

# The Jobs Letter

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*Essential Information on an Essential Issue*

## SPECIAL

## The Digital Divide

*“Computers, as the central agent of change in the so-called digital revolution, can also be perceived as the agent of division in widening the existent disparities between the ‘haves’ and the ‘have-nots’ of not only America, but the entire planet.”*

— **Claude Henry Potts** in *The Digital Divide: Social Justice in the Information Age (1999)*

*“Over 80% of the people who will need jobs in 10 years are already in the workforce. There is a need and opportunity to make effective use of information and communication technologies to promote on-the-job and institution-based training to up-skill older workers. There is also a need for investment in industry and community-based training both to increase the number of workers able to participate in knowledge-based industries and to overcome ‘digital divide’ problems that may in future limit people’s participation in society.”*

— **Ministry of Commerce,** *The Social Impact of Information Technology, A Briefing to the Minister for Information Technology, Wellington, 17 December 1999.*

- The “digital divide” is now the catch-phrase of concern throughout the world’s leading economies. While the US economy is booming on the back of high-tech productivity, and the demand for skilled workers in the developed world cannot be satisfied ... there are also clear signs that the “new economy” is seeing many people — and countries — falling through the net.

- The growing gap between information technology (IT) “haves” and “have-nots” was high on the agenda of the G8 Summit, held in Japan in July, and also at this month’s Millennium Summit at the United Nations.

— The G8 leaders (from Britain, the US, Canada, France, Germany, Italy, Russia, and Japan) have agreed to create a “Digital Opportunities Task Force” (or “dot force”) to help bridge the global digital divide. The G8 communique warns: “If we fail to ensure that all nations have the opportunity to participate fully in the network economy and society, we run the risk that the divide between nations will grow...”

— A report by a panel of UN advisers to UN Secretary-General Kofi Annan has called for the establishment of a fund to enable the entire world to have internet access by 2004. The advisers say that the value of business done over the internet, or e-commerce, is estimated to swell from US\$45 billion in 1998 to more than US\$7000 billion by 2004. But with less than 5% of the world’s population presently on-line to the internet, the digital divide between rich and poor countries continues to widen every day.

- This digital divide is also a gap that can be found *within* most developed countries, including New Zealand, as the “new economy” stretches communities along the familiar fault-lines of disadvantage.

Last year’s Commerce Department briefing paper to the incoming government pointed out that the New Zealanders missing out on the opportunities of the information and communications revolution are most likely to be “... Maori and Pacific Island Peoples, those with lower incomes, sole parents, people with low or no qualifications, those who are unemployed or underemployed, and those in locations without a sound telecommunications structure, such as parts of rural New Zealand.”

The Commerce paper remarks: “If an IT-inclusive society were to be added to other crucial elements of progress which government plays a role in advancing, namely economic growth, social stability and good governance, and enhancing IT literacy and access were an agreed way of achieving this, then the question arises about the best way to do this ...”

- Initiatives to address the digital divide are springing up in many developed countries.

In Britain, Chancellor Gordon Brown earlier this year pledged a big expansion of information technology opportunities for the poor. He says the government has a responsibility to ensure that the benefits of new technology are shared across the community to prevent Britain becoming a two-tiered society divided between a “wired-up superclass and an information underclass.”

## STATISTICS THAT MATTER

- Around 43% of NZ households have computers, and around 50% of the NZ population are estimated to have access to the internet.
- Last year internet subscriber numbers skyrocketed to 592,000 — up 88% on the previous year. Free internet providers are expected to substantially impact this year's subscriber figures.
- Research firm Data Corporation predicts that NZ internet subscriber numbers will grow at a rate of 20.8% during each of the next four years, topping 1.5 million internet subscribers by 2004.
- NZ ranks 7th out of the OECD countries in the number of internet hosts (computers permanently connected to the net), with 52 hosts per 1000 of population.
- Internet connectivity in NZ is usually through land-based telephone wires (although this is changing). While over 97% of NZ'ers have access to the telephone, this percentage is less for Maori, Pacific Island and low income families.
- While a 1998 survey showed nearly 30% of NZ households overall had computers, only 23% of Maori households and 17% of Pacific Island households had computers.
- An AC Neilson Survey has found that just 15% of NZ'ers earning under \$30,000 have ever accessed the internet, compared with 60% of those earning over \$80,000.
- While a recent study showed that 43% of farmers had computers, a reason that fewer use the internet is that electric fences interfere with the sending of data down telephone lines which makes e-mail and data transfer difficult if not impossible.
- NZ schools compare well with their international counterparts with respect to connection to the internet. A recent survey shows that 96% of primary and 99% of secondary schools report some type of connection to the internet.

