

ICTs: Their Impact on Women and Proposals for a Women's Agenda

by Victoria Tauli-Corpuz

maybe a thousand years from now when we are all dead and buried and our great-great-grandchildren will study the past, the silicon chip and the double-helix will be the symbols which may characterise our civilisation.

Today's global economy is a high-technology economy. The new technologies, such as the information and communication technologies (ICTs) and modern biotechnology, particularly genetic engineering, are crucial in shaping today's world economy, politics and culture. Mainly, they encompass areas where the mode of production depends on the storage, retrieval, and application of knowledge and information.

The impacts of ICTs on society and on women have been analysed from various perspectives, although the women's movement has not yet formulated a common position on this. The debate is still going on.

Before and after Beijing, efforts have been made, by various women's groups and by the United Nations, to address this issue as part of the general area of gender, science and technology or women and media.



www.arttoday.com

A Framework for Analysing the Global Information Economy

There is a wide range of views about the information and communication technologies. Some of these are;

1. UTOPIAN VIEW OR CYBER-LIBERTARIAN VIEW

We have finally reached the technical state in which the dream of full unification and integration of humankind can be achieved. We already live in a global village, a global factory and a global mall, and rapidly advancing towards a global government.

2. TECHNO-DETERMINIST VIEW

This view considers technological fixes as the solution to many problems including social problems.

3. CAUTIOUS VIEW

On the other hand, there are those who express caution in regarding ICTs and their use. I identify more with this group. I would first like to state my views on technology and technique that I happen to share with others.

♦ *Technology and society are words for different aspects of the same whole.* Every society has a technological system that characterises it. A major component of the technology is technique, or the underlying knowledge of how a particular technology works. Technique is sometimes more important than the actual machines because even if these are destroyed, the technology can be rebuilt as long as we retain the knowledge of how the machine was built, how it works, and how it is used. Even the technology for organising production is part of technique.

♦ *Technology is a social force that is very much interlinked with major institutions of society, such as industry, government and the military.* It is not simply a relationship between an individual and her tools. It has been institutionalised so much so that the choice of what technology and technique to develop rests mainly on the dominant social and economic classes in a society.

♦ *Technologies should not just be considered as machines but as social relations.* If we regard these as social relations then technological systems can be seen as communications sys-

tems. Social relationships are organised and structured by technological systems that allow or encourage some kinds of interactions and prevent or discourage other kinds. We should not just look at technology per se but at the way those in power use it to perpetuate their control and dominance.

♦ *Technology is not neutral.* It has a built-in logic or ideology that is based on the domination or control of nature. Basically the technological worldview is the belief in one's right to control the material or physical world. This is also the dominant male view and the way in which men are socialised, to assert dominance and control over the world, over women, over nature.

Women are not mere users or consumers of technology and information. They are appropriate creators, shapers, and producers of technology and also providers of information.

♦ *Men make use of technology as symbols of self-expression, of male sexuality and power.* However, these symbols are only capable of providing false meaning — for example, that men are rational, scientific, and objective, they keep emotions out of their lives, experts in technique etc. Women are not expected to act from a technical worldview. They are emotional, nurturing, experts in human relationships including understanding men, etc.

How are all these related to information and communications technology? Some people think that ICTs are empowering for women because they require less physical labour. They will bring about gender equality or even a women-superior society because of the democratising effect of information technologies. Some feminists are even “charmed by the prospect of a human/machine cyborg, a revolutionary being that transcend boundaries of gender, class, race, and ethnicity.”

The reality, however, is not as simple as this. Thus we need to analyse how information and communications technology affect women—all women, especially the majority who come from

the rural areas and who are still basically engaged in agriculture and subsistence production. Depending on where women belong by virtue of age, race, income, education, and ethnic group their control and access to technological resources and values differ. Women are not mere users or consumers of technology and information. They are appropriate creators, shapers, and producers of technology and also providers of information.

