

**THE IMPACT OF
THE REGULATORY FRAMEWORK
ON E-COMMERCE
IN SINGAPORE**



**SYMPOSIUM
TECHNOLOGY LAW DEVELOPMENT GROUP
SINGAPORE ACADEMY OF LAW
5 APRIL 2002**

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EDITOR
SENG KIAT BOON DANIEL

FOREWORD

The rapid advance of technology poses new challenges for the legal and regulatory framework of all countries. Laws that have traditionally developed at a leisurely pace must now catch up with technology's incessantly rapid progress.

The TLDG is a think tank established by the Singapore Academy of Law to engage in research and reform of technology law.

By promoting information sharing and collaboration between the technology industry, the legal sector, government and academia, the Academy hopes to play its part in ensuring that Singapore stays in the vanguard of the global technological revolution.

Stemming from this objective, the TLDG organised a Symposium on 5 April 2002 on "The Impact of the Regulatory Framework on E-Commerce in Singapore". Chaired by Lee Seiu Kin JC, the Symposium saw invited industry leaders, policy makers and lawyers gathering at the Academy in an informal setting for a day of frank dialogue and discussion on the legal and policy challenges facing Singapore e-commerce's industry.

This publication is a record of the Symposium proceedings.

I commend this book to policy makers, industry leaders, lawyers and students alike, and to all who wish to learn about the prevailing legal and regulatory issues in e-commerce in Singapore.

Yong Pung How
Chief Justice
Republic of Singapore

October 2002

INTRODUCTION

The dot.com hype has come and gone but e-commerce is definitely here to stay. The Quarterly E-Commerce survey Singapore Q1-Q3 2001, released by the Infocomm Development Authority of Singapore on 6 March 2002, showed that despite the weak overall economic climate, e-commerce revenue in Singapore grew steadily over the first three quarters of 2001. Business-to-consumer sales grew by 13% and business-to-business sales revenue grew by a surprising 26%.

The growth of the e-commerce industry also coincides with its growing maturity. We are beginning to witness the ascendancy of well-run dot.coms and the death and rebirth of failed dot.coms. Well-established brick-and-mortar companies are investing in them or buying them out. E-commerce in Singapore will face new challenges. Not only is it affected by industry and technological shifts, it will also be buffeted by international legal, regulatory and policy changes.

A supportive regulatory framework in Singapore is therefore necessary for e-commerce to flourish. The regulatory framework and the policies that underpin the framework must be carefully constructed in order to accommodate the various interests involved. Finding the correct blend of policies requires research and reform.

This is where the Technology Law Development Group ('TLDG') comes in. The TLDG is a think tank established by the Singapore Academy of Law to engage in technology law research and reform with a view to assessing the adequacy of existing laws and formulating broad solutions on these issues.

To further this end, the TLDG organised the inaugural TLDG Symposium on "The Impact of the Regulatory Framework on E-Commerce in 'Singapore'" on 5 April 2002. The Symposium was well attended by representatives from the Attorney General's Chambers, the Economic Development Board, the Infocomm Development Authority of Singapore, the Inland Revenue Authority of Singapore, the Intellectual Property Office of Singapore, the Ministry of Law, the Monetary Authority of Singapore and the Singapore Broadcasting Authority. Representatives from the Singapore e-commerce industry such as National Computer Systems, DCS Solutions Ltd and Adroit Innovations Ltd were also active participants. The TLDG was extremely heartened by this show of support from the public and private sectors of the IT industry. The diversity of perspectives was reflected in the contributions of the participants as they voiced their thoughts on what it takes to ensure that Singapore's e-commerce market remains relevant and competitive.

It was a fruitful day of discussion and dialogue and the proceedings are now consolidated in this publication for your benefit.

Lee Seiu Kin
Judicial Commissioner
Republic of Singapore

October 2002

EDITORIAL NOTE

The inaugural Symposium on 'The Impact of the Regulatory Framework on E-Commerce in Singapore' held on 5 April 2002 provided an opportunity for various experts from different sectors of the economy to share their experiences and expertise to facilitate a better understanding of the effectiveness of the regulatory framework supporting e-commerce in Singapore.

The mix of experts comprising industry players from multi-national corporations ('MNCs'), small and medium enterprises ('SMEs') and government-linked corporations ('GLCs'), legal practitioners, officers from government and regulatory bodies and academics, provided the different perspectives necessary to a comprehensive understanding of Singapore's e-commerce industry.

This publication has been structured to reflect the proceedings on the Symposium day. Participants heard several presentations from experts beginning with the presentation of a perspective and context paper, which provides the background on the path of e-commerce policy making in Singapore.

This is followed by a series of topical papers on Contract Law and intellectual property protection in the context of e-commerce, and a paper on the legal and regulatory hurdles to e-commerce in Singapore.

The continued significance of the postal acceptance rule, terms that ought to be implied in cyberspace contracts, issues relating to electronic signatures and jurisdiction clauses were highlighted in the paper on contractual issues in cyberspace.

The highly controversial anti-circumvention measures were thoroughly discussed in the intellectual property papers from the perspective of a practitioner and regulator of intellectual property laws.

Privacy issues, industry self-regulation and taxation issues are highlighted in the paper on the legal and regulatory hurdles to e-commerce in Singapore.

After the presentation of each topical paper, representatives from the relevant government bodies responded in their personal capacities. The presentations of papers and responses were followed by discussion sessions during which participants contributed their thoughts on the issues at hand. All discussions were transcribed and consolidated for inclusion in this volume. The Symposium concluded with contributions from a panel of industry players who contributed the industry's insights on prevailing issues.

It is hoped that the wealth of information from the Symposium containing up-to-date discussions about Singapore's e-commerce laws and policies as of April 2002 will help us to better understand the requirements for encouraging e-commerce activity in Singapore.

The Symposium and this book are largely the contributions of the intellectual efforts of the authors of the main papers and the response papers. It is to them that we owe our gratitude. To Seow Hiong, Andrew, Tiong Min, Stanley and Peng Hwa – my thanks for so graciously accepting the TLDG’s request to anchor the Symposium with your papers. To Khang Chau, Wee Chuan, Woon Yin, Mei Poh and Lawrence – my thanks and appreciation too for sharing your perspectives with us and for enriching us with your personal opinions. I also wish to acknowledge the contribution of the industry panellists led by Mr Johnny Moo as well as the Symposium participants for their valuable views which I trust this book accurately captures.

Finally, I would like to express my thanks to the Honourable The Chief Justice for his support for the TLDG and for favouring us with his foreword for this book. I would also like to thank JC Lee Seiu Kin, Chairman, TLDG, Mr Charles Lim, Head, Law Reform and Revision Division and Deputy Head, Legislation Division, Attorney-General’s Chambers and Ms Serene Wee, Director of the Academy, for their leadership of the TLDG. A word of thanks, too, to my ex-Legal Research Coordinator, Ms Lynette Hee, my dedicated Legal Researcher, Mr Sriram S. Chakravarthi, my hardworking secretary, Ms Norhayati Binte Eusop, members of the TLDG Secretariat and all my friends and colleagues at the Academy. It was a team effort – from organising the Symposium to editing the papeprs to typesetting the book to designing the cover – that brought this book to fruition, and without everyone’s input and assistance, the production of this book would not have been possible.

Visiting Associate Professor Daniel Seng
Faculty of Law, National University of Singapore
Editor & Director of Research, Singapore Academy of Law

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SINGAPORE'S POLICY APPROACH TO INFORMATION COMMUNICATION TECHNOLOGY

Goh Seow Hiong

Biography

Goh Seow Hiong has been in the government service for the past 10 years. Prior to joining Rajah & Tann where he now practises as an advocate and solicitor, he was the Deputy Director of Infocomm Development Policy division of the Infocomm Development Authority of Singapore ('IDA'). Under this division, he was responsible for policy formulation to facilitate the development and growth of the e-commerce and infocomm industries in Singapore, and the planning and protection of critical infocomm infrastructures in Singapore. Up till December 2000, he also held the concurrent appointment of Deputy Director for Infocomm Security, and was responsible for the technical security programmes at the infrastructure, government and national levels. His office provided security consultancy services to both the industry and the Singapore Government.

Seow Hiong received his Bachelor's Degree with Honours and Distinction in General Scholarship (equivalent of a First Class Honours) in Computer Science from the University of California at Berkeley, and his Master's Degree in Computer Science from Stanford University. He also has a Bachelor's Degree with Honours in Law from the University of London.

Abstract

The fast paced development of the information communication technology ('ICT') industry (which includes the information technology, e-commerce and telecommunication sectors) in Singapore is founded on a set of underlying policy goals and objectives that have evolved over time. While Singapore has made significant strides in these sectors so far, a fresh look and a new mindset are needed for Singapore as we face a different landscape entering the global economy. This paper first outlines the evolution of ICT governance in Singapore, considers the implications of having a converged regulator, and highlights the emerging external influences (Parts I to IV). The paper then reflects on the effectiveness of the current policy approach, with a view to identify the challenges that lie ahead for Singapore, and recommends new ways of addressing the key issues (Parts V to VII).

I. Introduction

1. Singapore has earned a good international reputation in its efforts to develop its information technology ('IT'), electronic commerce ('e-commerce') and telecommunication industries. The widespread use of technology in modern day Singapore society is a credit to the many successful initiatives and programmes that have been put in place over the years. These sectors are now collectively known as the info-communications (also abbreviated as infocomm) or information communication technology

('ICT') sector. The broadcasting sector is also being brought into the fold increasingly. Technological convergence and advancement in these sectors have made true ubiquitous access to information almost a reality.

2. Policy making in ICT can be characterised by one word – “balance”. The policy maker is often surrounded by a gamut of internal and external forces and pressures, some of which are at times contradictory and paradoxical in nature. The challenge in policy making is to view the issues from all angles, make an assessment and determine a course of action that is likely to best bring about the intended result for the greater public good. This paper provides a review and critical assessment of Singapore's policies to date in the development of the ICT industry, and identifies gaps that need to be filled or issues where a different perspective may be needed. It is hoped that the ideas and recommendations offered are of assistance to develop new strategies and approaches that will better position Singapore to face the new challenges that lie ahead.

II. Evolution of ICT Governance

3. Historically, the responsibility for developing sectoral policies has been undertaken by separate dedicated government agencies. The IT, telecommunication and broadcasting sectors were governed by three sector-specific agencies under the purview of three different ministries:

- a. IT, including e-commerce, by the then National Computer Board ('NCB')¹ under the Ministry of Trade and Industry ('MTI');
- b. Telecommunication, by the then Telecommunication Authority of Singapore ('TAS')² under the then Ministry of Communications;³ and

¹ The creation of the National Computer Board ('NCB') in 1981 signified the start of a major push by the Singapore Government in the technological realm. Over its 18-year history, the mission of NCB had evolved from one primarily focused at computerising the government to one that included promoting IT and e-commerce to the industry and the masses. NCB was initially under the purview of the Ministry of Finance ('MOF') as MOF was the central ministry responsible for government computerisation. In 1997, NCB was moved from the purview of MOF to the Ministry of Trade and Industry ('MTI'), a recognition that IT and e-commerce were key economic sectors to be planned and strategised in conjunction with Singapore's broader economic aspirations.

² In the telecommunication services sector, there was initially a national telephone service provider. In 1992, it was split into a regulator, the Telecommunication Authority of Singapore ('TAS'), and a corporatised operator, Singapore Telecommunications ('SingTel'). SingTel largely enjoyed a monopoly until 1995, when the telecommunication services market was opened up to allow new players in segments such as paging and cellular services. Today, the telecommunication services market in Singapore is completely liberalised, with major local players such as MobileOne and StarHub, and international players such as MCI Worldcom (from the United States) and Reach International (a tie-up between Telstra from Australia and PCCW from Hong Kong) providing telecommunications services in Singapore.

³ The Ministry of Communications became the Ministry of Communications and Information Technology ('MCIT') in 1999 when IDA was created and placed under its purview. In 2001, MCIT became the Ministry of Transport after IDA was placed under the purview of MTA.

- c. Broadcasting, by the Singapore Broadcasting Authority ('SBA')⁴ under the then Ministry of Information and the Arts ('MITA').
4. Supporting the work of NCB, TAS and SBA are:
 - a. the agencies under MTI, namely the Economic Development Board ('EDB'),⁵ the Trade Development Board ('TDB'),⁶ the Agency for Science, Technology and Research ('A*STAR')⁷ and Productivity and Standards Board ('PSB').⁸ These agencies each have promotion roles, and in accordance with their own organisational goals and missions, supplement the efforts of the lead sectoral agencies to align and integrate the promotion of the ICT and broadcasting sectors with other national economic promotional programmes and plans.
 - b. the Ministry of Law ('MinLaw') and the Attorney-General's Chambers ('AGC'). These agencies provide the legal perspective to support the establishment of the legal infrastructure for these sectors. They are instrumental in working with the lead agencies to put together the legislation that governs the ICT and broadcasting sectors today.
5. In recent years, technological convergence⁹ and the ability to provide more services in the online environment have led to the increasing need to

⁴ Broadcasting took a similar, albeit more limited, path as telecommunication. The regulator also discharged the functions of a national broadcaster for television and radio, but in 1994, it was also split into a corporatised operator and a regulator. The regulator, Singapore Broadcasting Authority ('SBA'), was under the purview of the then Ministry of Information and the Arts. The corporatised operator, Singapore Broadcasting Corporation ('SBC'), subsequently became the MediaCorp group of companies, under the holding company Media Corporation of Singapore. In 1995, Singapore Cable Vision ('SCV') was set up to build a hybrid fibre-coaxial cable network infrastructure in Singapore. SCV provided cable television initially, and now provides data services through its cable infrastructure as well. By 1999, four years since it started laying its first cables, SCV completed the construction of its broadband network around the country. In 2001, a second over-the-air broadcaster, MediaWorks, was licensed to operate in Singapore.

⁵ EDB planned and executed strategies to make Singapore a hub for businesses and investments. It attracted large and major investors to Singapore.

⁶ TDB helped local companies reach the overseas market. It is also the regulator of imports and exports of products, including IT and other technological products such as telecommunication equipment and encryption devices. On April 2002 TDB has been renamed International Enterprise Singapore ('IE Singapore') when it took on a broader responsibility to help local companies become international players.

⁷ A*STAR (previously the National Science and Technology Board, ('NSTB') cultivated local research and development in various sectors.

⁸ PSB was responsible for helping the development of small and medium enterprises ('SMEs') and for the national standardisation initiatives. On April 2002 PSB has been renamed the Standards, Productivity and Innovation Board ('SPRING Singapore') with the transfer of its responsibilities for SMEs to IE Singapore. SPRING Singapore continues to be responsible for standards and innovation.

⁹ Technological convergence has happened as a result of digitisation – different media and devices are now functionally interchangeable. However, business convergence has not yet materialised, and neither has regulatory convergence.

involve other government agencies in the policy formulation process so that a balance of the competing needs and interests can be reached.¹⁰ With more agencies, the problems of coordination and speedy resolution of issues are correspondingly more difficult. Recognising the importance of the ICT sector to Singapore's economy and the need to involve multiple agencies to address the issues arising, in 1997, the Singapore Government revamped the then National IT Committee ('NITC')¹¹ into a high-level multi-agency policy-making committee. NITC is represented by top office holders and deals with issues that required building consensus across the different agencies and ministries.

6. In 1999, NCB and TAS were merged to form the Info-communications Development Authority of Singapore ('IDA'), under the purview of the then Ministry of Communications and IT ('MCIT'). IDA undertook the combined responsibility to regulate and promote the ICT industry. SBA remained unchanged as the agency responsible for regulating broadcasting and Internet content. MCIT took over NITC and renamed it the National Infocomm Committee ('NIC'). However, NIC continued to manage multi-agency issues, including coordination with SBA.

7. Today, IDA has been moved¹² under the purview of an expanded Ministry of Information, Communications and The Arts ('MITA'),¹³ bringing it under the same supervising ministry as SBA. This move further provides the ability for many ICT and broadcasting related issues to be resolved under the guidance of a single ministry, and sets the stage for a more integrated policy approach towards managing the converging ICT and broadcasting sectors.

III. Having a Converged Regulator

8. The creation of IDA is significant in two aspects. It has brought together the oversight of the IT, e-commerce and telecommunication sectors under a single agency. It has also brought together the regulatory and promotional functions for these sectors under the same roof. This alignment is intended to make it possible for a single agency to internally find the appropriate point of balance in the governing policies over these sectors. We first examine the

¹⁰ For example, there is a need to involve the Ministry of Finance ('MOF') and the Monetary Authority of Singapore ('MAS') on issues relating to online financial transactions, while issues relating to online gambling involve the Ministry of Home Affairs ('MHA') and the Singapore Police Force ('SPF').

¹¹ NITC was first set up in 1992 as an advisory platform to monitor and guide the promotion and use of IT in the different sectors of the Singapore economy. In 1997, recognising the need to drive the execution of the national IT plans in different ministries and the need to coordinate cross agency issues, NITC was given a broader policy-making and executive mandate. NITC was then chaired by the Minister for Education and Second Minister for Defence..

¹² IDA was moved from the purview of the then MCIT to MITA in 2001.

¹³ MITA was formerly the Ministry of Information and the Arts, before being renamed when IDA was moved under its purview in 2001. It retained its acronym after taking on the additional portfolio for ICT.

implications of bringing together the policy responsibility of these different sectors, and then address the potential benefits and shortcomings of combining the regulatory and promotional functions in a converged regulator.

A. *Different Sectors under a Single Agency*

9. When the Government decided to make IDA overall responsible for the ICT sector, there may have been an implicit assumption that the different segments of the technology industry can be governed by policies that are driven by similar underlying principles. Despite technological convergence bringing the different spaces within the ICT and broadcasting sectors closer together, there still appears to be fundamental differences between the industries. After over more than a decade since the concepts of convergence were first articulated, the cultures, strategies and business models of the telecommunication, broadcasting and IT industries have remained quite distinct, although the players have started to venture into each other's markets. Legacy "super-structures" have kept the sectors apart, save perhaps for the blurring of the interface between telecommunication and Internet. Correspondingly, the assumption that the regulator can apply the same policy and regulatory principles across the different segments may not be well founded.

10. Arguably, the underlying approach to deal with IT and e-commerce is, and needs to be, different as compared to that for telecommunication services. One can look at the evolution of these markets, their characteristics and regulatory considerations to see how they are fundamentally different from each other:

- a. The telecommunication services market evolved from a national monopoly operator providing telephone and postal services. Through the Singapore Government's liberalisation policy, new players were introduced into the market over time, and some parts of the monopoly were broken up into separate business units, each focusing on a certain market segment (e.g. postal, paging, mobile and Internet services). The then telecommunication regulator evolved from a background where intervention and restriction were the norm. The licensing framework is largely built on the premise that permission needs to be sought before any new service can be introduced in the market. With the full liberalisation of the telecommunication market, this premise has changed and the main regulatory concerns now are in managing the electromagnetic frequency spectrum as a scarce resource, overseeing the competition between players in a liberalised market, and imposing regulatory controls where there is unfair competition or a lack of competition.¹⁴

¹⁴ The Info-communications Development Authority of Singapore Act (Cap 137A, 2000 Rev Ed) , the Telecommunications Act (Cap 323, 2000 Rev Ed), and the Postal Services Act (Cap 237A, 2000 Rev Ed), empowered IDA as a regulator and provided for the regulation of the telecommunication and postal services by IDA. After the telecommunication services sector was completely liberalised in April 2000, the Code of Practice for Competition in the Provision of Telecommunication Services, S 412/2000:Code of Practice

Being constrained by a scarce resource, the telecommunication regulation regime continues to be more “restrictive” or “inhibitive” on the market in nature. It also tends to be reactive and responds to the actions taken by the market players.

- b. The IT and e-commerce sectors evolved almost from the opposite direction. When the age of personal computers first dawned upon us in the early 1980s, there were many types of computers in the market, each with a different operating system, and their software and peripherals were not freely interchangeable. There was no clear dominance in the early days. As Microsoft emerged, it started to push competitors out of the market, first among the operating system platforms, followed by the office productivity software suites. Two decades later, Microsoft has grown to a position of dominance, and it is a major player not only in the personal computer software market, but also in the server software market and on the Internet. The explosive popularity of the Internet during this period also started the growth of the e-commerce sector, bringing about new players such as Yahoo! and eBay. This dynamic environment with minimal regulatory intervention permitted a company such as Microsoft to grow from a literal non-existence to a position of dominance.¹⁵ Against this backdrop, it follows that the regulatory perspective for the IT and e-commerce sectors differs from the telecommunication sector. There is no issue of scarcity, and the main concerns of a policy maker in such an environment are to remove regulatory barriers (which may be in other sectors) that impede industry growth, clarify ambiguities of current laws and policies as they apply to cyberspace, and where necessary, create certainty in the rules by which players in cyberspace should abide.¹⁶

for Competition in the Provision of Telecommunication Services (2000), was instituted in September 2000 to regulate the competitive behaviour of the operators in the industry.

¹⁵ Unlike a typical dominant telecommunication operator that started from the position of a monopoly, the strategies and approaches that Microsoft adopted to achieve its dominance are quite different. The characteristic termed by some as “network effects” (<http://wwwpub.utdallas.edu/~liebowit/palgrave/network.html>) has been an important contributing factor towards Microsoft’s success. The value of a product increases as users find themselves more inclined to use the same product used by others so that they can interact with others using that product. This results in a rapid spread of the product, as the users themselves effectively become advocates of the product. Also unlike a telecommunication operator that may be dominant only within its national boundaries, Microsoft’s dominance is international.

¹⁶ The main laws in the IT and e-commerce sectors are the Electronic Transactions Act (Cap 88, 1999 Rev Ed) and its regulations (administered by IDA), Computer Misuse Act (Cap 50A, 1998 Rev Ed) (administered by MHA and SPF), Evidence Act (Cap 97, 1997 Rev Ed) and its regulations (administered by MinLaw), and Copyright Act (Cap 63, 1999 Rev Ed) (administered by MinLaw, MTI and the Intellectual Property Office of Singapore). Internet content is regulated by the Singapore Broadcasting Authority (Class Licence) Notification and the Internet Code of Practice (administered by SBA).

- The Electronic Transactions Act (Cap 88, 1999 Rev Ed) was passed in 1998 as an enabling legislation to remove the uncertainty around the legality of contracts that are formed electronically, give recognition to electronic signatures and clarify the

Voluntary codes are often used as tools to provide guidance to the industry.¹⁷ The IT and e-commerce regimes tend to be enabling and

liability of network service providers that merely carry traffic. It establishes the voluntary licensing of certification authorities as trusted third parties in the online world to provide the basis for other trust relationships to be established. The Electronic Transactions (Certification Authority) Regulations (2001 Rev Ed) : stipulate the requirements for a certification authority to obtain a licence in Singapore, and the accompanying Security Guidelines for Certification Authorities stipulate the technical security requirements that must be met. There are also provisions in the Act that enable Government agencies to easily implement electronic systems to transact with the public without the need to amend their own parent Acts. The Act provides for the acceptance of electronic applications and issuance of digital licences, with the ability to send and receive electronic documents in a reliable manner.

- The Computer Misuse Act (Cap 50A, 1998 Rev Ed) , was passed in 1993 to deal with increasing incidents of computer crime that were not readily caught by the provisions under the existing Penal Code (Cap 224, 1985 Rev Ed). Before its enactment, criminal acts involving computers did not clearly fall under traditional crimes such as theft or criminal breach of trust, thus making it difficult for the Public Prosecutor to bring charges against offenders. The Act thus created new offences to deal specifically with unauthorised access and modification of computer systems. In 1998, the Act was further amended to address new attacks that had evolved with the spread of the Internet (e.g. denial-of-service attacks). It also recognises that some computer systems were critical to Singapore (e.g. banking and finance systems, emergency services systems and public services systems) and thus meted out harsher punishment for offenders who secured unauthorised access to such systems.
- The Evidence Act (Cap 97, 1997 Rev Ed), was first enacted in 1893 (as the then *Evidence Ordinance*) and governs the general admissibility of evidence in court. The Act was amended in 1995 to provide for the admissibility of computer output as evidence in court. The Evidence (Computer Output) Regulations (1997) were promulgated in 1997 to establish the criteria for giving legal recognition to imaging systems that can archive documents in an electronic form.
- The Copyright Act (Cap 63, 1999 Rev Ed) was passed in 1987. The Act primarily deals with the protection of copyright in works. Computer programs are included as copyrightable works. As various forms of works are increasingly available in electronic forms, it is important to prevent the making of illegal digital copies of works to protect the interests of the authors of those works. The Act was amended in 1999 to deal with the uniqueness of the electronic environment (e.g. clarification of the concept of temporary reproduction in the Internet browsing environment, and introduction of “take down” provisions to deal with problems of unauthorised copies of works being made available through the Internet).
- SBA derives its powers and regulatory role over the broadcasting sector from the Singapore Broadcasting Authority Act (Cap 297, 1995 Rev Ed) passed in 1994. The Internet is classified as one of the broadcasting media. To regulate content on the Internet, SBA established a class licensing scheme through the Singapore Broadcasting Authority (Class Licence) Notification (1997 Rev Ed) , and the Internet Code of Practice. The class licensing scheme provides the framework under which content providers on the Internet are licensed, while the Code establishes the guidelines for acceptable content that can be published over the Internet. In addition, the Parliamentary Elections (Election Advertising) Regulations 2001, S 524/2001 provide rules under the class licensing scheme to enable previously disallowed Internet election campaigning activities to now take place.

