Japan is a tremendous digitally divided country, with a large population that has not had much contact with a typewriting culture or IT, and who are carrying a slight or heavy disability. In a country where many universities are finding a decrease in the enrollment of 18-year-old students, manufacturing products solely targeting this young population is not promising.

for more details on the topic please see “The Role of Universal Design: Closing the Digital Divide in Japan” by Chika Sekine from UDIT, Universal Design Institute for Information Technology, on the GSD website http://www.global-society-dialogue.org

Universal Design is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design. http://www.design.ncsu.edu:8120/cud/univ_design/princOverview.htm
Russia is keeping pace with the development of information technology; sure signs of it are the dynamics of absolute numbers growth, plans for increasing the overall Russian information technology level further, along with plans for overcoming Russia’s internal Digital Divide. In Russia, there is profound understanding of the importance for digital development in society. It is seen, on official federal state level, as the most promising part of the market.

Overall Russian information technology dynamics is rather high. According to data of the Russian Ministry of Communication (June 2001), traditional telephone operators sell their services at about $4 billion per year; growth of phones is 1,000,000 in cities and 70,000 in villages per year; the number of mobile phones is 4.7 million; and there is accessibility to the internet in 79 of 89 Russian regions.

Today, there are about 6 million users. Growth of Runet users in 2000 was 250-300%, and 400-450% for sites. Absolute numbers are still much lower than in OECD countries, but dynamics are higher.

The informal impression is even more indicative. There is a developed network of Internet sites for companies, mass media, administrations, diverse institutions, political parties, etc. All, more or less, famous persons have their own pages.

All, more or less, meaningful data is already accessible, including literature, museums, art, e-shopping, travel, etc. Search machines adjusted to morphological flexibility of Russian language are very popular and effective. Indirect, unofficial, and illegal access to information technology makes official Russian indices much higher. For example, 60% of Internet users in Moscow never pay their personal access since they do it in their offices. The number of women Internet users is rapidly increasing (10 times during 1999-2001), and they are now about 40% of all users.

Digital Divide as an explicit problem is recognized in Russia. In November 2000, the Russian government organized a conference, “Problems of Overcoming Digital Divide in Russia and FSR”. Ways of overcoming the Digital Divide in Russia are planned within national programs of information technology development. The first steps of the Russian Way to Information Society have been recently outlined by two Federal Programs, “Digital Russia: 2002-2010” and “Development of Integrated Educational Information Environment 2002-2006”.

For more details please see “Russia – Keeping Pace with the Development?” by David Levin from ForSIS, For Sustainable Information Society in Russia, Novosibirsk, on the GSD website http://www.global-society-dialogue.org
Moldova is one of the former Soviet Republics situated in the East of Europe between the Ukraine and Romania. It has no sea borders. After the collapse of the Soviet Union, the Republic of Moldova faces the same problems as other former Republics of the Soviet Union: decay of infrastructures and industries, inequality, and poverty. The economic "growth" is minus 9% per year.

The telecommunication sector in the Republic of Moldova is one of a few fields of activity that has experienced almost no decline during the "transition period". The number of stationary phones decreased from 140 per 1000 people in 1996, to 127 per 1000 people in 1999 (for comparison, U.S.A: 682, Colombia: 160). At the same time, there is a great difference between the urban and rural areas: 73% of telephone lines are in urban areas. In 1998, Moldova received, for the first time, mobile telecommunication services through Voxtel (a union between Moldavian, French and Romanian companies). Voxtel operates a GSM network and has an estimated 60,000 users in Moldova (August 2001). Another operator in mobile telecommunication services which received a license to operate a GSM network in Moldova is S.A. Moldcell, a union between Moldavian and Turkish companies. It began its GSM operations in 2000.

Internet development in Moldova is very weak. In 2000, the number of internet hosts per 10,000 people was 7 (for comparison, U.S.A: 1791, Germany: 412, Colombia: 19). A major obstacle to greater access is high telephone tariffs. Therefore, access to e-mail and other Internet services remains very limited, especially for the wider population. The Internet is accessible in a few cities of Moldova, and it is practically absent in the rest of the country. The number of Internet-cafes in Chisinau is increasing (around 100). Internet development in Moldova has not constituted a realistic means of providing Internet access to the broader public, because of the price (0.5-1 USD/hour), poor knowledge of foreign languages, and the poor content of information.