If we have to make an impact analysis of technology we should look not only at its end use but all the phases of its development and use. This means making a full real-cost accounting of the technology. We also have to look at the social, political and cultural context in which these technologies are developed and used. Many questions should be asked:

- ◆ What are the technological resources available and how are they distributed?
- ◆ What technologies and what cultural assumptions about these technologies are present?
- ◆ Who benefits?
- ◆ What legal empowerment does the technology need to sustain itself?
- ◆ What are the technological fixes or solutions which women apply and which others apply to them?
- ◆ Is this technology aiding or replacing human hands or human beings?
- ◆ Does this technology reduce or kill human creativity or conviviality?
- ◆ Does this preserve, or impair, ecosystem integrity, biodiversity, cultural diversity?
- ◆ How much waste is generated by the technology?
- ◆ What is the biodegradability of its components?
- ◆ Who are the experts?
- ◆ What is the special status of the differing work that women and men do with the use of these technologies?

In the book *Missing Links: Gender Equity in Science and Technology for Development* (IDRC and UNIFEM, 1995), several articles dealt with the differential impacts of ICTs on women and men and the social and economic reasons behind these differences. It is observed that most of the positive outcomes of the information revolution have bypassed women, and the information society has remained largely silent on gender issues. Nevertheless, there are positive and negative impacts some of which are as follows:

1. The ICTs have opened up new career paths for women, for example in banking, insurance, telecommunications and computer technology.
2. On the other hand, ICTs also have made women's traditional skills redundant in the workplace.
3. Unforeseen hazards to the productive and reproductive health of women's lives have also resulted.
4. Microelectronics production exacts tremendous environmental cost, as in Silicon Valley in the US where huge amounts of deionized water, bulk gases, hazardous gases, chemicals and electricity are required.
5. Skill requirements for women are changing and this often means displacement of women workers, even in an expanding industry. As overall productivity increases, the tendency is for women to be laid off.
6. Computer technologies have reduced the number of highly repetitive manual operations and the physical strain of doing these, but now the quality of labour demanded is increasing. For instance, now only one woman may be asked to operate ten machines.
7. Changes in the organisation of work are changing the nature and conditions of women's employment. Management philosophies such as just-in-time (JIT) and total quality management (TQM) are used to eliminate inefficiency and waste. Women generally occupy lower-grade jobs with limited access to relevant education and training, TQM has led to their displacement in core enterprises.
8. There have been changes in the qualifications of women working in the information and services sectors. Women over 35 are considered too old. In software programming it is women from privileged backgrounds who get the jobs.
9. New forms of work organisation are made possible because of the modularisation and miniaturisation of ICTs. Decentralisation of office work takes various forms like telecommuting, teleworking, distant working, etc. While the women work at home they work at unsocial times and often have longer hours. Teleworking reduces the bargaining power of women because they are isolated.

Key Issues for consideration

While all the issues mentioned earlier should be the basis of the women's agenda which we can create, I want to highlight the emerging

issues. The wonders of information technology and the possibilities it can offer to us are mind-boggling. However, we should be aware of the pitfalls and realities in the use of this technology and the entire information sector in general. It would be a big tragedy if we ignore the downside of information technology because we are so mesmerised by it.

1. ICTS ARE BOTH JOB CREATORS AND JOB DESTROYERS.

While new jobs and careers have been created for women, many jobs have also been lost because of ICTs and automated manufacturing technologies. Jeremy Rifkin, in his book *The End of Work*, has pointed out:

“Even developing nations are facing increasing technological unemployment as transnational corporations build state-of-the-art high-tech production facilities all over the world, letting go of millions of labourers who can no longer compete with the cost efficiency, quality control, and speed of delivery achieved by automated manufacturing.”

2. THE INFORMATION WE GET FROM MEDIA, THE INFORMATION HIGHWAY (INTERNET) ARE NOT NECESSARILY THOSE WE NEED.

The new ICTs hasten the homogenisation of the diverse cultures of the world to fit the mold of western consumerism and individualism.