¹⁷ These voluntary codes and guidelines are intended to provide industry players with an indication of the standards that they should abide by, and do not operate as mandatory regulatory regimes like the telecommunication regulations. The following are some examples:

proactive in nature, actively seeking out obstacles to be removed before they become real problems.

11. Despite the disparity, competition issues appear to be an emerging common denominator across these sectors. Competition is clearly a concern in the telecommunication sector where there are dominant operators in certain market segments. In the IT and e-commerce sectors, apart from Microsoft, other forms of dominance in the likes of Hotmail, Yahoo! and eBay are appearing. These companies are in a position today to exercise considerable influence over their very sizeable subscriber base from the worldwide Internet user population.¹⁸ While it may still be unclear whether such new forms of dominance necessarily place these companies in a position to be anti-competitive, traditional definitions of unfair competition practices (e.g. predatory pricing, price squeezes, cross-subsidisation, etc.) may no longer be sufficiently exhaustive and effective to deal with potential abuses. An anti-competitive behaviour may manifest itself in different forms, and it may be difficult to recognise such behaviour across different sectors.

12. In light of the differences between the sectors, when one brings the policy responsibility for them within a single agency, there is a potential danger that the agency is not adequately equipped to understand the nuances and significance of the different underlying policy objectives and approaches needed. If unguarded, this may result in an overly conservative stance being taken in a sector that requires an increasingly hands-off approach by the regulator, or vice versa. Moreover, assigning a single agency with the mandate to implement technology neutral regulation may inevitably extend regulation to areas where it is not necessary, or where it is needed in a different form. Over-regulation or inappropriate regulation can stifle innovation.¹⁹

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- IDA, on behalf of NITC, issued the Guidelines for Internet Access Service Providers ('IASPs') on Scanning of Subscriber's Computers in 2000 to safeguard public interests when IASPs conduct preventive security scanning exercises;
 - NIAC, in 2002, issued an Internet Content Code to deal with the types of content industry players should be putting on the Internet; and
 - NIAC, in 2002, also issued a Model Data Protection Code for the Private Sector to articulate a set of principles governing the collection, use, safeguarding, etc. of personal information by service providers.

¹⁸ See these further articles on "Network Effects":
<http://www.fastcompany.com/online/27/neteffects.html> and
<http://www.fool.com/portfolios/rulemaker/1999/rulemaker991123.htm>

¹⁹ Anecdotal evidence has suggested that most advanced innovation today come from sectors that were historically unregulated. Taking the United States as an example, the Federal Communications Commission ('FCC') has traditionally regulated telecommunication and broadcasting, but not the Internet. This has been seen as a fortunate development, as the innovation of Internet-based technologies in the US may be unlikely to have happened at the pace it did if the FCC also regulated the Internet like the other two sectors. In the past few decades, the technological innovation and advances in computers, IT, e-commerce and Internet have leapfrogged ahead of similar developments in the telecommunication and broadcasting arena in the US. This suggests that while regulation may be needed in some instances, care should be taken when imposing new regulations, as there is a likely to be an inversely proportional relationship between regulation and industry innovation.

B. Regulatory and Promotional Functions in a Single Agency

1. Potential Benefits of a Converged Regulator

13. One of the objectives of bringing the regulatory and promotional functions together within a single regulator is to achieve a better alignment of the efforts in these functions. It has been argued that regulation and promotion are two sides of the same coin, and that one regulates to promote by creating an environment that is pro-business and pro-competition. More traditional regulators such as MAS and the then TAS have a development role, although their functions are largely regulatory.

14. In the case of IDA, having the responsibility for regulating telecommunication services and promoting IT under the same agency has, for example, allowed for a more collaborative approach towards the development of broadband in Singapore. The policies regarding open access to the broadband telecommunication infrastructure, coupled with the industry development and end user IT education efforts, have successfully commercialised broadband services and raised the level and sophistication of broadband industry and users in Singapore. The combined promotional and regulatory role creates an “internal tension” that can enable the institution of a robust but yet flexible and responsive regulatory framework.

2. Potential Shortcomings of a Converged Regulator

15. Although an internal separation of functions can allow the roles of promotion and regulation to be independently carried out within a single agency,²⁰ conflict of interests may still potentially arise when there is a clash of priorities between these two roles. The converged role of the regulator may also lead to some operational awkwardness.²¹

16. A promotional and industry development role requires the agency to champion the interests and concerns of companies to grow their business and maximise their profits, and assist the companies to find innovative ways to legally overcome regulatory constraints to their business ventures. For a fast-

²⁰ It appears paradoxical that after putting the regulatory and promotional rules together under a converged regulator, there is then a need to create an internal separation to allow the roles to be independently carried out.

²¹ The nature of the IDA Board can be offered as an illustration of such awkwardness. IDA has nine out of its 14 board members appointed from the industry. This is consistent with the practice of the other promotional agencies in Singapore who have industry representatives as members of their boards to provide insight and guide management in creating promotional programmes that are useful and relevant to the industry. The members of the IDA Board do not include anyone that may potentially be regulated by IDA to avoid any problem of conflict. However, these industry members on the Board usually do not deal with nor are they routinely consulted on policy or regulatory matters or decisions of IDA, understandably so since many of such matters can be market sensitive. Instead, major policy decisions are more often taken in consultation with IDA's parent ministry. It appears that in reality, the Board plays largely an advisory or strategic role to the agency although under the law, the functions, duties and powers of the IDA are legally vested with the members that constitute the Board. See ITU study on *Effective Regulation Case Study: Singapore 2001*, http://www.itu.int/itudoc/itu-d/publicat/sgp_c_st.html, at 21-22.

paced industry, such a promoter needs the flexibility and ability to respond quickly to new issues and challenges, and sufficient room to manoeuvre at the pace that the technology, market and industry evolve.

17. However, when the promotional role is combined with a regulatory role, the agency no longer has the same flexibility to assist the industry, as its actions now have to be measured against the regulatory policies that it sets and is expected to enforce.²² Since policies should preferably not fluctuate with market developments, the agency is likely to have to act within its defined regulatory boundaries, and be more constrained when responding to industry needs. When the decision maker within the agency is faced with a situation where a potential new business opportunity for a company runs counter to its existing regulatory policies,²³ he inevitably has a conflict of interest. He either has to hold firm to the regulatory policies and deny the company the business opportunity, or to amend or bend the rules to advance the business opportunity. In the former, the agency cannot in good faith claim to be a promoter with the company's best interests at heart. In the latter, frequent changes to the rules create ambiguity and uncertainty for other companies. For such a combined role to work expediently, the agency must be able to administratively manage the issues on a case-by-case basis to decide which role has supremacy in a particular instance. This non-transparent approach is likely to lead to inconsistencies over time.

18. Seen from another perspective, adding a strong promotional role to a regulatory role may give an appearance that the regulator is more laissez-faire, prone to being more hands-off, and unwilling to resolve disputes. This is equally undesirable. The appearance may have resulted from an external observer's inability to accurately discern the regulator's role from the promoter's role, but rather see them as an amorphous whole. This reduces the impact and standing of the regulator, and may inevitably discourage new investments when issues about the capability and effectiveness of the regulator are open to doubt. In having a "split personality", the candour of the relationship between the industry and the agency may also suffer.²⁴ It may

²² For instance, IDA provides incentives and funding schemes to assist companies to develop and enhance their services. While such schemes are welcomed by the industry, tension may arise when financial assistance provided to some players for the purposes of development can potentially result in anti-competitive predatory acts (e.g. price cuts) being taken by these players to keep their competitors out. IDA may unintentionally be causing a behaviour that it is supposed to curb.

²³ Such a scenario may arise not because the business opportunity is fundamentally against public policy, but rather that even when policies are formulated with the best available information at that time, and the scenario may still not have been contemplated and inadvertently excluded in the original policy. For instance, when the rules on sale of liquor were first developed with specific hours of sale, they were targeted at protecting minors and discouraging intoxication at certain hours of the day. At that time, it certainly did not envisage that online auctions might involve the trading of vintage wines. When such online trading activities started to take place between end users, issues began to arise as to whether end users taking part in the auction required a liquor licence, and whether such trading could only take place during certain hours of the day.

²⁴ For example, a licensee when speaking to the regulator about its commercial plans may be concerned about the information being shared with the market by regulator as promoter.

perhaps be idealistic to expect that a single agency can carry out both a promotional role and regulatory role to the same extent. In the end, one role may have to take precedence.

IV. External Influences on Policy Making

19. Singapore's participation in the World Trade Organisation (WTO) and the negotiation of several bilateral Free Trade Agreements (FTAs) with partners such as United States, Japan, Australia, New Zealand, Canada and European Free Trade Association²⁵ have introduced a new set of external influences to the policy making process in Singapore. This is likely to shift the balance point that has been maintained over the years.

20. While such bilateral and multilateral arrangements are necessary to maintain open linkages with Singapore's trading partners, the more developed countries may also use the opportunity to advocate changes to Singapore's policies and regimes to make them more open and conducive for foreign competitors to enter our market. This is consistent with our push for globalisation and the need for our domestic players to look beyond the local market, and gear up for competition at the international level.

21. However, Singapore is a small country. In some key sectors, there is a tight balance between preserving national interests and allowing complete free market play. There is a fear that large foreign players may overwhelm the local players with their greater economies of scale or deeper pockets, and drive the local players out of business. This can be perilous in uncertain economic times when such global players, who have no obligation to stay in Singapore (apart from monetary and other investment concerns which can be written off), can easily withdraw or shift their base of operations to other countries, potentially leaving Singapore without any inherent domestic capability in the key sectors to fend for itself. Singapore players should also not be placed at a competitive disadvantage vis-à-vis foreign operators competing in Singapore when such Singapore players do not enjoy similar benefits when they compete in the overseas markets against these same foreign operators.

22. These external influences have already begun to manifest themselves in Singapore. With WTO, the obligations under the Trade-Related Aspects of Intellectual Property Rights ('TRIPS') Agreement have prompted the need for Singapore to review its entire intellectual property rights ('IPRs') regime and make the necessary amendments²⁶ to the legislation. A new round of negotiations at WTO is now underway and more changes are to be anticipated. Similarly, when the various FTAs are concluded over the coming

Similarly, a party engaging in a discussion with the regulator as promoter may be concerned about disclosing strategies about its new business practices that may subsequently prejudice its position if the promoter as regulator is tasked to investigate the behaviour for being anti-competitive.

²⁵ European Free Trade Association ('EFTA') comprises the Republic of Iceland, the Principality of Liechtenstein, the Kingdom of Norway and The Swiss Confederation.

²⁶ Copyright (Amendment) Act (No 6 of 1998).

years, in particular with our major trading partners such as the United States, the obligations that are eventually contained in these international treaties need to be translated into actual implementation within Singapore, failing which, Singapore may be subject to the dispute resolution provisions and sanctions under the respective agreements. An investor from one of these FTA partners who is aggrieved by acts of the regulator (or otherwise by some agency of the Singapore Government, or involve circumstances surrounding the acts of another player in Singapore) in breach of an FTA obligation can also raise the issue to be dealt with by the dispute resolution procedures of the FTA. Administrative actions and decisions, in particular, may be challenged and need to be taken fairly and be open to scrutiny. A rather complex outcome may also result if individual FTAs in their final negotiated form confer slightly different obligations to each foreign partner. Inconsistencies between the different obligations may translate into an instance where Singapore develops a legal regime that caters for a different treatment of players depending on their country of origin.

V. Effectiveness of Current Policy Approach

23. In reviewing the effectiveness of the policy approach so far, one should recognise that there are international market developments that are beyond Singapore's control. The untimely downturn of the international and domestic economy led by the fallout from the excessive 3G spectrum auctions in Europe has an adverse impact on the ICT sector. The dot.com flurry has effectively ground to a halt, and there is consolidation in the telecommunication sector within two years into full liberalisation of the industry in Singapore. In the over-the-air broadcasting and printed news media sectors where there are only two major competing players, there are also signs of consolidation. These symptoms suggest that the limited size of our domestic market may also increasingly become a problem.

24. Notwithstanding the downturn, the policies of the Government remain fundamentally unchanged: to stimulate the growth in the ICT sector, while addressing broader public policy concerns such as fair competition, appropriate content and consumer protection. Although the economic downturn has affected the ability of companies to grow and expand at a faster rate, there is evidence that the basic policies established has provided the needed foundation and certainty. It is unfortunate that this downturn has overshadowed the potential industry growth that may have been possible, and diminished the effects of the policies established in these sectors.

A. Telecommunication Services Policy

25. We have seen some good results from the bold policy move to liberalise the telecommunication services market ahead of schedule. Since the full liberalisation in 2000, the market has seen numerous new entrants putting pressure on the dominant operators to be more cost-efficient and customer-oriented. Prices of services in hotly competed areas such as International

Direct Dialling ('IDD') have dropped significantly.²⁷ Competition, however, is not evenly spread throughout the range of available telecommunication services due to the continued presence of dominant operators in some market segments. Until recently, we did not see any significant narrowing of the price differential between broadband and narrowband Internet services nor many innovative cost-competitive broadband offerings for consumers, although multiple providers and resellers were in the market.

26. The institution of the Telecom Competition Code²⁸ shortly after the full liberalisation of the market is an important milestone. The Code establishes the framework and principles regarding competition (including what constitutes unfair competition practices), and stipulates the duties of operators to end users, cooperation amongst operators to promote competition, interconnection with dominant operators and infrastructure sharing. A significant challenge in developing the Code was to fill a gap created by the absence of any competition law in Singapore. This Code is the first competition framework instituted in Singapore, albeit only within a specific sector. While commercial negotiation for services between operators in the market is desirable, in recognising that the presence of dominant operators (who have little economic incentive to negotiate) reduces the effectiveness of relying entirely on market forces, an asymmetric regulatory approach is taken to place a heavier burden on dominant operators compared to non-dominant ones.

27. An essential feature of the Code is the requirement for dominant operators to provide a Reference Interconnection Offer ('RIO'). The RIO is a comprehensive written statement, approved by the IDA, of the pre-determined prices, terms and conditions that every dominant operator is prepared to provide interconnection to its critical facilities to other operators. The RIO, although statutorily mandated, will be legally binding once an operator accepts it. Apart from the RIO, the Code also provides that operators may seek interconnection by two other methods. It is possible to adopt an existing interconnection agreement (based on the same prices, terms and conditions) of a similarly situated operator who has already established such an agreement with a dominant operator. The parties may also arrive at an individualised interconnection agreement, which may result from voluntary negotiations between the parties or from a dispute resolution procedure by IDA. As a result of the RIO and the ability to opt into existing agreements, many new players without any market power in Singapore are able to quickly establish their interconnection agreements with the dominant operators without going through a tedious and time-consuming negotiation process. This has effectively removed an important entry barrier for new players and improved their time to market for new services.

²⁷ For example, the price of a call from Singapore to the United States is noted to have dropped from S\$0.95 per minute to as low as S\$0.09 per minute (Voice over IP). See "Singapore Government's Liberalisation of the Telecommunication Sector – One Year On" (at <http://www.usembassysingapore.org.sg/embassy/politics/Telecom2001.html>).

²⁸ Code of Practice for Competition in the Provision of Telecommunication Services, S 412/2000.

28. A shortcoming of the Code is in the inadequacy of its transition provisions.²⁹ For example, when the Code came into force, issues arose as to whether contracts and other arrangements established before the Code continued to have legal standing if they contained provisions that might be deemed anti-competitive under the new competition regime. One can argue that it may be unfair for the Code to retrospectively affect arrangements entered into under a different commercial basis prior to the Code. However, there is also a need to curb behaviour that is now characterised as anti-competitive and undesirable under the Code, especially if the behaviour is embodied in agreements that last for an extended period. By not having any transition provisions in the Code, IDA has to address such transitory irregularities and make rulings on a case-by-case basis even before it has the opportunity to institute a formal dispute resolution mechanism. The transition provisions that should have been put in place from the start could have averted the predicament by giving the industry advance notice of the grace period during which pre-Code arrangements would continue to subsist, but such arrangements would come to an end at a specific time. This gives the parties a known window of time to rectify the arrangements, rather than be embroiled in disputes over their applicability.

B. Content Policy

29. Compared to telecommunication services policy, cross-agency content policy issues are not being addressed with the same expediency and boldness. "Content policy" here does not refer simply to the government's efforts to promote certain types of content or restrict the access to other types of content. It includes an emphasis on the ability of the industry to control the content that it creates (intellectual property issues), address business and consumer confidence issues (protection of consumer interests, security and payment services), manage information and data (data protection issues) and deliver an experience of seamless access (standards and interoperability issues) to the content. In each of these areas, some, but not enough, progress has been made to advance the policies over the past two years.³⁰

30. The contrast in dealing with cross-agency content policy issues may be attributed to the lack of clear ownership to resolve such issues compared to the clear responsibility of IDA for the telecommunication services sector. Correspondingly, these issues do not have the benefit of having a single agency with the mandate to find the point of balance. In its absence, there is a difficult consensus-building process involving multiple decision-makers who may not be completely familiar with the subject matter, its importance and its urgency. This unfamiliarity translates to a reluctance to make fundamental changes that may disturb the *status quo*.

²⁹ Transition provisions are important whenever new rules are instituted as they provide guidance as to the manner in which arrangements entered into prior to the institution of the new rules ought to be treated.

³⁰ We will discuss this further in the next section under the heading "Looking Ahead".

C. Governance Structure

31. While it is acknowledged that IDA has made significant strides in moving the ICT sector forward in the two years since it was created, it is less clear whether the merger of the telecommunication regulator and the IT and e-commerce promoter was a necessary precondition for these outcomes to materialise. Arguably, if the two pre-merger agencies had each been given its new mandate³¹ and a higher profile, perhaps guided by having a common parent ministry, the same results today may still have been achieved without being encumbered with the shortcomings of a converged regulator as outlined above. It is unclear whether the governance structure should be created by aligning common regulatory or promotional functions and related technologies under the ambit of separate agencies or by adopting an “all-in-one” super-agency approach.

32. In hindsight, perhaps the merger may have been more appropriate between the telecommunication and broadcasting infrastructure regulators, thus expediting the alignment of the regulatory framework for the physical delivery infrastructure,³² and creating an enlarged but focused regulatory agency that is better placed to and can more effectively oversee market liberalisation and competition. The non-infrastructure issues for which SBA was responsible (i.e. radio, television and Internet content issues) could have been undertaken by its parent ministry MITA, and absorbed alongside the ministry's other supervisory role for media and print. Although this approach does not necessarily imply that difficult cross-agency content policy issues can be resolved with any greater ease, having the cause championed by a promoter rather than a regulator may see a more vigorous pursuit of solutions to overcome the barriers faced by the industry without being constrained by the relative conservatism of a regulator.

VI. Looking Ahead

33. Singapore is now at a turning point. Although we have been internationally recognised for our leading efforts in developing a conducive environment for the ICT sector, we have recently lost some momentum in

³¹ That is, TAS to rapidly liberalise the market, and implement and enforce a competition code, while NCB to aggressively promote the development of the ICT sector and resolve the IT and e-commerce policy issues.

³² The demarcation between the regulation of the telecommunication and broadcasting infrastructures by two regulatory regimes can be redrawn along different activity lines. There can be one framework that deals with the physical communication infrastructure (i.e. traditional wire line telecommunication, wireless, broadcast, satellite, cable, fibre, etc.) so that spectrum can be treated similarly across telecommunication and broadcasting, instead of providing it virtually free to broadcasters while auctioning it to telecommunication operators, as is the case today. Such a single consistent and economically-driven regime for the infrastructure is more likely to allow the market to evolve depending on which network is more efficient in carrying the different content and services, thus reducing access bottleneck and allowing open market competition between the infrastructure providers. There can be a separate framework to deal with content issues that are currently embedded in the broadcast regulatory regime. The policies on broadcast and Internet based content can be aligned and driven by the same underlying principles as for films, publications and advertising.

maintaining our lead and making new headway in IT and e-commerce policy-making. Reflecting on the Government's efforts in the past two years since IDA was formed, two broad areas are highlighted below for consideration as to what Singapore needs to do looking ahead. The first deals with the need for a greater focus on a range of content policy issues and the second deals with the structure, role and practices of the industry regulator. In both instances, a fresh look and new mindset are needed for Singapore to face the new challenges as a part of the global economy.

A. Content Policy

34. There is a need for more focus and attention to be placed on creating a policy environment that is conducive for new and innovative content to be created. The greater value and potential for innovation is at the telecommunication and broadcasting services level. Not only is formulating a content policy more important, it is also more difficult to address due to a greater range of competing interests.³³ While in the past, concerns of business efficiency largely took precedence over consumer protection interests, in today's setting, consumer interests cannot be neglected, but a new balance needs to be found between the two. Without the gaps and concerns on content policies being addressed, the development of the ICT sector, and specifically e-commerce, is likely to be subdued. An excellent communication and delivery infrastructure does not achieve its full potential without good value-added services being made available through this infrastructure for consumers.

35. In the following sections, we examine some of the specific issues of content policy and discuss some future directions for each of them. It should be noted that each of these topics deserves a fuller exposition and comprehensive discussion in a separate paper concerning the issues and their implications. However, we only deal with touch on them in a cursory manner in this paper.

1. Online Content

36. Singapore has always maintained a high standard for its publicly-accessible mass media content such as television, cable, cinemas and Internet. Such standards are based on our societal norms for acceptable content. However, in the Internet and e-commerce, online content is neither bound nor limited by our geographical borders. Being a communications hub, businesses often seek to place their base of operations in Singapore to serve the region. In situations where the content is not targeted at Singapore residents, it may not be appropriate, nor is it our policy objective, to impose our local standard on such content. Similarly, if a business outside Singapore is offering a service on the Internet to the world-at-large and a local resident

³³ For example, online gambling may be an excellent application that can generate electronic transactions and revenue, but it brings along a string of social ills that need to be considered.

can access such a service, it is impractical to require such an overseas service provider to fully comply with our domestic regulations.

37. Situation Today. Since 1996, SBA has done well in governing Internet content with a light touch through its class licensing scheme and Internet Code. Its efforts have made it clear to industry players what types of content are undesirable by our societal standards. SBA has also put in place several self-help mechanisms to allow concerned parents and other individuals to filter out undesirable content. However, as more interactive activities are made available over the Internet, content delivery is no longer passive, and new online activities reach into domains that may be governed by other legislation and agencies in Singapore. There are older laws that have been drafted at a time that did not envisage the Internet. Although such laws were not intended to impede the development and growth of the market, they may now be barriers to the development of new services if they contain provisions that are sufficiently wide that they cover activities in the Internet, and unintentionally extend coverage into areas where either application is inappropriate or enforcement is impractical. Fortunately, newer laws often give consideration to the uniqueness of the Internet and the electronic environment, and provide exceptions where it is appropriate.³⁴

38. As an aid to this area of development, the National Internet Advisory Committee (NIAC)³⁵ has released an Industry Content Code³⁶ in 2002,

³⁴ As an illustration of such old and new legislation, prior to the repeal of the archaic Auctioneers' Licences Act (Cap 16, 1985 Rev Ed.) via the Auctioneers' Licences (Amendment) Act 2000 (No 22 of 2000), Internet auctions, such as those offered by the popular eBay website in the United States, technically required a licence from the local authorities; in contrast, although the recently enacted Financial Advisers Act 2001 (No 43 of 2001) generally requires persons giving financial advice to be licensed, the new law provides an exception when such advice is only given over an electronic medium.

³⁵ The NIAC was appointed by the then Ministry of Information and the Arts in 1996. The Committee advises SBA on the regulation of electronic information services and the development of the Internet industry, and assists in the development of SBA's regulatory framework for the Internet. It also provides feedback and advice on the impact of technological developments and other Internet related issues.