Access to telecommunication services has become recognized as an important means of communication in overall human development. Despite the Internet’s democratic potential, it is recognized that there is a real danger that the world will be divided into the “information rich” and the “information poor”. One of the major factors which prevent private use of the information technologies in Moldova is the price for the computer equipment. It remains expensive ($500), and the rate for private Internet connection is $10 per month. The officially reported average monthly income in Moldova is $30 per month. According to government statistics, about 80% of the population lives below the poverty level and 20% of the population is classified as extremely poor. 65.4% of the poorest people live in rural areas. A majority of citizens cannot afford to buy food products on a regular basis. A programme privatizing state-owned enterprises, proposed by the World Bank and IMF, expecting positive results, has only destroyed major Moldavian industrial enterprises. As a result, the country also has considerable foreign debt.

On one hand, the large differences in incomes, and high fees for telecommunication services, cause considerable differences in access to information and universal values; this is an obstacle to the country’s integration into the global society. On the other hand, the possession of PC’s and free access to new information technologies, alone, would not solve the existing problems in Moldova. While gaining independence, Moldova received only partial access to the international markets and did not get equal opportunities. As a result, today’s Moldavian development depends on credits and grants.

for more details on the topic please see “No E-Commerce without Computers” by Stella Tabirtsa from Teleradio Moldova, Chisinau, on the GSD Web site http://www.global-society-dialogue.org
Former Czechoslovakia was before the 2nd World War one of the economically strongest countries in Europe and successfully started creation of the first roots of the civil society (The development was interrupted at the time of communism). The typical feature for information technology environment was the fact that also at the times of technology embargo in the 1980s the development of the own technologies continued. General education was on a relatively good level what later helped to go through gaps and absorb modern technologies very fast after the political changes in the early 1990s.

Before 1990 computer usage was educated only in some high schools in big cities and Universities and Technical schools. Today the situation is different, e.g. in Masaryk University in Brno in the last two years all students coming to study used computer before. But population above 35 years old with lower than university education is impacted insufficient.

In the Czech Republic the situation was very positively influenced by the Internet services at the universities (with help of the EU, IBM and other players). The CESNET started to work in main universities in 1991. Negative influence was the very conservative policy of the Czech Telecom organisation, especially the long time monopoly and too high prices for Internet access. Many changes occurred in the last 2 years, e.g. opening of the market, but Internet is still expensive: 1/20 of the average salary after tax of the Czech inhabitant (approx. 10,000 CZK) for Internet connection (lasting 1 hour every day) at evening and night hours by dial-up connection; 1/3 of the same average salary for ISDN connection in one month. Cost of a cheap computer in Czech Republic is 12,000 CZK (higher than average salary for simplest efficient computer) and cost for an average up-to-date PC is 35,000 CZK.

On the state level there are several important initiatives.

> Many efforts were encouraged by the EU Policy and the European Information Society Forum activities (some of the ideas are part of the State Information Policy of the Czech Republic) and influenced and accelerated development of the Information Society in the country.
> The Czech Government Program in IT,
> The Prodi Initiative “eEurope”
> The Warsaw EU-CEEC Ministerial Conference,
> The creation of the Czech Information Society Forum
> and finally the document about design of the National Geographic Information Infrastructure

The most important results and documents are:

> Act on Public Administration Information Systems;
> Amendments to Certain Laws to the Government.
> Act on Electronic Signature, signed by the President on 6 October 2000;
> The Action Plan of the realisation of IT and portals

But still many problems have to be solved.

for more details on the topic please see “Sustainable Information Society in the Czech Republic” by Milan Konecny from Czech Information Society Forum, on the GSD website http://www.global-society-dialogue.org
The Development of the Information Society in Brazil

The history of the evolution of the Internet in Brazil began with the pioneering efforts of some academic institutions and NGOs, but was only taking off when the Federal Government got actively involved, through the Ministry of Science and Technology (MST), and several state governments. Strong and determined government support for the Internet in the country, since the initial stages, clearly distinguishes Brazil from most of the other developing nations.