We are now witnessing the globalisation of computer culture whose key proponents don't care how it affects existing cultures, and the consumers are conditioned to consider this as the most modern stage of evolution.

The way the communication and information system is structured is that it is easier for somebody like me, living in the boondocks of the Cordillera, to find out what is going on in Washington, like Clinton and Monica Lewinsky, than to know what is happening in my own village.

Information and information technology is a social good which has its own cultural patterns, social organisation, complex and subtle forms of social reproduction and values. It basically uses English as its functional language. The use of English in the Internet marginalises the majority of peoples who do not use the language.

The dominant information perpetuates neocolonialism, and classist, racist, sexist and elitist values and ideas. Information and techno-

logy should not be used to undermine our cultures, identity, cosmovision or worldviews, and our rights as indigenous peoples and women. Furthermore, they should not be used to commercialise and commodify our cultures, our women, our indigenous knowledge and even our territories.

"More than half of our children learn about nature from television, a third from school and less than 10% by going outdoors... No computer can teach what a walk through a pine forest feels like. Sensation has no substitute."

3. THE VALUE OF INDIGENOUS KNOWLEDGE, WHICH IS ALSO WOMEN'S KNOWLEDGE, IS DIMINISHED AND MARGINALISED.

Computers and the Internet have made it possible to translate cultural life into digitally based simulations and databases. The life, blood, culture, and spirituality that forms part of the package we used to know as indigenous "knowledge" and "wisdom" cannot be accommodated when these become "information" and "data". The living libraries in the heads and collective memories of indigenous peoples have to be collected and put in computers, databases or libraries. Computer technology reinforces the notion that knowledge is an individual attribute.

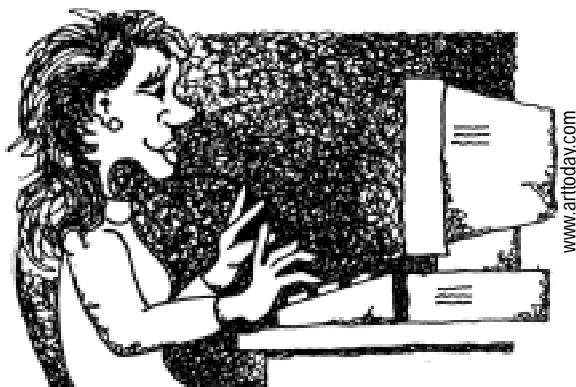
The globalisation of the consumer culture is a key factor in the destruction and appropriation of intergenerational indigenous knowledge. Indigenous cultures developed complex symbolic worlds and traditions which are in harmony with the local ecosystems. The knowledge of indigenous women on what rice seed varieties to plant in sandy soil, during the dry season, etc. their knowledge of medicinal plants, are now appropriated by pharmaceutical and seed corporations.

Gerald Berthoud aptly describes what is taking place today: "With the present tendency to impose market mechanisms and principles on a global scale, development is held to be possible only for those who are ready to rid themselves entirely of their traditions and devote

themselves to making economic profit, at the expense of the whole gamut of social and moral obligations.. We are all subjects to the compelling idea that everything that can be made must be made and then sold."

4. THE ICTs FURTHER ISOLATE US FROM EACH OTHER AND FROM NATURE, AND CHEAPEN THE ACTUAL MEANING OF EXPERIENCE.

Clifford Stoll, author of *Silicon Snake Oil: Second Thoughts on the Information Highway* (1995), has been deeply immersed in the information network since its inception. He has profound misgivings about the technology: "More than half of our children learn about nature from television, a third from school and less than 10 percent by going outdoors... No



computer can teach what a walk through a pine forest feels like. Sensation has no substitute."

He continues: "Isolated facts don't make an education. Meaning doesn't come from data alone. Creative problem-solving depends on context, interrelationships and experience. The surrounding matrix may be more important than the individual lumps of information. And only human beings can teach the connections between things."

