

Eco-friendly actions

ICT development will not contribute to the acceleration of the current negative trends, but will instead contribute towards sustainable development. A limited number of areas need to be prioritised to start with.



Dennis Pamlin
World Wildlife Fund (WWF),
Sweden
dennis.pamlin@wwf.se

World Wildlife Fund (WWF) is right now exploring the possibilities to engage in a more proactive way in India. The experiences from China have been very encouraging. A report by WWF, 'Chinese companies in the 21st Century - helping or destroying the planet', has created a lot of interest and WWF hope to produce something similar for India. But for this we need good cases, especially in the field of ICT.

The future of the planet

For too long the environmental agenda has been set by the north. The language and way to approach the global challenges have been developed in a context that often have failed to incorporate the perspective of other parts of the world. As a global organisation, WWF is therefore shifting its focus from north to emerging economies such as India in areas such as new technologies, trade and investment.

Many are worried by the implications of the economic growth of India and China and the difficulty of tackling the problems it is set to generate; problems which will have ramifications for the rest of the world. Increasingly, other poor countries are pinning their own economic development hopes on providing the natural resource base for these emerging economies: soy from Latin America, oil from Africa, timber from South East Asia. Considering the historical precedents for the succession of one global superpower by another, we should be concerned about the environmental implications. The need for ICT solutions that can provide welfare without increased resource consumption should be obvious.

Grounds for hope

Instead of worry, WWF would like to see this change as an opportunity and a ground for hope. Increasingly, environmental problems such as climate change are coming to be seen not just as problems to be considered in a narrow 'environment' box, but rather as challenges, which strike to the

heart of international relations and global economic welfare. This is where WWF, which has now been working in countries like China and India for twenty-five to thirty-five years, has something to offer. If we are to meet the global target such as the Millennium Development Goals (MDGs), the Kyoto Protocol, the Convention of Biodiversity, etc, we must start to think outside the box and include the frontrunners in the emerging economies.

WWF must move beyond the environment ministry, and include also to those in government who are charged with long-term economic planning, development of technology and trade and investment policy. These are the people who will decide, for example, whether colossal investment in meeting India's and China's energy demand is to be channelled to building more coal-fired power stations and buying oil from countries with questionable human-rights records, or whether they will invest this money in the development of new urban solutions with energy efficient solutions that can be fuelled by renewable alternatives.

WWF also wants to see how it can support progressive companies who are willing to engage in the challenges ahead and to explore ways in way we can strengthen these companies, not only at a national level, but also through finding and opening new export markets. With a strong presence in European Union (EU) and US, WWF hopes to become a constructive partner in providing support for those who see opportunities in a sustainable future.

Beyond a simple polarised perspective

Whether we like it or not, ICT will radically influence transport patterns, energy consumption, overall resource usage and, to an unknown degree, our culture and even the way we perceive the world, our relationship to it, and our actions as dictated by these new mores. Although ICT will have an enormous effect on tomorrow's society,

surprisingly little research has been conducted regarding its future environmental and social consequences.

Most of the work that has been done has reached one of two conclusions: either ICT will bring only good things, from solutions to world hunger and the elimination of all transportation problems to a revitalised democracy; or ICT will bring nothing but problems, accelerating resource consumption, introducing new toxic materials and resulting in greater inequity by introducing a digital divide that will worsen the already unequal distribution of wealth and influence. The first challenge is if we want to tackle the challenges surrounding ICT for the future, is to go beyond this polarised perspective.

The complexity of ICT makes it difficult to approach in a traditional manner, which focuses only on the direct impacts of extraction, manufacturing, use, and disposal. It is vital that all due caution be taken when responding to ICT-based challenges. The impact of ICT must be viewed in a very broad sense, from cultural changes caused by the use of new technologies, to the appearance of new possibilities for shaping a new economy in which production and consumption patterns look fundamentally different.

Seven strategic areas for action

Corporations, organisations and political parties are all very enthusiastic about ICT and its possibilities, but judging from the actual results so far, these ideas and thoughts are seldom transformed into concrete action. This lack of results often seems to stem from a lack of focus. In order to focus, a limited number of areas need to be prioritised to start with. The areas chosen are, of course, not all that need to be addressed, but are among those that require rapid progress in order to ensure that ICT development will not contribute to the acceleration of the current negative trends, but will instead contribute towards sustainable development.

ICT products

The importance of ICT products is due to two basic causes: (i) ICTs broader credibility is threatened as there is a great risk that the political system and mass media will judge the whole sector as environmentally unfriendly if the sector as a whole does not have a clear environmental strategy even if ICT products themselves have only a marginal environmental impact; (ii) The rapid increase and penetration of ICT products can, if no action is taken, result in increased energy demand and bigger quantities of toxic substances. In order to address the issue of sustainability, the sustainable approach must be integrated throughout the entire life cycle of every new product. Low energy use and the no use of toxic substances should be goals that are encouraged from Research and Development (R&D) to the final act of recycling a product.

Transport of goods

One area where ICT can contribute significantly is the transport of goods. But it could also result in further investment in a system that is inherently unsustainable. Due care must therefore be taken in order to avoid a situation where investments only result in marginal short term reductions and create an infrastructure that makes it hard to reach the necessary long term solutions. When considering a sustainable transportation system, it is important to always think in terms of service. This process, along with the encouragement of

Concrete examples

Video-conferencing

If 20% of business travel in Germany alone was replaced by 'non travel solutions', e.g. video-conference: 5.2 million tonnes CO₂ emissions would be saved.

Audio-conference calls

If we replaced travel with 100 million audio-conference calls: 2.2 million tonnes CO₂ emissions would be saved.

Flexi-work

If we got 100 million flexi-workers: 2.87 million tonnes CO₂ emissions would be saved.