A first version of Internet services - with points in 21 states of the country - was implemented by the National Research Network from 1991 to 1993, at a slow rate of speed. Between 1995 and 1996, these services were updated for faster speeds. Concurrently, beginning in June of 1995, a Federal Government decision defined general rules to expand the availability of Internet services in Brazil to anyone interested.

The Brazilian Internet disposess today of 446,444 hosts, ranking 13th in the world in volume of hosts. The number of domains in Brazil rose from 7,574 in 1996 to 174,163 in February of 2000, being that the commercial domain is the one that most expanded among first-level domains (FLD), with growth slightly greater than the expansion of all other domains during this period.

The Information Society Programme

The goal of the Information Society Program is to integrate, coordinate and foster actions for the utilization of information technology, in order to contribute to the social inclusion of all Brazilians in the new society and, at the same time, help the country’s economy secure the necessary conditions to compete on the global market. The program’s execution presupposes the sharing of responsibilities between the three sectors: government, free enterprise and civil society. For this intent, the program will unfold along the following broad Lines of Action:

**Government at everyone’s reach** – render support to projects aimed at learning, continued education and distance education based on the Internet and networks, by fostering schools, the qualification of teachers, self-instruction and certification in Information technologies on a large scale.

**Market, employment and opportunities** – promote the greater competitiveness of Brazilian companies and an expansion of small and midsize companies.

**Universalization of services for citizens** – promote the universalization of access to the Internet, pursuing alternative solutions based on new mechanisms and new means of communication; promote systems for collective or shared access to the Internet; as well as foster projects that encourage a greater sense of citizenship, national pride and social cohesion.

**Education in the Information Society** – render support to projects aimed at learning, continued education and distance education based on the Internet and networks, by fostering schools, the qualification of teachers, self-instruction and certification in Information technologies on a large scale.

**Contents and cultural identity** – promote the generation of contents and applications that emphasize Brazilian cultural identity; foster digitalisation systems for the preservation of artistic, cultural and historical heritage and science and technology data.

**Government at everyone’s reach** – promote the computerisation of government administration and the employment of standards in its applicable systems.

**R&D, key-technologies and applications** – pinpoint the strategic technologies for industrial and economic development and promote R&D.

**Advanced Infrastructure and new services** – implement a basic national infrastructure of information, integrating the various specialised network structures – government, private sector and R&D.

The Government has the role of assuring universal access to ICT and to the benefits they provide, regardless of where people live and what their income is, guaranteeing basic levels of services and promoting the interoperability of technologies and networks. Furthermore, it’s up to the government to make it feasible for and to encourage non-profit organisations, small businesses and the marginalised or minority segments of society to participate.

Civil society must make sure the public interest is protected, by organising itself to monitor and systematically influence the decisions of the government and private organisations. For this purpose, Non-Governmental Organisations (NGOs) play an important role in the mobilisation of society, assuring that the public’s interests and rights are respected. In turn, each individual should act in a responsible and ethical manner in the dissemination and utilisation of contents made available through electronic networks, especially the Internet.

Finally, everyone – citizens, the private sector, the academic community, and government – should get involved in the process to create and execute activities capable of turning the joint program for an information society into a concrete reality.

The path towards an information society is full of challenges in all countries. However, in each country, the challenge reflects a unique combination of opportunities and risks. All nations are moving, voluntarily or involuntarily, in the direction of an information society. It’s up to each to find their own route and establish their own priorities.

A Basic Model of Support for an Inclusive Information Society

The information society should be the result of collaboration between different partners, on the local, national and international levels. The sharing of responsibilities between government workers, private organisations and civil society is a basic model of support for an information society.

The private sector is the one with the greatest capacity to invest and innovate, the sector with the dynamism and conditions necessary for widespread and web-producing actions, which are necessary to turn the concept of an Information Society Program into reality. Subsequently, it’s this sector, together with the various groups of users, that should take the lead in investing in technologies and applications. This partnership should also be aimed at the development of high-quality products and innovating services capable of generating opportunities in new markets and improving living conditions for everyone.

