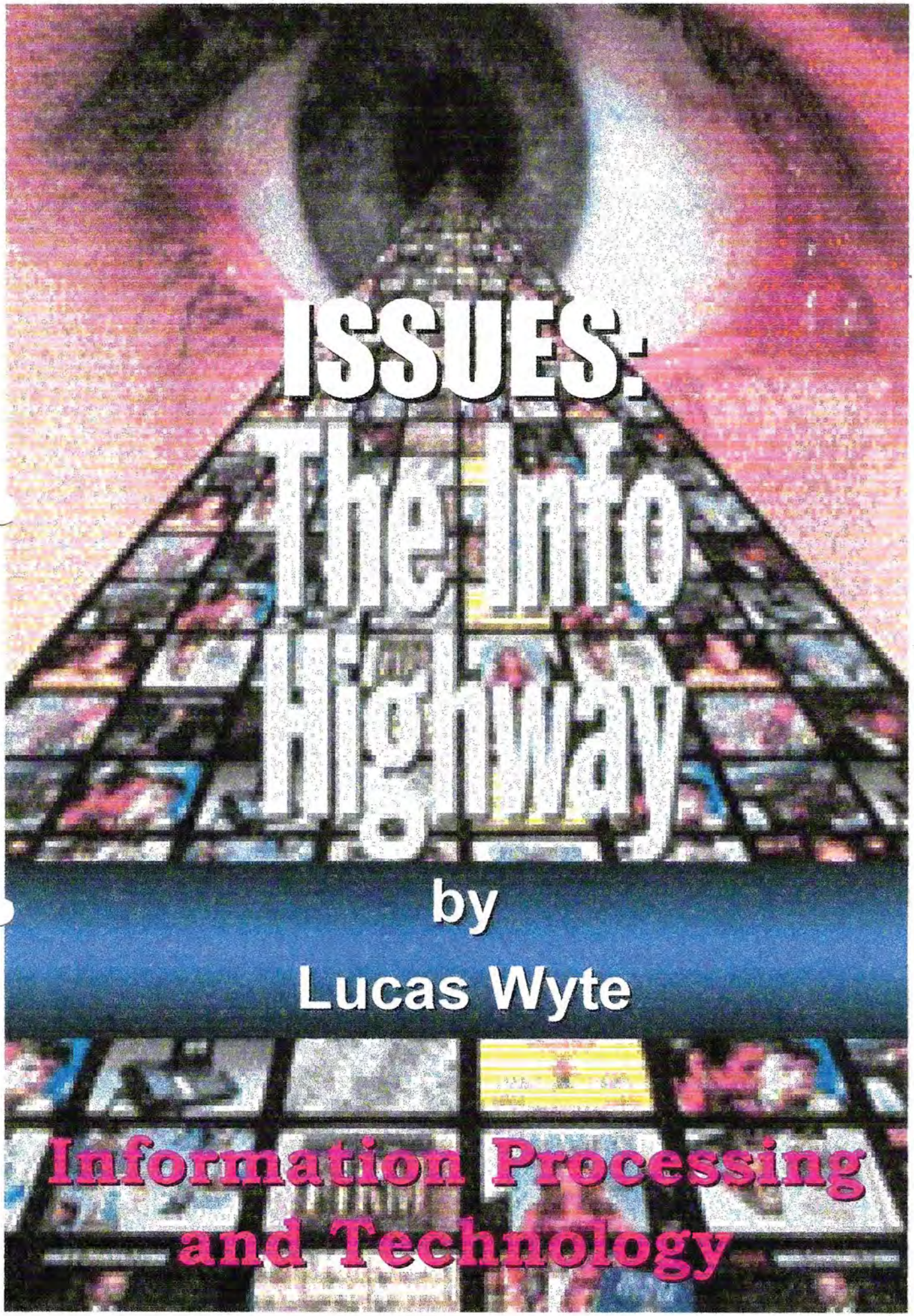

ISSUES:
The Info Highway
by
Lucas Wyte
Information Processing and Technology

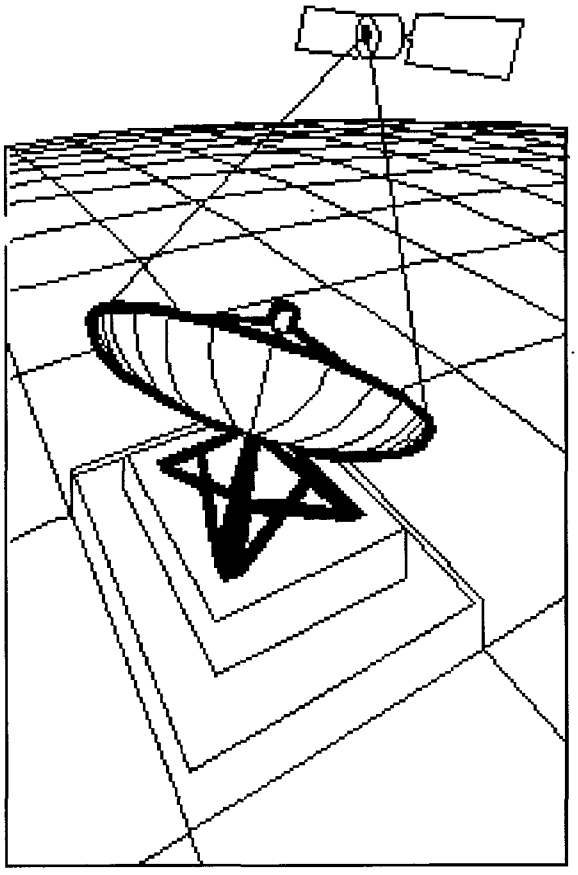
12 Information Processing and Technology
Researched Response
Semester IV

INTERNET ISSUES

Back in the dark ages of the 1960s, at the height of the cold war, the United States Department of Defence faced a difficult question: How could orders be issued to the armed forces if the U.S. were attacked in a nuclear assault? The communication centres of the time were extremely vulnerable to attack, hence the Pentagon was longing for a military command system that would continue to operate even if most of the phone lines were in tatters and the central computers melted down.

In 1964, a researcher named Paul Baran came up with a bizarre solution to the military's puzzle. He designed a computer-communications network that had no hub, no central switching station, no governing authority and assumed the links connecting each computer in the network were totally unreliable. Dubbed the "electronic post office designed by a madman"[1], Baran's network used messages, cut into strips and stuffed into electronic envelopes called packets. Each packet was marked with the address of the sender and the intended receiver. These packets were then released like confetti into the web of connected computers, where they were tossed back and forth over high-speed phone wires in the general direction of their destination and reassembled when they eventually got there.

Such was the birth of the Internet, the sprawling web of interconnected computer networks that now circles the globe. With over 50,000 networks in 90 countries, electronic mail to 160 countries and an estimated total of 20 to 40 million Net users, growing by 10 per cent each month, the Internet "is suddenly the place to be"[2]. From its foetal stages in the U.S. Defence Department's ARPANET project, through growth in universities and colleges of the 1970s and 1980s to today's grand information super-highway, "the Internet isn't just computer scientists talking to one another anymore ... It's a family place. It's a place for perverts. It's everything rolled into one."[3]