### COMMUNITY COMPUTER ACCESS

An example of how to help bridge the digital divide at a local level can be found in New Plymouth's Community Computer Access Centre, recently opened by the Taranaki Employment Support Foundation Trust.

The centre contains four second-hand (pre-Pentium) computers with a range of business software, and an internet connection.

Centre trustee Elaine Gill says the centre is aimed at disadvantaged people, who generally tend to be those in lower socio-economic groups and are mainly women. Visitors to the Centre can explore the world of computing and follow training courses on their own, or ask for help from a part-time supervisor.

Gill says a lot of women who might be wanting to return to the paid workforce grew up with electric typewriters and needed to be computer literate to apply for jobs: "A lot of people simply can't afford to pay \$5 for 15 minutes on a computer in a cybercafe or to do a polytech course..."

Brown's plan will see one million British people, who are out of work and claiming a benefit, offered free computer training courses within the next two years. Brown: "Britain is now embarking on the biggest public education programme on offer in our history, opening up new opportunities for millions of people..."

- In the US, President Clinton is setting a national goal of making computers and internet access available for every American, and has directed the US Commerce Department to devise a national strategy to achieve that goal.

More than 50% of America's schools and over 80% of its classrooms are now wired for the Internet. The Clinton administration's goal is to have all schools connected by the end of this year.

A US Commerce Department report last year documented the wide digital divide existing in America. It found that black and Hispanic households are only two-fifths as likely to have internet access as white families. Households with incomes of \$75,000 and above in urban areas are more than 20 times as likely to have internet access as households at the lowest income levels.

In targeting these gaps, the Clinton administration wants to expand computer access to low income families and has proposed spending as much as \$100 million to provide computers and internet access in as many as 9 million households. The administration also proposes extending high-speed technology to rural communities and sending hundreds of tech-savvy AmeriCorps volunteers into low-income neighborhoods.

- Here in New Zealand, a Deloitte Consulting report on government services shows that all but one of the twelve departments and agencies surveyed are, or are considering, delivering services electronically. This may include everything from paying fines, to applying for a passport and checking tax records. This also brings with it the obvious governance questions of guaranteeing access to these services across all sections of our communities.

State Services Minister Trevor Mallard is keen to emphasise the role that schools can play in providing public access to government services delivered

*(continued on page five)*

## TRENDS

# POVERTY and WEALTH in an INFORMATION AGE

by Louise May, *Caritas Aotearoa*

• The Internet and other information technology tools are revolutionising the way many people live and the way in which societies are changing. People are getting computers and linking up to the Internet everyday. The pervasiveness of this technology is already making its effects felt in the everyday lives of people, whether or not they have access to the technology. For example, the skills that are needed in the workforce are becoming those associated with information and knowledge rather than the industrial skills of the nineteenth and twentieth centuries. It is becoming more important to have these skills in order to gain employment, and to earn an adequate income.

There may be a time when people will conduct the majority of their everyday business in the virtual reality of cyberspace via their computer or equivalent. Some already do. Although it is difficult to imagine that printed materials in the form of books, newspapers and magazines will disappear altogether, it is likely that much information will become solely web-based in the future. Whether or not things develop quite as some observers and commentators predict, the fact remains that information technology is having a significant impact on our world. It is important to scrutinise the changes that the technology brings and to see it in the context of the lives of people, community, and society.

• There are debates about the degree to which there is a digital divide, for how long it will be with us, and what, if anything, should be done about it. But what is not being disputed is the fact that the digital divide does exist – between rich and poor nations, within even the wealthiest countries, and here in New Zealand.

The digital divide is a term that describes the gulf between those who are able to access and make use of information technology and those who are not. It not only describes a purely technological division. The digital divide has significant socio-economic meaning. The growing importance of information technology in our increasingly digitised world means that those on the non-access side of the divide risk losing out on the benefits of the technology and may indeed experience another kind of marginalisation in the Information Society. They have been described by some as the 'information poor'. There is strong evidence to suggest information poverty exacerbates other forms of poverty, and so feeds into the cycle of poverty and marginalisation already experienced by so many.

• Educational institutions, businesses, Governments, other organisations and private individuals are being linked up to the Net everyday. More and more useful information is becoming available on the internet – educational material, government information, job advertisements, news and current affairs, and so on. In short, more of life is being put onto the Net. In some cases, the Internet is the only place you can go to get certain information and goods and services. Some people/organisations are most easily and quickly contacted via email than by other means of communication.