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In addition, the visibility of disparities is increased through world-wide access to television and the Internet – through which many frustrated young people see the extravagant lifestyles of the US and Europe, and migration to these wealthy regions as their only alternative to continued poverty. There is in fact good reason to fear that the superposition of a service-based knowledge economy on industrial and agriculture-based economies will increase earning differentials. These inequalities risk to increase both between countries and within them.

Against these concerns, there are nevertheless reasons for optimism: The growing disparities in income are more the result of exclusion from global markets than of polarising effects within them. The greatest inequalities are between countries rather than within them: The devastating effect of trade sanctions in recent years well illustrate the dangers. Greater integration of more people (and countries) into world trade can therefore be one of the most effective measures against growing inequality. A key “enabler” is that adult literacy has increased from less than 50% of the world’s population in 1970 to about 75% in 2000. In addition, and possibly as a result, average incomes in developing countries have almost doubled in real terms (PPP) between 1975 and 1998.

With these two positive trends, new IT and telecommunications infrastructures are more affordable and of wider social and economic use than almost any other comparable infrastructure: whether of roads, railways or electricity supply. With continued progress in mass-produced micro-electronics and wireless technologies, 2.5 to 3 billion people could have access to global networks by 2010 (nearly half the world’s population). Compared with 750 million fixed-line telephone subscribers in 2000.

The transition to a knowledge economy is likely to enable more people to actively participate in creative work activities than in an industrial economy, but the prosperity difference between those that do, and those that are excluded will be greater. The European Union is committed to sustainable development, both within Europe and globally. Success in the strategy adopted in Goteborg in June 2001, and with the Kyoto protocol agreed in Bonn, depends on partnership between Europe and developing countries.

In March 2000, the European Council agreed on a new strategic goal for the Union for the next decade: to become the most competitive and dynamic knowledge-based economy capable of sustained economic growth with more and better jobs and greater social cohesion. Europe’s involvement in these global development challenges, notably in reducing the “Digital Divide”, is not just a gesture of solidarity. Europe’s own social and economic development is now centred on accelerated transition to the “most dynamic knowledge economy in the world”. In this, we must address our own challenges for social inclusion, most notably with the enlargement of the Union to eastern and central Europe; And in more balanced regional and rural development within the existing Union. The risk of a “Digital Divide” is both a threat to social cohesion in Europe and a threat to under-performance in economic growth, job creation and to the full realisation of everyone’s creative potential.

We therefore share the problems of developing countries, and must share experience in solving them. We also believe we have a unique and leading contribution to make: Europe leads the world in wireless technology development and use. Nearly 70% of Europeans use digital mobile telephones, and the European GSM system is used in over 130 countries. Europe has led the developments of the 3rd generation of higher-speed wireless systems for data communications.

The Union invests about 1 billion Euros per year in Information Society research and technology development, in partnership with most major IT and telecommunications companies in the world – a formidable instrument to align technology developments with social and economic policy objectives

for more details on the topic please see “eEurope Strategies and the Digital Divide” by Peter Johnston, European Commission, Brussels, on the GSD website http://www.global-society-dialogue.org
The closure of the Digital Divide appears as a “must” on the political agenda in almost all countries, and there are not many doubts cast on this paradigm. Yet, as 20% of the world population consumes 80% of the world’s resources, the question must be addressed if the new technology is suitable to reduce the resource consumption or if it will increase it - bringing us again deeper into ecological problems.

At first sight, there seems to be a win-win situation with regard to ecology. Information Technology creates an opportunity to reduce consumption of natural resources by increasing resource efficiency and strengthening the dematerialisation of many processes. However, a counter-acting effect is found in many areas of information technologies: the Rebound Effect. Computers are becoming smaller, but their increased resource efficiency leads to a rapid and wanted decrease of prices for the products, and this stimulates consumption in a way that overrides the resource savings.

We have to address the question of how the new technologies will change our lifestyles. Will virtual meetings replace physical ones, and how is communication related to travelling?

