ECA

Workshop on "Intellectual Leadership and the African Information Society Initiative: What Role for Africa's Academic Community?"

Ford Foundation

15 – 16 June 2003
Addis Ababa, Ethiopia

International Livestock Research Institute (ILRI)
Addis Ababa, Ethiopia

ICT Visioning Statement

by

Mohamed BEN AHMED

Investing in the Intellectual Capital : today' challenge, tomorrow' assets [1]

Prof. Mohamed BEN AHMED

(Tunisia)

It is a truism to assert that "*the real wealth of a nation is its people. And the purpose of development is to create an enabling environment for people to enjoy long, healthy and creative lives. This simple but powerful truth is too often forgotten in the pursuit of material and financial wealth*" [2].

Globalization is not new. But the new globalization has made people everywhere interconnected and affected by events in far corners of the world and in real time. The distinctive features of the new globalization are : shrinking space, shrinking time, breaking borders and linking people's lives more deeply, more immediately than ever before. It is not true for all. It depends on who you are. It is true if you are financial dealers, multinational corporations, tourists, high-skilled laborers.

If you are part the professional elite, you may be a *netizen*, a citizen of the global village, facing low borders. The main outcome of the current globalization is the increase in income, resources and wealth among just few people, few socities and few corporations.

But if the globalization offers great opportunities for a few; these opportunities and benefits need to be shared much more widely. Globalization is posing new great risks : billions of humans are facing borders as high as ever to integrate the new society. They are facing new threats to human security (job and income insecurity, health insecurity, cultural insecurity, personal insecurity, environmental insecurity, political and community insecurity) .

Globalization has given new characteristics to conflicts through new markets, new tools, news rules, new actors erasing its positive, innovative and dynamic aspects and enhancing negative, disruptive and marginalizing aspects.

At the dawn of the new millennium, people in developing countries are facing many challenges in order to narrow the gap and to bridge the social, economic, cultural and digital divides. These challenges can be summarized in freedom, security, peace and development.

Freedom from fear. Security at all levels. Peace as an enabler of development. Human centered development.

---

[1] Paper presented to ICT Visioning Meeting, ECA, Ford Foundation, Addis Ababa, 14-16 June 2003.

[2] First sentences of the First Human Development Report, UNDP, 1990.

To pursue human development as UNDP said [3], "*globalization with human face has to mean :*

- **Ethics** *:less, not more violation of human rights and disregard of human values,*
- **Development** *: less, not more poverty of countries and people,*
- **Equity** *: less, not more disparity between and within nations and generations,*
- **Inclusion** *: less, not more marginalization and exclusion of countries and people,*
- **Human security** *: less, not more vulnerability of countries and people,*
- **Sustainability** *: lees, not more depletion and degradation of the environment*".

These are the challenges faced by people and governments, states and societies as they attempt to advance human development. Theses challenges are fundamentals not only for their high significance to growth and progress but also for their intrinsic value and mainly when we are achieving equity, knowledge and freedom. They are both means and ends. They are keys to both the process and the state of human development.

We consider here the knowledge as a key issue for the human development.

Entering the new millennium, knowledge may ease paving the way to development and liberation. Acquisition of knowledge has an intrinsic value by itself, but more importantly, it is a major facet of human development as "*it is critical means of building human capability*" [4]. The Knowledge edge is a core factor of production and a principal determinant of productivity and human capital. It is obvious that the synergy between knowledge acquisition and productive power of society may leads to high value-added activities which are becoming mainly based on intensive and innovative knowledge and the rapid obsolescence of know-how and capabilities.

Building human capabilities for the knowledge society through a high level educational system is very important and is a cornerstone of human development.

At a time when accelerated acquisition of knowledge and formation of advanced human skills are becoming prerequisites for progress, it is urgent to address many key issues related to education, training and R&D through an ambitious vision and a radical reform including strategic choices, dedicated policies and specific areas for expansion and improvement.