Online billing

If 100 million customers received online phone bills: 109,100 tonnes CO₂ emissions would be saved.

Web-based tax-return

If 100 million web-based tax-returns were sent out: 101,400 tonnes CO₂ emissions would be saved.

Source:

WWF-ETNO leaflet

local production, could set in place a less ecologically damaging economy.

Business travels

One strategic area where more advanced technology already exists, and where there could be a rapid and important shift towards sustainability, is business travel. Not only would a reduction in business travel result in significant environmental gains; but done in the right way it could also contribute to a corporate culture where physical transport would be an option to be avoided, if possible. The most important change needed in order to shift from a flying and car-driving culture to a videoconferencing and telecommuting culture is a small mental and institutional shift. For this shift to take place, there must be no compromise solutions. Full-wall high-resolution projections for virtual meetings should be a standard in all major corporations, and all major cities should supply this kind of facility for groups and corporations that do not have sufficient in-house resources. The technology exists; it is just a matter of co-ordinated investments, as there would be little point in only one city or company investing in such technology.

Changes in production and consumption patterns

Introducing ICT would make the economy more efficient in a number of ways:

- More accurate estimation of demand,
- The optimisation of production processes,
- Facilitated updates of products.

However, very little indicates that these improvements, sometimes called eco-efficiency, would be sufficient to reduce over-all resource and energy use. The most important issue that needs to be addressed is the very different economic and social situations on the planet.

For the first time in history, a significant proportion of the world's population is living a life without material scarcity. At the same time, a much larger proportion is still living in poverty. By using the same development model for both systems, many of the negative trends seem to be accelerating instead of reversing.

Solving this challenge requires elaborating solutions for the more affluent parts of the globe to shift their economies from growth economies to quality economies, keeping sustainable development in focus instead of the old economic indicators. The energy system is just one example where most rich countries have a centralised large-scale system to deal with very large fluctuations. With a small scale system there is no need to build the same kind of over-capacity.

Land use

Looking ahead, many of today's trends show that the exploitation of natural areas will continue. In order to address this issue, a multi-prong strategy is required, wherein ICT could play a significant role. ICT can be used-

- To monitor land use in a more efficient manner than is currently the standard (e.g. satellites and probes in remote areas can help to understand and identify different threats, Geographical Information Systems may also be used to optimise land use);
- To communicate not only the threats to, but also the beauty of untouched areas;
- For more direct educational purposes, such as calculating and communicating the footprints left by various lifestyles in different parts of the world.

New technologies

With ICT and genetically modified organisms (GMOs) already available, difficult ethical, environmental and economic questions beg to be discussed. Much indicate that ethical questions regarding new technologies will be even more important in the years to come, as there will probably be new breakthroughs in areas such as biotechnology, nanotechnology, robotics and quantum computing. In order to direct ICT and broader technological development in a sustainable direction, independent agencies should be created on both the national and international level to evaluate emerging technologies. One way to address this issue would be to develop an International Convention on New Technologies, to assess the societal and political implications of emerging technologies before their commercial release.

Digital divide and digital bridge

Today a digital divide, both within and between countries, is growing. This divide is a serious issue, as it tends to increase already existing gaps, making the poor on this planet even more isolated than before. To address this challenge, there must be a change in the methodology for addressing basic needs, acknowledging that it will be impossible for a purely commercial perspective to be used to close the digital divide.

Let's start now

There is no time to waste and the world desperately need a new generation of entrepreneurs who are not afraid of a global perspective. Actors who are thinking about India's emerging role as a global power house and how sustainable ICT solutions can be spread from India to the rest of the world must step forward. ■

Internet-linked boats for ecological awareness in Bangladesh

The river-dominated areas of Bangladesh are submerged for 3-4 months every year during the monsoon season. These floods prevent the government from providing services to the 20 million people. In addition, these river basin communities do not have access to information about water protection, and poor water practices are rampant, such as dumping pesticides and raw sewage into the rivers. As a result, these rivers have experienced an alarming level of toxicity and a sharp decline in fish production.

Shidhulai Swanirvar Sangstha (SSS) has started Mobile Internet-Educational Unit Boats (MIEUB) to reduce pesticide use, improve water quality, and increase incomes for isolated river basin farming communities through distance learning programmes on water health and rights.

This project is the only one of its kind to literally navigate the Bangladeshi river network to deliver water information and training services to these remote areas. In addition, the Internet capability allows the farmers to obtain commodity pricing information and communicate with others. This project expects to educate 100,000 farmers to take a more proactive approach to address water violation practices, while also helping them to achieve a 50 percent increase in agricultural productivity and income and a 60 percent reduction in pesticide and fertiliser use.

<http://web.worldbank.org/>

EnviroInfo conference 2005

The conference 'EnviroInfo: Informatics for Environmental Protection' will be hosted by Centre of Biostatistics and Analyses, Masaryk University in Brno, Czech Republic from 7-9 September, 2005. The conference will show the state-of-the-art in research, development and application, with a special focus on the networking environmental information.

Enviroinfo 2005 is a meeting place for experts from leading edge technologies, fostering information flows in Europe and beyond and standardisations necessary for a sustainable development.

Proposed topics for discussion at EnviroInfo 2005 include:

- Environmental information systems engineering,
- Modelling, simulation and computing,
- Geographical information systems and their applications,
- e-Government in the Europe and environmental web services,
- Environment, Health and Security (e-Health),
- Knowledge management and decision support systems,
- Statistics (Environmetrics/Chemometrics),
- Standardisation of environmental data and information management,
- Corporate sustainability communication and reporting,
- Environmental law and e-Commerce,
- Urban environment,
- e-Learning,
- Environmental informatics in the 7th framework programme of the European Union.

<http://www.enviroinfo2005.org/>