aim is to expedite the transfer of results of research into clinical practice. Among other issues, this section also focused on improving the efficiency and reducing the cost of conducting medical trials, including the idea of incorporating trials as part of routine clinical practice.

Overall, this book is well presented. The tables, graphs and illustrations are clear, relevant and aid in understanding the text. In order to broaden the readership it may have been worthwhile to include summary tables, diagrams and photos. However, this would have greatly increased the cost of producing this book. The indexing was somewhat brief but relevant. The number of references are limited ranging from 3 to 25 per chapter (average 14) but they tend to be core and fairly current references. Thus, this book provides a starting point for any review of the literature in medical technology assessment. The review of the scientific literature in the book is critical of studies and certainly not given to uncritical quoting of their results and conclusions, which tends to occur in medical textbooks. The writing in the book is concise and clear. The authors try to avoid jargon and explain concepts in plain English, however the complexity of the area makes this almost impossible. A person not familiar with medical terminology will probably find it a little hard going.

This book is not comprehensive enough to be a textbook on medical technology assessment. It certainly is a good read for anyone, with some knowledge of the health area, wishing to have an overview of medical technology assessment or wishing to explore some of the current issues in health care.

Eugen Mattes
University of Western Australia
Perth, Australia

Technology and Privacy: The New Landscape

Philip E. Agre and Marc Rotenberg (Eds)

Cambridge, MA, MIT Press, 1997, vi + 323 pp., US $25.00, ISBN 0-262-01162-X (hbk)

Privacy on the Line: The Politics of Wiretapping and Encryption

Whitfield Diffie and Susan Landau

Cambridge, MA, MIT Press, 1998, ix + 342 pp., US $25.00, ISBN 0-262- 04167-7 (hbk)

Technology and Privacy: The New Landscape defines a landscape of privacy and technology that is both daunting and inspiring. Ten well-chosen essays explore the issues and opportunities that confront policy-makers, professionals and privacy advocates in new technologies.

Some of these issues are in well-trodden territory. Privacy advocates are familiar with the real-time privacy risks associated with increased bandwidth and computer processing power and the growth of global information networks. Privacy advocates are also confronted by increased commodification of personal information, a lack of consumer awareness of the economic value of their personal data and disempowerment of individuals in controlling their personal information.

A theme of the volume is the observation that there is a global trend for minimum privacy protection standards. While encouraging, we should be sceptical that this will result in a satisfactory global framework. One contributor, Mayer Schönberger describes

data-protection norms in generational terms and supports Bennett in his demonstration that:

> data protection, above and beyond national idiosyncrasies, can be viewed as an informally co-ordinated international process in which nations might be at different stages of legislative development but cannot resist a general evolutionary trend within data-protection norms (especially in Europe) (p. 220).

The proposition is that although there is no centralized co-ordination of global privacy policy and regulation, there are internationally consistent norms. However, these norms are altered by generational 'shifts', such as the recognition that data-protection laws should apply to the private as well as the public sector, which Mayer Schönberger identifies as taking place in the mid 1970s (an area in which the Australian Government continues to lag).

For example, the functional approach of the 'first-generation data protection norms' was not realized because of the diffusion of micro-processing units:

> The image of a monolithic Big Brother who could be fairly easily regulated through stringent technology-based procedures gave way to a broad, blurry picture of a constellation of distinct and novel data-protection offenders (p. 225).

What have been the subsequent generational shifts? According to Mayer Schönberger, the second focused on the privacy rights of the individual while the third was the concept of 'informational self-determination'. As set out by the German Constitutional Court: 'The basic right guarantees the ability of the individual, to decide in general for himself the release and use of his own personal data'.

An interesting question is to ask where Australia fits into this landscape? Regrettably, it doesn't look good. Here, the move to extend privacy legislation to the private sector has been on and off for a number of years. In the context of *Technology and Privacy: The New Landscape* we can see that the Federal Government's perspective is concerned with functional and economic issues rather than the concept of information self-determination.

To cite an example, the Federal Government failed to intervene when Telstra refused to inform its customers of the privacy risks associated with the introduction of calling number display technology. The Australian Government places a higher priority on commercial and business interests, in the acquisition of customer information, than the rights of individuals. Based on Mayer Schönberger's analysis, Australia's privacy legal and policy framework hasn't moved far beyond the European situation of 1970, if at all.

And the fourth generation? This should follow the recognition that individuals are in a weak bargaining position when exercising privacy rights. The fourth generation model will try to equalize the bargaining position between individuals and institutions while removing 'parts of the participatory freedom given to the individual in second- and third-generation data protection norms' (p. 233). Fourth generation norms supplement this framework with sector-specific data-protection regulation and through complaints-handling ombudsman schemes.

