

Smart Card Technology International –1999
Application Issues
The Open Society and its Enemies
Sociopolitical Issues and Smart Card Market
Development

Graeme Freedman outlines impending sociopolitical issues in smartcard business development.

Karl Popper, perhaps this centuries greatest philosopher of science, in 1944 completed two volumes entitled “The Open Society and its Enemies” from which I have stolen the title for this short discussion. In these volumes, Popper criticised some of the great philosophers that had come before him.

Plato was criticised for arresting all change, for providing justice for every person only in the role in which they were “happy”. The ruler was most happy ruling; the slave was happiest slaving, and the merchant happy trading. Therefore Plato’s republic became no more than a totalitarian state managed by a benevolent class based government.

Marx was attacked for his doctrine of inevitability, that because change is inevitable, it should be planned, and controlled by the state.

Between 1938 and 1944 while Popper was writing these volumes, the fight to attain an Open Society was being fought via a physical war with arms and munitions in defence of ideas and ideals, values and doctrines.

In 1954, in an address to the Chicago Decalogue Society, Albert Einstein took up the battle for the Open Society:

“The existence and validity of human rights are not written in the stars. The ideals concerning the conduct of men toward each other and the desirable structure of the community have been conceived and taught by enlightened individuals in the course of history.”.....“In talking about human rights today, we are referring primarily to the following demands: protection of the individual against arbitrary infringement by other individuals or by the government; the right to work and to adequate earnings from work; freedom of discussion and teaching; adequate participation of the individual in the formation of his government.”

Between 1945 and his death in 1955 Einstein wrote and spoke prolifically on pacifism, equity, justice and human rights. There has undoubtable never been a

single person so acutely aware of the power that science and technology provides for good, and the potential it can unleash for evil.

We have moved on dramatically in technology since Plato, Marx, Popper and Einstein, but in historical and sociopolitical terms, perhaps we have not moved on very far at all.

Both the greatest fears and the greatest desires of The Open Society can be found in IT technology, and these fears and desires are the most polarised in smart card technology.

Smart cards have been characterised as everything from “Big brothers little helpers” to “Convenient devices that deliver equity”. I believe that it is crucial for the smart card industry to clearly deliver the latter rather than the former version of the technology.

As with the development of Physics post Einstein, the technology itself is neutral, and can be used for either good or bad, nuclear bombs or nuclear medicine. The issues come with the implementation of the technology in a sociopolitical context, and the design of a new sociopolitical infrastructure that guarantees the stakeholders that the technology is being used for the good of The Open Society.

Much research has been carried out across many countries in understanding the issues that this technology generates. The issues are present everywhere, but the social and political context varies widely. For instance, in the USA a single social security number is accepted by all citizens, yet in Australia an attempt to introduce a single number from birth to death resulted in the loss of government of the political party that suggested it. In Eastern Europe identity cards are a normal part of life, yet in Britain every move to introduce them to solve illegal immigration has been thwarted.

In Australia we have one of the most sensitive sociopolitical environments on the planet in this regard. Here the issues seem to have broken down to a number of key privacy and equity principles that we are working with in order to achieve the right balance for The Open Society.

1. Involvement in any smartcard scheme should be non compulsory. This is often a significant test of the scheme intent, compulsory schemes are most commonly found in totalitarian societies.
2. Opting out of a smartcard scheme should not result in an inequitable result for the cardholder. There should be alternative (perhaps less convenient) options. Preferably these options should have existed prior to the smart card scheme.

3. A cardholders status, financial position or any disadvantage should not effect their ability to become a member of a scheme should they so wish and they otherwise meet the requirements of the scheme.
4. A scheme should not force cardholders to use specific merchants or services they would otherwise not use. There must always be an option to use alternative services, even if this would mean opting out of the scheme.
5. All parties involved in a smart card scheme need to understand their involvement and have clear, open and audit capable information flows between them.
6. A scheme must not add functionality or change its purpose without clearly advising the cardholders and providing a means for them to exit the scheme should they choose.
7. Information obtained from all parties in a scheme should not be used for purposes other than those for which the information was gathered.
8. All participants in a scheme must be able to check and correct information held about them at any time.
9. No information should be collected that is not essential to operate the specific smart card scheme in which the cardholder is involved.
10. Where minors are involved in a scheme, all scheme rules and options (including the option to withdraw from the scheme) must be available to their parent or guardian.
11. As much as is possible transactions should be anonymous, or pseudoanonymous. Where the transactions cannot be anonymous or pseudoanonymous they should not be collected on centralised databases with any other information that could be compared against the cardholder data.
12. Where transactions are operated or owned by different parties on the same scheme they should be securely separated with different encryption keys for each application so as to guarantee each party cannot read the others information (and breach the rules above). In this case it is prudent for keys to be held and managed by a disinterested party so as to obtain the maximum public confidence.

Additionally consideration needs to be given to the different entities or roles that are required in order to implement the principles above. I will leave out the ones that are obvious, such as cardholder, scheme owner, merchant, service provider etc. Some of the crucial roles that need special consideration include:

1. **Certification Authority (CA)** - The group or agency that certifies the identity of Clients and Service Providers. If this is an independent agency it can significantly reduce concerns of privacy.
2. **Ombudsman** – In Government implementations there may be a need for an independent agency vested with the powers to audit and check and enforce the implementation of privacy and equity policy. This function may well be crucial to achieving public confidence.

3. **Key Management Agency** – In government implementations the separation of key ownership away from the various agencies to a disinterested body can provide significant public confidence in the inability of those agencies to compare cardholder data.
4. **Consumer Watchdog** – The involvement of consumer lobby groups is inevitable, particularly if some of the principles above are broken. It is important that these groups are brought into the process where appropriate and even allowed to audit the implementation of the principles above. This can be used to inspire public confidence in government implementations that could potentially attract heavy criticism.
5. **Float Fund Manager** – In government implementations the principles of equity and privacy may prevent the involvement of a bank, due to concerns about the provision of private government information to a bank and due to banks interests being perceived to be primarily commercial and not equitable. If this is an issue, due consideration needs to be given to an appropriate body to hold funds. This role has a key public responsible for the audit of all cash transactions and providing the balance for reloading of any value on cards should they be lost or stolen.
6. **Help Desk** - Provision of a help desk that can provide equity of access to all groups, but particularly disadvantaged cardholders, is important.

In conclusion, smart card technology presents many opportunities, but in an Open Society also presents many challenges. This paper has presented some principles and mechanisms that may be useful in implementing the technology in current and emerging sociopolitical environments. It is hoped that the industry will educate its customers in how to responsibly implement smart card schemes so as to guarantee even more extensive use of the technology.

Graeme Freedman is Business Development Manager for SmartCity Smartcard systems at Fujitsu Australia Limited.