³⁶ The main obligations for those adopting the NIAC's Internet Content Code are contained in paragraph 3.4 of the NIAC Committee Annual Report 2001/2002 and require the content providers to observe the following obligations:

- they are not to knowingly place inappropriate, objectionable, or illegal content on the Internet;
- they are to use their best efforts to ensure that no content deemed unsuitable for minors is made available to them freely on their service;
- they should adopt an appropriate content classification system to rate and label their websites;
- they are not to use inaccurate or misleading descriptors to rate and label their websites;
- they are to respect the privacy and confidentiality of user information;
- they are not to send unsolicited emails;
- they should comply with the Singapore Code of Advertising Practice published by the Advertising Standards Authority of Singapore ('ASAS');

developed with the assistance of the Singapore IT Federation ('SITF'), as a guide on what type of content should be placed on the Internet by industry players. This Code is voluntary, but a company that wishes to adopt it is expected to use it in totality. Codes, however, are only guidelines for practising industry self-regulation, and they are subservient to any contrary provisions in law that may stipulate otherwise. As such, while codes are useful in encouraging the industry to engage in good practices, they do not on their own extend the legal boundaries to give the industry a larger playing field.

39. Going Forward. If a distinction between the policy for content for domestic consumption and for international consumption can be made, the challenge is in implementing this distinction with a balance that does not require us to forego our societal norms, but yet providing sufficient flexibility for companies to use Singapore as a hub for online content. While one is not advocating that existing laws should not apply to the Internet at all, when the content is not targeted at our residents, it is beneficial for industry innovation if companies are given a freer hand to innovate and create new services, save for certain areas which are clearly identified as out-of-bounds and undesirable.

40. Although Singapore has a reputation for being a physically safe and stable place for businesses as a result of our efficient policing and prosecution of offenders, the strict atmosphere may also have unintentionally intimidated potential online businesses from innovating new services for fear of harsh punishment if they cross the line with some rules. Singapore's legal system is premised on the principle that unless the law disallows a particular activity, it is legal and allowed. The mindset of the industry, however, is usually that unless the Singapore Government has given its "blessings" for an activity, they prefer to be prudent and conservative, and not engage in it. This may have been a product of historically having "drift-net" legislation that contains wide-ranging provisions that are intended to cast a wide net to catch illegal activities to allow for more effective prosecution and enforcement.

41. If the difference between physical and cyber space is clearly recognised, Singapore may need to articulate a clear and positive online policy that projects an image of open-mindedness in the online world (and where appropriate, that is distinguished from the physical world policy), supported by concrete laws that reflect this new mindset, so that the industry can innovate without inhibition. Merely having administrative arrangements in the place of laws is not likely to be sufficient to create the needed assurances for investors. It may be desirable for Singapore to be seen to be progressive in its policies in these areas, rather than fall behind by having an ambiguous or ambivalent policy stance on these issues.

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- they should support public education initiatives and make available where possible information on filtering solutions and other content management tools; and
 - they should establish a process to address and investigate any public feedback or complaints, including cooperating with other industry members to carry out any remedial actions needed.

2. Intellectual Property Rights

42. IPR protection gives content owners control over their content and other creations. Service and content providers require sufficient IPR protection of their innovative creations to allow them to earn a profit in their business ventures, and not allow competitors to simply copy their works and unfairly profit from their investment. Besides being initially deprived of the profit that is rightly due to them, such innovators may subsequently also lose the desire to create new services for fear of their works being copied as well. However, this does not mean that Singapore should enact laws to create new rights for owners at the expense of the principles of fair use or in areas where adequate rights already exist. An enshrined principle behind IPRs is to maintain a balance between the rights of IPR owners and the larger public interests, in particular, education, research and access to information. Innovation builds on previous innovation. IPRs give the owners the ability to protect their creation from abuses, while allowing the creation to be made publicly available. If IPR protection becomes too onerous, it may also stifle innovation.³⁷

43. Situation Today. The Singapore Government's stance on IPR protection has strengthened over the past few years, with Singapore acceding to several significant international treaties (e.g. the TRIPS Agreement³⁸, the Berne Convention³⁹, the Paris Convention⁴⁰ and the Madrid Protocol,⁴¹ etc.). Having adequate IPR protection in Singapore is a necessary precondition to attract investors who require assurances that their intellectual creations will be protected. It also provides the foundation for the continued growth and development of the IT and, e-commerce industries, as well as media, content, entertainment and other service sectors whose main products are intellectual creations.

44. Previously, the protection of IPR has been viewed as a civil matter, where the right owners have to take their own steps to address infringement of their rights. Today, the authorities are taking a much more proactive enforcement role in arresting and prosecuting people who engage in illegal piracy activities. There is also increasing emphasis on educating the consumers, in particular with the younger generation, that infringement of

³⁷ For example, there is a push from the European Community to create a right for persons who compile information into databases. Such a right already exists in the form of copyright protection today if a database is created with an element of originality and creativity. To have a new right on the basis of mere compilation is likely to create the possibility for the right to be exerted over the collection of bits of public domain and other information, and hinder the further legitimate expression or use of such information in creating new works or other purposes, or even prevent the use of previously public domain information altogether.

³⁸ Trade-Related Aspects of Intellectual Property Rights Agreement (1995).

³⁹ Berne Convention for the Protection of Literary and Artistic Works (1971).

⁴⁰ Paris Convention for the Protection of Industrial Property (1883).

⁴¹ Protocol Relating to the Madrid Agreement Concerning the International Registration of Marks (1989).

intellectual property is akin to theft. It may take a few years for the efforts to take root and manifest their benefits.

45. Going Forward. Going forward, the challenge is to evolve the IPR regime in Singapore so that it meets international standards and can boost Singapore's image as a place where rights are well protected and an environment that is conducive for content creation. In striving to be an intellectual property hub, Singapore cannot be satisfied in having the lowest piracy rate in Asia of 50% compared to other countries that range from to 53-97%. It needs to find new strategies and take affirmative steps to strive to reach the even lower piracy rates of 25-35% of developed countries.⁴² These are the indicators that investors are likely to look to as evidence of the success of our policies, and not the mere rhetoric and promotional materials of our enforcement efforts against piracy. Internationally, Singapore may also need to take a higher profile in leading the reforms needed to improve the worldwide IPR regime in the context of ICT, and get the maximum mileage out of our reputation for being technology-savvy, rather than merely remaining as one of the followers among the developing countries.

3. Consumer and Data Protection

46. Efforts in promoting e-commerce and online transactions are not likely to achieve their full benefits if the consumers of such services remain sceptical of them due to concerns that their interests are not protected in cyberspace. The current policy stance on consumer protection is largely *caveat emptor*. Beyond fundamental and long-standing provisions such as those in the Sale of Goods Act,⁴³ the Supply of Goods Act,⁴⁴ the Unfair Contract Terms Act,⁴⁵ and the Consumer Protection (Trade Descriptions and Safety Requirements) Act,⁴⁶ there have been little legislative additions⁴⁷ to further protect the consumer in the electronic environment. There is also a distinct gap in the lack of some of these basic provisions for services (e.g. implied terms about quality or fitness of purpose). In addition, there are some new issues in the technological age that need to be addressed. For example, when dealing with automated online systems and committing to transactions by clicks of the mouse, it is easy to hit the wrong key while typing or click a mouse on the wrong spot on the screen, and as a result, send an electronic command with unintended legal consequences. While many established websites prevent such "single keystroke errors" by requiring an individual to confirm the particulars of a transaction before committing to it, in situations where a consumer does not have an opportunity to prevent or correct such an error, it may be appropriate to provide legal recourse to protect the consumer

⁴² See <http://www.bsa.org/resources/2001-05-21.55.pdf> for a report on the 2000 piracy rates.

⁴³ Sale of Goods Act (Cap 393, 1999 Rev Ed).

⁴⁴ Supply of Goods Act (Cap 394, 1999 Rev Ed).

⁴⁵ Unfair Contract Terms Act (Cap 396, 1994 Rev Ed).

⁴⁶ Consumer Protection (Trade Descriptions and Safety Requirements) Act (Cap 53, 1985 Rev Ed).

⁴⁷ There is an ongoing discussion to establish a Fair Trading Act.

by giving him a grace period to correct a *bona fide* mistake and avoid the legal consequences.

47. Data protection can be viewed as an aspect of consumer protection. Online services have made it possible for data and information to be collected more easily than before. Without proper guidelines over the appropriate handling and management of such information, there is a great potential for abuse by unscrupulous businesses without any remedies available to the aggrieved individual. There is however a tension between, on the one hand, adequately protecting such information so that it is not inevitably disclosed, and on the other hand, the need at times for such information to be disclosed when investigating a fraud or other crimes that have been committed and the criminals are disguising their real identity or hiding behind the anonymity of the Internet.

48. Beyond consumer protection, there is also an economic reason to establish a good data protection regime in Singapore. The laws now being enacted in countries around the world increasingly have a “cross border data flow” provision,⁴⁸ where data flow from one country to another can be restricted if the recipient country does not have a regime that adequately protects the information that it receives. In the world of globalised trade today, it may be crippling for a company based in Singapore to be unable to transfer data to and from another country.⁴⁹

49. Situation Today. Currently, Singapore does not have unified legislation for data protection. For the public sector, there are provisions for protecting the confidentiality of data held by government agencies in many individual laws such as the Official Secrets Act,⁵⁰ the Statistics Act⁵¹ and the Central Provident Fund Act⁵². For the private sector, the most notable is the banking secrecy provision under the Banking Act.⁵³ Other laws that govern the private sector include the Telecommunications Act⁵⁴ and the Telecom Competition Code,⁵⁵ which deal with information held by telecommunication service

⁴⁸ This provision originated from the European Union's Data Protection Directive (Directive 95/46/EC) . See http://europa.eu.int/comm/internal_market/en/media/dataprot/.

⁴⁹ For example, an airline may face serious difficulties if it finds that it cannot transfer its passenger information between countries where it has flights. A global product company may face challenges in getting data (such as customer support and warranty information from users around the world) to be collated in a single country. An international company based in Singapore may find difficulties in transferring human resource records of its own employees from offices around the world and consolidating them to be managed in Singapore.

⁵⁰ Official Secrets Act (Cap 213, 1985 Rev Ed) . .

⁵¹ Statistics Act (Cap 317, 1999 Rev Ed).

⁵² Central Provident Fund Act (Cap 36, 2001 Rev Ed) . .

⁵³ Banking Act (Cap 19, 1999 Rev Ed).

⁵⁴ Telecommunications Act (Cap 323, 2000 Rev Ed) .

⁵⁵ Code of Practice for Competition in the Provision of Telecommunication Services (S. 412/2000).

providers, and the Computer Misuse Act,⁵⁶ which deals with unauthorised access of data generally held in computers. However, many of these provisions deal only with confidentiality, and do not usually extend to other aspects of data protection such as accuracy and purpose of use.

50. In 1998, Singapore established a voluntary code under NIAC⁵⁷ called the E-Commerce Code for the Protection of Personal Information and Communications of Consumers of Internet Commerce. This Code aims to establish public confidence in e-commerce transactions over the Internet by establishing principles on confidentiality, collection, use and accuracy. However, the adoption rate of the Code has not been an encouraging indication of the level of industry commitment.

51. In 2002, the NIAC has developed, with greater industry input, a new and more comprehensive Model Data Protection Code for the Private Sector⁵⁸ that superseded the 1998 Code. Based on this new Model Code, the National

⁵⁶ Computer Misuse Act (Cap 50A, 1998 Rev Ed) .

⁵⁷ See above, n 39.

⁵⁸ The Model Data Protection Code for the Private Sector provides for 11 data protection principles, differentiated roughly according to the different stages of data processing:

- Accountability – An organisation needs to be responsible for the personal data that is under its control, and there should be an individual within the organisation who is designated to be accountable to ensure the compliance with the data protection policy;
- Identifying purposes – An organisation needs to identify the purpose for collecting the data either before or at the time of collection;
- Consent – An organisation needs to obtain the consent of the individual before the data is used for the identified purpose. The Code provides guidance on some exceptions to this principle;
- Limiting collection – An organisation should only collect data that is necessary for the purpose that is identified, and the collection should be done in a fair and lawful manner;
- Limiting use, disclosure and retention – An organisation should use or disclose data only with the consent of the individual or in accordance with the Code. The organisation should retain the data no longer than necessary for the purpose;
- Accuracy – An organisation should strive to maintain the accuracy and completeness of the data for the purpose that it is collected;
- Safeguards – An organisation should take appropriate measures (e.g. security controls) to ensure that the data is adequately protected;
- Openness – An organisation should be open about its policies and practices regarding how it manages the data in its possession;
- Individual Access – An organisation should grant an individual access to the data that is held about him, and give the individual the opportunity to amend the data to ensure accuracy and completeness. The Code provides guidance on some exceptions to this principle;
- Challenging compliance – If there is any issue about whether an organisation is in compliance with its data protection policies, a challenge may be taken up with the designated person accountable for compliance; and
- Transborder data flows (optional) – Where an organisation transfers data to another country, measures should be taken to ensure that the data continues to be afforded the same protection when received in the other country.

Trust Council ('NTC')⁵⁹ will conduct a public consultation, followed possibly by an implementation of the Code through its TrustSg programme.⁶⁰ If this new Code is embraced by the industry, it may be a positive indication of the changing mindsets of businesses and service organisations that consumer rights need to be recognised and protected. With the international reach of our electronic services, consumers in other countries are likely to also come to expect such standards and quality in the providers in Singapore.

52. Although Singapore does not yet have a strong data protection regime for the private sector, it is fortunate that there have not been in Singapore instances of abuse in the likes of *Toysmart.com*.⁶¹ Perhaps there is a cultural imperative for local companies not to freely disclose personal information that they have collected, notwithstanding the absence of regulatory requirements. However, as businesses become more globalised and they see the benefits of data mining and direct marketing, such an imperative may neither be an effective nor sustainable deterrent to prevent abuse.

53. Beyond data protection, under the broader umbrella of consumer protection for the online environment, there are also some efforts that deal with harmful content for minors, and dispute resolution for online transactions. In the area of protecting minors from harmful content, the NIAC has worked with the local Internet service providers to provide an optional Family Access Network ('FAN') for subscribing parents to filter out additional undesirable materials, and manage and monitor the children's

⁵⁹ The National Trust Council ('NTC') was formed in 2001 (see http://www.trustsg.org.sg/ntc_main.htm). It is an industry-led and government supported effort to address concerns of the industry to build confidence in e-transactions. Among its articulated objectives are to:

- help businesses and consumers increase trust and confidence in e-commerce;
- develop and promote the National Trust Mark Programme;
- develop a Risk Management Framework to reduce fraud in e-commerce transactions as well as to promote good business practices;
- develop and promote thought leadership and best practices for a trusted e-commerce environment;
- identify and make recommendations for policies and relevant areas to promote trust and reduce fraud in e-commerce transactions; and
- enhance consumers' and businesses' awareness in fraud in e-commerce transactions through seminars, case studies and research.

⁶⁰ NTC has launched a national trust mark initiative called "TrustSg" (see <http://www.trustsg.org.sg>) to instil consumer confidence in e-commerce service providers and create consumer awareness. The mark provides a visual indication to consumers and businesses as to the "worthiness" of online establishments. It will cover concerns on fraud, credit card scams, fulfilment, data protection and security. Authorised Code Owners ('ACOs') such as trade associations, chambers or other businesses will be accredited by NTC to issue and enforce the trust mark based on codes of practice.

⁶¹ *Toysmart.com* was a failed Internet retailer of children's toys. The United States Federal Trade Commission ('FTC') took action against it for selling the personal customer information collected on the company's website, in violation of its own privacy policy. *FTC v Toysmart.com, LLC, and Toysmart.com, Inc.* (District of Massachusetts) (Civil Action No. 00-11341-RGS). (See <http://www.ftc.gov/opa/2000/07/toysmart.htm>)

online activities. These measures are intended to manage the access to harmful content such as pornography, rather than address information collection from minors as what the Children Online Privacy Protection Act ('COPPA')⁶² in the United States does.

54. Dispute resolution for online transactions is available in Singapore through the *e@dr* initiative.⁶³ This initiative by the Singapore Subordinate Courts allows parties in an e-commerce transaction to resolve their dispute through the Internet. It provides a low-cost alternative to consumers and businesses for dispute resolution without requiring an action to be commenced in the courts. In addition to dealing with disputes on e-commerce transactions concerning the sale of goods or provision of services, *e@dr* can also handle disputes on IPR and domain names.

55. Going Forward. Singapore may need to more clearly articulate its policy on consumer protection and data protection publicly.⁶⁴ Beyond that, the main obstacle is likely to be in getting businesses to be proactive despite the increased costs, and take steps to protect personal information and recognise consumer rights. Companies with international presence are likely to face external pressure from foreign jurisdictions to deal with data protection issues. However, our locally based companies may need more encouragement to adopt good practices. The experience in Hong Kong has been that it is difficult to objectively pre-determine on a cost-benefit analysis the returns on implementing a data protection regime. Some of the benefits of consumer confidence are intangible. However, after having the data protection regime in place for some six years, the results of Hong Kong's annual community opinion survey indicate an increasingly high level of consensus (currently standing at 80-90%) that compliance with the regime has improved customer and employee relationships and the public image of organisations, and increased confidence in the management of personal data and accuracy of data records.⁶⁵

56. For Singapore, putting a new and broader Model Data Protection Code in place is only an initial step. For it to bear fruit, it is important to have an equally effective enforcement mechanism to deal with errant businesses that abuse the information that they hold. Singapore may need to consider implementing an enforcement mechanism that carries more weight and mandate beyond the current voluntary approach.

57. At a broader level, more effort may be needed to study consumer issues, review the adequacy of current consumer protection legislation and provide

⁶² Children Online Privacy Protection Act 1998 (United States), 15 U.S.C. 6501-6506.

⁶³ See the website at <http://www.e-adr.org.sg>.

⁶⁴ Hong Kong and Taiwan enacted their data protection laws in 1995, and South Korea in 1996. India, Malaysia, Japan and Thailand are examples of other countries that have publicly committed to enact such legislation in the near future. By comparison, Singapore's position on data protection legislation is ambiguous.

⁶⁵ See the statistics at http://www.pco.org.hk/misc/hk_apdpf/sld015.htm and <http://www.pco.org.hk/english/infocentre/files/lam.doc>.

better and more accessible avenues for dispute resolution for online transactions. These are building blocks to create greater consumer and business confidence in the online world. As electronic transactions are not geographically bound to Singapore, the solutions also need to be international in nature.

4. Security and Payment Services

58. Both consumers and businesses in cyberspace need online security. Consumers may be primarily concerned that their personal information and other confidential transaction information are properly and accurately transmitted to the business and are not stolen in transit.⁶⁶ In addition to such anxieties, businesses are also concerned that their online operations are free from fraudulent transactions and malicious attacks. Thus, site security (which focuses on ensuring that the website is resilient against attacks) and transaction security (which focuses on protecting information during transmission) are equally important.

59. Situation Today. In dealing with malicious attacks, the introduction of the Computer Misuse Act⁶⁷ complemented by the technical expertise in the Computer Crime Branch and Computer Forensics Branch of SPF and the Singapore Computer Emergency Response Team (SingCERT)⁶⁸ of IDA have ensured that wrongdoers in the online environment can be identified, caught, prosecuted and punished. There have been instances in other countries where despite the perpetrator being caught, the laws were found inadequate to prosecute the offender.⁶⁹ Singapore has a head start in having the computer crime enforcement regime in place, and it has provided businesses in the ICT sector with good assurances.

60. However, in the realm of protecting against fraudulent transactions, Singapore has not done as well to fill the gaps. Singapore has been recognised for pushing ahead in the exploration of technologies such as public key infrastructure ('PKI') and certification authorities to meet the requirements of businesses for stronger authentication and non-repudiation features needed in the face of online fraud. Singapore is also pioneering leading edge cross-border PKI efforts with countries such as Japan and Korea in the Asia PKI Forum efforts. Unfortunately, beyond the exploration phase, adoption of such technologies on a wide scale within Singapore has been

⁶⁶ The US FTC has reported that identity theft was the leading consumer fraud complaint in 2001, involving 42% of 204,000 complaints compiled by FTC from more than 50 government enforcement agencies and consumer groups. See <http://www.ftc.gov/opa/2002/01/idtheft.htm>.

⁶⁷ Computer Misuse Act (Cap 50A, 1998 Rev Ed) .

⁶⁸ See the website at <http://www.singcert.org.sg>.

⁶⁹ This was the case in Philippines in 2000, where the author of the "ILOVEYOU" virus (which caused damages estimated in the billions, mainly from lost work time in cleaning up jammed e-mail systems) was caught, but could not be prosecuted under the laws of the Philippines at that time. The Philippines Government quickly passed a set of cyber laws shortly after that incident.

slow,⁷⁰ and this is particularly evident in the lack of the use in our government e-services although the Government has historically been a leader and advocate by example in IT usage. Instead, Singapore's e-Government applications continue to rely on password-based systems as their main authentication mechanism. Although the typical e-government transaction may not need the level of security nor the inconvenience of certification authorities, the lack of a strong proponent for the use of such security services is likely to result in the industry players, including large players such as banks, staying on the sidelines and using old and insecure technologies, and trapped in a position to be unable to offer a wider range of services for fear of any compromise to their systems. Though major banks around the world are joining consortiums such as Identrus⁷¹ to make possible strong authentication of users, our local banks still appear to resist participating because of the lack of a perceived "government endorsement" of the technology.

61. In contrast, PKI developments are making headway for broad adoption in other countries such as Australia and Hong Kong. In Australia, in an effort to boost e-commerce and government online services, the Australian government has specified that the Australian Business Number Digital Signature Certificate ('ABN-DSC')⁷² will be used by all its agencies to identify business entities when conducting online transactions. Any accredited⁷³ certification authority in Australia can issue the ABN-DSC. More recently, the Australian government has also committed that its agencies will accept the digital certificates issued by Australian banks.⁷⁴ As these certificates are issued by banks that are part of the Identrus network, businesses in Australia that use these certificates will also be able to transact with their international clients and partners. In Hong Kong, good progress is also made in making available e-certificates to its residents through Hongkong Post, and recently through the launch of the mobile e-Cert system.⁷⁵ To encourage broad adoption, Hong Kong has also decided to offer its 6.8 million residents with free digital certificates for use in secure electronic transactions when a national smart identity card is introduced in

⁷⁰ This is despite the presence of licensed certification authorities in Singapore for the general public, and other private or in-house certification authorities for specific purposes.

⁷¹ Identrus (<http://www.identrus.com>) is a global trust system with 50 of the world's leading financial institutions among its participants, spanning more than 133 countries.

⁷² See http://www.govonline.gov.au/projects/publickey/ABN-DSC_BroadSpecs.pdf

⁷³ Accreditation in Australia is similar in concept as Singapore's voluntary licensing scheme for certification authorities.

⁷⁴ See http://www.dcita.gov.au/nsapi-graphics/?MIval=dca_dispdoc&ID=5597&template=Newsroom.

⁷⁵ See http://www.hongkongpost.gov.hk/2news/news_fr23.html and <http://www.info.gov.hk/itbb/english/speech/pr08102001.htm>.

mid-2003. This is part of the Hong Kong government's e-business and e-government drive.⁷⁶

62. Apart from authentication, there is also a lack of appropriate and cost effective online payment schemes serving both business and customer needs to prevent a transaction from running foul. In Singapore, credit card based payments for online transactions have high overhead costs for merchants, and the use of credit cards is not as pervasive in Singapore and the region as compared to the United States and parts of Europe. Many online merchants who rely on credit card payments today, in addition to having to bear a higher commission charge from their bank for being a smaller outfit compared to major retail outlets, still have to bear the risk of credit card charge-backs from customers who deny having committed to online transactions, although the goods have already been delivered. Unfortunately, the few secure payment initiatives that the financial industry previously embarked on lacked sustainability and failed to take root. Improved payment schemes that are safe and secure while easy and inexpensive to use need to be found and are essential to the success of e-commerce.