However, society needs to embrace this awesome technology with some consideration of the consequences. One must drive cautiously down the information super-highway, for the Internet today poses some challenging issues which need to be addressed.

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[1] Elmer-Dewitt, P. (1994). "First Nation in Cyberspace". *Time Almanac 1990's* (CD-ROM). New York: Time Magazine.
[2] Elmer-Dewitt, P. op. cit..
[3] Willis, G. (1994). In Elmer-Dewitt, P. op. cit..

What happens to people who can't afford to get the information?

Internet access is fairly affordable to most middle-class families today, however many people of the lower economic classes of society are unable to afford Internet access and may feel the information revolution passing them by. The Rich vs. Poor issue is considered by some to be a challenge to the role of the Internet in the future, however Internet access, in Australia and most Western nations, is available from various non-profit and/or educational providers for those who are unable to meet the costs of commercial Internet Service Providers.

APANA, the Australian Public Access Network Association, for example, is a non-profit computer networking organisation. Running a non-commercial network that covers most of Australia, APANA offers members access to the Internet for as low a cost as possible. For many running a personal system, the only cost will be phone bills. BrisNet operates similarly, providing a non-profit network for dial-in by Brisbane residents at the lowest possible cost.

Yet, if a family wishes to access the Internet and cannot afford a personal computer to access the network, other options are still available. Most schools, universities and libraries have access to the Internet via the Australian Academic and Research Network (AARNet). Such service offer access for free, and hence anybody wishing to join the Internet community may do so. The fear of being left behind in the information age need not be a reality, for the governments of most nations have indicated they do not want this to happen and are providing as many public terminals as possible.