A new education strategic reform

Education is a key factor in the knowledge-intensive world. It stimulates a critical outlook and creative skills; it accelerates pace of change, development and progress. Education and progress are in a dialectic relationship. They are mutually reinforcing.

---

[3] Human Development Report : **Globalization with a human face**, UNDP, 1999.

[4] Arab Human Development Report 2002 : **Creating opportunities to future generations**, UNDP, AFESD, NY, 2002.

As proposed for the Arab World by ALECSO [5], the African countries need the same philosophy for new and reformed educational structures laying on the following statements :

- **The learning process has to be individual-centered, putting humanity at the core of the cultural process,**
- **Modern knowledge is power and thus has to be placed in the heart of the human development process,**
- **Creative human efforts lies at the heart of progress,**
- **The spirit of challenge should be the main stimulator for people giving them the opportunity to shape their future and master their destiny,**
- **Equal educational opportunities should be available to all,**
- **Education should aim at promoting physical, emotional and societal well-being of learners as well their acquisition of knowledge,**
- **Education should help children and youth to understand themselves, their own culture, past and present and to be open-minded to the other cultures through tolerance, dialog and cultural exchange,**
- **Education should integrate people into the age in which they live through a global and proactive vision,**
- **Education should help the young generations to cope with a future of complexity and uncertainty.**

<u>Intellectual Capital :New assets from companies to nations</u>

The Intellectual capital (IC) paradigm has a long history even it has been boosted during the last decade of the 20th century.

Tom Stewart [6], was the first to refer to the term "Intellectual Capital"[7] attributed by GR Feiwel to John Kenneth Galbraith, who in a letter to economist Michael Kalecki 1969 wrote: *"I wonder if you realize how much those of us in the world around have owed to the intellectual capital you have provided over these past decades".*

It is Tom Stewart who in his June 1991 article Brain Power - How Intellectual Capital Is Becoming America's Most Valuable Asset, brings IC firmly on to the management agenda. He defines IC in his article as: "*the sum of everything everybody in your company knows that gives you a competitive edge in the market place*".

The first use of the term is thus to describe the dynamic effects of the individuals' intellect. What caught the attention of managers (and management consultants) is that Tom Stewart makes IC the attribute of an organization.

---

5 "A vision for the future of education in the Arab World", ALECSO, June 1998, Tunis.

6 Thomas A. Stewart, **Intellectual Capital**", Currency Doubleday, N. Y., 1999.

Thomas A. Stewart, "**The Wealth of Knowledge: Intellectual Capital and the Twenty-first Century Organization**", Doubleday & Company Inc., December 2001.

7 in Michael Kalecki, "**The Intellectual Capital**" , 1975.

Leif Edvinsson (Skandia) and Pat Sullivan define it [8] as: "*Knowledge that can be converted into value*". And in Laurence Prusak's (Ernst & Young) definition IC becomes even more "packaged". He defines it as: "*Intellectual material that has been formalized, captured and leveraged to produce a higher-valued asset*" [9].

The first practice community of IC started in Sweden in 1988. This community emphasizes the static properties of knowledge, that is: *inventions, ideas, computer programs, patents, etc., as Intellectual Capital.*

Edvinsson & Sullivan also include Human Resources, Human Capital, but emphasize that : it is clearly to the advantage of the knowledge firm to "*transform the innovations produced by its human resources into intellectual assets, to which the firm can assert rights of ownership*". One major task of IC managers is to transform human resource into intellectual assets.

Hubert Saint-Onge, vice-president of the learning organization and leadership development at CIBC considers IC as "*the sum of human, structural and customer capital*". Human capital, he explains, is the accumulated capabilities of individuals responsible for providing customer solutions. Structural capital refers to the capabilities of the organization to meet market requirements. Unlike human capital, structural capital can be formally captured and embedded.

IC is static and needs a verb to describe what managers can do with it: like managing IC or improving IC. Consequently we have seen the birth of concepts such as Intellectual Capital Management and Intellectual Capital Audit.

