

INFORMATION AND COMMUNICATION TECHNOLOGY

International Young Professionals Summit 2001 Agenda Paper

ABSTRACT

The majority of the world is disconnected. Most people don't use a telephone more than rarely and hardly anyone uses the internet. If you believe in the importance that the developed nations place on Information and Communication Technologies (ICTs), then there is a huge potential to improve standards of living worldwide by increasing their effective use. However, by studying activities aimed at increasing access to these technologies it can be seen that their impact is not always positive. There is thus a need for further research and debate on the positive and negative impacts of Information and Communication Technologies. This research and debate will hopefully lead to socially responsible programs for increasing the effective use of ICTs. Such programs have the potential to improve the standard of living for much of humanity.

THE WORLD IS DISCONNECTED!

We hear day after day about how Information and Communication Technologies (ICTs) are revolutionising the world, bringing the world together, and making it a better place. In fact, I'm sitting here writing this paper using a 24 hour high speed internet connection and have a mobile phone in my pocket that I can use to talk to anybody in the world (which is useful when the organisers of this summit are scattered across the globe). But, can I really contact anybody in the world?

There are just over six billion people in the world. Less than two billion people make a phone call more than rarely [5]. Less than half a billion people use the internet, over a third of which are from the United States anyway [2]. It's clear that the world is disconnected.

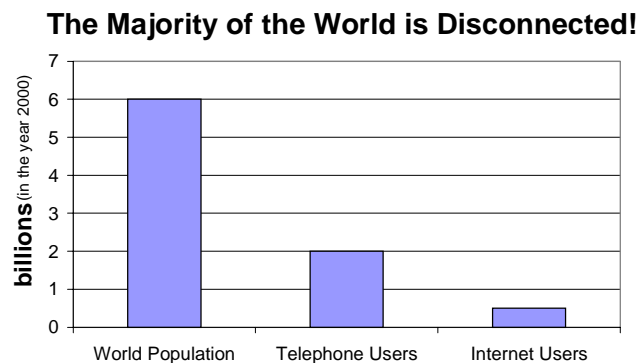


Fig 1. Telephone and Internet access in 2000.

However, this is only the tip of the iceberg. Even in apparently well connected communities there is evidence that the rapid development of Information and Communication Technologies is putting up barriers as well as breaking them down. One study carried out at the University of Technology, Sydney [1] found that equity group students at the university would be further marginalised if the issues of appropriate access, use and support of Information and Communication Technologies were not pro-actively addressed. If new forms of ICTs are to be adopted by our society, then all people, especially those from equity groups, need support and training if such use is to be effective.

WHAT ARE WE MISSING?

If missed calls are missed business then what are we missing out on from the disconnected billions? Larry Irving, former Deputy Secretary of the US Department of Commerce made this comment:

“Think how powerful the Internet is. Then remind yourself that fewer than 2% of people are actually connected. The power of the Web increases exponentially with every person who goes online. Imagine what we’re missing.”

So, what exactly are we missing? We may be missing inconceivable amounts of new knowledge. We may be missing the wisdom of entire cultures. We may even be missing the chance for world peace.

THE BENEFITS OF ICTs

What’s so good about ICTs anyway? What are the disconnected billions missing? Evidence of the benefits of ICT production and use is beginning to emerge at many levels in connected society. However, ICTs are still relatively new and it is thus still difficult to measure their impact on a person, let alone an economy. Following is a brief overview of some of the benefits reaped by connected society as we can best currently measure them. It is by no means exhaustive.

Community Strengthening

ICTs can be applied to strengthen the communities that have access to them. Some studies have highlighted the potential of the Internet to create meaningful social interaction [13]. Other studies have focused on their use as a tool for reaching out to isolated people such as the aged [12].

Cost Savings

The intelligent application of ICTs can lead to cost savings in the supply chain. The U.S. Department of Commerce suggested that internet banking could see costs fall from over US\$1 per transaction in branch banking to near zero [7]. Cisco, a communications equipment manufacturer, estimated that putting their applications online was saving the company US\$363 million a year by 1998, or approximately 17.5 percent of their total operating costs [10]. Australia’s pharmaceutical wholesalers expect to reduce the cost of processing orders from \$75 to as low as \$5 by using e-commerce instead of a paper based system [11].

Economic Growth

The ICT industries themselves are starting to have a strong direct aggregate impact on the economies of some nations. In their annual Digital Economy report, the U.S. Department of Commerce goes so far as to say that in the U.S. ICT producing industries accounted for 30 percent of total real economic growth between 1995 and 1999 [8]. The Bank of Korea suggest that 40 percent of recent GDP growth in Korea came from the ICT industries [9].

Education

Education, the cornerstone of any successful democracy, is one area that appears to benefit largely from improved access to ICTs. A survey recently released by NetDay [4], a US education technology nonprofit, reported that more than eight out of ten teachers (84%) believe that computers and access to the Internet improve the quality of education. However, two-thirds of teachers agree the Internet is not well integrated into their classrooms.

New Delhi physicist Sugata Mitra found that computer literacy can be taught to children solely through the provision of internet kiosks [3]. He placed a high speed internet connection in a wall in a slum and watched as ghetto kids aged 6 to 12, most with rudimentary education and little knowledge of English, taught themselves to draw on the computer and to browse the Net. He reckons he could get 500 million computer-literate in five years by scaling up his experiment. It would cost \$2 billion but Mitra believes that achieving the same feat through traditional methods would cost twice as much.

Jobs

ICTs have the potential to increase aggregate employment and real wages. Taking Australia as a case study, even though its ICT producing industries make a smaller contribution than in most developed countries, 680,000 Australians work in ICT and related support jobs [7]. That is 3.5% of the current Australian population. Furthermore, ICT employment in Australia is growing and becoming increasingly higher paid.