Examination of the effects of traditional communication tools show that, in the past, communication and travelling grew parallel with each other. Internet now allows people to be in contact with even more people living at a greater distance. Some prophets of the information age are sure that tools like videoconferences will replace physical transport, but in the European Union, in the 1990’s, the number of passenger kilometres travelled in private cars rose by over 2% a year.

Even more so than the transportation of persons, the transportation of goods could be influenced by information technology. Already today, worldwide transportation of goods is increasing much more than worldwide production - the typical globalisation effect. With information technology, more new and yet unknown products from remote regions become available, and they are transported over long distances.

There is a big risk that information technology will not be an overall positive contribution to sustainable development. A strategy that intends to solve the problem requires three components:

1) A change in consciousness of the users of the new media.
2) New frameworks are necessary to support sustainable behaviour. In the future, external environmental effects must be integrated into the price system.
3) We need new, environmentally-friendly information technologies. Supplying 6 billion humans with present-state PCs, and replacing them every 3 years, would result in an ecological nightmare.

for more details on the topic please see “Environmental Effects of Information Technology” by Thomas Schauer, Coordinator of the GSD, on the GSD Web site http://www.global-society-dialogue.org

Historically, we have always seen that good technical solutions for solving a problem usually do this by creating a new, even bigger problem. Around the globe today, the main problem is that we are not sufficiently socially balanced. Europe has been, and still is, an example of what a reasonable social system could be. However, on the global level, we have a much higher degree of asymmetry than in Europe. This is true for the US, and even more so for the world in total. What we really need are better frameworks for the world economy that deal with questions concerning not only anti-trust and ownership rights, but also social, cultural, and ecological aspects. Essentially, it is those frameworks by which social, cultural and ecological sustainability will or will not be established.
Frameworks include rules, incentives and, in particular, co-financing. Certainly, the essential issue for sustainability is co-financing, particularly in the social field. This means taxes, money redistribution, and so on. One has to take the money where it comes in fountains, and put it for development and empowerment purposes where there is only very little, to get a socially balanced situation. In such a situation, there is a reasonable chance that world population pressures may finally be dissolved, and that we can do contracts for the protection of the environment.

If we ask which kind of solutions are needed on this globe, the European Union and its enlargement processes are an enlightening example. It is really instructive to contrast this with the situation of NAFTA. With NAFTA, there is a free market, but no social dimension via co-financing. In a sense, there is no bridging of the gap, therefore there will always remain a border (in social terms). In a deeper sense, it means that people in general will not gain. It is a process of undermining social structures in the US, and of exploitation and divisions in Mexico. The European picture is completely different. Whenever we enlarge in Europe, we understand that the issue is to compensate for resulting losses in competitiveness the incoming countries to higher standards via co-financing.

The critical question for sustainability is the global order system. This is broadly known to the interested public, since the failure of the opening of the Millennium Round of the WTO in Seattle. The crucial issue, today, is how to develop the WTO further. In a sense, the WTO is our best approximation to something like a world economic system. It is the most important element of global order we have, at present, and a major instrument of global governance, though not tuned completely right. With its own jurisdiction and financial sanctions, it is also a kind of substitute for a global government.

The issue now is to make this WTO regime compatible with other regimes that we, in an isolated fashion, have created globally for social fairness, labour rights, child protection issues, and the global environment. In all those cases, today a real compatibility does not exist. Given the WTO power, in case of conflict, the economic system, will always remain a border (in social terms). In a deeper sense, it means that people in general will not gain. It is a process of undermining social structures in the US, and of exploitation and divisions in Mexico. The European picture is completely different. Whenever we enlarge in Europe, we understand that the issue is to compensate for resulting losses in competitiveness the incoming countries to higher standards via co-financing.

The Kyoto contract is a case study involving the topics at hand. This contract is important, because it concerns global resources (e.g. the right to create greenhouse gases) that are heavily used and exploited by the richest countries of the world. This exploitation is part of our wealth creation process. We use resources to an extent that we are disposing of future chances for progress of developing countries. We need steps, urgently, to a solution in which the global increase of greenhouse gases is stopped, or at least regulated.

for more details on the topic please see “Information Society, Globalisation and Sustainable Development” by Franz Josef Radermacher, on the GSD Web site
http://www.global-society-dialogue.org

Renegotiating Kyoto: Free Ride through Delay?