People actively using "Intellectual Capital" in their work seem active in measuring, auditing and valuing issues and in "capturing" knowledge.

A new thinking has emerged among companies and new processes have been adopted. Among the companies that have begun to closely examine the issue of intellectual capital and search for ways to measure and manage it are: Sweden's Skandia Group, Canadian Imperial Bank of Commerce (CIBC), US West, Buckman Labs, and Hughes Space and Communications. While the efforts of some are more formal than others, all are exploring new ways to accelerate learning and leverage knowledge .

When the Knowledge Movement began, many thought that it was a matter of productivity – and it really was. However, it was only the tip of the iceberg for the real potential transformation underway. The ENTOVATION [10] definition of Knowledge Innovation proposed ion 1992 was "*The creation, evolution, exchange, and application of ideas for new products and services to benefit:*

(1) the success of an enterprise (both profit and not for profit,
(2) the vitality of a nation's economy, and

---

[8] in European Management Journal, vol. 14, 1996.

[9] in Klein & Prusak, "Characterizing Intellectual Capital", 1994.

[10] http://www.entovation.com/whatsnew/ic-nations.htm

(3) the advancement of society-as-a-whole."

The new step is to broaden the paradigm to nations considering the society's brains – *the global know-how, skills, relationships, tacit and collective knowledge of its citizens* – as its competitive advantage today and even more tomorrow. The Brainpower will continue to become far more valuable than muscle, mechanical power or even technical power.

Lester THUROW said that the era of brainpower industries is causing a fundamental shakeup in classical capitalism because strategic assets are now the brains of employees [11].

Today, there is hardly a nation that is not carefully scrutinizing the real economic wealth of their country in terms of the intellectual capital – how it is developed and utilized.

Some nations have been more progressive than others – establishing formal, systematic measurement criteria to document and report the progress according to key factors that undergird the *prosperity of the nation.* Sweden was first. Announcing 1996 the *"Year of Innovation"*, the government leadership together with Stockholm University modified the Skandia Navigator at the national level to quantify Sweden's critical success factors.

Sweden was only the beginning for architects such as Leif Edvinsson and Caroline Stenfelt [12] the principals involved in the study. Believing that Intellectual Capital (IC) is the driving force for the future wealth creation and provides the roots for the *"future fruits of nations as well as organizations"* they hosted the Vaxholm Summit – the First International Meeting on Visualizing and Measuring the IC of Nations **- in August 1998. The result has been a flurry of activity in different nations and an informative report : *"An Invitation to the Future"*. The original meeting was intended to have an open, imaginative and collaborative exploration of the IC of nations in order to share past experience, identify issues and develop new perspectives.**

In addition to the Sweden report, there is an IC Report of the State of Israel – *"A Look to the Future: The Hidden Values of the Desert"* – released in 1999. This IC picture of Israel presents the hidden values and the key driving success factors along its 50 years of existence in different areas such as education, patents, scientists engaged in research and development, international openness, computer and communication infrastructure. The report concludes: *"...(global competition) trends are creating opportunities and new businesses based upon the Knowledge Revolution...dependent upon knowledge from the technological and scientific fields, upon information concerning world markets, and upon the optimal acquisition and exploitation of knowledge"*!

The leadership in Denmark believes that a global knowledge economy poses quite different conditions than an industrialized society. Intellectual Capital Statements – similar to the ones originally produced by Skandia [13] are used as both an internal

---

[11] "The Future of Capitalism", William Morrow and Co, N. Y., 1996.

[12] http://www.unic.net

[13] http://www.entovation.com/innovation/skandia.htm

management tool as well as an external communication tool to attract new staff, clients and perhaps new investment capital. In a unique effort to establish the national IC Guidelines, The Danish Agency for Trade and Industry has been publishing a series of IC Statements that systematically collect experience from nineteen companies for a couple of years.