63. Going Forward. Security and payment systems are infrastructure services that the Singapore Government needs to invest in and promote. It is beyond the resources of a few fledging industry players to achieve the desired level of acceptance on their own without the support and endorsement of the Government. The examples of Australia and Hong Kong are indicative that the Government needs to take proactive steps to close the gap, and not look only to its own short-term needs and overlook its longer-term industry promotion and catalyst role. An unfortunate fallout may be that e-government transactions and other more innovative online applications in Singapore that require stronger security features are implemented on only the weaker solutions available or are not implemented at all due to the unacceptable level of risk exposed. While the technological solutions need not necessarily be PKI-based, some more secure alternative to vanilla password-based systems is needed. Emerging wireless PKI solutions or other two-factor authentication mechanisms may offer some viable choices. Pressure may also need to be placed on financial institutions to provide more cost competitive online payment schemes, or in the alternative, to allow non-financial institutions to offer other payment solutions and gateways to merchants.

5. Standards and Interoperability

64. Modularisation of technological components is likely to allow consumers to pick and match the parts and services that they want. For example, consumers can eventually choose their own access devices, access medium and content providers, each independent of the other. It may soon be possible to deliver any service over any channel. To realise this eventuality, there is a need to address the issues of standards and interoperability so that systems can be linked together.

⁷⁶ See <http://www.info.gov.hk/itbb/english/press/pr20122001b.htm> and <http://www.newsbytes.com/news/01/173233.html>.

65. The Government has a role in promoting, and in some circumstances, mandating standards. It is important for open standards and open source to be advocated so that there is continued innovation. Closed and proprietary systems should be avoided, as they are likely to impose structures of control that inhibit innovation.⁷⁷

66. Situation Today. There are a number of standardisation efforts in the ICT sector today:

- a. The IT Standards Committee ('ITSC'), an industry led effort supported by PSB and IDA, is responsible for guiding the formulation and promulgation of IT standards in Singapore. It was formed in 1990, and its main areas of focus are to align Singapore's standardisation efforts with international efforts, raise awareness of the public and industry of the IT standards, and encourage the local industry to adopt and use the standards. There are numerous working groups under the ITSC which look into standards in areas such as security, smart cards, information exchange, eFinancial services, etc. The agreed standards are established as Singapore standards under the Standards Council of PSB.
- b. An industry-driven National Cable Standards Committee ('NCSC') supported by IDA has been established to chart the direction for cable technical standards in Singapore. This is necessary in light of new digital television services with interactive capability, high speed Internet access and a variety of broadband digital delivery systems that are now possible through the cable infrastructure. NCSC tracks the developments in technologies and technical solutions that can be deployed to promote the growth of the cable industry.
- c. In the areas of Digital Video Broadcasting ('DVB') and Digital Audio Broadcasting ('DAB'), SBA is studying, setting and promoting the standards to be used in Singapore. Trials are being conducted to determine the viability of such technologies. Singapore is also currently embarking on Interactive TV ('iTV') trials, and standardisation issues are also likely to surface there in due course.
- d. IDA sets the standards for telecommunication products and services. It specifies the standards for electromagnetic compatibility ('EMC') for telecommunication equipment, line terminal equipment and radio-communication equipment. Generally, telecommunication

⁷⁷ Paradoxically, in some instances, allowing a monopoly to exist at one level may result in faster standardisation and competition at a higher level. To illustrate, some twenty years ago when there was a multitude of personal computers and operating systems available (e.g. Apple, IBM, Amiga, Atari, Commodore and Texas Instruments), an application developer needed to create different versions of software for each platform, incurring cost and time. Today, the dominance of Microsoft as the operating system has simplified the choice of platforms, and allowed for more competition and a greater range of applications being available to end users. See also arguments by Lessig in his book *The Future of Ideas* at 27-30 about the benefits of a monopoly on competition.

equipment needs to be type-approved before they are placed for sale or use domestically. Radio and wireless communication equipment must comply with the technical standards and requirements specified by IDA, although low power radio communication equipment for indoor or localised use in approved shared-frequency bands and power limits are exempted. Such equipment however should not cause harmful interference to other users, and should accept possible interference from other users. With the emergence of power line communication technologies that are currently mostly proprietary, the regulator is also likely to take steps to ensure the compatibility and safety of such systems.

- e. IDA has also organised industry working groups to deal with specific technical issues such as number portability and inter-operator short messaging services ('SMS') to allow operators to cooperate together to deliver services to end users or to share technical and operational experience with one another.

67. Going Forward. The dichotomy between telecommunication versus IT and e-commerce is seen again in how technical standards are dealt with. Standards for telecommunication services are often mandatory as without due compliance, system interference and safety issues may arise. The creation of such standards is also a highly structured process, guided by organisations such as the International Telecommunication Union ('ITU').⁷⁸ However, IT and e-commerce standards are usually voluntary in nature, and it is up to the designer of a product to decide which standards to adopt. Creation of these standards tends to be more laissez-faire and championed by ad-hoc industry groups.

68. IDA may need to, as a neutral party, impress the importance of standardisation on the industry, and continue to bring about the greater interconnection between products and services through discussions of standards and interoperability. In some instances, IDA needs to ensure that standards are strictly complied with, and in others, it may need to facilitate the active involvement of the local industry in the standardisation process. The different standardisation efforts mentioned above also need to be better coordinated so that compatible standards are eventually established as technological convergence brings the consumer devices together. Otherwise, one may find that a television in the household of the future requires multiple decoder boxes and switches to receive programmes through digital video broadcast and cable networks, and even more boxes to access interactive television services through the broadband network.

B. The Role of the Regulator

69. Singapore's telecommunication market is at a transition stage. Our discussion of the role of the regulator therefore considers first its short-term

⁷⁸ See <http://www.itu.int>.

role to deal with dominant players in a liberalising market, and then its long-term role when effective competition has taken root.

1. Short Term Role

70. The continued ability of dominant operators to control critical physical access infrastructure to customers and the lack of viable alternatives are contributory factors to the unevenness of competition and obstacles to realising the benefits of full market liberalisation. The current competition regulatory regime has placed a heavier but measured burden on dominant operators to address this imbalance. This is supplemented by piecemeal regulatory controls⁷⁹ aimed at addressing specific issues or regulating particular aspects of industry behaviour.

71. Removing the Dominance Factor. Assuming that the dominant operators continue to erect entry barriers for new players, policies may be needed to give effect to the swift deployment of alternative open network infrastructures based on next generation of technologies and owned by *different* players who do not already exercise dominance over existing critical access infrastructures⁸⁰ and can realistically compete with the dominant operators.⁸¹ This is more likely to bring about a more competitive and level playing field, and not one that is ostensibly open, despite the fact that the dominant operators continue to have a chokehold on the critical points of the physical infrastructure. The economic downturn has inhibited the ability and limited the resources of new players in this regard. If these new players are not able to establish a foothold in the near future or worse, are wound up due to prohibitive operating costs in leasing facilities from the dominant operators, the competitive telecommunication landscape in Singapore is likely to deteriorate and Singapore, although having a fully liberalised market in name, may effectively develop an oligopolistic market. By then, the

⁷⁹ Examples of such controls are the policies on accounting separation practices, quality of service standards, fixed-mobile interconnection, mobile virtual network operator deployment, merger and acquisition guidelines, charging for mobile phone services, payphone access charges and international settlement arrangements. There does not appear to be a discernable systematic approach as to which such controls are identified and addressed, but the policies largely seem to be reactions and responses to particular market behaviour and consumer complaints.

⁸⁰ Given that the critical access facilities today are mainly in wire line infrastructures that are prohibitive in cost to deploy, possible alternative strategies are to encourage the deployment of cheaper wireless infrastructures, or to tap the existing power line infrastructure for communication.

⁸¹ The US FCC noted recently that it is difficult to foster competition within each mode of access (particularly, high speed Internet access) because of the huge cost of building networks. A better alternative in their opinion is to encourage competition through different modes of access (e.g. cable, satellite, etc.). As such, FCC is considering treating digital subscriber line ('DSL') as an information service, and thus will not be subject to the same open-access regulation as basic telephone services. Regional telephone operators may no longer be required to provide access of their phone networks to third parties to provide Internet access (see <http://www.washingtonpost.com/wp-dyn/articles/A12815-2002Feb14.html>). Similarly, in Singapore, our policies may need to be geared towards creating alternative access infrastructures, instead of just regulating the existing ones.

foreign players who are still exploiting our liberalised market may only be those who have come to provide services mainly in lucrative high-profitability sectors (e.g. commercial telecommunications), drawing profits away from local players, without generating any direct benefit for society.

72. In the alternative, to remove the underlying problem of any operator's dominant position, the United States' example in the 1982 break up of the then monopolistic AT&T into regional Baby Bells and long-distance AT&T⁸² can possibly be adapted in Singapore to further level the field in Singapore. If so, even without further regulatory intervention, no one operator can have so large a commercial bargaining power that it overwhelms the new players.⁸³ To be effective, this break up should occur not only along different market segments (e.g. paging, mobile, Internet services), but also along the axis of creating multiple providers at the backbone, backhaul, exchange, last mile and other physical infrastructure levels.

73. However, if the obstacles for new players stem not from reasons related to the entry barriers created by dominant operators, but rather from issues of whether there is sufficient demand⁸⁴ in the domestic market to make it commercially viable for new players to deploy their own infrastructures, the circumstances then raise the question of whether the liberalisation of the market should perhaps have taken a different form from the outset. Since liberalisation, the regulator has sought to bring about alternative providers to the dominant operators by requiring new infrastructure or facilities-based operators to make specific network rollout or capacity commitments as a condition of obtaining a licence. However, if such new operators face a limitation on demand within the domestic market, they may find the commitments difficult to fulfil commercially.⁸⁵ Such a Catch-22 situation suggests that a radically different policy approach may be needed to create competition in telecommunication services if the current approach appears likely to end in a deadlock. Perhaps a tightly regulated monopoly or a nationalised operator is needed at some basic or low level services, so that more effective competition can take place at a higher level. However, the benefits of competition may be lost in such a drastic move as a monopoly lacks the motivation to innovate (whether in price, function, or service) and

⁸² See http://www.navyrelics.com/tribute/bellsys/att_divestiture.html.

⁸³ A new player coming into the market should not face a situation where it has no realistic alternative provider to the services it requires, and is forced to enter into agreements on the terms of the dominant operators, or risk not having a service at all.

⁸⁴ The consistent reporting of high levels of annual profit margins by some players in the market suggests that economically, Singapore is not yet reaching such a limitation on market size. Assuming that entry costs into the market are not prohibitively high, such large profit margins are likely to continue to attract other players to enter into the market.

⁸⁵ Perhaps infrastructure providers should be allowed to establish their market presence first before being required to meet their commitments. Going further, perhaps the licensing distinction between a facilities-based operator and a services-based operator should be removed entirely, and allow each operator the freedom to offer services on its own commercial basis, and not engender the infrastructure rollout artificially through terms under the respective licensing schemes, but allow the infrastructure to evolve based on market forces.

the competing higher-level services may become indistinguishable from each other over time.

74. Policing by the Regulator. It has been said that a common and effective strategy of dominant operators around the world to create barriers to entry for new players is that they operate on the “three Ds”: delay, deny and degrade. It is for the competition regulator to ensure that dominant operators do not engage in such tactics so that the new players are given a fighting chance in the market. As IDA learns on the job to build up the expertise and experience needed to regulate open competition,⁸⁶ it should not be apprehensive (or seen to be apprehensive) about ruling against any dominant operator. Instead, all else being equal, the regulator should err on the side of the new players and give them the benefit of doubt,⁸⁷ simply because any non-action or non-intervention by the regulator is a victory for the dominant operators. When investigating anti-competitive behaviour, in view of the imbalance in the availability of information or evidence⁸⁸ to the new players regarding how the dominant operators provide their services, the new players may be tasked to illustrate a *prima facie* case on the balance of probability (to prevent frivolous complaints), but it may be more appropriate for the burden be upon the dominant operators to demonstrate that their actions are fair, reasonable and non-discriminatory and not for the new players to prove otherwise. IDA needs to be much more proactive and consistent in issuing directions, and such directions should not be seen as punitive in nature, but as necessary instruments to clarify the boundaries of fair competition behaviour. Each day that the new players are unable to obtain satisfactory service due to the dominant operators’ “three Ds” tactics and the regulator sitting on the sidelines translates into a loss of revenue and loss of customers for the new players while having little impact on the dominant operators.

75. In the event that anti-competitive behaviour or other contravening act by an operator has been ascertained, one often finds that the pecuniary penalties that are imposed by IDA have little deterrent effect on large operators. Although the maximum penalty that IDA may impose for each contravention is S\$1 million, the enforcement actions taken by IDA to date involved only a maximum court-imposed fine of S\$50,000, with the average compounded fine imposed by IDA ranging only from S\$1,000 to S\$5,000. Such small amounts pose no obstacle to operators who may choose to absorb the fine as a business cost and bear the occasional bad publicity⁸⁹ in exchange for a commercial or market advantage over their competitors. Even if the maximum penalty is imposed, it is only a drop in the ocean compared to the

⁸⁶ Regulating open competition requires a significant mindset shift and new skill sets and experience distinct from managing a monopolistic and duopolistic environment.

⁸⁷ This is especially true when one recalls that IDA has a promotional role and needs to ensure the ability of these new players to thrive in the market.

⁸⁸ E.g. detailed information regarding the traffic in the dominant operator’s network is not readily available to the new player.

⁸⁹ Before April 2002, IDA did not always publicise its enforcement actions. Hence, an operator may not necessarily face bad publicity when an enforcement action was taken against it.

revenue of some large operators, and it is unlikely to have any significant detrimental or deterrent effect. IDA may also revoke or suspend a licence for such contravention. However, in view of consumer interests, such actions are unlikely to be taken with an operator that has a substantial user base. To address this shortcoming, the legislature may need to consider following the examples of some countries that make unfair competition practices criminal offences, and arm the regulator with the ability to initiate criminal proceedings against office holders (personally) of the operators who engage in such practices.

76. Dispute Resolution by the Regulator. IDA's management of disputes between operators is a heavy responsibility as the regulator assumes the role of the judiciary in resolving disputes and enforcing provisions of the Code relating to competition regulation. The current legal framework does not allow an aggrieved party to take legal actions to the courts on the grounds of anti-competitive behaviour. The only recourse of such a party is to the regulator. The execution of IDA's adjudication role is a visible manifestation to investors of the regulator's operating principles, underlying philosophies, and level of maturity. As an adjudicator, IDA's practices, procedures, judgments and orders should be of a standard similar to like-minded dispute resolution tribunals and based on rules of natural justice. This includes giving parties opportunities to present their arguments, and making judgments objectively, guided by precedence and based only on the facts that the parties presented before it.⁹⁰ Rulings and findings need to be reasoned, substantiated and published, as they are relied on for similar disputes and issues in the future and form the basis for the industry to find certainty in the regulatory framework. Orders and directions should be made with sufficient clarity to avoid ambiguity in interpretation subsequently. Appeals should be accessible to parties, and made to an autonomous tribunal whose members are separate from the original decision maker. In not being equipped with a formal dispute resolution capability, there is room for IDA to improve its role as an adjudicator in the areas outlined above⁹¹ and cultivate an air of fairness, openness and transparency in its dealings with operators.

⁹⁰ If the adjudicator uses other information (e.g. results from its own investigation), the reliance on this information and details regarding how this information was obtained should be fully disclosed to the parties.

⁹¹ As an illustration, when IDA requires parties in a dispute to make submissions in the course of a dispute resolution, the parties are asked to indicate whether their submissions include commercially sensitive information, and if so, paragraphs or sections from the submission are removed before it is provided to the other party. To the other party, there is usually no indication of what the information is or why the information is removed, other than it is commercially sensitive. While there may be valid grounds to withhold such information from the public, withholding the information between the parties does not foster good faith attempts to resolve disputes as it prevents the parties from assessing the full strength of their respective positions. Submissions relating to dispute resolution should be made on a basis that they will be fully disclosed to the other party, and the adjudicator should not ask for the information on the starting premise that the submission will contain sensitive information only for the benefit of the adjudicator and but will be withheld from the other party. IDA's approach is contrasted with the discovery process in commercial litigation (a reasonable analogy as parties may take their dispute to the courts rather than to

77. An adjudicator is at times placed in a difficult position if it has a dispute before it where the objective facts or precedence support a finding in favour of one party, but it finds that broader public policy or public interest objectives may be better met by a finding in favour of the other party. Judges in courts deal with such situations by clearly articulating the grounds of public policy or public interests that lead them to the different conclusion. Such grounds are in turn used by other judges as tests in future decisions to determine whether the public policy or public interests should apply. For IDA, the duty to act fairly as a judge and jury is further clouded by its own policy objectives as a government agency. Therefore, there is all the more reason for the adjudicator to clearly articulate the rationale when deciding on the basis of policy or national interests, and not be obscure and leave the parties and the industry to speculate as to why a decision was made contrary to the plain facts and evidence tendered.

2. Long Term Role

78. If our premise is that the role of the government and the regulator is to stimulate growth, then the policy maker's job is to create economic value. Regulation need not necessarily be restrictive, but can also be empowering and enabling. In the long term, the regulator should aim for the industry to self-regulate through the proper mix of market forces and have an objective to eventually make its own role dispensable. The purpose of regulation is not to impose barriers on the development of the sectors, but to improve the efficiency of the market and enhance consumer choice. To do so, such regulatory frameworks need to be kept up-to-date.⁹² With technological convergence, it is possible for different infrastructure platforms to carry different services and content. This puts the regulator in a position to create policy frameworks that build on technological convergence and enable the use of more open content delivery channels than what is available currently. Greater efficiency and more choices of channels are likely to engender more competition and allow new services to grow and develop. Such a mindset

IDA, albeit that the courts today may lack the legislative backing to act on issues of anti-competitive behaviour), where the parties are required to reveal to each other all relevant information and evidence that bear upon the issues in the dispute (except when the information is protected by privilege, public interest or other rule of law), failing which the parties may be precluded from introducing any new evidence subsequently during the dispute if it is not introduced during the discovery. Confidentiality or commercial sensitivity of information is not a ground for withholding the information if such information is relevant. In return, there is an undertaking that the parties are not to use the information for any purpose other than for the specific dispute resolution. Where necessary, the parties can apply for some information to be kept out of the permanent public record of the dispute. This disclosure process makes it clear to the parties the case that they need to meet, and the process encourages settlement between the parties. It also ensures fairness in that one party cannot attempt to influence the adjudicator with additional information that is not known to the other party.

⁹² A good standard practice to adopt is to have "sunset" or mandatory review provisions that limit the lifespan of regulatory regimes or require a periodic review of them to ensure that the laws and regulations remain relevant and achieve the intended purpose. An example is the requirement for the Telecom Competition Code to be reviewed minimally once every three years. See s. 1.5.5.1 of the Telecom Competition Code).

change from the traditional notions of regulation is necessary but difficult to achieve.

79. Transparency and Openness. The success of free market competition in many developed countries has suggested that that transparency and openness of the regulator are fundamental building blocks to allow the market to regulate itself and for competition to effectively take place. In this regard, IDA has fairly done well in the past two years in increasingly engaging the industry in its policy making process through a public consultation process and making information available to the public through publications on its website. However, while decisions are usually taken quickly and fairly, it is not always apparent as to how the decision is made, and the rationale for the decision is not always given.⁹³ Where there is public consultation before a policy decision is taken, how the public and industry views are incorporated in the final decision-making, and the reasoning behind taking the policy decision, are also not always articulated. Neither was all information about enforcement actions taken against errant operators and the results of dispute resolution made public and in a timely manner. These factors reinforce the perception of a lack of transparency. Being consistent in providing transparent, timely and sufficiently detailed information is essential for investors and operators to have an accurate and complete picture of the state of the industry and its players to make their own market decisions, and allow the regulator to take a backseat role. Otherwise, the opaque interventions or non-actions of the regulator may distort the market conditions.

80. IDA has instituted various industry committees that assist its technical, promotional and development role in the ICT sector.⁹⁴ However, save for its Board,⁹⁵ IDA does not appear to have any other formalised platform available for the members of the industry to engage IDA in an interactive discussion or provide feedback concerning IDA's policy-making and regulatory role in a manner similar to what SBA has with its industry committees.⁹⁶ Such a dialogue platform offers a different dimension from the primarily paper-based industry consultation process. It provides an environment where a more candid discussion can be conducted about issues of concerns that parties may otherwise not be inclined to reduce into writing, yet it gives the opportunity for different perspectives to be aired and debated

⁹³ ITU study on *Effective Regulation Case Study: Singapore 2001* at http://www.itu.int/itudoc/itu-d/publicat/sgp_c_st.html, at 22 and 47.

⁹⁴ Examples of such committees are the Infocomm Manpower Committee, National Cable Standards Committee, National Trust Council, Malay and Tamil Internet Steering Committees, IT Standards Committee, Industry Working Groups on Inter-operator Short Messaging Services, Directory Enquiry, Integrated Printed Directory, and Number Portability, and ASP Alliance Chapter.

⁹⁵ The Board has a restricted advisory role, and its members come from a limited cross section of the ICT industry. There is no representation from parties that are regulated by IDA.

⁹⁶ SBA's industry committees such as its NIAC and the Programme Advisory Committees, although having an advisory role, provide the industry with a platform to discuss and give direct inputs to SBA on its policies.

constructively.⁹⁷ Having such an industry platform, even if only advisory to IDA in nature, may go some distance to create an impression of openness and a willingness to listen on the part of IDA.

81. Increased transparency and openness is likely to impose some overhead and slow down the decision-making process. This may run counter to a desire for greater expediency in decision-making by not always being bound to follow the rigid rules of a transparent regime. However, in the long run, the strict compliance with such transparency rules is likely to create greater accountability of the operators for their actions, and allow competitive market forces, and not the intervention of the regulator, to drive the players to provide a higher level of service at a lower cost. There is also a danger that shortcutting the rules in the name of efficiency or expediency may result in more haphazard and inconsistent policy decisions being taken over time, and the subsequent need to back-pedal or deal with the consequences of a bad decision. Lingering doubts about potentially unknown factors that go into the decision-making process in Singapore is likely to undermine investor confidence. Given the weak economy, if Singapore does not have more to offer to boost investor confidence, investors may be quick to consider putting their investments in other countries where the rules are clearer, or at least less uncertain.

82. Possible Structural Changes. Today, the urgency to deal with telecommunication and infrastructure policy issues involving the government-linked telecommunication heavyweights may have overshadowed the importance of the IT and e-commerce policy issues in the eyes of the policy maker. IDA appears to have more resources to deal with policy and regulation issues in telecommunication services compared to IT and e-commerce. This is an imbalance considering that there are only a handful of players (albeit large and influential players) in the telecommunication sector compared to the much wider and broader base of players in the IT and e-commerce sectors. The policy interests of this greater number of players in IT and e-commerce should be looked after and the current policy-making capability in IT and e-commerce may need to be strengthened.

83. For Singapore in its current phase of a recently liberalised telecommunication services market, it is reasonable to expect that the regulator needs to step in to resolve issues relating to the practices of the dominant operators vis-à-vis the new players. However, in the long term, there is a need to recognise that the growth of the industry is likely to be limited by the speed of response of the regulator if new players feel the need to continually involve IDA in their disputes with the dominant operators. The regulator may never be able to respond as fast as the market needs it to, and putting more resources in the regulator can only be a temporary solution.

⁹⁷ IDA's Industry Working Groups offer a close approximation for such an industry dialogue platform, although their discussions are primarily focused on technical issues rather than policy issues. There are currently four Working Groups addressing areas of short messaging services, directory enquiry, integrated printed directory and number portability.

Instead, the infrastructure regulation role may need to downsize, thus persuading the operators to address their disputes among themselves or through other more established dispute resolution mechanisms such as arbitration, mediation and litigation.⁹⁸ Over time, telecommunication services are likely to become commodified and the policy maker may need to give more attention to enhancing the environment for new interactive services to be made available *above* the telecommunication layer, namely the content policy issues discussed earlier.

84. Perhaps to bring about a renewed emphasis and a more balanced approach to address the range of policy interests and the conflict of interest issues of a converged regulator,⁹⁹ a solution in the form of a structural change may be needed. The existing infrastructure and competition regulation functions of IDA can evolve into a dedicated competition and consumer protection commission with an increased jurisdiction to cover other sectors that are introducing competition, such as the energy market¹⁰⁰ and broadcasting,¹⁰¹ and eventually across all sectors when a full competition regime is introduced in Singapore.¹⁰² Dispute resolution will be an important aspect of such a commission, and it should acquire the necessary legal expertise in addition to the economic expertise. The remaining functions of IDA are primarily one of an economic promotion agency, and the policy responsibility for IT, e-commerce and higher-level services can be allocated to such an agency. The agency should be vested with a primary responsibility to remove regulatory barriers and encourage innovation, and a policy authority to move and resolve cross-agency issues with expediency.