NOT SO FAST!

Now knowing that the majority of the world is disconnected and that there is a huge potential to improve social conditions by connecting them, you're probably half way out the door with some scheme for connecting the silent billions. Not so fast! You first need to appreciate that a sheer effort to connect the disconnected billions may have unexpected side effects. Just as it is difficult to measure the impact of ICTs on an economy, it is incredibly difficult to measure the impact of ICTs on a culture.

Simon Romero [6] gives a number of examples of how the introduction of the Internet to remote villages can produce unexpected and sometimes undesirable results. He describes an incident in Ecuador where some male villagers began to visit pornographic sites in addition to their intended gathering of crop information and selling of their crafts over the Web. The local women were dismayed and a debate ensued over the treatment of women. Whether or not you view this debate as a good thing, the introduction of the internet unexpectedly generated discussion on a once taboo topic. Not really something you want to do by accident.

Romero gives another example of a bumpy Internet introduction, this time in Guyana. The women of two impoverished tribes were introduced to the Internet as a tool for making money and easing poverty. A group of young women began making money by selling their intricate hand-woven hammocks over the Web for US\$1,000 each. This sounds like a fantastic success, but after this giant leap forward, the community took two giant leaps backward.

The women's financial success caused the traditional regional leadership to feel threatened. The traditional leaders responded to this perceived threat by taking control of the organization. They drove out the young woman who ran the Web site, resulting in the fall of the weaving group into disarray. Hardly a desirable outcome.

CONCLUSIONS

The majority of the human population has no access to ICTs. They are disconnected. There is thus a huge potential to improve worldwide social conditions by increasing access to and effective use of ICTs. However, although almost always massive, the impact of connecting the disconnected is not necessarily always positive.

RECOMMENDATIONS

We need to engage in a great deal of further research and discussion on the various possible positive and negative impacts of increasing access to ICTs. We should also discuss means of ensuring that increased access to ICTs also leads to their increased effective use. It is my hope that such research and discussion will lead us to socially responsible programs for increasing access to ICTs and promoting their effective use by all. It is my hope that we can develop and commit ourselves to some such programs. It is my hope that by taking action on this incredible opportunity to improve the quality of living for all of humanity, we will improve the quality of living for at least a small few.

The Information Communication Technology Agenda area was facilitated by Aaron Chippendale. The views expressed in this paper do not necessarily reflect those of the facilitator.

REFERENCES

- [1] J. Barraket, A. M. Payne, G. Scott, L. Cameron (2000) *Equity and the Use of Communications and Information Technology in Higher Education: A UTS Case Study*, DETYA, Commonwealth Government of Australia, Canberra.
- [2] Commercenet (2000) *Worldwide Internet Population*, <http://www.commercenet.com/>.
- [3] P. Judge (2000) *The Hole in the Wall Experiment*, Business Online Daily Briefing, <http://www.businessweek.com/>, March 2.
- [4] NetDay (2001) *84% of Teachers Say Internet Improves Quality of Education*, <http://www.netday.org/>, March 29.
- [5] M. North, P. Swider (2001) *Sweatshops and Butterflies: Cultural Ecology on The Edge*, Greenstar, <http://www.greenstar.org/>, March 9.
- [6] S. Romero (2000) *When Villages Go Global: How a Byte of Knowledge Can Be Dangerous Too*, New York Times, April 23.
- [7] J. Houghton (2001) *Impact of the ICT Industry in Australia*, Australian Computer Society.
- [8] U.S. Department of Commerce (2000) *Digital Economy 2000*, U.S. Department of Commerce, Washington DC; cited in [7].
- [9] K. Yoo (2000) *The Role of IT Industry in Korean Economy*, Ministry of Finance and Economy; cited in [7].
- [10] U.S. Department of Commerce (1998) *The Emerging Digital Economy*, Washington DC; cited in [7].
- [11] NOIE (2000) *E-commerce beyond 2000 (Final Report)*, DCITA, Canberra; cited in [7].
- [12] R. Swindell (2001) *Technology and the Over 65s? Get a Life*, Social Alternatives, vol. 20 no. 1, January 2001.
- [13] K. Komito (1998) *The Net as a Foraging Society: Flexible communities*, The Information Society, 14(2), pp. 97-106; cited in [12].

This paper and further information about Information and Communication Technologies is available at <http://www.atnf.csiro.au/people/chi139>

Petition to World Leaders on Information and Communication Technologies (ICTs)

The participants at the International Young Professionals Summit 2001 call upon international, national and private leaders to:

1. ensure adequate access to ICTs for all;
2. ensure adequate training in the effective and appropriate use of ICTs for all;
3. involve the community through consultation and participation to identify local and global ICT needs;
4. develop better metrics and methods for monitoring the accessibility of ICTs;
5. develop better metrics and methods for monitoring the contribution of ICTs; and
6. provide strong support to the research and development of new ICTs.

Call to Action on Increasing Access to and Effective Use of Information and Communication Technologies (ICTs)

This is a call to action for all young people to be actively involved in facilitating change through information and telecommunication technologies, both as individuals and part of a wider community. You are called upon to:

1. identify and address ICT needs in the local and global community;
2. improve access to ICTs for disadvantaged groups in the local and global community;
3. develop programs and networks to identify and assist those marginalised by ICTs due to the absence of appropriate support and training programs;
4. address issues that are important to young people through innovative applications of ICTs;
5. share ICT projects experience and knowledge with other young professionals;
6. become involved in the development of alternative media, applying new ICTs as instruments of free speech and democracy worldwide;
7. lobby government and international organisations to ensure adequate access to ICTs for all; and
8. improve the quality and appropriateness of ICT applications within our communities.