Perhaps the most exciting revolution for society, both high and lower class, will be the introduction of Web Television, which will bring the Internet to our television sets. Considering that 85% to 90% of most American homes aren't yet connected to the Internet, and realising that nearly everybody has a TV and a phone, the introduction of Web or Net Television might finally offer the Internet as "the mass medium its promoters have been promising all along"[4].

The Internet need not promote a fear in the lower-economic classes of society that they are being left behind in the information revolution, for "if the tolls are too high - the electronic superhighway ... [will] lead to a dead end"[5].

[4] Krantz, M. (1996, August 19). "The Biggest Thing Since Color?". *Time*. i. 34, 74.

[5] Elmer-Dewitt, P. (1994). "Take a Trip into the Future on the Electronic Superhighway". *Time Almanac 1990's* (CD-ROM). New York: Time Magazine.

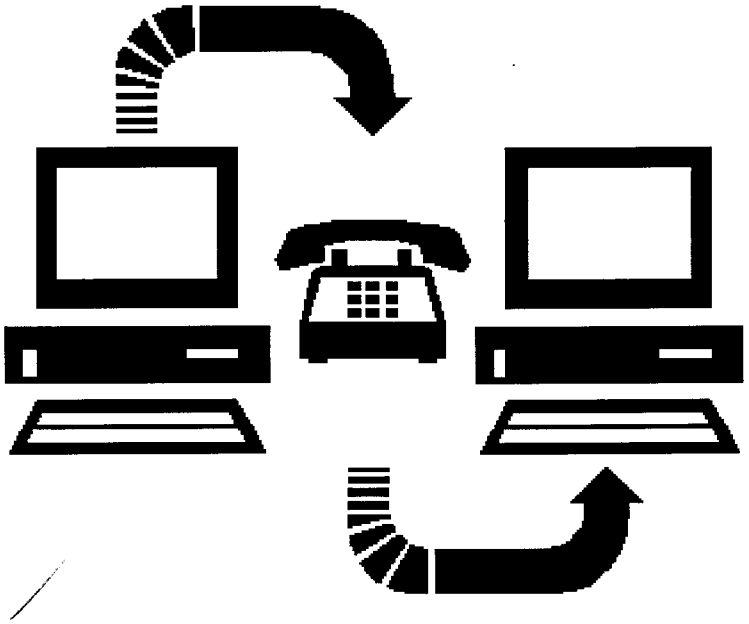
Who owns the information?

Copyright is a major issue being faced by electronic publishers and the internet community. It is believed that, "In the coming years, instantaneous computer transmission, electronic reproduction, and text and image manipulation are destined to change the way information is treated as property. Already multimedia discs, network information nodes, and a variety of information services accessible by anyone with a personal computer complicate the concept of ownership."[6]

Undoubtedly, "copyright law ... [is] now facing its most formidable challenge"[7]. In this, the age of information, those who electronically publish information generally do so because they want people to have it. Yet, how do copyright and other intellectual property rules apply on the Internet, where information is stored in digital form and can be transmitted, copied and printed at the touch of a few simple keystrokes and for little more than the cost of a local telephone call? Anthony Foley, a leading technology and digital media copyright lawyer, has found that, "Some say copyright law is irrelevant because works can be used, disseminated and manipulated without detection."[8]

However, it is argued that those who publish electronic material on the Internet should be entitled to the same protective measures against unlawful copying as those who publish in the traditional mediums. David Post sees the copying of electronic publications remaining as a means by which "free-riders can appropriate the creative output of others"[9], and it is exactly for this reason that, in the eyes of the legal system, "copyright is not dead"[10]. While it has been suggested that "we are sailing into the future on a sinking ship ... copyright law has evolved and survived the creation of other new technologies that have constituted major paradigm shifts"[11], and will most likely continue to evolve with regards to publishing on the Internet.