Those who do not have access to IT tools or who are not competent at using these tools are going to become increasingly disadvantaged if more of everyday life is going to be conducted in cyberspace and nowhere else. It is important to ensure that people do not get left behind.

*"Access to information technology used to be looked upon as a privilege. Today it is becoming a necessity."*

— Caritas

• The research suggests that those who are on the wrong side of the digital divide are also those who are disadvantaged in other areas of economic and social life. In other words, the digital divide reflects the gaps that already exist between rich and poor, the privileged and underprivileged. The information poor tend to be those who experience poverty and social exclusion. Poverty is usually defined as an inability to share in the everyday lifestyles of the majority because of a lack of resources (often taken to be disposable income). Social exclusion is when one is (a) lacking integration into civic life – not being an empowered citizen in a democratic system, (b) lacking integration into the economy – not having a job or a valued economic function, (c) lacking integration into society – not having access to state support, free from stigma, (d) lacking interpersonal integration – not having family, friends, neighbours and social networks. And so the factors that influence access to information technology are also those factors that influence experience of poverty and social exclusion.

• A look at the statistics of where online population growth is occurring in the world shows that, on the whole (and perhaps not surprisingly), the richer nations are taking to the Internet at a far greater pace than the poorer. IT access seems to be dividing itself along first world/third world lines. The latest figures show that 57% of Internet users in the world are from the United States despite the fact that the country makes up 4.7% of the total world population. Europe accounts for 21.7% of Internet users, Asia 17%, South America 3%, and Africa 0.8%. So, industrialised countries, which make up just 15% of the world's population, are home to 88% of all Internet users. Less than 1% of people in South Asia are online even though it is home to one-fifth of the world's population.



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- On the whole, New Zealanders appear to be taking to information and communications technology fairly enthusiastically. The percentage of households with computers has been rising steadily at a rate of around 14 percent every year since 1985/86.

In New Zealand around 50% of the population has access to the Internet. The percentage drops dramatically for low incomes groups and those with fewer educational qualifications. There is an expectation that unequal access to, and therefore mastery, of IT between different groups in the population will be smoothed out by the education system.

But the education system is not yet equipped to do this. Most schools are now connected to the Internet, but this does not yet mean that all students get much individual access to it, or that they are able to use it in the advanced way that other students are able to. While a high level of staff in schools are regular users of the internet, less than 30% of schools in New Zealand have significant use of the internet by students. In fact, students report that, overall, they use computers more at home than they do at school. Often the technology they have at home is more frequently updated, and therefore more advanced than what is available in the formal learning environment of the classroom. This confers a significant advantage on those students whose families can afford to provide IT tools at home. The one-fifth of students who only have access through their school are at a distinct disadvantage.

*"A consistent theme throughout the range of research on the digital divide is the need to address the underlying causes – poverty, lack of literacy and education."*

— Caritas

- Over 80% of the people who will need jobs in ten years are already in the workforce. Given the increasing importance of IT-literacy in terms of employment, and given that there are people in the workforce who are not IT-literate, it is likely a number of the job-seekers of the future will require education and training in information and communications technologies. Our society needs to provide assistance for people in or entering the workforce who are without IT access at home (and who would find it very difficult to acquire this) and who will also miss out on reaping the benefits of future IT initiatives in our schools.

- Soon, it will become not enough to simply have Internet access. The type of connection one has to the Internet will also determine the ability of users to participate on an even playing field with the rest of on-line society. Those who are not able to access high-speed data lines will find themselves at a disadvantage. New Zealand's rural business stands to lose if it is not able to gain the cost and marketing advantages that high-speed data access can provide. The ability to access adequate bandwidth has implications for rural and isolated Iwi in terms of their development of IT capability. It is important for

the survival of rural communities, which have been hard hit in recent years, not to be left behind in the information age.

As a speaker at a recent conference on 'Claiming Internet for the Community' in Wellington said: "Having reasonable access to a telephone, a postal service and broadcast services are generally accepted as basic rights in advanced societies. Having reasonable access to email, discussion forums and other interactive environments should be considered equally fundamental."

As a country, New Zealand will want to address this issue for a number of reasons. One of these is related to the effects upon the rural regions. Being on the wrong side of the digital divide has the potential to make it difficult for rural business to compete in the international arena and may therefore exacerbate rural unemployment. There is sufficient evidence that a growing gap between the "haves" and "have-nots" contributes to marginalisation of one group and so is likely to have spin-off effects including increased violence and crime in the community borne of frustration, anger, marginalisation, and isolation.