VII. Parting Thoughts

85. Singapore has demonstrated that it can make tough decisions when the situation warrants it. Even “sacred cows” can be reviewed when it is necessary. The challenge is not in making difficult decisions, but to know which issues need attention and how to manage the external pressure and

⁹⁸ Just as the courts and other alternative dispute resolution tribunals have learnt to deal with other highly specialised fields of commercial practice such as admiralty and construction, disputes on telecommunications issues can also be dealt with in this way over time (if necessary, with the support of appropriate technical expertise).

⁹⁹ Discussed earlier under the heading “Potential Shortcomings of a Converged Regulator”.

¹⁰⁰ The energy market is the second sector (after telecommunication services) in Singapore that is subject to a competition regulator, the Energy Market Authority (‘EMA’).

¹⁰¹ SBA is currently looking into developing a competition framework and code of practice to govern Singapore’s broadcasting and print industry.

¹⁰² A word of caution about merging regulatory functions. It is instructive to note that although the US FCC had the benefit of having the same agency regulate the telecommunication and broadcast sectors, it still applied its rules differently to players across the sectors. Having a single regulator did not necessarily bring about a change in mindset or a change in *modus operandi*. FCC had, within itself, separate bureaus looking into the different sectors with different regimes, and the bureaus often do not communicate with each other internally. For example, cable operators were able to cross-subsidise their data cable services, thus allowing the cable networks to flourish in the US. However, the telecommunication operators were not allowed to cross-subsidize DSL services. It will be undesirable of Singapore’s eventual competition commission also operated in such a ‘silo’ manner.

scrutiny that we are under. For Singapore to succeed, we need to consider our future policy developments with the perspective of the developed countries in mind. It may not be sufficient to satisfy ourselves that our policies and frameworks suit our own purposes, our size, or our other unique characteristics or limitations. We are under the scrutiny of other countries, and potential investors may measure us not by our own standards, nor by the standards of our neighbouring countries in Asia, but by the standards of the developed countries that are our major trading partners. We are also likely to be measured based on their perception of us. Too often, the perception may not reflect the reality, and correcting the perception can be more difficult than correcting the actual problem itself.

86. With the yardstick that we are likely to be measured by in mind, we need to be aware of the level of transparency of governments in developed countries, and how their actions and decisions are open for scrutiny by the public and the media. Singapore's current standard of transparency and openness, albeit high compared to many countries in Asia, is still some distance from the developed countries' standard. One of the oft-cited criticisms of "Singapore Inc." is the close relationship between key appointment holders in the Government and major government-linked companies ('GLCs'), and the common ownership structures among the GLCs. It is therefore even more important for decision and policy-making processes to be completely transparent to silence any accusations of impropriety or favouritism between the government and the GLCs.

87. Often, the resistance to take bold steps on content policy is not due to negative economic impact to Singapore, but rather the lack of certainty or tangibility of the economic returns for such initiatives. It may be myopic to look only for sure-win situations before making moves in an area where we are losing ground. Certainly, there are also other considerations such as political and social concerns, and increased business costs for local enterprises. It will be reckless to make "bold" policy moves without regard to the social implications. Our fundamental challenge is in finding and articulating the new balance between Singapore's economic aspirations versus our philosophy and values as a society. The globalised nature of the economy and external forces that are upon Singapore suggest that inevitably, the current point of balance needs to move towards an even more open and liberal mindset. Having clearly articulated a new underlying philosophy may then allow us to recognise what tradeoffs we can make in a consistent manner. What we do or not do is likely to directly affect our attractiveness as a business hub, especially when opportunities in other large emerging markets easily surpass the available opportunities in Singapore.

88. Times are changing, and sometimes we need to do things differently from the past. What has worked in the past may not work again in the future. We need to look beyond the short term, and truly look at the long term to recognise Singapore's limitations and identify the strengths that we need to build on to survive.

THE IMPACT OF CYBERSPACE ON CONTRACT LAW

Professor Andrew Phang
Associate Professor Yeo Tiong Min

Biography

Professor Andrew Phang

Andrew Phang is Professor of Law and Chair of the Department of Law in the Business School at the Singapore Management University. He graduated with an LLB (First Class Honours) from the National University of Singapore and obtained his LLM and SJD from Harvard Law School. He has well in excess of one hundred publications and has published not only in local journals but also in twenty five international journals published in the United Kingdom, Australia, the USA, Canada, South Africa and Hong Kong. He is the author of several books and monographs, including *The Development of Singapore Law – Historical and Socio-Legal Perspectives* (Butterworths, 1990) and *Cheshire, Fifoot and Furmston's Law of Contract – Second Singapore and Malaysian Edition* (Butterworths Asia, 1998). He is also the General Editor of as well as contributor to the Contract volume of *Halsbury's Laws of Singapore* (Butterworths Asia, 2000) and contributor to the practitioners' text, *Butterworths Common Law Series – The Law of Contract* (Butterworths, London, 1999). His works have been cited by Singapore and Malaysian courts, as well as by the Australian High Court and New South Wales courts.

He is presently on the Editorial Boards of the *Journal of Contract Law, the Journal of Obligations & Remedies* as well as the *Singapore Academy of Law Journal*, and is on the Editorial Advisory Board of the *Singapore Law Review*. He is also a member of the Panel of Law Reform Consultants of the Attorney-General's Chambers. His main areas of interest are in contract and commercial law, as well as legal history and legal philosophy.

Associate Professor Yeo Tiong Min

Associate Professor Yeo Tiong Min obtained his bachelor's degree in Law from National University of Singapore in 1990, where he has been employed since then. He graduated from the University of Oxford with a Bachelor of Civil Law in 1992, and spent another two years there as a Senior Research Fellow from 1998 to 2000. Currently, he teaches contract law and private international law subjects in the NUS. His research interests include not only his teaching subjects but also equity, restitution, remedies and certain aspects of information technology law.

He has written on topics in private international law, equity, restitution, contract law, and constitutional law, and published in local and international journals. He is the Asia Pacific Regional Editor for the *Restitution Law Review* and an editorial member of the *Singapore Journal of International and Comparative Law*. He is a member of the Panel of Law Reform Consultants of the Attorney-General's Chambers. He was one of the resource persons assisting the Legal, Regulatory and Enforcement Study Group of the Electronic Hotbed Policy Committee in 1997. He has been a member of the National Internet Advisory Committee as well as its Legal Sub-Committee.

Abstract

This paper is an incipient attempt at sketching out the possible implications of cyberspace on the general principles of contract law.

The information technology revolution can affect contract law in several important ways. First, it presents a new physical context for contracting activities, requiring analysis of whether and how existing contract rules apply to these new situations. Secondly, contracting activities in cyberspace may challenge some assumptions made in contract rules designed for contracting in the real world. Thirdly, the cross-border nature of cyberspace contracting engages conflict of laws issues with higher frequency, even for consumer transactions: contractual techniques of jurisdiction selection and choice of applicable laws will become more important, as will reservations of forum public policy.

We will examine all the major aspects of contract law. More substantive analysis and recommendations can be undertaken with respect to formation of contract, particularly in relation to the Singapore Electronic Transactions Act, and related issues of notice and incorporation of terms. Other areas of contract law, for example those pertaining to vitiating factors, entail more speculative hypotheses. In this regard, we also argue for more empirical research in the extralegal sphere which would constitute an invaluable guide to possible ways forward in the legal sphere. We will also examine contractual techniques that may be used to control choice of jurisdiction and applicable law and their effectiveness.

I. Introduction and Scope

1. The law of contract, by virtue of its utter pervasiveness in the planning and regulation of transactions both large and small alike, is the 'legal lifeblood' of commerce in both local and global contexts. It also constitutes the foundation of most other specialised areas of commercial law: a point that serves only to underscore the point just made.
2. The key question which constitutes the focus of the present paper is whether or not the current principles of contract law which necessarily were (and, to a large extent, continue to be) formulated in the context of the so-called 'old economy' in real time, space and (often) paper, ought to be either modified and/or replaced or abrogated in the context of cyberspace. This is a straightforward, yet profoundly important, question, given the increased (and increasing) numbers of transactions over the Internet.
3. The question posed in the preceding paragraph leads to an equally important (and related) question and issue: to what extent is the answer to that particular question merely one of application within a different context (in this instance, cyberspace)? If the answer to this question is (in large part at least) in the affirmative, then this would suggest that minimal, if any, changes to the existing rules are in fact required – and vice versa.
4. In order to respond in a meaningful, albeit tentative, way to these questions, we considered the substantive rules and principles of each major area of contract law. Our preliminary conclusion is that the existing rules and principles do not need to be changed, let alone replaced or abrogated. In other

words, for the most part at least, the difficulty is one of application rather than substantive content as such. This is, perhaps, not wholly surprising as, by their very nature, common law as well as equitable rules and principles will tend to be stated at a very general level of abstraction or universality, thus leaving much scope for actual as well as potential application to a large variety of contexts, including one as ostensibly radical as cyberspace. We do also have to bear in mind the fact that even though transactions may be concluded in cyberspace, the *raison d'être* remains largely (if not wholly) the same – to aid the parties in coming to a binding legal obligation via agreement.

5. However, we should add that the line between content and context, between rule or principle and application, between substance and process, is not always clear: a point which Professor Atiyah has very convincingly and perceptively demonstrated in what must be considered the leading scholarly discussion on the point in the Commonwealth.¹ We nevertheless suggest that this distinction, whilst admittedly not always clear, is an important one for the purpose of the present paper. We also suggest that notwithstanding our main conclusion briefly stated in the preceding paragraph, there are indeed a few areas of contract law where the relevant rules and principles may require at least some modification (this, as we shall see, is particularly the case with regard to the formation of a contract in cyberspace). However, we did not really locate any contract rules or principles which required total abrogation, with the possible substitution of a new rule or principle altogether. At this juncture – and consistently with the point made right at the outset of the present paragraph – we note, once again, that even in these situations (of change), the modifications originate, in the main, from the influence of the (new) context (here, cyberspace) itself. In other words, the sphere of context and application is virtually indispensable.

6. We should also like to point out that the practical answer to many of the issues of application and context are themselves heavily dependent on extra-legal factors as well as solutions.

7. Finally, we should further observe that in order for the law in general and contract law in particular to respond to the changes brought about by cyberspace, more empirical research is necessary. This observation is necessarily related to the point made in the preceding paragraph. Indeed, it may well be argued that both are but mirror images of each other.

8. Having regard to the brief summary of what we perceive to be both the key issues as well as the key solutions, we propose to divide the present paper into four main parts. However, we need, at this juncture, to point out that the 'solutions' proposed are necessarily tentative in nature and this leads to a second (and closely related) point: there is a dearth of (in particular,

¹ See Atiyah, "Contract and Fair Exchange" (1985) 35 *Univ. Toronto L.J.* 1 (reprinted as Essay 11 in the author's *Essays on Contract* (1986)); in the US context, the seminal article is probably the late Professor Arthur Leff's article: see "Unconscionability and the Code – The Emperor's New Clause" (1967) 115 *Univ. Pa. L. Rev.* 485.

Commonwealth) legal literature on the present topic and whilst there have been isolated pieces dealing with specific aspects of contract law,² there has been virtually no literature that analyses the various issues in any systematic fashion. Given this context, it is not surprising, therefore, that we offer this paper as only a tentative attempt at dealing with an extremely large area of the law indeed: an area which is, arguably, the most significant general area of the private law.

9. Returning to the four main parts mentioned in the preceding paragraph, they are as follows. We will first discuss those areas of the law of contract which pertain, in the main or uniquely, to problems of application and context. As already mentioned, these areas constitute, on a combined basis, virtually the whole of the existing common law of contract. However, given the overlap between content and application as well as the very nature of the inquiry itself, the issues raised in this particular context are no less important and, indeed, difficulties (in particular) with regard to points of application will be noted, wherever relevant.

10. Secondly, we will discuss those areas (or, more accurately, parts thereof) that are not ones that (at least primarily) concern application and context but that may, on the contrary, require possible modification. However, these situations are, as already mentioned, few in number.

11. Thirdly, we will point to those areas (or, again more accurately, parts thereof) that are in urgent need of empirical research in the extra-legal sphere. As lawyers, this particular part of the paper is *prima facie* outside the remit of our expertise and we will therefore only paint in broad brushstrokes, as it were. It should, however, be noted that the discussion in this particular Part is closely related to that in the first Part inasmuch as issues pertaining to application and context would, in these specific situations, require a more nuanced understanding of what precisely is happening in the extra-legal sphere.

12. The fourth part will consider the key policy issues in transnational contracting.

13. Before proceeding to our discussion under these main Parts, we should point out that we have opted not to proceed by way of an examination of each specific (and major) area of contract law, primarily because (as already mentioned more than once because of its obvious importance) the vast majority of areas concern issues and difficulties of application and context, rather than substance. We do not, however, address the issue of contract formalities as this has been the subject of law reform in the Electronic Transactions Act.³

² These have tended to focus on the issue of the *formation* of a contract in cyberspace – which is not in the least surprising in view of our discussion of this very topic below.

³ (Cap 88, 1999 Rev Ed), ss 4, 6, 7, 8, 11.

II. Issues of Application and Context

A. Introduction

14. It may be apposite to note, at the outset, that there are a few specific areas where no real issues of application, context or substantive content are raised at all and this concerns, first, the doctrine of consideration. The doctrine itself is, admittedly, riddled with actual as well as potential difficulties,⁴ but these difficulties do not really impact on the context of cyberspace. The second area relates to the doctrine of privity of contract.⁵ Also included are the general principles relating to the discharge of contract (including discharge by agreement, performance and breach,⁶ as well as by frustration⁷).

B. Formation

1. Offer and Acceptance

15. Turning to the discussion in the present Part proper, we consider, first, the formation of a contract and, in particular, the issue of offer and acceptance, where we note that the relevant statute is the Electronic

⁴ Arising, in the main, from the English Court of Appeal decision of *Williams v. Roffey Bros & Nicholls (Contractors) Ltd.* [1989] 2 WLR 1153; but cf the (also) English Court of Appeal decision of *Re Selectmove* [1995] 1 WLR 474. And see generally Carter, Phang & Poole, "Reactions to *Williams v Roffey*" (1995) 8 J.C.L. 248 as well as Phang, "Acceptance by Silence and Consideration Reined In" [1994] L.M.C.L.Q. 336.

⁵ Although one should note the very important legislative developments with regard to benefits which are sought to be conferred on third parties: see (in the English context) the Contracts (Rights of Third Parties) Act 1999 (Cap 31), which was the model upon which the very recent Singapore Contracts (Rights of Third Parties) Act (No 39 of 2001) was based. But this does not impact uniquely on the context of cyberspace as such. And see generally Adams, Beyleveld & Brownsword, "Privity of Contract – the Benefits and Burdens of Law Reform" (1997) 60 M.L.R. 238 (see also *Butterworths Common Law Series – The Law of Contract* (1999) at 934-958); Treitel, in *Chitty on Contracts* (28th ed, 1999) at 1003-1017 (see also his *The Law of Contract* (10th ed, 1999) at 538-539 and 600-614); Burrows, "Reforming privity of contract: Law Commission Report No 242" [1996] L.M.C.L.Q. 467 and, by the same writer, "The Contracts (Rights of Third Parties) Act 1999 and Its Implications for Commercial Contracts" [2000] L.M.C.L.Q. 540; Bridge, "The Contracts (Rights of Third Parties) Act 1999" (2001) 5 Edinburgh L Rev 85; MacMillan, "A Birthday Present for Lord Denning: The Contracts (Rights of Third Parties) Act 1999" (2000) 63 M.L.R. 721; N Andrews, "Strangers to Justice No Longer: The Reversal of the Privity Rule Under the Contracts (Rights of Third Parties) Act 1999" [2001] C.L.J. 353; and Yeo, "When Do Third Party Rights Arise Under the Contracts (Rights of Third Parties) Act 1999 (UK)?" (2001) 13 S.Ac.L.J. 34. Reference may also be made to the valuable collection of essays in Merkin (ed), *Privity of Contract – The Impact of the Contracts (Rights of Third Parties) Act 1999* (2000) as well as Kincaid (ed), *Privity – Private Justice or Public Regulation* (2001).

For an account of the general principles relating to the doctrine of privity of contract, see generally Phang, *Cheshire, Fifoot and Furmston's Law of Contract – Second Singapore and Malaysian Edition* (1998) at Ch 15.

⁶ For an account of the general principles in these areas, see generally Phang, *ibid* at Ch 20 and 19, respectively.

⁷ For an account of the general principles relating to the doctrine of frustration, see generally Phang, *ibid* at Ch 21.

Transactions Act.⁸ However, this Act is by no means exhaustive: not least because the material parts therein are based on the UNCITRAL Model Law which was intended to interfere as little as possible with the domestic law of contract of the country concerned. The first broad issue which arises is whether or not the context of cyberspace requires re-formulation of the existing rules relating to offer and acceptance. However, the threshold issue is, in our view, really one of context. In particular, because of the inherent nature of the Act just mentioned, it is unclear whether the general rule (that the contract is concluded only on actual receipt of the offeree's acceptance) or the postal acceptance rule (that the contract is concluded at the point of posting) applies with regard to transactions concluded via electronic mail.⁹ Although the Act does provide for the mechanics of ascertainment, as it were, it does not really furnish a definitive answer to this particular issue. Rather surprisingly, conflicting views have been expressed. For instance, one view is that since telexes and faxes are considered to be forms of instantaneous communications, electronic communications ought, *a fortiori*, to be considered likewise. However, a contrary view is that not all forms of electronic transactions are instantaneous: for example, electronic records may be collated and transmitted in batches, may be saved in computer systems for retransmission, or may even be forwarded from computer system to computer system only when the recipient requests for his or her electronic messages. It seems to us that it may be best for the Electronic Transactions Act itself to clarify which rule should prevail, bearing in mind the fact that exceptions could be statutorily incorporated in order to achieve a balance between the parties concerned. For example, it has been well-established that in a situation pertaining to instantaneous communications where the general rule of actual receipt applies, this general rule may in fact be displaced where the non-receipt of the acceptance by the offeror is due to fault on the offeror's part. If such a suggested approach is accepted, this might in fact entail the enactment of a separate statutory regime. We shall return to this possibility in the next Part of this paper.

16. One other major issue which arises with regard to offer and acceptance is inextricably bound up with the issue of incorporation of contractual terms in the context of 'browsewrap' and 'clickwrap' contracts. At this juncture, it should be noted that the issue which arises here is not one that is primarily technical in nature but, rather, is inextricably bound up with notions of public policy as well as fairness and justice. Should, for instance, an individual be bound by the terms in a 'browsewrap' agreement merely by clicking his or her mouse without actually having had an opportunity to read the terms

⁸ (Cap 88, 1999 Rev Ed). See generally Phang & Seng, "The Singapore Electronic Transactions Act 1998 and the Proposed Article 2B of the Uniform Commercial Code" (1999) 7 *International Journal of Law and Information Technology* 103.

⁹ See generally e.g. Reed & Davies, "Electronic Commerce" in Reed & Angel (eds), *Computer Law* (4th ed, 2000), Ch 10 at 304-305; Rowland & Macdonald, *Information Technology Law* (2nd ed, 2000) at 303-305; Hill, "Flogging a Dead Horse – The Postal Acceptance Rule and Email" (2001) 17 *J.C.L.* 151; and Christensen, "Formation of Contracts by Email – Is it Just the Same as the Post?" (2001) *Queensland University of Technology Law & Justice Journal* 22.

themselves? On the other hand, is it permissible to incorporate terms in a 'clickwrap' agreement when the individual has in fact been given the opportunity to read the terms, bearing in mind that the individual concerned would not be permitted to (for example) download the software which is the subject matter of the contract without accepting these terms by clicking the mouse? The introduction of elements of unfairness and/or surprise are significant factors that would have, necessarily, to be taken into account (this may explain, in part at least, the relatively more generous judicial attitude towards 'clickwrap' (as opposed to 'browsewrap') agreements). It is, of course, possible to resolve this issue by recourse to standard principles of offer and acceptance and to state, for example, that no terms can be incorporated where the other party has not acceded to them because he or she has not had any (or any sufficient) notice of them since a contractual relationship is one that embodies the assent of both parties themselves.¹⁰ On the other hand, one alternative approach is to develop a separate regime of legislative rules to govern the situation: a point we return to in the next Part of this paper. It should be further noted that similar issues arise with regard to incorporation of exception clauses, which is dealt with below.

2. Intention to Create Legal Relations

17. It would appear, at first blush, that no issues in the context of cyberspace would be raised at all. However, it bears noting, if only in passing, that virtually all transactions on Internet websites would necessarily be commercial (rather than purely domestic) in nature and, hence, trigger the presumption that there is an intention to create legal relations. It is suggested that this would also be the case with respect to transactions concluded via electronic mail although a caveat is necessary here: because of the nature of the medium of communications, it is also possible for purely domestic situations to arise as well and, if so, the countervailing presumption to the effect that there is no intention to create legal relations would apply instead.

C. *Terms of the Contract*

1. Express and Implied Terms

18. Insofar as express terms are concerned, one issue which arises is whether or not the parol evidence rule¹¹ is less likely to be applicable, at least in the context of transactions purportedly concluded on Internet websites. There is, however, no compelling reason for responding to this issue in the affirmative simply because much depends on what has actually transpired. Indeed, there is no reason in principle or logic why oral communications might not also be involved. Everything would appear, in the final analysis, to depend on the precise facts in question.

¹⁰ See, e.g., the approach in *Specht v Netscape Communications Corp* 150 F Supp 2d 585 (SDNY 2001) .

¹¹ Embodied, in the Singapore context, within the Evidence Act (Cap 97, 1997 Rev Ed) ss. 93 and 94.

19. More potentially relevant issues are, however, possible with respect to implied terms and, in particular, to that category of implied terms which has been classified as “terms implied in law”. These are terms which, implied by the courts based on policy grounds rather than to fulfil the presumed intentions of the actual contracting parties themselves, are much more general in nature and would be implied (in the absence of subsequent reversal by a higher court) in every contract of that particular type. Unfortunately, however, there remains a lack of clarity (particularly in the local context) between “terms implied in fact” (the narrower category which is intended to give effect to the presumed intention of the parties, and no more) and “terms implied in law”.¹² This ambiguity notwithstanding, we are of the view that, insofar as “terms implied in law” are concerned, the very interesting issue arises as to whether one should ascertain whether there are any practices or norms with regard to particular industries or businesses in the context of cyberspace that would (in turn) lead to the possible implication of certain specific “terms implied in law”. This is, it is suggested, primarily an extra-legal issue, which will therefore be considered in a subsequent Part of this paper. However, it is also important to note at this juncture that if such an approach is viable, there would be at least a possible overlap between the category of “terms implied in fact” and terms implied by custom. It is true, of course, that terms implied by custom, as conceived in the traditional sense,¹³ would be quite different and it would (on the ground of the relative lack of time for development, if nothing else) be virtually impossible for any term in the context of cyberspace to be implied under this particular category. If so, then, it might be still possible, nonetheless, to imply a term premised on the category of “terms implied in law” instead. However, food is also generated for legal thought as to whether or not there ought, in addition, to be a reconceptualisation of terms implied by custom – at least inasmuch as terms implied in cyberspace are concerned. In our view, this is not at all a pressing inquiry for (as we have just seen) terms could be possibly implied under the category of “terms implied in law” instead.

2. Exception Clauses

20. Incorporation. There are three fairly standard stages in the analysis of cases dealing with exception clauses. The first is that of incorporation which (in turn) may be sub-classified into at least three main modes. One of the most obvious modes is that of a signature. In this regard, issues of security and trust arise, with the relevant provisions of the Electronic Transactions Act being of crucial importance. As we shall see below, however, allowing for the possibility of alternative modes of incorporation with the advent of new forms of technology is something that ought to be provided for in the present law (perhaps in the Electronic Transactions Act itself). We will discuss this (and other related points) in another Part below.

¹² See Phang, above, n 5 at 268–271.

¹³ And see generally *ibid* at 253–256.

21. A second mode of incorporation is that of reasonable notice. In this regard, we note that the presence of Internet websites may result in at least a slight alteration of the rules in this regard, although (here again) the line between content and application may not be wholly clear. We will briefly consider the possibility of new rules in the next Part of this paper. It should also be noted that, on an extra-legal level, the degree of access to reliable information may impact on this mode of incorporation as well.

22. Insofar as the third mode of incorporation (a consistent course of dealing) is concerned, it would appear that the existing principles would apply without much, if any, modification.