The Ministry of Economic Affairs in The Netherlands - with a shift from "technology policy" to "innovation policy" - published a 1998 report "*The Immeasurable Wealth of Knowledge.*" Subsequent reports, such as "Intangible Assets: Balancing Accounts with Knowledge," have been published [14]. The study administered by the Central Planning Bureau showed that in 1992 over 35% of national investments were of an intangible nature – an indication of the evolution of the knowledge-based economy. In 1995 KPMG was asked to assess the feasibility of creating a "*knowledge balance sheet*". They advocated establishing appendices to the corporate annual reports and the creation of a database for benchmarking purposes.

Nations do not compete, as do companies. Rather, governments influence the basic conditions for those companies (e.g., quality of living environment, climate for innovation, physical environment, etc.) A healthy competitive position, then, is ultimately expressed in the level of growth and prosperity. The second challenge is to shape the economic policy in such a way that the country can benefit from the trends, such as demographic changes, globalization, increasing demand for individual freedom of choice, information technology, growing mobility, greater environmental awareness, which will in turn provides:

1. A knowledge and participation economy;
2. An economy that calls for macro-economic stability and a competitive fiscal climate;
3. An economy that calls for macro-economic flexibility and innovation; and
4. An economy that must reconcile growing demand for mobility and space with the concern for a clean environment.

It is important to notice IC is dealing with capturing, storing, disseminating and sharing the knowledge among the society members. But what about knowledge production and innovation ? It is what Mark W. McELROY emphasizes in a recent paper [15]. We have to redefine IC and to enlarge its boundaries by including what McELROY calls the "*Social Innovation Capital*".

The self-organized learning and the knowledge production will be the keys issues for a renovate IC needing relevant innovation policies in the next four areas :

- *Learning* : high degree of freedom's individuals to pursue learning agendas on their own pace, choosing and directions;

---

[14] http://www.minez.n

[15] http://www.macroinnovation.com/images/SIC3.07.01.pdf

- *Knowledge processing* : **policies that determine the manner in which creation, sharing and applying new knowledge are made and how the benefits of the global knowledge is shared among the co-actors;**
- *Connectedness* : **the extent to witch co-actors can and do, connect to one another with ease through technological and social networks;**
- *Ethodiversity* : **the *ethography* is a measure of the "ethodiversity" of the society and determines the diversity of values and worldviews fostering the abilities to learn, innovate and adapt.**

Many countries are entering the new IC era as UK, Austria Japan, ... It is only the beginning. Once we have enough examples to contrast national and regional approaches, the reality of a Global Knowledge Innovation Infrastructure may become a reality. This is true evidence of the beginning of the Knowledge Millennium.

It is time for Africa to enter this new era and benefits for all through cooperation, collaboration, innovating paving the way to self-organizing network in order to develop the social capacity to innovate and integrate shared knowledge and to enhance the collective capacity to produce new knowledge.

The IC strategy has to be built on these pillars :

- **Large Literate and high skilled human resources**
- **Enhancing human capabilities**
- **Strengthening the synergy between the educational system and the socio-cultural and economic systems**
- **Deep reform of the higher education system to improve the efficiency and the quality with a focus for scientific and technological progress**
- **Transforming the education into a lifelong learning process with a culture of innovation, a spirit of excellence and cultivation of talents**
- **Building effective R&D systems and encouraging setting up a number of specialized centers of excellence and focusing on fields and niches in which distinctive capabilities exit.**

<u>The Digital Divide</u>

IC technologies are increasingly conditioning the kind of country we live in and the kind of our life. The digital divide sheds a light on the role ICT play in widening social and cultural gaps throughout the society, among people, among generations, among societies and among countries.

Helping to close the "digital divide" defined here as the gap between those who are able to benefit from digital technologies and those who are not, started as a movement in the late 90s when a mood of <u>digital utopianism</u> was prevailing. Many assumed that market forces combined with philanthropy would easily bridge the Divide.

The Reality is so far from the Dream !