In *Wired Magazine*, Gary Wolf said in 1996: "I used to think that technology could help education.. I've had to come to the inevitable conclusion that the problem is not one that technology can hope to solve. Historical precedent shows that we can turn out amazing human beings without technology. Precedent also shows that we can turn out very uninteresting human beings with technology."

5. ICTs' POWER AND DOMINANCE ARE FURTHER ENTRENCHED THROUGH THE CONCENTRATION AND INCREASING CONTROL OF THEIR MANUFACTURING AND SERVICE CAPABILITIES IN A FEW COMPANIES AND

COUNTRIES.

The UN Declaration of Human Rights says that "every one has the right...to seek, receive and impart information and ideas through any media." Communication is a fundamental human need and in all diverse cultures of society various forms and methods of communication are developed and used. The principle of "free flow of information" is meaningless if not everyone can receive and impart information.

Despite the presence of the most sophisticated and high technologies in information and communications, the gap between information-rich and information-poor countries and peoples is ever increasing. We know that information is an element of the autonomous power of people and it is a social good, not a commodity. Thus, it should not be controlled by the power structures whether this be the market or the state.

But more than ever, information services and technologies are becoming more concentrated in the hands of fewer and fewer companies (e.g. CNN, Reuters, Microsoft, ATT, IBM, etc.) and countries. In fact, the whole debate on intellectual property rights is basically a fight between the rights of corporations and the right of peoples to have control and access to information, knowledge, and technologies.

The Internet is now becoming the infrastructure for marketing and distributing the information products of rich countries; it has also facilitated rapid financial transactions by the finance industry and speculators. This means the further concentration of wealth in the hands of banks and finance brokers.

It is not just technology, but its uses by the structure that controls it that need attention. The political and economic nature of the print industry is changing dramatically, through consolidation of book publishers, conglomerate formation (where many communications companies become one) sometimes owned by a corporation (Gulf and Western) that has had no prior interests in print and other media.

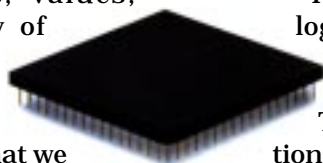
A Women's Agenda

It is our task as members of the women's movement and various other movements for transformation to understand ICTs and analyse their different effects on women and men. Beyond that, we also have to look into the value system underpinning these technologies and understand how the society and gender relations are affected. We have to make concrete

recommendations for policy formulation and activities in the realm of education, organising and mobilisation of women and also men. Some of these are as follows:

1. DEMOCRATISATION OF ACCESS, CONTROL, AND RIGHTS OVER THE USE OF ICTS AND OVER INFORMATION AND COMMUNICATIONS.

The demand to democratise communications and information remains very much valid today even if we have access to Internet or cable television. Pluralism in the flow and production of information should be allowed so that the diverse knowledge, cultures, values, cosmovisions and spirituality of peoples from all parts of the world will continue to flourish instead of becoming extinct.



Indeed, we should be proud that we in the women's movement have moved significantly ahead in publishing, collecting, producing and disseminating information on women. However, we should not feel complacent and fail in our responsibility to continue being critical because in the real world the majority of peoples are still unable to have access to information, much less to relevant and appropriate information.

For this to happen there are several things we can do. The costs of introducing ICTs are still prohibitive as far as Third World countries are concerned. There are some proposals presented by Roberto Verzola of INTERDOC, an NGO dealing with these issues.

a. Stick to the idea of appropriate technology, make do without the online frills and concentrate on low-cost offline technologies, which can bring on the most essential services.

An example of offline technologies are those which are based on store-and-forward e-mail and e-mail based services such as mailing lists, e-mail-enabled access to websites. These would mostly be text modes, offline, low-bandwidth, and low-cost. They can run on plain old telephone systems.

b. Use free/open software where they are available, because they take full advantage of benefits of pooling together the intellectual resources not only of a country but of the Internet community.