23. More generally, what are basically extra-legal issues will arise which will impact, in our view, significantly on the issue of incorporation of exception clauses in the context of cyberspace. We will, again, deal with these in a little more detail below but they may briefly be mentioned at this particular juncture.

24. One issue is whether or not consumers are more or less likely to read terms on Internet websites. A related issue is whether or not they are also more or less likely to be able to obtain reliable information on various businesses which are to be found on the Internet.

25. Construction of Exception Clauses. It is submitted that the existing principles (such as the *contra proferentum* rule and principles of interpretation with regard to clauses which seek to exclude or restrict liability for negligence, as well as the concept of fundamental breach as (probably) a rule of construction) would continue to apply.

3. The Unfair Contract Terms Act¹⁴

26. It is submitted that the existing principles would continue to apply vis-à-vis the application of the relevant provisions of this Act to the facts of the case at hand. More research, however, is (in our view) required to ascertain whether or not the test of reasonableness (under s 11) is impacted on by the new context of cyberspace: in particular, whether there is more reliable information available and whether, if so, this might affect the ascertainment of the reasonableness (or otherwise) of the exception clause in question. There is also the issue as to whether or not consumers are more, or less, likely to read terms put up on Internet websites. However, the very factual nature of the inquiry itself means that there can be no blanket rule laid down as such, even if it were possible to ascertain with any degree of certainty the quantum as well as quality of information available on the Internet, itself a task as factual as the process of determining the reasonableness (or otherwise) of an exception clause itself.

¹⁴ (Cap 396, 1994 Rev Ed).

D. Capacity to Contract

27. The key issue here would appear to centre around minors: in particular, how a contracting party would be able to ascertain that the other party is in fact (in the case of Singapore law at least) at least twenty-one years of age (we assume that there would be no difficulties with regard to ascertaining the identity as well as capacity of companies, which of course entails somewhat different issues). This raises legal concerns (particularly about modes of verification), which we will discuss in the next Part of this paper.

E. Vitiating Factors

1. Mistake

28. We view the main issues arising here as being primarily extra-legal in nature, and therefore deal with them in more detail below. For this reason, we will not embark on a discussion of the general principles in this rather complex area of contract law.¹⁵ It is important, however, to identify these issues for further reference and discussion later.

29. The first issue centres on the access to reliable information. Quite obviously, if a particular contracting party has access to such information, it would be rather difficult for him or her to argue that there has been an operative mistake entitling him or her to treat the contract concerned as unenforceable as being either void or voidable.

30. The second issue concerns verification and security. This is particularly relevant to the issue of mistaken identity. The existing principles of law suggest that it is easier to establish mistaken identity in distance or non-*inter praesentes* transactions.¹⁶ If, however, the prevailing standards of both verification and security are adequate, then the argument from mistake loses much, if not all, of its force. In this regard, the doctrine of *non est factum* is also particularly relevant: here, we need to return to the Electronic Transactions Act and, specifically, to the provisions on electronic and digital signatures. The issue of such signatures (especially with regard to their authenticity and integrity) obviously cuts across, as it were, not only the entire law of mistake but also other areas of contract law where this issue is also relevant.¹⁷ It will suffice for our present (and more modest) purposes to suggest that the Legislature might need to consider whether or not to introduce at least the flexibility for the incorporation of alternative modes of

¹⁵ For an account of the general principles relating to the doctrine of mistake itself, see e.g. Phang, above, n 5 at Ch 9 and, by the same author, "Vitiating Factors in Contract Law – The Interaction of Theory and Practice" (1998) 10 S.Ac.L.J. 1 at 4–15.

¹⁶ See e.g. the leading House of Lords decision of *Cundy v. Lindsay* (1878) 3 App. Cas. 459; contrast this decision with the infamous trilogy of decisions on mistaken identity in face-to-face (or *inter praesentes*) situations, viz, *Phillips v. Brooks, Ltd* [1919] 2 KB 243, *Ingram v. Little* [1961] Q.B. 31 and *Lewis v. Averay* [1972] 1 Q.B. 198. See also Phang, "Vitiating Factors in Contract Law – The Interaction of Theory and Practice", above, n 15 at 10–15.

¹⁷ See e.g. with regard to incorporation via signature in the context of exception clauses, discussed above.

confirming the identity of contracting parties as well as the integrity of the information conveyed by such parties. The definition of “electronic signatures” in the UNCITRAL Model Law on Electronic Signatures 2001¹⁸ appears to be slightly wider than the definition in Singapore’s Electronic Transactions Act. Moreover, to raise a rebuttable presumption of identity under the Act, the parties must have used a commercially reasonable procedure previously agreed to, or a procedure provided by law, *viz*, the public key infrastructure-based digital signature. The main difficulty with the Act as presently promulgated is that it ‘locks’ contracting parties into one major approach (centering on signatures) and does not accommodate the inevitable fact that technology is ever-changing: and at an extremely rapid pace at that.¹⁹

31. It should also be pointed out, however, that transactions in cyberspace need not necessarily be wholly impersonal; video conferencing and link-ups are now being increasingly utilised, although we would venture to suggest that more empirical research is necessary as even such a situation is not precisely the same as a face-to-face transaction as such.

32. Two legal issues may, however, be considered. The first may be considered briefly. The extent to which a contract can be said to be induced by a mistake where one or more of the contracting parties use automated systems as agents raises an issue of application, and it is thought that the common law is flexible enough to ascribe computer errors and actions to legal entities responsible for the running and maintenance of such systems. The Electronic Transactions Act²⁰ already deals with attribution of origin of electronic messages. It does not require much to extrapolate it to the ascription of responsibility. But we invite participants to share their views and/or disagree on this issue nevertheless.

The question posed is: (1) Should there be legislative clarification on the issue of ascription of responsibility for actions of computer agents in the context of formation of electronic contracts?

33. The second is whether the substantive law on mistake should be modified to allow room for mistakes to be made in transactions made in the electronic context. The problem of errors in the formation of electronic contracts was adverted to in the Secretariat’s Note to the proposed draft UNCITRAL Convention on Electronic Contracting.²¹ The desirability of this

¹⁸ Art 2. Available at <http://www.uncitral.org/english/texts/electcom/ml-elecsig-e.pdf>. The definition appears to be more passive, requiring only the signature to indicate the party’s approval of the content of the information associated with the signature, while the Singapore definition requires the party to execute or adopt the electronic signature with the intention of approval.

¹⁹ See also Phang & Seng, above, n 8, at 119-122.

²⁰ S 13.

²¹ Available at http://www.uncitral.org/english/workinggroups/wg_ec/wp-95e.pdf. Art 12 of the draft Convention prescribes a mode of contracting to prevent errors and further provides that the failure by an automated system to provide a natural person with an opportunity to correct an error can invalidate the contract. This is an example of the

type of reform depends on empirical evidence, if any, (not available to the authors' knowledge) as to the relative likelihood of errors being made in such contexts compared to normal contexts, as well as considerations of policy as to whether it is desirable for the law to be more indulgent with contracts made over electronic media, and of possible prejudice to third parties.

The question posed is: (2) Should the substantive law of mistake be modified to give greater allowance in electronic contracting for one party to nullify or withdraw from the transaction?

2. Misrepresentation

34. Very similar issues briefly discussed above with regard to "Mistake" arise in the context of misrepresentation. In particular, insofar as fraudulent misrepresentation is concerned, the issue of application and context which arises is whether or not it is, in the impersonal environment of cyberspace, in fact relatively easier for rogues to effect their unsavoury schemes. Equally importantly, are there sufficiently effective measures and precautions that contracting parties can take in order to protect themselves from fraud? Amongst the various issues that must be considered would, of course, include (as already alluded to at the outset of this paragraph) those briefly mentioned above in our discussion of "Mistake". These are not, obviously, issues that pertain to the law of misrepresentation *per se*,²² and will be very briefly considered in a subsequent Part of this paper.

3. Economic Duress

35. Once again, very similar issues to those discussed in the preceding two Sections arise. At this juncture, it should be noted that this should not perhaps be surprising because we are dealing with vitiating factors which are, in the main, concerned with achieving justice and fairness in the case at hand.²³ Turning to possibly relevant factors, these include whether or not reasonable access to reliable information and alternatives is feasible. It might be thought that, given the enormous reach of the Internet, such information as well as alternatives ought to be fairly accessible. However, there are other factors which we will consider in a subsequent Part of the present paper.

36. It might also be thought that a finding of economic duress is less likely in the context of the impersonal environment of cyberspace. However, as already briefly touched on in the Section on "Mistake" above, transactions in cyberspace may not be wholly impersonal – a point to which we will return again below. It should also be noted that insofar, for example, as electronic

difficulty adverted to above in distinguishing issues of procedure from substance: see text to n 1 above. This raises the broad issue whether it is feasible to confine reform to formation of contract without touching on the substantive issues of contract law (see below, text after n 36).

²² For an account of the general principles relating to the doctrine of misrepresentation, see Phang, above, n 5 at Ch 10 and above, n 15 at 15–33.

²³ And see generally Phang, "Vitiating Factors in Contract Law – The Interaction of Theory and Practice", above, n 15.

mail is concerned, there is sufficient scope, particularly during a moderate (and, *a fortiori*, extended) period of negotiations, for possible economic duress to creep in.

4. Undue Influence

37. The discussion in the preceding Section (with respect to “Economic Duress”) would apply, it is suggested, to Class 1 (or actual) undue influence as there is a very close resemblance between the two doctrines.²⁴ However, the general principles relating to Class 2 (or presumed) undue influence would continue to apply (with little or no modification) in the context of cyberspace, although one has now to work out the implications of the recent House of Lords decision in *Royal Bank of Scotland v Etridge*.²⁵ In addition, broader considerations with regard to the impersonal nature (or otherwise) of cyberspace would apply equally to the situation of presumed undue influence.

5. Unconscionability

38. Similar (principally, extra-legal) issues as those discussed in the preceding two Sections (*viz.*, “Economic Duress” and “Undue Influence”, respectively) arise with regard to the doctrine of unconscionability: not least because of the close linkages amongst all three doctrines.²⁶

6. Illegality

39. Given the very strict approach taken by the courts in situations where it is ascertained that Parliament intended to prohibit not merely the conduct but also the contract itself,²⁷ it might well be thought that, the state of mind of the contracting parties being thus irrelevant, no extra-legal factors (such as the impact or significance of access to reliable information via the Internet) would be relevant. However, it should be borne in mind that there are situations (particularly with regard to statutory illegality) where the state of mind of the parties is relevant (for instance, where the contract is not otherwise prohibited but where the contracting parties nevertheless insist on going ahead with the contract in blatant contravention of the provision(s) of the statute or of the regulation concerned²⁸); in such situations, it is suggested that the availability (or otherwise) of reliable information may become quite a crucial factor indeed.

²⁴ See Phang, “Undue Influence – Methodology, Sources and Linkages” [1995] J.B.L. 552 at 565-566.

²⁵ [2001] 3 WLR 1021.

²⁶ And see generally Phang, above, n 24.

²⁷ See generally Phang, “Illegality and Public Policy” in *Butterworths Common Law Series – The Law of Contract* at Ch 5.

²⁸ See *ibid* especially at para 5.201.

F. Remedies

40. Although it would appear that no real issues of significance arise in the sphere of remedies, there is one issue of application which may require more extra-legal information. Once again, the key point centres on the availability (or otherwise) of reliable information. Such access may be crucial in ascertaining whether or not doctrines such as remoteness of damage or the duty to mitigate are applicable. Where, for instance, there is reasonable access to reliable information, there may well arise a duty to mitigate as there is a stronger likelihood that the argument that there are no reasonable alternatives will fail, particularly where the contractual subject matter is generic in nature.

III. Instances Where Substantive Modification or Even Replacement of Existing Rules and Principles May Be Desirable

41. Consistent with the preliminary propositions made right at the outset of this paper, there are indeed few, if any, changes we would propose to the existing substantive rules of contract law.

42. The main changes really centre around the formation of the contract and, in particular, possible changes to the Electronic Transactions Act. The first change we would propose would not, in point of fact, change the existing rules as such. It would, however, conduce to certainty (clearly with regard to domestic transactions, although a caveat is required with regard to transactions with a foreign element (see generally our discussion of the conflict of laws issues, above)) if the Legislature could clarify whether or not either the general rule (of receipt) or the postal acceptance rule applied in the situation of electronic transactions. As we have seen, the arguments are finely balanced as to which rule is preferable.²⁹ However, given the very nature of adjudication in general and the common law system in particular, a general default rule is not only necessary but also inevitable. The only other alternative is to allow the courts to decide on an ad hoc basis, but this would engender unnecessary uncertainty. Even then, because judges inevitably operate (as a matter of both logic as well as necessity) from a fixed point of legal departure, they would necessarily adopt either one of the rules just mentioned in any event. It is therefore important that the Legislature fix a legal point of departure in order to reduce the uncertainty that would otherwise be generated by judges acting according to their own lights. It is true that courts would probably develop a general default rule over time. If so, it would clearly be more appropriate for the Legislature to fix such a rule first, after analysis as well as consultation rather than allow for possible judicial 'anarchy' in the meantime. Depending, of course, on which rule is adopted by the Legislature, exceptions could (as we have already mentioned) be incorporated in order to achieve a balance between the parties in question.

²⁹ See above, para 15.

The question posed is: (3) Should the legislature clarify the applicability of the postal acceptance rule in the contexts of electronic contracting?

43. Secondly, and on a related note, the Legislature might also like to consider whether or not a separate regime of rules is required in order to achieve fairness in the context of ‘browsewrap’ as well as ‘clickwrap’ agreements. It might well retain the existing rules (subject to the clarification proposed in the preceding paragraph) but add, for example, further rules pertaining to incorporation in order to achieve fairness for all concerned.

The question posed is: (4) Should the legislature modify the existing law on the incorporation of terms to deal with specific situations relating to browsewrap/clickwrap contexts in electronic contracting?

44. Thirdly, it might conduce to more flexibility if the Legislature also provided for alternative modes of authentication and the verification of integrity which would undoubtedly appear with the rapid change in technology. We should add that this issue is relevant not only with regard to the formation of the contract but also to areas where issues of authentication and integrity are also important: these include the issues concerning the attempted incorporation of exception clauses by signature, the ascertainment of the age of majority of a potential contracting party.

The question posed is: (5) Should the use of technologies alternative to electronic signatures as defined in the Electronic Transactions Act be legislatively recognised as valid modes of authentication and verification in electronic contracting?

45. Insofar as the terms of the contract are concerned, we did raise the issue as to whether or not there ought to be a more ‘modern’ view of implying terms via custom, particularly in the context of the quite different environment of cyberspace. However, as we have briefly argued, this is not really a pressing issue in view of the fact that the category of “terms implied in law” could be utilised to achieve the same degree of flexibility instead.

46. Whilst still on the topic of the terms of the contract, we have also alluded to the fact that the rules relating to the attempted incorporation of exception clauses by reasonable notice may need to be modified, not least because of the paperless nature of transactions in cyberspace.

IV. Issues and Factors in the Extra-Legal Sphere

47. One key issue cum factor which cuts across very many areas of contract law is that of the availability of, or access to, reliable information. This is the inevitable consequence of the inherent nature of cyberspace itself. Some specific areas of the law of contract which would be impacted include the incorporation of exception clauses via reasonable notice, the doctrine of mistake, the closely related doctrines of economic duress, undue influence and unconscionability, at least certain aspects of the doctrine of illegality, and specific doctrines with respect to damages (such as remoteness of damage as well as mitigation). We should add, however, that much would also depend on the precise type of transaction concerned. But, within particular

parameters, we are of the view that the inquiry could be aided by specific empirical research: which is the second key issue to which our attention must now briefly turn.

48. Another key issue which overlaps with as well as complements the preceding one is that of the need for more empirical research, and this, too, cuts across a great many areas of contract law. We have, for instance, already mentioned the need to ascertain, in the context of both the incorporation as well as the reasonableness³⁰ of exception clauses, whether or not consumers are more or less likely to read terms on Internet websites. Such an avenue of research would also impact on the impact of doctrines such as economic duress, undue influence and unconscionability. Indeed, the point of overlap as well as complementarity is underscored by the fact that the preceding issue (*viz.*, the degree of access to reliable information) is also crucial in responding to the issues just mentioned in the context of exception clauses.

49. One other key issue pertains to verification and security generally and is particularly relevant in the context of verifying the age of majority of contracting parties, the issue of mistaken identity, alleged fraudulent misrepresentation, as well as any transaction where some form of authentication is involved. However, it should be noted (as we have already pointed out) that not all transactions in cyberspace are necessarily impersonal although, even then, there might still be a need for proper verification. In this regard, and in the extra-legal context, the continued development of technology must be closely monitored (indeed, services already exist that purport to verify the age of potential contracting parties in Internet transactions); this is consistent with the concomitant change to the legal rules to the Electronic Transactions Act which was discussed in the preceding Part of this paper.

V. Transnational Issues

50. Transnational legal problems already exist in real-world contracting, but are exacerbated in the context of cyberspace because of its inherent cross-border nature. Thus cyberspace contracts are more likely to be made between parties residing in different jurisdictions, the communication process leading to the formation of the contract is likely to take place across several jurisdictions, and performance is likely to cross jurisdictional borders. Thus, transnational legal problems are more likely to arise than in traditional contracts. It is ironic that cyberspace is theoretically borderless but practically is more likely to raise complex cross-border legal problems. There is no doubt that the territoriality of laws will always be a real issue so long as sovereignty of independent states (and legal systems) remain.³¹

³⁰ Under the Unfair Contract Terms Act: see above, n 14.

³¹ The supra-jurisdictional status of cyberspace was expressly denied in *United States v Thomas* 74 F. 3d. 701 (6th Cir 1996) . In the context of the common law, Scrutton LJ's words from a different context are apt: "There must be no Alsatia in England where the King's writ does not run." *Czarnikow v. Roth, Schmidt and Co* [1922] 2 KB 478, 488.

51. In the civil context, conflict of laws issues are engaged. The purpose of this Part is not to address the application of conflict of laws to cyberspace generally, but to focus on certain aspects which are highly relevant to electronic contracting. Broadly speaking, conflict of laws deal with three types of problems: which country's court can or will hear the case; the substantive law to be applied to resolve a dispute; and the recognition and enforcement of judicial orders obtained from another country.

52. There are two main concerns in the jurisdictional context. The first is that the rules for assumption of jurisdiction should take into consideration the new paradigm of contracting over electronic media. The rules for service out of jurisdiction of originating processes on defendants absent from Singapore in relation to contractual disputes were amended in 1998 to take account of this new paradigm, as one of the recommendations of the recommendations of the Legal and Regulatory Subcommittee of the Electronic Commerce Hotbed Committee. So the new provision (read with the Electronic Transactions Act) looks beyond where the contract is made to where actions are taken by the parties in concluding the contract.

53. The second issue relates to the effect of jurisdictional clauses in contracts. It is very common for written (including electronic) contracts to contain jurisdiction clauses. Often they are exclusive; at least one party agrees to sue the other in only one specified jurisdiction. The legal effect of such a clause, assuming that it is found to be valid under the governing substantive law of the contract, varies from jurisdiction to jurisdiction. Many jurisdictions, including Singapore, will give effect to such clauses unless exceptional circumstances are shown. In commercial transactions, such jurisdiction clauses are very useful in helping to reduce transaction costs in providing greater certainty. The problem is raised starkly in the context of consumer contracts, where purchasers of consumer items often have no bargaining power to negotiate for a more favourable jurisdiction clause. The problem is two-fold. Consumers may not be able to sue foreign vendors in Singapore, and the foreign vendors may be able to sue the consumers in foreign jurisdictions. Three attitudes may be contrasted: the common law approach does not distinguish between commercial and consumer contracts;³² one judge in the United States has refused to enforce such a clause for reasons of public policy to protect consumers;³³ and the European Union imposes strict conditions on when such clauses can be effective against consumers.³⁴ The question for Singapore is whether its attitude to jurisdiction clauses should be modified to accommodate policies of consumer protection. There is obviously a cost involved, as foreign parties may then choose not to

³² In *Rudder v. Microsoft Corp* (1999) 2 C.P.R. (4th) 474 (8 October 1999 Ontario), individuals trying to sue Microsoft in Ontario were held bound to an exclusive agreement in the electronic terms and conditions, and the action was stayed.

³³ *Williams v. America Online Inc* (2001) Mass. Super. Ct., No.00-0962.

³⁴ Brussels Convention of 27 September 1968 on jurisdiction and the enforcement of judgments in civil and commercial matters, Art 17.

deal with parties from Singapore. If protection is thought to be necessary, then legislative intervention is probably necessary.

The question posed is: (6) Should Singapore adopt a policy of restricting the effect of exclusive jurisdiction agreements to protect consumers?

54. The first thirteen sections of this Part have discussed the issues on the assumption that Singapore law is the substantive law governing those issues. Obviously this may not be the case whether the contract is transnational. Every country has its own legal rules, cultures and traditions. The common law of Singapore contains rules of law that tells the court which country's law to apply to resolve issues arising out of the contract. As a general rule, the express or implied choice of law by the parties will be effective, and in the absence of such choice, the law with the closest and most real connection with the contract will govern. For the most part, especially for commercial transactions, this approach is satisfactory, providing much needed certainty for the contracting parties. Many other countries also give effect to parties' choice of law in contractual situations.

55. Thus far, we have looked at the resolution of transnational problems using each country's own conflict of laws rules. This obviously works for that country, but from an international perspective, it may not be satisfactory because every country has its own conflict of laws rules.³⁵ At an international level, there are two techniques that may be used to resolve such transnational problems: harmonisation of internal rules; or harmonisation of conflict of laws rules. An example of the former is the draft UNCITRAL Convention on International Contracts Concluded or Evidenced by Data Messages. An example of the latter is the draft Hague Convention on Jurisdiction and Recognition and Enforcement of Foreign Judgments in Civil and Commercial Matters. International conventions provide much comfort, but their practical effectiveness depend from case to case. Even if substantial numbers of countries can agree to give effect to such conventions, there are likely to be problems relating to the interpretation of the scope of such conventions, and, more seriously, the substantive provisions may be interpreted differently in different countries.³⁶ Nevertheless, international instruments can be quite effective if their objectives are narrow and well-defined. So we are sceptical of any efforts to harmonise substantive rules of contract law generally. The divergence of legal doctrines, cultures and traditions in different countries should not be underestimated. For example, outside of contracts for sale, there are many transactions that are viewed as contractual in civil-law based systems which are not contractual in the common law, and it is impossible to assess the operation of contract law of individual countries without also considering the impact of their neighbouring obligations like tort/delict and unjust enrichment. Further, the common law itself may vary (on occasion,

³⁵ The position is even more complex in federal countries, as issues arise as to whether federal or state choice of law rules should apply, and in the latter case, which state's rules should apply.

³⁶ Some signs of this may be seen in the United Nations Convention on the International Sale of Goods (Vienna 1980) ('CISG').

quite radically) in different legal systems. More realistic odds of success on an international level are to be found within narrowly defined areas of contract issues that cause particular difficulties in international transactions. We see the formation of contracts as the key issue here.³⁷ Once the contract is formed, generally the choice of law rules applied by the courts (including any exceptions thereto reflecting the public policies of the forum) are adequate to deal with substantive questions relating to the contract. These public policies may include the limitations on the contractual selection of governing law to protect consumers residing in the forum, and sometimes also consumers residing elsewhere.³⁸

The general question of policy posed is: (7) To what extent should Singapore support international harmonisation efforts dealing with electronic contracting? What forum public policies (eg, consumer protection) should be preserved in the process?

56. Aside from cases where international conventions may be applicable,³⁹ countries approach the issue of choice of law for the formation of contracts differently. The approach of the European Union is to apply the law that would have governed the contract had the contract been formed.⁴⁰ Generally, courts in the United States would apply the law with the closest and most significant relationship to the transaction.⁴¹ The approach in other common law countries is uncertain, with authorities supporting both the law of the forum⁴² or the law governing the contract had it been formed.⁴³ The result is that the choice of the forum to start an action may be determinative of the substantive question of whether a contract has been formed. It may be desirable for Singapore law to be clarified in respect of the choice of law rule governing the issue of formation. However, in the absence of any international consensus on the correct choice of law rule for formation of contracts, Singapore's adoption of one position or another is not going to make any significant difference. However, adoption of substantive rules of formation of contract that have some international acceptance, at least in the limited context of contracting over electronic media, may go some way to make the application of Singapore law more attractive, whether as the law of the forum, the law of the putative contract or the law with the closest and most significant connection with the transaction. An alternative approach is to legislate that Singapore's domestic substantive rules of formation of contract (at least in the context of electronic contracting) shall apply

³⁷ See, however, n 21 above.