One word more to precise the meaning of digital divide in its broadest sense : a digital divide is marked not only by physical access to computers and connectivity, but also by access to the additional resources that allow people to use technology well. However, the original sense of the digital divide term gave overriding importance to the physical availability of computers and connectivity, rather than to issues of content, language, education, literacy, or community and social resources.

This large notion of a digital divide implies a chain of causality, i.e., that lack of access (however defined) to computers and the Internet harms life chances. While this point is undoubtedly true, the reverse is equally true; those who are already marginalized will have fewer opportunities to access and use computers and the Internet. In fact, technology and society are intertwined and co-constitutive, and this complex interrelationship makes any assumption of causality problematic.

Finally, we think the digital divide framework provides a poor roadmap for using technology to promote social development since it overemphasizes the importance of the physical presence of computers and connectivity to the exclusion of other factors that allow people to use ICT for meaningful ends.

To address this big issue, it is necessary to provide equitable access to technology (networking) and equitable access to content in order to ensure that all and not few step into information and knowledge global society.

Many think it does not make sense to try to sell PCs and Internet access to Africans in their villages where many citizens are lacking basic needs (water, food, medicines, literacy, ..). For others many experiences and examples show how technology can make a real difference in the lives of those countries' citizens. In the same sense, high-tech industry officials say, providing developing nations with access to technology is not only a way of promoting sustainable development, it can also make good business sense (and give the high-tech industry the opportunity to increase more and more their benefits).

So there are differing viewpoints in the debate about how much focus should be placed on addressing the global digital divide.

In a study commissioned by the World Bank, Ernest Wilson III, director of the University of Maryland's Center for International Development and Conflict Management, found that developing countries on average are increasing their adoption and use of information technologies by 18 percent per year, but this is still below the 23 percent per year for developed nations. Wilson says that while this illustrates that a digital divide exists, it is unclear how much benefit developing countries would derive from narrowing it.

One view is that aid programs and organizations need to continue to focus on addressing the most basic needs, such as providing clean water and improving sanitation. But Bruce McConnell, a former Clinton administration official who now heads McConnell International, a firm that advises foreign governments and others on using information technology, says that "*there is a growing viewpoint that [information technology] is part of the solution*".

Many observers say that if steps aren't taken now to ensure that developing nations are not left behind as the world's industrialized nations become more dependent on technology, the gap between the richest and poorest countries will only widen. "*If you don't work now to bridge the digital divide, the people who will suffer the most will fall that much further behind*," says Elli Kaplan from the United Nations Development Program.

International aid groups have launched initiatives for bridging the digital divide. For example, the U.N. D. P. is working with the *Markle Foundation* and *Accenture*, formerly *Andersen Consulting*, to develop a strategic approach and recruit others to help developing nations take advantage of technology. The organizations will provide funding for pilot projects, which could include providing education via the Internet.

From the private sector, we have to notice the HP initiative with its World e-Inclusion program, which the company estimates will total $1 billion in sales and services in 2001 and is aimed at reaching out new markets often left untouched by major corporations. HP plans to launch initiatives in 1,000 villages worldwide that include providing access to health-care and education developing countries, setting up telecenters where residents can pay to access the Net or telephones, and providing the poor with better opportunities to sell their products via the Web.

But as Lyle Hurst, Business Manager of HP e-inclusion program said "*The philanthropy primarily used in developing nations is not sustainable. When the donations stop, the programs dies. What we're committed to is putting solutions in place that are economically viable.*"

A the world recession deepened in 2002, the movement to bridge the digital divide has moved to a crucial new phase.