Free-open software pools the intellectual

resources available in the Internet and shares the results with the rest of the world. The Linux/GNU system is a computer operating system created in 1991 by Linus Torvalds. It is now developed as a full-operating system with thousands of programming tools and software applications. These are being further improved and made available for free by thousands of volunteer programmers who believe in the philosophy of freedom and against the concentration of wealth and power by Bill Gates.

I said earlier that technology has its own logic. The logic of Linux is to work in harmony with the nature of information. Information has a social nature. The near-zero cost of copying information should make it easy to copy, share and exchange. However, IPR laws create proprietary rights over information and lead to the creation of monopolies. The creators believe that if they work in harmony with the nature of information, it becomes easier to improve, and its quality, reliability and usefulness will develop rapidly.

c. Apply genuine compulsory licensing (GCL) where commercial software is the only option; GCL is an internationally-recognised mechanism that allows poor countries access to technologies on their own terms.

GCL provides an internationally recognised mechanism for public access to commercial software and other copyrighted or patented goods. Somebody who wants to use commercialise or patented/copyrighted material will not pay the IPR holder but the government for the license to do so. The government grants the license, even if the IPR holder agrees or not, but asks the local licensee to pay the IPR holder a royalty rate that is fixed by law.

GCL is the demand of most countries who can't afford the price set by IPR holders. The TRIPS Agreement of the WTO is trying to illegalise this but the civil society should pressure the governments to still continue the practice.

d. Set up public access stations that do not require the ordinary citizen to pay a fixed monthly charge.

The strategy of resource-pooling and

resource-sharing should be encouraged by the governments of poor countries. This means the installation of publicly-owned, publicly-accessible facilities. So you will have:

- ◆ Public libraries vs. a library in every home
- ◆ Public viewing centres vs. a television in every home
- ◆ Public calling stations vs. a telephone in every home
- ◆ Public access terminals vs. a computer in every desktop

e. Work out a system of public ownership over the hardware infrastructure to minimise rent-seeking by private interests, which can lead to further concentration of wealth.

Expensive ICT infrastructure could be set up by an entire community collectively pooling its resources. Then it can offer universal access, charging only enough to maintain good quality service and provide for future requirements.

Since information and communication technologies require heavy investments, financially, environmentally and socially, we should demand that these be brought under public control so that power will not be further concentrated in fewer hands and countries. Public funding of communications is still a component of the demand for democratisation of information. Mechanisms should be put in place, however, to eliminate bureaucratic control and indirect censorship.

2. WE SHOULD CALL ON GOVERNMENTS IN BOTH THE NORTH AND SOUTH NOT TO SURRENDER THEIR RIGHTS TO REGULATE THE OPERATIONS OF CORPORATIONS IN THE INFORMATION SECTOR.

Communications and information systems should be subjected to a public review process to correct distortions and to ensure that information serves the needs of the majority of the population. Diversified sources of supply in the market should be assured to avoid dependency on few companies. Thus, the efforts of smaller firms and even individuals to develop software and hardware should be supported and their products should be promoted and patronised by us.

3. ATTENTION MUST BE PAID TO THE ENVIRONMENTAL HAZARDS AND HEALTH HAZARDS CREATED BY THE

PRODUCTION OF INFORMATION TECHNOLOGIES. THE VICTIMS SHOULD BE COMPENSATED AND THEIR COMPLAINTS SHOULD BE REDRESSED.

Indigenous peoples' rights to their territories are further violated because many of our lands are appropriated and devastated by mining companies who mine for gold, copper, silicon, etc., the basic materials needed by micro-electronic technologies. Some of our lands are also appropriated and converted to become industrial or export-processing zones to house assembly plants of electronic and micro-electronic companies.

The people who are mainly affected by these operations are the Native Americans and people of colour in the United States. Now many of these companies are also operating in the South. In

Many indigenous peoples still believe that if there is a development which alienates you from your relationship with nature or Mother Earth and from your own peoples and humankind, in general, you should be critical of this.

my place, Baguio City in the Philippines, Texas Instrument is the biggest company in the export-processing zone that has displaced many indigenous peoples.