- A consistent theme throughout the range of research on the digital divide is the need to address the underlying causes – poverty, lack of literacy and education. If people struggle to meet basic living costs, it is unlikely they will be able to afford to purchase a computer, to pay the lines charges for internet and email, to pay for IT support when something needs fixing, or to replace equipment. If people cannot read, they cannot use IT. If people lack education, they are less likely to have access to, or the skills or inclination to use IT, or the future income to purchase it and to pay for the support of it. The digital divide is representative of gaps in wealth and development, the gulf (which has been growing) between rich and poor. It is here where we must start if we are to be effective in closing the technology gap.

- The fact that many people are missing out on the information revolution highlights the need to eradicate poverty in our world. We have an individual and collective responsibility to help bring down the barriers to human development and the progress especially of poorer nations, and the poor and marginalised in our own communities. It challenges us to seek ways to help get information technology, and training and support, to those who cannot get access, whether because of personal income, national poverty and lack of infrastructure, or other factors. It suggests that we may have to form partnerships with other sectors of the community, locally, nationally or globally, in seeking imaginative and effective methods by which to do this.



Source — *The Digital Divide: Poverty and Wealth in the Information Age*, by Louise May for Caritas Aotearoa. Booklet No.5 in the Caritas Social Justice Series, published for Social Justice week 17-23 September 2000. Full copies of the booklet are available for \$4 each from Caritas Aotearoa NZ, P.O.Box 12-193, Wellington 6038 phone 04-496-1742 email [caritas@caritas.org.nz](mailto:caritas@caritas.org.nz)

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## EAST COAST IT INITIATIVES

The Tairāwhiti Development Taskforce, which brings together central and local government, Māori and private sector leaders to work together for the economic development of the East Coast, has also set its sights on closing the local digital divide.

The Taskforce is distributing around 2000 computers to local schools and community groups to help them extend and improve their use of new technology. The computers have been surplus to the requirements of various government agencies such as Winz.

The Taskforce is also working with Telecom to establish CommunityNet centres which will provide computer and internet training and support for people in the region. CommunityNet will involve an internet start-up package of two free phone lines and two years free phone rental, \$1,500 cash grant, and a free Xtra internet connection for two years. The Tairāwhiti Taskforce will provide accommodation and computers for the programme.

Taskforce Chairman and Deputy Prime Minister Jim Anderton:

"These community-based initiatives are just the start. But they are a good start for the Tairāwhiti area..."

over the internet. He says he is considering "putting quite a lot of funding" into the school system next year to allow schools to open for longer hours and provide supervised access to the internet for the public at weekends.

- Prime Minister Helen Clark has also taken a direct interest in combating NZ's digital divide, partly sparked by attending a two-day conference on "progressive governance" hosted in Berlin in June by German chancellor Gerhard Schroeder. The gathering of heads of state from 15 countries also featured discussions on the impact of information technologies on the delivery of state services.

Two months ago, Clark established a new think tank, called the Science and Innovation Advisory Council (Siac), to help steer NZ's progress towards a knowledge economy. The council aims to promote a long-term strategic direction for NZ's research, science and technology sectors, and also address local issues of the digital divide. It will meet every three months and report directly to the PM.

The members of Siac include Rick Christie of investment company Rangatira; John Blackham of software developer Xsol; Vicki Buck, a former Mayor of Christchurch; Kate Frykberg, of internet company The Web; Donna Hiser of information consultancy Innovus; Michael Matthews of Tātua Dairy Co; Stephen Tindall of The Warehouse; Sir Angus Tait, electronics pioneer; and Michael Walker, a leading Māori scientist.

- Some of the indicators in the NZ knowledge economy are very healthy. In ownership of personal computers, the cost of international phone calls and mobile phones per head, the number of internet hosts per head and public expenditure on education ... NZ rates well against its peers in the OECD.

But, according to Neil Richardson, chairman of the government's Foundation for Research, Science and Technology, NZ ranks abysmally low in perhaps the three most important indicators of a knowledge economy: the percentage of exports that are high technology and high value-added, the number of technical graduates (computer science, mathematics and engineering) per head, and the amount of money spent on research and development.

Richardson: "The knowledge economy may be the key to New Zealand's prosperity in the 21st century. But right now, it's a myth. We are lagging behind the rest of the developed world in a race we cannot afford to lose..." Richardson's list of concerns include:

— Around half our total exports are commodities whose prices fluctuate widely on world markets. The real returns on these commodities will continue to decline.

— Only 11% of NZ'ers have a university-level education, well below OECD averages.