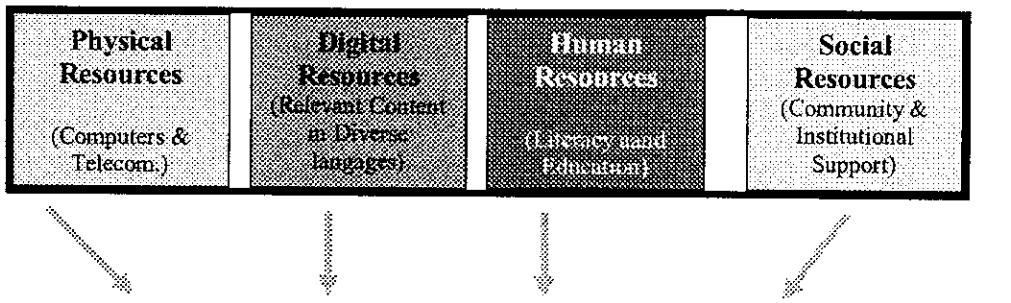
To return to the main problem in the digital divide : it is important to assert the problem is not only access to technology, to computers, to networks but mainly to content. Closing the digital divide has to be intertwined with the bridging the great literacy divide.

Access to ICT for the promotion of social inclusion cannot rest on the provision of devices or conduits alone. Rather, it must entail the engagement of a range of resources, all developed and promoted with an eye toward enhancing the social, economic, and political power of the targeted communities. Any attempt to categorize these resources is by nature arbitrary, but an analysis based on four general categories serves the purposes of both analysis and policy-making. The four categories can be labeled :

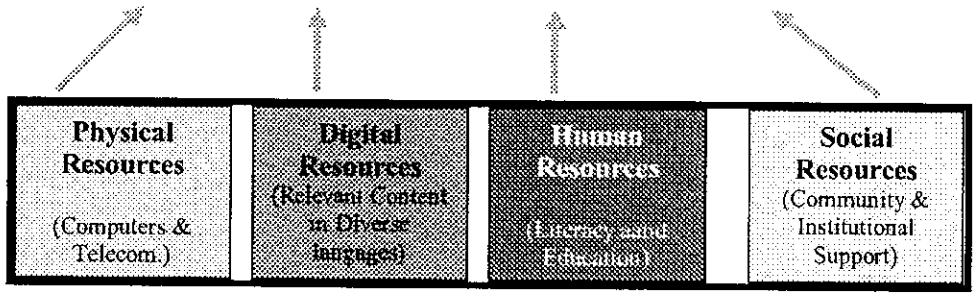
(1) Physical Resources,
(2) Digital Resources,
(3) Human Resources, and
(4) Social Resources

Physical resources encompass access to computers and telecommunication connections. Digital resources refer to digital material that is made available online. Human resources revolve around issues such as literacy and education (including the particular types of literacy practices that are required for computer use and online

communication). Social resources refer to the community, institutional, and societal structures that support access to ICT.



Effective use of ICTs to Access, Adapt and Create Knowledge



Effective Use of ICTs

In considering these four sets of resources, it is important to realize their iterative relation with ICT use. On the one hand, each of the resources is a contributor and an enabler to effective use of ICTs. In other words, the presence of these resources helps ensure that ICT can be well used and exploited. On the other hand, access to each of these resources is a result of effective use of ICTs. In other words, by using ICTs well, we can help extend and promote access to these resources. If handled well, these resources can thus serve as a virtual circle that promotes social development and inclusion. If handled poorly, these elements can serve as a vicious cycle of underdevelopment and exclusion [16].

It is a big challenge to move from Promise to Practice !

Reverse Brain Drain

The Brain Drain is a drama for the African continent. For long decades our different developing countries has become its "*nutrient medium*". To face this crucial issue, it is urgent to reformulate the doctrine of human capital circulation shaped by physical movement of skilled personnel in order to accommodate a growing potential of overseas

[16] inspired by the paper : **Reconceptualizing the Digital Divide** by Mark Warschauer, Assistant Professor of Education and of Information & Computer Science at the University of California, Irvine, July 2002 : http: www.firstmonday.dk/issues/issue7_7/warschauer/#w4

African scholars to contribute in nation building at least virtually **(via ICT means). Many experiences in Latin America and Asia show the overseas scholars are "*contributing tremendously to their native countries by serving as visitors scholars, creating virtual networks and shaping the direction of the scholarly environment and capacity building*"[17].**

Our continent has to be inspired by earlier experiences from countries as India, Taiwan, Korea and Thailand..., considering these experiences as cardinal reference for remodeling brain mobility paradigm. The Reverse Brain Drain succeeded in identifying and attracting high level professionals overseas to use their brainpower in nation building process through promoting the development of core teams of researchers, high skilled professionals and high level experts, leaving the classical program aiming at their permanent return.