³⁸ E.g., Convention on the law Applicable to Contractual Obligations (Rome Convention, 1980) Art 5.

³⁹ One example is the United Nations Convention on the International Sale of Goods, harmonising the rules on formation for contracts falling within its scope.

⁴⁰ Rome Convention, Art 8(1) .

⁴¹ See, e.g., the approach in *Specht v Netscape Communications Corp* 150 F. Supp. 2d 585 (S.D.N.Y. 2001) .

⁴² See, e.g., *The Heidberg* [1994] 2 Lloyd's Rep. 287.

⁴³ See, e.g., *The Atlantic Emperor* [1989] 1 Lloyd's Rep. 548.

irrespective of any choice of law considerations. As a matter of general principle, such a position should not be adopted as being insular and contrary to international comity. There may be justification, however, if the rules are the result of an international convention to which Singapore is a party, or if it is considered that the rules enjoy such international support that it would in fact be in the interests of international comity and certainty in international transactions to apply them in all situations.

The question posed in this context is: (8) Should there be legislative clarification of the Singapore conflicts of law position relating to the issue of formation of contracts, either as a choice of law rule or as a forum mandatory rule?

57. Ultimately, it should be noted that conflict of laws rules are only engaged in a litigious context. Many consumer transactions do not involve sufficient sums of money to justify initiating full-scale international litigation on either side. Other methods of dispute resolution are probably more suitable in such cases. This issue, however, is beyond the scope of this paper.

VI. Conclusion

58. The principal thrust of this paper has been largely exploratory in nature. It is important, however, to emphasise that one clear theme arises from the discussion above – that the common law of contract is indeed alive and well in the context of cyberspace. Many of the issues raised have, as we have seen, been concerned with that of application and context. Correspondingly, there is relatively little need to modify or substitute the existing rules. However, there is an urgent need, in our view, for more empirical research as well as an attendant understanding of the broader extra-legal context. This is perhaps not surprising in view of the fact that many of the issues pertain to that of application and context and, hence, the resultant factual nature of the entire inquiry would be better resolved if there was also a better understanding of the extra-legal context in which such fact situations occur.

RESPONSE TO: “THE IMPACT OF CYBERSPACE ON CONTRACT LAW”

Pang Khang Chau
Phua Wee Chuan

Biographies

Pang Khang Chau

Pang Khang Chau is the Deputy Director of the Legal Policy Division in the Ministry of Law. He graduated from King’s College London and joined the Legal Service in 1995 as a State Counsel in the Civil Division of the Attorney-General’s Chamber, where he was very much involved in advising on, drafting and negotiating computer contracts, including the revision of several sets of standard Government contracts for purchase of computer system.

He represented Singapore at the UNCITRAL Working Group on Electronic Commerce from 1997 to 1999. He was also involved in the work of the Electronic Commerce Hotbed Policy Committee, which gave rise to the Electronic Transactions Act and the 1998 amendments to the Computer Misuse Act. During his time in the Attorney-General’s Chambers, Khang Chau also served concurrently as an Assistant Director of its Computer Information System Division. In his current position in the Ministry of Law, Khang Chau has been involved in a number of law reform initiatives including IT-related ones such as the 1999 amendments to the Copyright Act to update it for application in the Internet context.

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Phua Wee Chuan LL.B (London), LL.M (London), LL.M (Singapore), Barrister-at-Law (Middle Temple) is a Deputy Senior State Counsel with the Civil Division of the Attorney-General’s Chambers. His main areas of practice are contract law, information technology law and intellectual property law. Wee Chuan is actively involved in legal education. He has given many lectures in Singapore as well as abroad. Recently he lectured to the Finance & Economics Committee of the Standing Committee of People’s Congress, China and to the Universiti Brunei Darussalam.

I. Introduction

Promises become binding when there is a meeting of the minds and consideration is exchanged. So it was at King’s Bench in common law England; so it was under the common law in the American colonies; so it was through more than two centuries of jurisprudence in this country; and so it is today. Assent may be registered by a signature, a handshake, or a click of a computer mouse transmitted across the invisible ether of the Internet.

per Alvin K Hellerstein, United States District Judge¹

¹ *Christopher Specht and others v Netscape Communications* 150 F. Supp. 2d 585; 2001 U.S. Dist. LEXIS 9073; 45 U.C.C. Rep. Serv. 2d (Callaghan); also available at <http://www.nysd.uscourts.gov/courtweb/pdf/D02NYSC/01-07482.PDF>

1. The authors of this paper have been invited by Assoc Prof Daniel Seng, the Moderator of the TLDG Symposium, to prepare a response to the paper entitled "The Impact of Cyberspace on Contract Law" by Professor Andrew Phang and Assoc Prof Yeo Tiong Min (the 'Main Paper').
2. The Main Paper posed eight questions. Instead of taking firm positions on the questions posed, our approach in providing our response below is to seek to provide additional perspectives which, we feel, may assist participants with discussions at the Symposium. For some questions, no responses have been provided as there is nothing we can usefully add to the very comprehensive discussion already in the Main Paper on those questions. Finally, the views in this paper are the personal views of two public officials, and do not represent the official view.

II. Formation of Contracts

Question: Should there be legislative clarification of the issue of ascription of responsibility for actions of computer agents in the context of formation of electronic contracts?

3. Although the question speaks of responsibility for "actions" of computer agents, we note from the position of the question within the Main Paper that it mainly concerns responsibility for mistakes of computer agents.² We feel that this is largely a question of allocation of risks. Logically, the risk of any mistake caused by a computer agent should rest with the contracting party employing the computer agent. It seems fair to place the risk on the party using the computer agent as he is in the best position to prevent the mistake from occurring and to detect the mistake if it occurs. It would not seem fair to place any additional risk arising from usage of computer agent on the other contracting party since he would probably not know whether he is dealing with a human or a computer agent.
4. This result has to a large extent been provided for under existing law. At common law, it is said that:

"If, whatever a man's real intention may be, he so conducts himself that a reasonable man would believe that he was assenting to the terms proposed by the other party, and that other party upon that belief enters into the contract, with him, the man thus conducting himself will be equally bound as if he had intended to agree to the other party's terms."³

² We understand from the term 'computer agent' to refer to computers that are not being used as mere communications tools (e.g. using a computer to send an e-mail or a fax) but are being programmed to make independent decisions to form contracts (albeit based on pre-fixed criteria) without human assent or intervention. For example, a computer could be programmed to automatically initiate sell orders to dispose of a proportion of a particular stock if its price moves by a pre-determined percentage against the general market. The computer's decision to sell is then triggered off entirely by its algorithm without any human intervention.

³ *Smith v Hughes* (1871) LR 6 QB 597, per Blackburn J at 607.

Under the Electronic Transactions Act, section 13 provides that a message sent by a party's automated computer system is deemed to have originated from the party himself. There may of course be room to legislate to make things even clearer but, as presently advised, we doubt any further legislative clarification is necessary.

Question: Should the legislature clarify the applicability of the postal acceptance rule in the context of electronic contracting?

5. Not all forms of electronic contracting are alike. Some are more instantaneous than others. For example, a clickwrap contract is clearly instantaneous, while we all know of instances of SMS messages taking more than eight hours to arrive and also of instances of e-mails taking more than a day to arrive or even of e-mails never arriving. Some electronic communications involve transmission via a trusted third party analogous to the postal service, while others do not. The question is whether we ought to prescribe one single rule to cover all these differing situations.

6. Even within the narrow context of telex communications alone, the House of Lords was unable to lay down a universal rule covering all telex communications. In *Brinkibon v Stahag*, Lord Wilberforce said:

"Since 1955 the use of telex communication has been greatly expanded and there are many variants on it. The senders and recipients may not be the principals to the contemplated contract. They may be servants or agents with limited authority. The message may not reach, or be intended to reach, the designated recipient immediately: messages may be sent out of office hours, or at night, with the intention, or upon the assumption, that they will be read at a later time. There may be some error or default at the recipient's end which prevents receipt at the time contemplated and believed in by the sender. The message may have been sent and/or received through machines operated by third persons. And many other variations may occur. *No universal rule can cover all such cases: they must be resolved by reference to the intentions of the parties, by sound business practice and in some cases by a judgment where the risks should lie...*" [emphasis added]⁴

7. Should we leave the question of whether the postal acceptance rule applies in electronic contracting to be resolved case by case "by reference to the intentions of the parties, by sound business practice and ... by a judgment where the risks should lie?" Or should we lay down a universal rule for all forms of electronic contracting? If we choose to lay down a universal rule, it would presumably be a declaration that the postal acceptance rule does not apply. Should we then go further and abolish the postal acceptance rule completely for both electronic and non-electronic contracts (for the sake of media neutrality)? Or would this distinction between electronic contracting and paper-based contracting be acceptable?

⁴ [1983] 2 AC 34, 42.

III. Terms of the Contract

Question: Should the legislature modify the existing law on the incorporation of terms to deal with specific situations relating to browsewrap/clickwrap contexts in electronic contracting?

8. The existing law is that a term would be incorporated if it has been sufficiently brought to the notice of the other contracting party. The more onerous the term, the more must be done to bring the term to the attention of the other contracting party.⁵ These common law rules should serve their purposes equally well in the context of browsewrap/clickwrap agreements. In determining whether the terms of a browsewrap/clickwrap agreement are binding, the court should undertake the same case-by-case analysis of whether there was reasonably sufficient notice of the terms.

9. Attempts in other jurisdictions at legislation have not brought the matter very far along. For example, the Uniform Computer Information Transactions Act ('UCITA') adopted last year in the US by the National Conference of Commissioners on Uniform State Law went no further than to hang everything on the concept of "opportunity to review", a concept which, although defined extensively in the UCITA, is still not much clearer than what we have at common law.⁶

IV. Electronic Signatures

Question: Should the use of technologies alternative to electronic signatures as defined in the Electronic Transactions Act be legislatively recognised as valid modes of authentication and verification in electronic contracting?

10. First, we do not think the Electronic Transactions Act "locks contracting parties into one major approach." The definition of "electronic signature" in

⁵ *Thornton v Shoe Lane Parking Ltd* [1971] 2 QB 163; *Interfoto Picture Library Ltd v Stiletto Visual Programmes Ltd* [1988] 1 All ER 348.

⁶ The concept of "opportunity to review" is defined in Section 112(e) of the UCITA as follows:

(e) With respect to an opportunity to review, the following rules apply:

- (1) A person has an opportunity to review a record or term only if it is made available in a manner that ought to call it to the attention of a reasonable person and permit review.
- (2) An electronic agent has an opportunity to review a record or term only if it is made available in manner that would enable a reasonably configured electronic agent to react to the record or term.
- (3) If a record or term is available for review only after a person becomes obligated to pay or begins its performance, the person has an opportunity to review only if it has a right to a return if it rejects the record. However, a right to a return is not required if:
 - (A) the record proposes a modification of contract or provides particulars of performance under Section 305; or
 - (B) the primary performance is other than delivery or acceptance of a copy, the agreement is not a mass-market transaction, and the parties at the time of contracting had reason to know that a record or term would be presented after performance, use, or access to the information began.

the Electronic Transactions Act was intended to be broad enough to cover future technological developments. Second, the Electronic Transactions Act is facilitative and not prescriptive. It does not validate or invalidate any particular mode of authentication or verification. The question of amending the Act to "legislatively recognise as valid" alternative modes of authentication and verification therefore does not arise.

11. An "electronic signature" is defined in section 2 of the Electronic Transactions Act as:

"any letters, characters, numbers or other symbols in digital form attached to or logically associated with an electronic record, and executed or adopted with the intention of authenticating or approving the electronic record"

The definition was drafted widely in order to cover all possible modes (including future modes) of authentication and verification in electronic contracting. That this was the policy intention was made clear in the Minister's speech during the Second Reading of the Electronic Transactions Bill, when he said that one of the guiding principles for drafting the Bill was "the need to be flexible and technologically neutral to adapt quickly to a fluid global environment."⁷

12. A similar intention was to be found in the UNCITRAL Model Law on Electronic Signatures 2001, which contained a similarly worded definition of "electronic signature". The current draft official commentary by UNCITRAL explains the intention behind the definition this way :

"Given the pace of technological innovation, the Model Law provides criteria for the legal recognition of electronic signatures irrespective of the technology used (e.g., digital signatures relying on asymmetric cryptography; biometric devices (enabling the identification of individuals by their physical characteristics, whether by hand or face geometry, fingerprint reading, voice recognition or retina scan, etc.); symmetric cryptography, the use of personal identification numbers ('PINs') ; the use of "tokens" as a way of authenticating data messages through a smart card or other device held by the signatory; digitised versions of hand-written signatures; signature dynamics; and other methods, such as clicking an "OK-box"). The various techniques listed could be used in combination to reduce systemic risk..."⁸

13. Conceptually, future technological developments in authentication and verification should be able to fit within the present definition of "electronic signature". If, for some reason, it is felt that the actual drafting of the

⁷ Parliamentary Debates Vol. 69, Col. 251 at 253 (29 June 1998) (Mr Lee Yock Suan, Minister for Trade and Industry)

⁸ Para. 82, Draft Guide to Enactment of the UNCITRAL Model Law on Electronic Signatures (UN Document No. A/CN.9/493) - <http://www.uncitral.org/english/sessions/unc/unc-34/acn-493e.pdf>

definition is not wide enough to cater to future technological developments, consideration may perhaps be given to broadening the definition of "electronic signature".

14. In any event, even if the definition of "electronic signature" is held to have excluded certain modes of authentication or verification, it does not mean that these excluded modes are not valid for electronic contracting. The Electronic Transactions Act is facilitative rather than prescriptive. Firstly, section 8 provides that where there is a legal requirement for a signature, an electronic signature satisfies that legal requirement. Section 8 does not require all electronic contracts to be concluded by way of an electronic signature. It merely explains how legal requirements for a signature (such as those found in Statute of Frauds) can be satisfied in the electronic environment. In the vast majority of contracting situations, there would be no legal requirements for a signature, section 8 would not come into play at all, and nothing in the Act calls into doubt the validity of any mode of authentication or verification not coming within the definition of "electronic signature". Secondly, section 18 provides for certain evidentiary presumptions if a class of electronic signatures called "secure electronic signature(s)" are used. Nothing in the Electronic Transactions Act affects the evidentiary value of modes of authentication or verification which do not come within the scope of section 18.

15. Accordingly, the value of modes of authentication or verification which do not come within the definition of "electronic signature" have not been invalidated or diminished by the Electronic Transactions Act. The question of "legislatively recognis[ing] as valid [other] modes of authentication and verification" therefore does not arise.

V. Transnational Issues

Question: To what extent should Singapore support international harmonisation efforts dealing with electronic contracting? What forum public policies (e.g., consumer protection should be preserved in the process?

16. As a nation largely dependent on international trade, Singapore has always been supportive of efforts to harmonise commercial law internationally.

SYMPOSIUM PROCEEDINGS – FIRST SESSION

MR DANIEL SENG:

1. Let me just sum up what we have heard from the two speakers thus far.
2. Andrew and Tiong Min have told us that the starting point for changing and looking into possible reforms in the area of laws of contract in cyberspace is to, in essence, ask ourselves the question, “Do we embark on a ‘bug fix’ or a major upgrade?” They have identified for us some areas of the law which they feel should either be upgraded or patched, as the case may be.
3. The two areas of particular concern arising from the presentations just now are, firstly, the postal acceptance rule⁴, whether there is a continued place in cyberspace for the application of the postal acceptance rule as opposed to the instantaneous communications rule; and secondly, whether or not we have to revise the definition of an electronic signature under the Electronic Transactions Act to cater to other forms of electronic authentication.
4. I would like to invite participants who have any views or thoughts on these matters, or any of the matters that have been raised by the speakers just now, to share your thoughts with us. I have spoken to some of you just now, and I think all of you have very interesting insights to offer in this regard. Actually, the practitioners should be able to answer this first question for us. [Question] Jim, can I ask you to help out here?
5. Would you like to explain to us from a practitioner’s perspective, how the postal acceptance rule works in practice and whether or not you agree or disagree with the existence of that rule.

MR JIM LIM:

6. I think I agree with Khang Chau’s presentation in terms of when he elaborated on *Brinkibon v Stahag*, because I think it brings to me the message that, basically, the law should serve the purpose and the circumstances in which it was elected or it was legislated for.
7. In that sense, I think it is refreshing, in this particular case, that Lord Wilberforce actually brought to bear that the reality of the transactions and the reality of what actually is being brought before the court should be what should prevail in the deliberations by the court of what should actually apply, as opposed to just applying a blanket rule that has been accepted over time.
8. On the matter of transnational issues, what one has to bear in mind is that one particular dimension that I have found in doing e-commerce is the moment anybody gets on to the Internet to start doing business, he becomes an instant multi-national; and when you are a multi-national corporation you are no longer bound by your home ground or home rules. You are

immediately thrown into an arena where even angels fear to tread, because it is fraught with a lot of controversies and conflicts and areas which I, of all people, being a mere mortal, would not want to comment on.

9. But I think it is important to bear in mind, to put in perspective this whole topic today that is being discussed. I think regulatory framework on e-commerce in Singapore has to bear in mind, has to consider, not just Singapore consumer interests, because I think Khang Chau correctly pointed out that, in Singapore, we have more international transactions than we have domestic transactions; if we want to continue to be realistic about this, in terms of the economics of survival, then we need to have a balance.

10. Personally, while as a consumer I think I can sympathise with the case, I am actually not sure that is the right way to go, because in my own experiences as a practitioner I have seen how, for example, my client, as a Singapore businessman, is impacted by the rules of the Trade Practices Act in Australia, and they get completely thrown off. I am digressing a bit.

11. My point is that there is the postal acceptance rule which provides for some certainty; but to take on Andrew and Tiong Min's take, there is a need for clarification or modification from time to time. I intend to borrow Daniel's point: I think we need more 'bug fixes' rather than upgrades in this industry. That is how I look at it.

MR TONY CHEW:

12. I think all three speakers have referred to PKI digital signatures, but they have not directly mentioned digital certificates. I think I should clarify some views that have been expressed, without being controversial or trying to cause a stir. I think I should express my personal opinion and comments about references to those three matters. I think they are very important.

13. I will start by saying that there is a notion that PKI is essential for e-commerce, in order to foster e-commerce. There are proponents as well as detractors regarding that view. If you ask me where I stand, I am trying to be objective and neutral, being a regulator. It is a vast area of uncharted territories, and questions have to be asked as to why PKI has not taken off, despite all the tremendous efforts by various agencies and government industry bodies trying to promote it.

14. We know what the issues [in its implementation] are, mainly because of the cost and complexity, as well as questions about the benefits that can be derived from PKI as such. There is also the view that PKI, in terms of security authentication, providing non-repudiation attributes, is much better than password systems. I would tend, perhaps, to question that view. Our banking systems rely predominantly on passwords, PINs, and very similar ways of authentication. They have stood the test of time, and they will continue to be very secure and safe if those password systems can operate in a manner that actually has adequate security practices and layers of security behind them.

15. PKI does not necessarily provide a better security system or authentication, or satisfy the non-repudiation requirement. Some of you may be surprised to hear that, because there are great technical problems and technical impediments in the way you implement a PKI system. If you read various experts' opinions, from cryptologists, and from people who have actually spent a lot of time in this area, PKI does not provide additional or better security than password systems. Certainly, you can use biometrics, you can use other security tokens and means of strengthening an authentication system, and even provide digital signatures which can be produced through different means and in different forms.

16. I am in the company of very distinguished lawyers, so I do not want to talk about the ETA. My understanding is that digital signatures are only one form of electronic signature, and that is all it is. It uses public key cryptography. It will serve some very specific objectives, even if you use that. But it is not, by all means, the best tool, or in fact the best security system as such; so it is an area that invites a lot of debate.

17. I would just like to talk about the digital certificate, which I think is inherent in a PKI system. Certainly, you do not need a digital certificate to operate a PKI system. The issue of trust is much bigger than what a digital certificate can purport to provide in terms of authentication or non-repudiation. I do not believe that digital certificates encapsulate all those features of a secure system at all. In fact, there are more controversial than settled grounds on this whole area of PKI. We are certainly looking at it very, very closely within the commercial and financial industry. We would certainly like to see better and more secure systems. But the question is not having more security; the harder question is what is adequate, because then that raises questions of cost-benefit analysis, as well as what is sufficient.

18. It is easy to resolve a question of what is better security, and can get you a high level of security. That is very easy to answer. The tougher question is: is the current system of security sufficient, or what security level is sufficient for a particular application, particularly in the financial industry? That is what a lot of effort is being put into: trying to ascertain whether there is a definitive answer to it.

19. I would like to say that PKI faces a long and arduous task of being an inter-operable system and, in fact, a system where you could place great confidence in it; not the way it is currently heading, or the way it can be implemented, because there are just too many technical problems with it. That is just my view.

MR GEORGE TAN:

20. I would just like to follow up on something that Andrew and Tiong Min said. I think earlier in your paper, particularly in Question 7, you posed the question of whether Singapore should support international harmonisation efforts dealing with electronic contracting, and I think you concluded that there are two ways of doing it. One is the harmonisation of contract law; the second one is to harmonise conflict principles.

21. I believe that in your paper,⁹ you express scepticism on the first one, harmonisation of contract law. I think the reason you gave is because of the divergence of doctrines of contract, and maybe the powerful impact on neighbouring principles as well. Would I be wrong to say that, in a way, in order to harmonise, you actually have to codify - for example, in the initiatives in UNCITRAL - and therefore, to some extent, I think the civil law countries may be more comfortable with codification than the common law principles? So I would say maybe the problem is one of mindset rather than difficulties. That is the first point.

22. The second point is, I think there could be more certainty in the codification approach, rather than to leave it to common law principles. For example in your paper, in terms of the jurisdictional aspects,¹⁰ I think one problem with a lot of websites is this question of localisation of websites. For example, I think, for Yahoo, although it is supposed to be a virtual shopping mall, it has also a localised version, and you have an SG version of Yahoo, for example. If you want to transact, particularly on an auction site, you can actually link it to somewhere else, so I think there could be this problem as to where the contract is made.

23. I think you make the suggestion, in your paper¹¹ - I believe you are looking at maybe sections 14 and 15 of the ETA - where you said the way to go about it is to look beyond where the contract is made, to the actions taken by the parties. From what I understand, for UNCITRAL, there is an initiative to require the parties to stipulate where the place of business in the electronic contract itself is. Would you agree that maybe this is a more certain way of approaching what is the closest connection, rather than to leave it until the costs are sorted out? Then I think maybe the consumer is better served by certainty rather than by general principles; because I think in that way they can actually evaluate the risk, and maybe thereby decide whether or not to proceed with the transaction.

A/PROF YEO TIONG MIN:

24. First of all, you raised the question of harmonisation. This is a very, very complex issue. It is not, I think, a simple matter of the civil law has codes and the common law does not have codes. I think it is much, much deeper. It is a way of thinking about the law, and George Tan has given a very good example of how different techniques are used by different countries, sometimes to resolve the same problem.

25. You use the postal acceptance rule because you do not want the offeree to be prejudiced; the civil law countries may use another rule, like the irrevocable offer. We talk at cross-purposes at a formal level in many instances, although at a substantive level I think the kind of problems we may

⁹ See Professor Andrew Phang and A/Prof Yeo Tiong Min, 'The Impact on Cyberspace on Contract Law', para 55.

¹⁰ *Ibid.* at para 52.

¹¹ *Ibid.*

try to solve can be quite similar. I think it is something that goes beyond mindset.

26. I am afraid I do not share your confidence in certainty in codification, because I think a lot of the so-called certainty in civil law systems from the codification is a false certainty. The judges in civil law countries also have gut feeling roles. They tend to have very general, broad statements in the codes, and then the judges will interpret them in all sorts of different ways. So I do not think that, again, codification is necessarily an answer; nor that it will actually bring us a step towards harmonisation.

27. Of course, there are many, many difficulties involved in trying to codify, and the most important one - and here, I think I stand at a diametrically opposite viewpoint from you - is flexibility. I think that flexibility is extremely important in the law. Certainty is, of course, very important; but on this issue I think I stand on the side of flexibility.

28. Your next point is on the question of jurisdiction, and what we said in our paper about jurisdiction.¹² I think that if parties are transacting at a level where they are thinking about jurisdiction the most obvious thing for them to do is to specify a jurisdiction clause, and that happens in most cases. Most courts in different countries will give effect to the jurisdiction clause. The default rule that a country always must have in some way is to determine situations where the parties have not given any thought to it. That is where rules start looking at what are the connections between the parties, and the connections with the transaction, and so on.