US President George Bush stunned the world when he rejected the Kyoto Protocol, that addresses the issue of reducing the greenhouse gases that cause climate change popularly known as global warming. The surprise is not about the Kyoto Protocol, but about one of Bush’s conditions that developing countries, such as India, should also join the effort to reduce emissions. This violates the basic premise of the previously ratified convention called “Framework Convention on Climate Change” (FCCC), at Rio in 1992. FCCC expected the US, along with other developed countries, to take the lead in reducing emissions, while the developing countries were not required to do so immediately.

The FCCC was a compromise. The developing countries did not insist on the historical responsibility of the developed countries, as there was no commitment for the developing countries to reduce immediately. We would not have made those compromises, had we known that the game would be turned around later. Can one selectively renegotiate one aspect of the treaty, at a time when the emissions of the developed countries have not yet been reduced? If the FCCC is to be renegotiated, India could raise three principles: historical responsibility, equity, and accountability.

Responsibility: Since 1950, the USA has emitted more than 60 billion tons of carbon against India’s 5 billion tons, despite its large population.

Equity: Annual emissions per person in India are 0.25 tons against 5.6 tons in the United States. This past and present inequity will continue for some time. Some of the future scenarios also show that this inequity persists, as far as the rich countries, with about 10% population of the world, account for more cumulated emissions than Asia, accounting for 50% of the world population.

Accountability: The cost of the US reneging the Kyoto Protocol and FCCC treaties is enormous for developing countries. To begin with, the knger they take to negotiate, more greenhouse gases are pumped into the atmosphere by the developed countries, doubly hurting the developing countries. First, it makes us vulnerable to various impacts of climate change such as higher temperature, sea level rise, and more frequent extreme events. Second, if the environmental capacity of earth is limited, then the greater their emissions, the less is left for our development. Unfortunately, this is a zero sum game. In less than a decade, from 1990 onwards, the USA has emitted what India will need for more than half a century, even assuming 5% emission growth that will be needed for development. Thus, the delay in negotiations permits the developed countries to ride free.

If pushed to the wall, developing countries would have no choice but to go on the offensive. They could also talk about historical responsibilities, equity, and accountability. Compensation payments to the victims of the extreme events, funds for insurance premiums, compensation for burden imposed on adaptation, and adjustments could also be discussed.

for more details on the topic please see “No going back on Climate Change Convention” by Jyoti Panik from IGIDR, Indira Gandhi Institute for Development Research, Mumbai, on the GSD Web site
http://www.global-society-dialogue.org

Co-financing on a Global Level

This programme is tough, but it is in the best interest of all players involved. Insightful selfishness, if not global ethos, should be the driving force. To get there, we need a dense interaction of co-regulation between the three major sectors in the field of global governance. These are the non-governmental organisations. These three groups are heavily supported by science, the legal systems, and the juridical systems. Of course, there is also a very delicate relationship between consumers’ behaviour, and consumers’ protection. Certainly, all that has to be seen in a framework of subsidiarity; issues have to be addressed at the respective stakeholder levels, whether global, continental, national, regional, or local.

Connection with the Kyoto Contract

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The challenges of the 21st-century are calling also for a new system of global governance. More problems are accompanying and supporting initiatives of the European Commission and aims at an eWorld initiative.

The approach is civil society-oriented, and the background is the information society and its overriding impact on eCommerce. The Global Society Dialogue is a forum with an ongoing commitment to reach for a consensus on core values, that could eventually be translated into coherent frameworks for international governance and trade.

The need for a Global Society Dialogue

The Global Society Dialogue addresses non-governmental organisations, politicians, and representatives from industry who are deeply influenced by the new information and communication technologies, and who are also aware of their responsibility for worldwide sustainable development. The Global Society Dialogue accompanies and supports initiatives of the European Commission and aims at an eWorld initiative.