Intellectual property

Uneven globalization is widening disparities in income. Gaps between poorest and richest people, between needy and greedy are continuing to widen. The same globalization is bringing integration for a few and fragmentation for many. Knowledge as mentioned before is the new asset. Globalization's rules have set off a global race to knowledge. These rules : liberalization, privatization and tighter intellectual property rights are shaping their control and their use with many threats for human development especially in developing countries. The consequence of these rules is the widening global gap between haves and have-nots, between know and know-nots.

The information revolution began two decades later on a worldwide scale and its networks are spreading wider but heavily concentrated in a very few countries.

The challenge for our continent is to be connected, to bring connectivity to people and to offer community access not individual ownership. This is the challenge and the key for the future.

The information highways have not to be a one-way streets. Universal access to information, knowledge and human heritage has to be considered as a new generation of human rights offering a good opportunity to local content to enhance community participation and institutional transparency leading to good governance.

The context of global communications have to find out solutions to the needs of poor countries and poor people. Creativity is needed to adapt the possibilities of technologies to our own vision, our own strategies, to our development aims.

The developing countries are facing a great threat as a consequence of the multilateral agreement on intellectual property (TRIPS : Trade-Related Aspects of Intellectual Property Rights, adopted on April 1994 and came into effect in 1995 under WTO) [18].

---

[17] Damtew TEFERRA, **Revisiting the Brain mobility Doctrine in the Information Age**. Regional Conference on Brain Drain and Capacity Building in Africa, Addis Ababa, 22-24 April 2000. http://www.iom.int/africandiaspora/pdf/TEFERRA.pdf

[18] http://www.wto.org/english/tratop_e/trips_e/trips_e.htm

Tighter intellectual property rights is raising the price of technology transfer and is blocking developing countries out of the dynamic knowledge sector in important areas such as computer software and generic drugs.

"*New patents laws pay scant attention to the knowledge of indigenous people, leaving it vulnerable to claim by others. These laws ignore cultural diversity in creating and sharing innovations and diversity of views on what can and should be owned, from plant varieties to genes. The result is a silent theft of centuries of knowledge from developing to developed countries*". [19]

In the private research agendas "*money is talking louder than needs*" and the rush and push of commercial interests are protecting profits, not people.

It is urgent to present frameworks that provide alternatives to the provisions of the TRIPS agreement. There is a clear need for full and broad review of existing legislation in order to take into account diverse interests and diverse needs over the world.

<u>Some alternatives</u>

Among the alternatives for tighter intellectual property rights, we are supporting the following three initiatives :

- **Support the background of the Independence Declaration of the Cyberspace made by John Perry Barlow [20] mainly when he states : "*Cyberspace consists of transactions, relationships, and thought itself, arrayed like a standing wave in the web of our communications. Ours is a world that is both everywhere and nowhere, but it is not where bodies live. We are creating a world that all may enter without privilege or prejudice accorded by race, economic power, military force, or station of birth. We are creating a world where anyone, anywhere may express his or her beliefs, no matter how singular, without fear of being coerced into silence or conformity. Your legal concepts of property, expression, identity, movement, and context do not apply to us. They are all based on matter, and there is no matter here. Our identities have no bodies, so, unlike you, we cannot obtain order by physical coercion. We believe that from ethics, enlightened self-interest, and the commonweal, our governance will emerge . Our identities may be distributed across many of your jurisdictions. The only law that all our constituent cultures would generally recognize is the Golden Rule. We hope we will be able to build our particular solutions on that basis. But we cannot accept the solutions you are attempting to impose*".**

- **We are endorsing the petition against patents for software : "** *We have seen that many software patents covering well-known algorithms and techniques hinder the software industry in the United States of America and around the world. The Patent Office has shown that it does not understand software and cannot follow developments in the field, and frequently issues patents on well-known techniques*

---

[19] UNDP Human Development Report, 1999, p. 68.