The United States government's National Information Infrastructure Working Group on Intellectual Property, found that, "The [copyright] coat is getting a little tight. There is no need for a new one, but the old one needs a few alterations."[12] Such alterations and amendments need to carefully examine what is classed as an illegal copy. Whether a person's e-mail is classed as an electronic publication which would be illegally "copied" by the receiver into their computer's memory or whether somebody's homepage being displayed on a computer screen in its digital form would be a breach of copyright, all illustrate "some of the difficult issues that arise when we try to apply venerable legal doctrine to new technologies"[13]. Post remarks that, "The question copyright law will have to settle is whether browsing on the Internet is



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[6] Demac, D.A. (1994). *Property Rights in the Electronic Dawn* (Internet world wide web site).
[7] McIntosh, T. (1996, April 30). "Hollywood to Untangle On-line Copyright Maze". *The Australian (Computers & High Technology)*, 49.
[8] Foley, A. (1996, April 30). In McIntosh, T. op. cit., 49.
[9] Post, D. G. (1995). *New Wine, Old Bottles: The Case of the Evanescent Copy* (Internet: world wide web).
[10] Foley, A. op. cit..
[11] Loundy, D. J. (1996). *Revising the Copyright Law for Electronic Publishing* (Internet: world wide web).
[12] Post, D. G. op. cit..
[13] Post, D. G. op. cit..

more akin to browsing at your local bookstore, or is more analogous to surreptitiously placing a copy of Grisham's novel on my Xerox machine or scanning its pages into my computer's memory"[14]. Loundy has also discovered that, "Another problem with electronic publishing arises from the fact that potentially infringing copies can be made by people who do not have the ability even to determine that they are copying protected works"[15]. It is therefore vitally important to understand that, "As technology changes, the law must also change in order to address concerns raised by new technology."[16]

Although "... electronic publishing and digital distribution of copyrighted works creates some tough questions for the current copyright law to address, the copyright law can be made to adapt to this technology without requiring a substantial overhaul"[17]. If governments in amending the laws to protect the authors of electronic publications take into account that the information is "an indispensable component of a new form of communication in a digital world, communication that can be smothered under a mountain of ruinous and wasteful litigation"[18], and that it would be "... very difficult, if not impossible, to impose a censorship regime across the Internet"[19], then perhaps the electronic publishers and the digital audience may both prosper from the opportunities the Internet offers.

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[14] Post, D. G. op. cit..
[15] Loundy, D. J. op. cit..
[16] Loundy, D. J. op. cit..
[17] Loundy, D. J. op. cit..
[18] Post, D. G. op. cit..
[19] McIntosh, T. op. cit..

Who controls the information?

Recently, the Internet community has faced major law reforms which threaten to regulate the Internet and the content provided on its thousands of computers. Ben Kingsley, playing Cosmo in the motion picture *Sneakers*, brings to light the United States government's push for information control and regulation, stating that, "The world isn't run by weapons anymore or energy or money; it's run by little ones and zeros, little bits of data. It's all just electrons ... There's a war out there ... A world war, and it's not about who's got the most bullets, it's about who controls the information! What we see and hear, how we work, what we think - it's all about the information."[20]

A little over two months ago, "The whole information revolution was jeopardized [sic] ... by a primly named U.S. government statute called the Communications Decency Act"[21], "the government's attempt to regulate on-line content more closely than print or broadcast media"[22]. The Communications Decency Act sought to squelch on-line pornography and make the Internet safe for children by banning "indecent" content, however the legislation was so vague that Shabbir Safdar, co-founder of Voters' Telecommunications Watch, now believes that United States Congress "... basically want to turn the Internet into Barney the dinosaur"[23]. Yet, those of the Net community protesting the Act as a breach of "free speech" defined under the U.S. First Amendment rights, were relieved in June when a landmark U.S. federal court ruling found that the Act was "unconstitutional on its face and profoundly repugnant"[24]. Similarly, a second federal court ruling this month declared the Communications Decency Act unconstitutional. Wayne Matelski, attorney in the case, believes that, "Freedom of expression should be allowed on the Internet without restrictions ... It is a definite victory for Internet users."[25].

Despite the feeling that "Congress does not understand the Internet"[26] from Republican Congressman Rick White and the majority of the American Internet community, others, including the governments of Singapore, Germany, China and Vietnam, believe that, "The freedom the Internet offers is a good thing, but there must be some limits or it will become another Wild West."[27] The Singapore Broadcasting Authority (SBA) has introduced a licence scheme for Internet service and content providers that seeks to censor "content which may undermine public morals, political stability and religious harmony in Singapore"[28]. While Singapore's government recognised "it was impossible to fully regulate the Internet"[29], they concentrated on "what is necessary and possible"[30]. Hence, pornography, the depiction of violence, nudity and sex, the propagation of sexual 'perversions' such as homosexuality, lesbianism and paedophilia, political and religious organisations' discussions which may disrupt social harmony, content that may jeopardise public security or national defence and content which denigrates any race or religion or promotes "religious deviations or occult practices" is forbidden to be transmitted or received in Singapore.