The challenges of the 21st-century are calling also for a new system of global governance. More problems are moving out of national control, and can be settled only if all concerned, affected stakeholders and groups alike, are included. We live in a transformation period where the "old governance system" rooted in the concept of the sovereign nation state, has to be complemented by an emerging "new governance system" which goes beyond national sovereignty. While national governments and the system of intergovernmental organisations will remain key actors in world politics and international relations, private industry and civil society will become independent key players. This governance system is global by nature, and includes more than the national governments and their intergovernmental, international organisations. A new "trilateralism" is emerging where intergovernmental regulation goes hand in hand with industry and public self-regulation. Co-regulatory models are needed in which national governments, private industry, and civil society are co-ordinating their policies; searching for a "rough consensus" among all main stakeholders, and avoiding those "solutions" where the benefits have to be paid by excluded groups.

All three groups - national governments, private industry, and civil society - have different, weight, roles, responsibilities, and legal status. Although governments (at least in a representative democracy) represent the whole society, including the private sector and the civil society, private industry and civil society each currently have an independent role and legitimacy which is not linked directly to a national government. None of the three groups can claim to represent, entirely, the interests of the others in the global information society. Also, none can impose its interests against the others, if the drafting of global regulatory frameworks and the building of new global governance structures is successful. Only if all three parties are involved in the drafting and decision-making process, it will be possible to reach global working solutions. Each party has the potential to block a bilateral deal of the other two sides.

The private sector has begun to enter public policy by building the "Global Business Dialogue on eCommerce" (GBDe), where the private industry speaks with one voice to governments and consumers. Yet, the civil society is still fragmented and very often unorganised. The challenge of the civil society is to create institutional and organisational frameworks, which will enable the development of policies to be communicated by representatives to both national governments and private industry.

History of the Global Society Dialogue

In 1995, the European Commission set up an "Information Society Forum", with the aim of representing civil society in advising the Commission on all matters related to the implementation of the Information Society. The research conducted by the different Working Groups and Task Forces of the Information Society Forum led to the production of several declarations and three major reports. The latest report, "A European Way for the Information Society", published in March 2000, summarises the most relevant achievements of the Forum.

The Information Society Forum, building on the input of a specialised Task Force on the Global Society Dialogue, invited similar organisations worldwide for discussion and debate findings in the "European Way". Additionally, the participants provided their own perspectives on the issues at stake, initiating a broad dialogue on global frameworks. Frameworks are regarded as essential to achieving sustainability.
### Members of the Global Society Dialogue

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<th>Organisation</th>
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<tr>
<td>African Information Society Initiative, Addis Ababa</td>
<td>Addis Ababa</td>
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<td>Civil Society Internet Forum, Seoul</td>
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<td>The Club of Rome, Hamburg</td>
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<td>Computer Professionals for Social Responsibility, Seattle</td>
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<td>Czech Information Society Forum, Prague</td>
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<td>For Sustainable Information Society in Russia, Novosibirsk</td>
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<td>Forum for the Brazilian Information Society, Sao Paulo</td>
<td>Sao Paulo</td>
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<td>Foundation Global Ethic, Tübingen</td>
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<td>Indira Gandhi Institute of Development Research, Mumbai</td>
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<td>Information Society Forum, Brussels</td>
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<td>Telecommunications and Information Society Policy Forum, Minneapolis</td>
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<td>Youth for Intergenerational Justice and Sustainability, Frankfurt</td>
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### Observers

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<th>Organisation</th>
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<td>Development Research Center of the State Council of the Peoples Republic of China, Beijing</td>
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<td>Information Society Forum of Nepal, Kathmandu</td>
<td>Kathmandu</td>
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<td>International Telecommunication Union, Geneva</td>
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<td>Internet Society, Geneva</td>
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<td>Stiftung für die Rechte zukünftiger Generationen, Frankfurt</td>
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<td>Teleradio Moldova, Chisinau</td>
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<td>The Trust for the Americas, Washington DC</td>
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<td>The Strategy Design Institute, Tokyo</td>
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<tr>
<td>Universal Design Institute for Information Technology, Yokohama</td>
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<tr>
<td>Women’s Network for a Sustainable Future, New York City</td>
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