On the average, 80 percent of workers in these companies are women and they are subjected to bad working conditions—low wages, ban on unions, exposure to toxic chemicals, etc.

Many governments of the South have liberalised their investment laws and lowered environmental standards to attract the mining and high-technology electronic companies, resulting in further incursions into our territories. Every day more violations of our rights to our lands and resources are taking place. Ironically, while all these raw materials are extracted from our territories and our women are the ones who process them to become micro-chips and computers, the basic infrastructures of information and communication are not available in most of our communities.

Devastated lands and waters, toxic waste dumps, women with cancers and bad eyesight, and poverty, are the legacy left with us.

Part of our advocacy should be to look into the situation of women and indigenous peoples who are directly affected by operations of companies selling us these technologies. We can launch programmes to support their campaigns and demands. There should be more information on this issue which can be put in websites and libraries.

4. PROMOTE EFFECTIVE PARTICIPATION OF WOMEN THROUGHOUT THE PROCESS OF DEVELOPING INFORMATION SERVICES, FROM DETERMINATION OF NEEDS TO SYSTEM DESIGN, ACCESS, MANAGEMENT AND CONTROL.

5. FORMULATE INTERNATIONAL COMMUNICATION POLICIES AND STANDARDS THAT ADDRESS THE QUALITY AND QUANTITY OF MEDIA COVERAGE OF WOMEN AND ISSUES OF CONCERN TO WOMEN.

The use of the Internet to further commodify and violate women should be regulated. Gender-biased dissemination of information should be addressed.

Many more points should be raised in this section. However, I think it is the task of women's groups to further discern what they think should be a comprehensive agenda for women as far as ICTs are concerned. I only raised a few recommendations here.

Conclusion

I know that it is no longer fashionable to be critical of modern technology, especially of information technology. However, many indigenous peoples still believe that if there is a development which alienates you from your relationship with nature or Mother Earth and from your own peoples and humankind, in general, you should be critical of this. I also believe that we can still do something to change this increasingly commodified and unjust world, where market forces make the key decisions on how people should live their lives and even how governments should behave.

The way the information sector is being used to globalise the culture, values, and lifestyles of the western industrialised world should be a cause for alarm for those who believe that cultural and biological diversity should be enhanced instead of diminished. Indigenous women are the key holders of traditional

knowledge and also the transmitters to the next generations. Their capacity to survive and to transmit this knowledge should not be diminished by the production and use of high technology in the information sector. If our rights are further violated because of the production and use of this we rightfully should protest and we expect support from those who believe in human rights, justice, and democracy.

On the other hand, I know that we are capable of discerning how and on what conditions we should make use of this tool. Some of the uses have been outlined in our statement. I have shown some examples of how we have used information and technology to facilitate networking among ourselves and between us and the rest of the world. We need to work harder to use the information sector to spread more appropriate information about us and to educate the world about who we are and what are our rights as indigenous peoples.

We do not reject the new technology per se. We would just like to create conditions that will give us better control over the use and access of information and technology. We know that the issue of how to gain control is the most difficult one. I have heard time and again that we should stop whining and instead hop into the fast train of information technology and globalisation and take control when we are in it. Personally, I think it is folly to ride in a runaway train which is carrying us into the twenty-first century at an alarming and ever-accelerating speed. ☺

Victoria Tauli-Corpuz is Director of the TEBTEBBA Foundation (Indigenous Peoples' International Centre for Policy Research and Education) and Convenor of the Asian Indigenous Women's Network. This article was adapted from a paper presented at the Workshop on Information and Communications Technologies: An Agenda for Women, sponsored by Asian Women's Resource Exchange (AWORC) and Isis International-Manila held during the Asia-Pacific Regional NGO Symposium, Kasetsart University, Bangkok, Thailand from 31 August to 4 September 1999.