## CLOSING THE DIGITAL GAP

The Digital Divide Network argues that now, more than ever, unequal adoption of technology is excluding many people from reaping the fruits of the global economy. The US-based non-governmental network sees the digital divide as a complex issue with no singular cause or effect. Addressing the digital divide will require a multi-faceted approach involving:

- **Affordable access to information tools** — for the elderly, the poor, the disabled, and those living in rural areas.
- **Economic development of communities** — developing an infrastructure of telecommunica-

tions facilities and cultivating a well-trained workforce so that communities can remain competitive in attracting and retaining businesses.

- **Internet content that is relevant to and produced by communities** — addressing the availability of community-relevant information, overcoming language and literacy barriers, and promoting the diversity of cultural voices.
- **A society devoted to lifelong learning** — developing the learning skills which will enable all generations to adapt to constantly changing times.

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## IF COMPUTERS ARE THE ANSWER ... ARE WE ASKING THE RIGHT QUESTION?

Not everyone feels the urgency to bridge the digital divide. *Turning Point*, a coalition of eighty US non-profit organisations, is asking whether we are rushing towards a high-tech future without fully considering the consequences.

The coalition is calling for wider public debate on the social, environmental, economic and human health consequences of embracing various new technologies.

Over the last few months, the coalition has been publishing a series of provocative full-page advertisements in the *New York Times*, warning of the effects of "technomania" on local communities.

*Turning Point* criticises the rush to put computers into schools as happening under an "atmosphere of hysteria", and warns that it will mean fewer teachers, less teacher training, more "distance learning" and less face-to-face, human centred or environmental experience for students.

The coalition is also critical of the push to convert the "bricks and mortar" economy into e-commerce. It says that large corporations want governments to subsidise e-commerce activity by banning taxes and tariffs on internet transactions. *Turning Point's* concern: as more and more shopping shifts to the internet, the tax income base of most nation-states will decline ... threatening their ability to provide health, education and social services.

— more on the *Turning Point* "technomania" campaign can be found at [www.turnpoint.org](http://www.turnpoint.org).

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[www.jobsletter.org.nz](http://www.jobsletter.org.nz)

— We turn out more lawyers than engineers and struggle to keep talented technical people at home.

— Although our researchers are a highly productive group (responsible for as many scientific publications per head as the Americans), the number of researchers in the NZ labour force is low by international standards.

— While Government investment in Research and Development is higher than the OECD average, private investment in R&D is so low that the total public and private spending falls behind every OECD country except the Eastern European countries, Spain, Portugal, Turkey and Mexico.

- Keeping talented and skilled people at home will be an increasing challenge of the international digital divide. Britain, Europe and the United States are already changing immigration laws in order to attract skilled workers from South East Asia and the former Soviet bloc. And these moves are also expected to further exacerbate the "brain drain" of young high-tech employees from Australia and New Zealand.

The US Congress last year raised the cap on special work permits for highly skilled immigrant workers from 65,000 to 115,000 per year. Already there are moves to see this cap pushed up to 200,000 work permits per year. Germany has just instituted its first "green card" scheme to encourage up to 20,000 foreigners to fill the skills gap in the IT sector.

Britain is proposing changes to its immigration laws in order to address chronic IT skill shortages. (Health and education professionals are also in critical demand). Newspaper reports suggest that more than 100,000 professionals will be allowed to immigrate each year — signalling the first relaxation in immigration laws in the UK for more than 30 years.

Startdate.com, an internet job search site representing 4,500 British recruitment agencies, says that anybody with a work permit even with limited experience in web design or IT, could be out of work in the UK for no longer than a week. Managing Director Philip Rawlinson says that salaries are "highly negotiable" ... especially for Kiwi's and Australians who have very good reputations as workers.

## LINKS

### INTERNET BOOKMARKS ON THE DIGITAL DIVIDE

*New Zealand: Flaxroots Technology Conference Report (April 2000)*  
<http://www.community.net.nz/flaxroots-technology/>

*The Social Impact of Information Technology, A Briefing to the Minister for Information Technology, Wellington (December 1999)*  
[http://www.moc.govt.nz/pbt/infotech/bim\\_social\\_inclusion.html](http://www.moc.govt.nz/pbt/infotech/bim_social_inclusion.html)

*The Digital Divide Network*  
<http://www.digitaldividenetwork.org>

*Clinton Administration Digital Divide Website*  
<http://www.digitaldivide.gov>

*Falling Through the Net: Defining the Digital Divide (report)*  
<http://www.ntia.doc.gov/ntiahome/fttn99/contents.html>

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