[20] http://www.eff.org/~barlow/Declaration-Final.html

and on simple ideas that programmers consider obvious. The causes of this are inherent in the nature of the software field and cannot be corrected.
Due to the incremental nature of software development, where developers add to the work of those that went before, patents covering software techniques are an obstacle to progress in software. Programmers, in the course of doing their job, search for solutions to the problem at hand and are only impeded by software patents which threaten them or their employers with litigation. The ultimate impact of software patents is to slow innovation, rather than to promote it and therefore contradicts the stated purpose of the patent laws.
Never before has an industry where copyright was widely established had patents imposed on it. Software patents increase the cost of doing business in the software industry, which will make it difficult for smaller companies and individual developers to operate. Patents in most fields in practice usually affect only factories, patents that apply to software tie the hands of every computer user. Only a tremendous public benefit could justify this imposition, but the actual effect of software patents is harmful. For the good of the software industry and computer users both, we call for a excluding software implementations running on general purpose computer hardware from the coverage of any patent".

In order to cope the patents threat in computer software field, we are supporting the free software approach because free software eases disseminating and extending human knowledge in a way that non-free software cannot do.

- **We are also endorsing the Budapest Open Access Initiative (BOAI) [21] launched on December 2001 in order to bridge the knowledge gap : "***An old tradition and a new technology have converged to make possible an unprecedented public good. The old tradition is the willingness of scientists and scholars to publish the fruits of their research in scholarly journals without payment, for the sake of inquiry and knowledge. The new technology is the internet. The public good they make possible is the world-wide electronic distribution of the peer-reviewed journal literature and completely free and unrestricted access to it by all scientists, scholars, teachers, students, and other curious minds. Removing access barriers to this literature will accelerate research, enrich education, share the learning of the rich with the poor and the poor with the rich, make this literature as useful as it can be, and lay the foundation for uniting humanity in a common intellectual conversation and quest for knowledge.*
For various reasons, this kind of free and unrestricted online availability, which we will call open access, has so far been limited to small portions of the journal literature. But even in these limited collections, many different initiatives have shown that open access is economically feasible, that it gives readers extraordinary power to find and make use of relevant literature, and that it gives authors and their works vast and measurable new visibility, readership, and impact. To secure these benefits for all, we call on all interested institutions and individuals to help open up access to the rest of this literature and remove the barriers, especially the price barriers, that stand in the way. The more who join the effort to advance this cause, the sooner we will all enjoy the benefits of open access. The literature that should be freely accessible online is that which scholars give to the world without expectation of payment. Primarily, this category encompasses their peer-reviewed journal

[21] http://www.soros.org/openaccess/

articles, but it also includes any unreviewed preprints that they might wish to put online for comment or to alert colleagues to important research findings. There are many degrees and kinds of wider and easier access to this literature. By "open access" to this literature, we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited".

Conclusion

The global economic system is telling us every day that we are all caught in a race. But if we are going to compete, let it be in a game of our choosing, not imposed game rules by the greedy. Nobody knows how long the race will last and how the victory will be defined. The challenge of the new order has to precise how to preserve the advantages and prevent the destructive turn. The solution may lie on reinventing global governance, putting human concerns and rights at the center of this governance. A governance strengthening ethics, partnership and responsibility of all, considering that culture, community and human security are intertwined.

This global governance is not a mere option for mankind but an imperative for the future.

Addis Ababa 15th June 2003