Another interesting contribution comes from Victoria Bellotti, who looks at design issues that arise from the 'blurring' of public and private spaces. Media spaces involve the installation of audio—visual equipment in places such as offices and public spaces and transmission of multimedia to remote observers. Although there may be a bi-directional flow of information, participants in a media space may be unaware of the use of information by the remote observers.

Bellotti's concern is 'how we enable people to determine that they are presenting themselves appropriately and how to control intrusive access over computer-mediated

communications infrastructures and other systems that connect distributed places and the people in them' (p. 64). Multimedia raises issues that are not well understood, arising from 'the relationship between user-interface design and socially significant actions' (p. 65). Bellotti also claims that closed-circuit AV systems provide for 'disembodiment' and 'dissociation'.

Media spaces cause a loss of awareness about the information we are conveying, to whom it is being conveyed and the intention of those accessing the information. Bellotti identifies four potential user and system behaviours: *capture*, *construction*, *accessibility* and *purpose*. Evaluation criteria are proposed for the reference of those designing and building multimedia systems.

The convergence of video, audio and data applications with mobile technologies will pose significant challenges. The consumer market for mobile multimedia can be expected to grow dramatically in the next decade. Bellotti's criteria might be applied in the design and use of multimedia applications utilizing mobile technologies, whether for multi-user purposes or where third parties collect and store data from the mobile platforms.

Burket and Philips propose alternative strategies. Burket looks at privacy enhancing technologies (PETS) and describes three trends relevant to the future of PET design: *information balance*, *identity* and *trust*. This complements Philips' later work on 'Cryptography, Secrets, and the Structuring of Trust' which presents an optimistic view of the level of awareness of privacy risks within communities.

Simon G. Davies writes on one of the most critical issues for privacy theory in 'Re-engineering the Right to Privacy: How Privacy has been Transformed from a Right to a Commodity'. Davies reveals how traditional privacy rights are being transformed by being introduced as commercial products (as with caller ID) or by 'partnerships' with surveillance advocates such as with Closed Circuit TV. Davies reports that in the UK, between 150 million and 300 million pounds are spent each year on the surveillance industry, with an estimated 200,000 cameras covering public spaces.

Of concern is Davies' observation that privacy lobbies are in decline. Davies cites the Australian Privacy Foundation, which began with a highly successful campaign against the Australia Card, but now has few members and no budget: 'Shifts in public attitude have created new and complex challenges that privacy groups have yet to absorb. The transmogrification of privacy rights into legal and consumer rights means that the slack is being taken up by institutional bodies such as courts, industry watchdogs, and trading standards bodies' (p. 155).

Rohan Samarajiva's contribution also deals with an emerging technology issue in an interesting analysis of changing producer—consumer relationships, in particular, the trend to 'customisation' of consumer products. The Internet is the mass-market platform for customized media and delivery of personalized products and services. Samarijiva is optimistic that 'trust-conducive and privacy-conducive interactive systems are likely to emerge' when certain conditions are satisfied (p. 301).

Samarajiva is wary of covert surveillance capabilities and policies that deny access to information about change or that offer choices:

> In this situation, not only do system operators and vendors lose the opportunity to learn about the trust and privacy concerns of the public; in addition, individual consumers lose the opportunity to enter into satisfying commercial relationships. The resulting dissonance may lead to mistrust and angst, resulting in pathological customer relationships (p. 301).

There is a consistent theme in the contributions, that moves to improve privacy are in a perpetual lag behind technological developments. Rather than dwell on this issue,

contributions such as the essays by Burket, Philips and Samarajiva present frameworks for improving the design of privacy enhancing technologies.

Technology and Privacy: The New Landscape will appeal to a fairly wide audience, including designers of information systems and policy and lawmakers. None of the contributors have succumbed to over use of jargon, making the contributions generally accessible and enlightening.

Privacy on the Line is a more specialized edition but just as interesting. The abuses of wire-tapping by various law-enforcement agencies (especially US based), that are sprinkled throughout the book may cause alarm or provide some entertainment, if you enjoy Ian Fleming.

Although wiretapping was first used in the 1890s by New York police, the illegal 'bugging' strategies of holders of high office in the period from Robert Kennedy to President Richard Nixon were the heyday of politically motivated interception of private communications, though we shouldn't assume that this means there has been a decline in the use of illegal wiretapping for political purposes. The perpetrators may simply be more sophisticated in avoiding disclosure.