Similarly, Vietnam's telecommunications authority has drafted a sweeping law to control the use of the Internet, due to "rising fears in the Communist Party that free access to information could help undermine its

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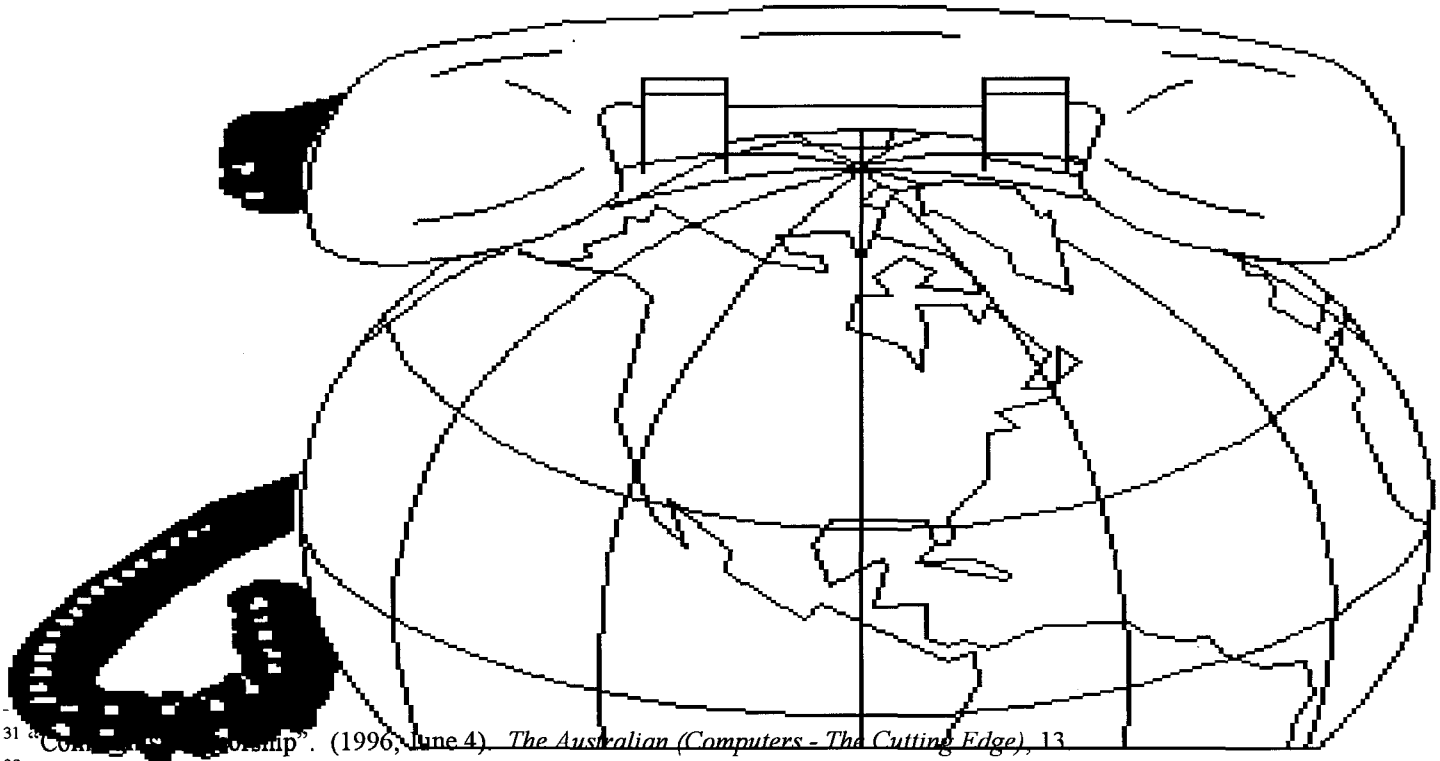
[20] Kingsley, B. (1992). *Sneakers* (video recording). Los Angeles: Universal Pictures
[21] Quittner, J. (1996, June 24). "Free Speech for the Net". *Time*. i. 26, 82.
[22] Quittner, J. op. cit., 82.
[23] Safdar, S. (1996, February 19). In Lemonick, M.D. "The Net's Strange Day". *Time*. i. 8, 57.
[24] Quittner, J. op. cit., 82.
[25] Matelski, W. (1996, August 6). In Simon, S. "Another US Court Rules in Favour of Internet Porn". *The Australian (Computers & High Technology)*, 45.
[26] White, R. (1996, June 24). In Quittner, J. op. cit., 83.
[27] Macri, F. (1996, August 5). In "Letters". *Time*. i. 32, 12.
[28] Goh, L.K. (1996, July 16). In Penna, A. "Singapore Government Tightens the Net". *The Australian (Computers & High Technology)*, 13.
[29] Penna, A. (1996, July 16). op. cit., 13.
[30] Goh, L.K. op. cit., 13.