Usually the interests of the individual and government/business interests are in conflict, but with respect to cryptography, Diffie and Landau point out that 'the fight for cryptographic freedom, unlike the fight against credit databases, is a fight in which privacy and commerce are on the same side' (p. 239). That situation may be changing.

The development of public key cryptography and the 'Clipper Chip' represent a watershed in the policy framework for cryptography (Diffie and Martin Hellman are the inventors of public key cryptography). The 'Clipper Controversy' involved the proposal for a key escrow system by the National Institute of Standards and Technology.

Key escrow involves the distribution of 'keys' or algorithms, split in two and retained by a federal agency. Law enforcement agencies would require legal authorization to access the key to allow for the interception and decryption of communications. The keys would be distributed as an integrated part of manufactured communications products:

> Despite strong protests, on February 9, 1994, NIST adopted the Escrowed Encryption Standard [EES] as a Federal Information Processing Standard (USDoC, 1994b). To objections that the standard was a first step toward prohibition of non-escrowed encryption, NIST responded that the standard was voluntary. To concerns that the system might infringe on individual rights, NIST responded that decryption would occur only when legally authorized. To protests over the secrecy of the algorithm, NIST responded that there are no known trap doors or weaknesses in it. To objections that the standard would be ignored by people engaged in criminal activity, NIST responded that EES would make strong encryption widely available and that ... non-escrowed encryption would become harder to obtain. Escrow agents remained undetermined, and NIST acknowledged that the standard lacked sufficient detail to function as an interoperability standard (p. 215).

A wide-ranging review of the effect of cryptography on the national interest was initiated by Congress in 1994. The National Research Council established a panel of 16 experts, who it seemed at the time would be sympathetic to the establishment position. This backfired, however, when the panelists recommended broader use of cryptography, the loosening of export-controls and a 'go slow' on escrowed encryption:

> The short message was that the United States would be better off with widespread use of cryptography than without it. This was a message the Clinton administration did not want to hear ... US Government officials began lobbying for it in other countries ... In 1994, under the influence of such lobbying, the Australian govern-

ment reported that the biggest *current* threat to telecommunications were digital telephony and encryption (p. 220).

Not surprisingly, the US Government had little success in promoting the concept in Europe and the OECD.

Privacy on the Line is an ideal read after *Technology and Privacy: The New Landscape.* Most of the book focuses on the US experience, but then the US, through its attempts to control encryption technologies on a global scale, is central to the issue. Cryptography is a threat (and an opportunity) to the economic, political, military and technological dominance of the US in an information economy. It's not surprising, therefore, how far the US is prepared to go to regulate cryptography.

Hopefully we will see widespread consumer access to encryption technologies in the next chapter of the cryptography story. The Internet is an ideal platform for mass-market global communications and an opportunity to restore privacy to personal communications. But perhaps business and consumer interests will divide in respect of encryption. That will be an interesting struggle.

To read an interview with Whitfield Diffie and find out more about *Privacy on the Line go to:* < http://mitpress.mit.edu/news/diffie/interview.html > . If, after reading *Privacy on the Line*, you want to download PGP (Pretty Good Privacy) to protect your email, go to: < ftp://ftp.au.pgp.net/pub/pgp/pgpi/ > .

Steve Horrocks
Consumers Telecommunications Network
Sydney, Australia

Die Rechtmäßigkeit europäischer Fernsehquoten aus kompetenzieller, grundrechtlicher und welthandelsrechtlicher Sicht

Michael Frese

Frankfurt, Germany, Peter Lang Verlag, 1998, 173 pp., DM 69.00, ISBN 3-631-33043-X

Die Filmpolitik der Europäischen Union im Spannungsfeld zwischen nationaler staatlicher Förderung und US-amerikanischer Mediendominanz

Sabine Jarothe

Frankfurt, Germany, Peter Lang Verlag, 1998, 434 pp., DM 98.00, ISBN 3-631-32725-X

Unzulässiger Protektionismus der europäischen Medienpolitik? Die Maßnahmen der Europäischen Gemeinschaft zum Schutz des europäischen Films und ihre Vereinbarkeit mit dem durch das GATT und die WTO-Vereinbarungen gebildeten Rechtsrahmen

Karin Sandberg

Frankfurt, Germany, Peter Lang Verlag,1998, 306 pp., DM 98.00, ISBN 3-631-32068-X

Although for many years German academe has not taken account of the conflicts between international liberalization of services and cultural policy, despite the fact that these conflicts were at the centre of numerous controversies within the GATT, WTO