rule"[31]. Under the new law, the interior ministry of the nation which is responsible for internal security will have the right to monitor all computer traffic and all Internet users will have to register with the Directorate General of Posts and Telecommunications (DGPT). Violations to the law would be punishable under the existing laws, for "abusing the rights of freedom of speech and democracy to damage the State"[32].

Yet, even more disturbing is the fact that censorship and regulation of the Internet is an issue here in Australia as well. The Australian Broadcasting Authority (ABA), while recognising "that the Internet and on-line services are different"[33] and even acknowledging that "the extent of objectionable and even X-rated material is low, and unlikely to be encountered without a user earnestly seeking it"[34], it expects the Internet to adhere to the standards required by today's licensed radio and television stations. That is, classifying world wide web sites with Australian censorship classifications such as PG, M and R, to protect children who may stumble across "indecent" material. However, many Australian users of the Internet understand, like the international Internet community, that "the Internet carries much more than dirty pictures"[35] and believe that the whatever danger is posed to children by the "indecent" offerings on-line is best addressed by parents and teachers.

"There is no need for licensing, and there is no need for paternalistic regulatory approaches."[36] Rather, the Internet, the fantastic communications and information network dawning today, "should be nurtured, not stifled"[37]. Internet pioneer, John Gilmore has found that, "The Net interprets censorship as damage and routes around it."[38] Therefore, "the only reasonably implemented solution is to encourage the use of self-regulation"[39]. For the Internet's use is determined by its subscribers, not its providers nor its respective governments.



[31] "Co[illegible]orship". (1996, June 4). *The Australian (Computers - The Cutting Edge)*, 13.
[32] "Communist Censorship". op. cit., 13.
[33] Hilvert, J. (1996, July 9). "Big Brother Wants Chilling Consistency". *The Australian (Computers & High Technology)*, 38.
[34] Hilvert, J. op. cit., 38.
[35] Lemonick, M.D. (1996, February 19). op. cit., 57.
[36] Hilvert, J. op. cit., 38.
[37] Quittner, J. op. cit., 82.
[38] Gilmore, J. (1994). In Elmer-Dewitt, P. "First Nation in Cyberspace". *Time Almanac 1990's* (CD-ROM). New York: Time Magazine.
[39] Jones, M. (1995, August). "Censorship: The ISP Dilemma". *Internet Australasia*, 17.

The Internet is continuing on a road, or rather a highway, of unprecedented growth that seems likely to continue for some time. As the Internet continues to expand, so too will its range of services. In the United States, there are already on-line shopping networks established where you can do your shopping via the World Wide Web. Such services can be expected to grow in future, as they are relatively easy to implement. Real time audio, in the form of Internet radio stations can be expected to develop and grow, as too will the use of Internet phone software. In fact, the use of audio communications software is now embedded in many world wide web browsers today.

Fibre-optic cabling will give rise to interactive television and video on the Internet, however applications will most likely face an uphill battle. Current technology does not provide for high-quality interactive television and data synchronisation does not work very well on the Internet. It is probable, however, that music distribution will eventually turn to the Internet and CDs as we know them will eventually fade from everyday use. Electronic publishing will also grow, as it already is, and we can expect to see more on-line documentation in the very near future.

Yet, perhaps the most exciting implications of the internet in the future will be the design and implementation of new laws that will cater for the needs of the Internet community. Censorship, copyright and maybe the "right to information" will all form the fabric of a new Internet structure, which is developing today in the dawning information age.

"In the end, how the highway develops and what sort of traffic it bears will depend to a large extent on consumers ... [like the Internet of the past, the information super highway of the future will most likely] veer off in surprising directions and take us places we've never imagined."[40]

[40] Elmer-Dewitt, P. (1994). "Take a Trip into the Future on the Electronic Superhighway". *Time Almanac 1990's* (CD-ROM). New York: Time Magazine.

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