29. The view that we took in our paper was that something has been done here; we are not saying it is necessarily the best thing, but I think it is something that we can look at again. But at least we have moved away from a jurisdictional rule that concentrates almost exclusively on where the contract has been made.

30. I am not sure whether I understood your last point, so I am not sure I have actually answered the question.

MR DANIEL SENG:

31. On this point on jurisdiction, may I invite some comments from Ms Joyce Tan. So far, we have confined the discussion to jurisdiction clauses in business to consumer contracts where consumers do not really have much say as to where the dispute should be resolved in the event of a dispute over a B2C transaction.

32. In a B2C transaction the vendor would say “I want the dispute to be resolved in my country” and the consumer very often has no choice. But would the same analysis apply to B2B transactions?

¹² *Ibid.*

MS JOYCE TAN:

33. I think, as far as B2B is concerned, there is a lot of room for parties to actually formulate how they want to be regulated. So I do not see that that is where the challenge in terms of the certainty, in terms of e-commerce, is really coming from.

34. In all these questions about the objectives to look for certainty in terms of codification in a transnational sort of environment, I think harmonisation is very attractive. But what strikes me as the other concern is the very attractive policy of not wanting to make e-commerce something so different from the way we have lived our lives so far. So in looking into whether we do or we do not give up the postal acceptance rule, while there are a lot of attractive arguments that say we should go the way of the UN Convention, and that kind of thing - after all, yes, it is very attractive - but the net effect is the same, because if the civil law countries preserve the offer while we basically say that the acceptance is as early as it can be, at the end of the day the effect that both sides are driven by is very, very similar.

35. So while we are looking into things like codification - which I personally am in favour of, if we are really going to go into an international arena, because the common law has always been very enigmatic in civil law countries - I am also concerned about the other aspect of not undoing our historical heritage so much, simply because e-commerce is not here to really change our lives so much in terms of the legal principles.

36. Business people are very, very creative and flexible. If the law says this today and they don't like it, they contract out of it. The good thing about the ETA today is that it allows the businesses to do that. So it is not a current impediment to B2B today, because businesses have the resources to dance around the law in whatever current version it is today. People who don't have the opportunity to create a B2B environment basically are, by default, governed by laws, because the law says what it does without them taking a step in the matter.

MR KWEK MEAN LUCK:

37. My question relates, in a sense, broadly to our topic today: is there failure of the law with regards to e-commerce. Andrew and Tiong Min mentioned that on the preliminary assessment that they have conducted the common law in respect of contract is alive and well, and very little modification is needed in respect of that. If that is so, then perhaps you could say that there is no legal failure in terms of contracts for e-commerce.

38. But flipping that to the other side, the question I would like to throw to the floor is, if that is the case, are we frustrating e-commerce by introducing e-commerce specific legislation? Are we simply confusing or over-regulating the issue?

MR CHIEW YU SARN:

39. I think that is a very good question. Just to follow on from that question, maybe what we need to do is to ask the people in the industry whether they

have any problems with the current legal framework in carrying out their business. If they do not have any problems working round it, as Joyce has mentioned, maybe we do not need to regulate it.

40. I also feel that we need to look at the law in two different ways in terms of whom it applies to. I think that the rules that apply to B2B transactions might be different from the rules that apply to B2C or C2C transactions, simply because businesses often have the opportunity to access legal advice, and to think through their actions, and to modify the terms of the contract when they transact; whereas consumers do not.

A/PROF YEO TIONG MIN:

41. If I could just make a few quick points; not really responses as such. I think Mean Luck has raised a very good point about legal failure and over-regulation. But I think, again, we have to be quite cautious in our approach here because most transactions will carry on with or without the law, basically because of the good faith of the transacting parties. It is the law's duty to look at failures. When things go wrong, what does the law do?

42. That brings me to a point that Joyce raised earlier when she said that many of these issues, particularly in relation to jurisdiction clauses and transnational issues, do not affect B2B transactions very much. I think that there is a very simple reason for that, and that is because in most cases parties keep to their contracts. But things can go wrong, and if things do go wrong I think that there are important transnational issues that can arise.

43. For example, if the parties choose a particular law to govern their transaction, if all things go well that law will govern that transaction. If things do not go right, if there is a breach of contract, for example, the approach of the law in most countries is fairly straight forward: let's apply the law that the parties have chosen to govern their contract. But if the failure comes at an earlier juncture - for example, a dispute arises as to whether the contract been formed - then that raises the question of what is the law to govern this contract, because you do not know what law governs the contract until the contract has been formed. That raises the question of what is the law that you are going to apply to determine whether or not this contract has been formed.

44. These kinds of questions rarely arise. They are real legal problems that I think require attention. They rarely arise because, fortunately, most people do keep to their word when they make a contract.

MR DANIEL SENG:

45. Thanks, Tiong Min. I think what Tiong Min said reinforces the aphorism that I had always heard when I was in private practice, which is that the clients are always talking like optimists and the lawyers are always drafting like pessimists. One would even say that academics are total pessimists when it comes to the law, and I think, as Tiong Min has rightly pointed out, justifiably so, because the law sometimes has to take into account the extreme circumstances which are least expected by the parties.

MR BERNARD TAN:

46. I just wanted to make an observation about the issue of jurisdiction. This is a real life example. I was negotiating a contract in a neighbouring country - I am not naming the country for sensitivity reasons - but the IBM entity and the other contracting party, the customer, were actually both entities of that country. The surprising thing was that both parties wanted the governing law and jurisdiction to be Singapore law and courts, and that hardly ever happens; but I am beginning to see more of this happening.

47. All I want to say is that we should not underestimate the perception and the goodwill that the Singapore legal system and courts have, in this region at least. It enjoys a very high standing with the MNCs, and I think we are on the right track having such a symposium.

48. As was mentioned by various parties earlier on, we shouldn't stop here. I think the "bug fix" approach is the right way to go. We are really on the right track. There is a high level of recognition of the Singapore legal system and courts. Just by anecdotal evidence, this is very true. That is just an observation. Thank you.

MS JOYCE TAN:

49. I thought I would just add a point about pre-contract problems. The thing that impresses upon one in the real world is that it is an inherent problem, with or without electronic communication. I do not think looking into specifically electronically driven legislation makes that problem go away, because it is inherent in a transnational, pre-contract period.

50. If one side of the border looks into legislation in a way that tries to address the issue that governs the other side, I am not sure that we can really solve the problems. I think there are practical realities as well.

A/PROF YEO TIONG MIN:

51. I think that is an extremely good point. I agree with that. This goes to the point that I made in my presentation about not dividing the two.

52. I think we should note, however, that the number of transnational transactions is going to increase because of the Internet; and although the legal problem is the same, whether you are in or out, this provides the context that tells us the problem may grow as a practical matter and, therefore, it may be a more urgent issue to address; although I agree this is not something that we should address only in a cyberspace context.

MR HARRY TAN:

53. It occurred to me while I am sitting here whether we should actually consider drafting standard form contracts by a certain body, managed by a certain body, for purposes of clarity. You have standard form contracts for contracts between consumers and businesses; standard form contracts between business and business. I am sitting here thinking it could resolve a lot of issues because, by nature of contract, it can be resolved - issues of formation of contract, jurisdictional clauses.

54. I particularly would like to get some feedback from the industry players and non-lawyers, whether such an exercise would be worthy in actually creating a more exciting e-commerce environment here, because what it does is resolve a lot of uncertainty for the players.

MR JOHNNY MOO:

55. Just one word: the Singapore IT Federation, to which I am an adviser, has been trying to write a standard contract, just a simple, business, standard contract between commerce and Government, for eight years, and we are still at it. So it is not easy

MR DANIEL SENG:

56. Thanks, Johnny. On that note, I think we have come to the end of the first part of the Symposium discussion on Cyberspace and Contracts.

ANTI-CIRCUMVENTION AND ITS CHALLENGES TO THE LAW OF COPYRIGHT

Dr Stanley Lai

Biography

A holder of a PhD in law from Cambridge University, Stanley is a litigation partner at Allen & Gledhill, who practises in intellectual property and information technology law, with a particular emphasis on e-commerce transactions, telecommunications regulatory compliance, intellectual property litigation, licensing, franchising and on-line and off-line enforcement against piracy and counterfeiting. He also advises clients on branding strategy and trade mark dilution. He has been involved in advising on the structuring of Internet and technology start-up companies, as well as on Y2K issues and domain name cybersquatting. He also advises on biotechnology issues and has spoken on the issues relating to the patenting of the life sciences.

Stanley is currently a panel member of the Technology Law Development Group of the Singapore Academy of Law and also holds the appointment of a Senior Adjunct Fellow in the Law Faculty of the National University of Singapore. He has published extensively on various topics on intellectual property and information technology law, and has published a monograph entitled *The Copyright Protection of Computer Software in the United Kingdom* (Hart Publishing 2000), as well as writing articles for a number of journals and legal publications.

Abstract

The evolution of technological measures has fuelled great controversy and debate over their protection and their relationship with the law of copyright. Legislation specifically designed to prevent or inhibit the use of devices or services that circumvent technological measures have to confront intense lobbying from device manufactures and user groups who feel that such enactments hinder access and erode fair use. This article attempts to comparatively highlight major treaty provisions, legislative measures and judicial interpretations in the US, Europe and Australia and the debates ensuing from such enactments. The article also suggests that Singapore in its attempts at securing greater protection for content and broadcast rights would be well served by a comparative analysis of the legislative measures on offer before drafting its own unique legislative model to deal with these issues.

I. Introduction

1. Over the last few years, the Internet has enabled instant access to millions of bytes of information and applications. Many forms of documents, arts, music and other visual manifestations have enjoyed unparalleled and uninhibited proliferation on the Internet through digitisation, thus enabling people to retrieve perfect reproductions of copyrighted material instantly. Information on compact discs and other storage formats such as DVDs can be copied virtually without effort or cost and are easily transmitted over the

Internet and other electronic communication networks. Because of the availability of information and the ease of perfect reproductions, the piracy of copyrighted work is more of a threat now than ever before.

2. Technological measures¹ have been developed by rights owners to safeguard the integrity of works and intellectual property protection. Whilst technological measures exist to safeguard the integrity and access to works, legislation has evolved to prohibit devices and methods which have been designed to achieve access to works and to circumvent such protective measures. This paper identifies the challenges to intellectual property resulting from the emerging legislative ethos governing anti-circumvention.

3. The introduction of such legislation has not been without controversy, and in the copyright law, such legislation has introduced for the first time into the copyright owner's arsenal exclusive rights of access (as opposed to use), whilst at the same time eroding traditional exceptions and exemptions like fair use and fair dealing. It is for these reasons that Singapore should consider very carefully the various legislative regimes on offer, and how they work or have been judicially interpreted to work in practice, before implementing its own unique legislative regime of anti-circumvention.

¹ Technological measures may generally divide into five broad (overlapping) categories. (1) Access Control – these measures generally prevent access to and use in general of information, and may be further subdivided into (i) technologies that control access at the online outlet (gatekeeper technology), (ii) measures that control access at the level of the user or receiver of the information (encoding/decoding technology, e.g. for on-demand content), (iii) measures that control access to an already acquired copy of a work (such as the content scrambling system which controls access to DVDs) and (iv) measures that prevent subsequent access (e.g. works that disintegrate after consecutive use or prevent access to protected material simultaneously on several terminals). (2) Control of Certain Uses – with these measures, controlling access also regulates use in general of information. Copy protection is a dominant feature of this type of technological measure. See for e.g. the Serial Copy Management System ('SCMS') which prevents the making of digital copies of digital copies. As a result a copy of a digital work cannot serve as a 'master' for subsequent digital copies (under US law these SCMSs must be built into DAT recorders – US Audio Home Recording Act 1992 (Title 17, Chapter 10, of the US Code), sections 1001-1010 US Copyright Act). (3) Integrity Protection – these are measures which protect the integrity of the work by preventing a work from being altered. Until now the issue of integrity protection of electronic information has mainly been addressed as a problem of 'authentication', calling to play the use of electronic signatures and certification. (4) Usage Metering – this category of measures do not prevent or inhibit access or use, but merely meter or track the frequency of a work that is accessed, or monitor other uses made of it, e.g. copying. Such measures may provide copyright owners with an audit trail (either measured at the online outlet or by a software module incorporated in a disseminated copy of the actual usage made of a work, which enables the right owner to bill for each specific use or to spot violations of the terms of a licence). (5) Electronic Copyright Management Systems ('ECMS') – these are advanced systems of protection which cover more than measures merely preventing access or use of a work, and are intended to facilitate the trade in copyrights or copyrighted works within a networked environment. For e.g. see <http://imprimatur.net>.

II. WIPO Treaty Legislation

4. The starting point to legislation which safeguards technological measures is Article 11 of the WIPO Copyright Treaty (1996) which requires the Contracting States to protect:

“...effective technological measures that are used by authors in connection with the exercise of their rights under this Treaty or the Berne Convention and that restrict acts, in respect of their works, which are not authorised by the authors concerned or permitted by law.”

A nearly identical treaty provision is contained in the realm of Performances and Phonograms.²

5. Prior to the WIPO Copyright Treaty a modest body of anti-circumvention law has been developed in a number of countries in the context of copyright.³

6. The essential premise of copyright legislation should be to maximise the creation and distribution of creative works of authorship through the reward of creators of such works in a manner that is not inconsistent with, and promotes the free distribution of ideas within society. This should be kept in mind because the size, scope and utility of the new digital domain differ greatly from all previous media. As proponents of anti-circumvention legislation in the US have successfully argued, analogies to these media provide limited assistance in evaluating the potential impact of the kind of legislation that is intended to cover this area.⁴ The US Congress has been persuaded that before copyright owners will make their works available for public benefit, owners' works must be protected from unauthorised access, such as with encryption or other forms of technological protection designed to prevent unauthorised access to a work.⁵

7. Following the enactment of the above treaty provisions, various implementing regimes in the US, EU and Australia have emerged to outlaw and prohibit the circumvention of technological measures, traversing in their application, a variety of acts, actors and devices.

² See also Arts 18, 19 WIPO Performances and Phonograms Treaty.

³ This includes the US Audio Home Recording Act, section 296 of the UK Copyright, Designs and Patents Act 1988 (c. 48) (United Kingdom) and Article 7(1) of the European Software Directive 91/250/EEC of 14 May 1991, OJ L122/42.

⁴ See WIPO Copyright Treaties Implementation Act (H.R. 2281) ; and Online Copyright Infringement Liability Limitations Act:s 512: Hearings Before the Subcommittee on Courts and Intellectual Property of the Committee on the Judiciary House of Representatives, 105th Cong 83, 87 (1997) (Statement of Roy Neel, President and CEO, US Telephone Association).

⁵ See above, n 4 at 79 (Statement of Jack Valenti, President and CEO, Motion Pictures Association of America); 201 (Statement of Hilary Rosen, President and CEO, Recording Industry Association of America).

III. US - Digital Millennium Copyright Act

8. To update the US Copyright Act 1976, the Digital Millennium Copyright Act 1998 (DMCA) was signed into law on 28 October 1998. It ostensibly complies with the WIPO Treaties. The DMCA implements anti-circumvention provisions in the new chapter 12 of the Copyright Act. The anti-circumvention provision has been drafted narrowly, but under it rights owners will secure protection against unauthorised circumvention of technological protection measures used to protect copyrighted works, including restrictions on the manufacture and distribution of devices and other technological means that are primarily designed or procured to circumvent such protection measures.⁶

A. *Kinds of Technological Measures*

9. Two kinds of technological measures are distinguished in the DMCA: (1) measures that ‘effectively’ control access, and (2) measures that ‘effectively’ protect copyrights. As to the first kind of measure, section 1201(a)(3)(B) DMCA provides that:

“a technological protection measure ‘effectively controls access to a work’ if the measure, in the ordinary course of its operation, requires the application of information, or a process or a treatment, with the authority of the copyright owner, to gain *access* to the work.” [emphasis added]

10. Such technological measures include serial numbers, passwords and encryption, as well as timers that permit access for limited periods. For example, on the Internet, a prohibited act would be the circumvention of a copyright owner’s website production measures in order to gain unauthorised access to his or her copyrighted works.

11. As to the second kind of measure, section 1201(b)(2)(B) DMCA provides that:

“a technological protection measure ‘effectively protects a right of a copyright owner under this title’ if the measure, in the ordinary course of its operation, prevents, restricts, or otherwise limits the exercise of a *right of a copyright owner*.” [emphasis added]

Type (2) prohibits circumvention of technological protection against the unauthorised duplication and other copyright infringing activities.⁷

⁶ 17 USC §1201.

⁷ See Nimmer “A Riff on Fair Use in the Digital Millennium Copyright Act” 148 U. Pa L Rev 673 at 690-691 (2000).

B. Ban on Devices

12. The DMCA prohibits acts of circumvention⁸ of technological protection measures that control access, and not measures which protect a copyright since ample rights are already available under general copyright law to prohibit otherwise infringing acts. Apart from the act of circumvention, the DMCA declares unlawful the commercial manufacture and provision of services or devices that enable the circumvention of type (1) and (2) technological measures.⁹ The prohibition of circumvention ‘devices’ extends to those that (i) are primarily designed for the purpose of circumventing, (ii) have “only limited commercially significant purpose” or use other than to circumvent or (iii) are marketed for use in circumventing a technological measure.¹⁰ The provision was obviously developed with the US Supreme Court’s *Sony*¹¹ decision kept in mind. In *Sony*, the Supreme Court held, *inter alia*, that devices which have substantial non-infringing uses are not copyright infringing devices and are therefore not illegal.¹² The computer industry has strenuously lobbied Congress to adopt *Sony*’s “substantial non-infringing uses” standard.¹³ In the end the “primarily designed” or “limited commercially significant purpose” standards came to be adopted¹⁴, and if this anti-device is challenged in court, the reasoning in *Sony* may prove influential in the future.¹⁵ The device prohibition has attracted controversy, because the WIPO Treaties mandate the provision of adequate legal protection and legal remedies against the circumvention of effective technological measures (acts of circumvention), and should not extend to devices *per se*.

C. Access Right

13. More controversially, the DMCA has created a potent ‘access right’ and this has caused considerable controversy. Much of this controversy lies in the

⁸ Section 1201(a)(3)(A) provides that “to circumvent a technological measure” means to “descramble a scrambled work, to decrypt an encrypted work, or otherwise to avoid, bypass, remove, deactivate, or impair a technological measure, without the authority of the copyright owner.”

⁹ Sections 1201(a)(2) and (b)(1) make it unlawful to ‘manufacture, import, offer to the public, provide, or otherwise traffic in any technology, product, service, device, component or part thereof’ that is primarily used for circumvention.

¹⁰ Section 1201(a)(2)(A)-(C) .

¹¹ *Sony Corp v Universal City Studios Inc* 464 US 417 (1983) .

¹² *Ibid* at 442.

¹³ See for example the statement of Christopher Byrne, Director of Intellectual Property, Silicon Graphics, before the Sub-Committee; above, n 4 at 250.

¹⁴ In lobbying for the more strict anti-device standards, some have argued that the *Sony* ruling does not provide sufficient protection to fulfil the WIPO treaty obligation to provide “adequate and effective legal remedies” against circumvention. It has been argued that most devices, even those designed or entirely used for infringing purposes, will be capable of substantially non-infringing uses since they could potentially be employed in the course of a fair use, or in the use of a work which resides in the public domain. See the statement of Marybeth Peters, Copyright Office of the US, above n 4 at 33.

¹⁵ *Contra RealNetworks Inc v Streambox Inc*, below, n 29, at 5, .

scenario where defendants can be held liable for circumventing an access control measure (type (1) technological measure) even if the use that is made of the work does not infringe copyright (e.g. through the operation of a fair use defence), or the work is not eligible for protection in the first place.¹⁶ It should also be observed that the anti-circumvention provisions do not apply to every protection measure that is taken by a copyright owner, but only to effective protection measures. Effective measures are those that render the copy of the work unusable unless the consumer has an authorised means to render the work acceptable and useable such as through an access code or decryption key.

D. *Limitations and Exemptions from Liability*

14. The legislative passage of anti-circumvention in the US, culminating in the enactment of the DMCA, saw many academics and interest groups alerting lawmakers as to their deep concerns with the prohibition on circumvention. To placate these concerns, lawmakers have incorporated a number of exemptions and limitations to the prohibition on acts of circumvention and devices, recognising that legitimate reasons exist for engaging in circumvention. These include exemptions for non-profit libraries, archives and educational institutions,¹⁷ exceptions for reverse engineering,¹⁸ exceptions for law enforcement, intelligence and other government activities,¹⁹ exceptions for encryption research,²⁰ exceptions regarding minors,²¹ exceptions for protection of personally identifying information²² and exceptions for security testing.²³

15. The DMCA expressly states that nothing in its provisions is intended to affect rights under the doctrine of fair use.²⁴ The legislative history shows that Congress “determined that no change to section 107 [fair use provision in the US Copyright Act] was required because section 107, as written, is technologically neutral, and therefore the fair use doctrine is fully applicable in the digital world as in the analog world.”²⁵

16. However, notwithstanding the purported intention to retain fair use rights, there will always remain a question as to how a user is to be able to exercise those rights in the first place. Under the DMCA, if a user must first gain access to a copyrighted work in order to rely on the fair use doctrine,

¹⁶ See Benkler “Free as the Air to Common Use: First Amendment Constraints on Enclosure of the Public Domain” 74 NYUL Rev 354 at 415 (1999).

¹⁷ Section 1201(d) .

¹⁸ Section 1201(f) .

¹⁹ Section 1201(e) .

²⁰ Section 1201(g) . See *infra*, n.68 and accompanying text.

²¹ Section 1201(h) .

²² Section 1201(i) .

²³ Section 1201(j) .

²⁴ Section 1201(c) .

²⁵ Report on the Senate Committee on the Judiciary, S Rep No. 105-190 (1998) at 23-24.

then it is not too difficult to imagine a scenario in which the provision will prevent the user from exercising those rights in the first place. For example, the copyright owner may provide a technological protection measure that can only be accessed by devices that are specifically made to circumvent and have no other practical commercial use other than to circumvent. In that instance, the user will not be able to purchase a device to circumvent because it would be illegal for a company to manufacture such a device. In order to gain access, the only alternative for the user would be to build a circumvention device to circumvent the measure, and the costs of which may be prohibitive. In this example, the lawmakers' efforts to retain the fair use defence may prove to be an exercise in futility.

17. The DMCA also provides for a user's exemption, which is designed to be a fail-safe mechanism to protect the continuation of fair use in the digital environment. The basic ban (in relation to access control measures and not copy control measures) does not apply to "persons who are users of a copyrighted work which is in a particular class of works."²⁶ The Librarian of Congress is mandated to consider, initially for two years, and thereafter for every year "...whether users of copyrighted works have been or are likely to be adversely affected by the implementation of technological protection measures that effectively control access to copyrighted works."²⁷ On 28 October 2000, the first exemptions made as a result of this procedure came into force and only two classes of works were exempted; namely compilations consisting of the lists of websites blocked by filtering software applications, and literary works that are protected by access control mechanisms which fail to permit access because of malfunction, damage or obsolescence.²⁸

E. Case-Law in the United States

18. The first decisions in the US based on section 1201 DMCA have effectively distinguished the application of the fair use defence to circumvention violations from copyright infringement claims: see *RealNetworks Inc v Streambox Inc*²⁹; *Universal City Studios v Reimerdes*³⁰. These first cases raise questions concerning the legitimate uses of technology that are permitted to innovators, researchers and the public at large.

19. *RealNetworks v Streambox* concerned RealNetwork's 'Real Player' software application, which is used to access 'on demand' audio and video content over the Internet. Through a 'streaming' method of broadcast, the

²⁶ Section 1201(a)(1)(C).

²⁷ Section 1201(a)(1)(B). In determining these classes, the Librarian will have regard to a variety of factors including: the availability for archival, preservation and educational purposes; and the impact of technological protection measures on traditional fair uses such as criticism, comment, news reporting, scholarship, teaching and research (section 1201(a)(1)(c)).

²⁸ See www.loc.gov/copyright/1201/anticirc.html.

²⁹ No. C99-20708, 2000 US Dist Lexis 1889 at 5 (WD Wash 18 Jan 2000).

³⁰ 111 F.Supp 2d 294 (S.D.N.Y. 2000).

audiovisual information from originating servers can be viewed and listened to on an end user's computer without transferring the file. Once the content is encoded in RealMedia format, it can be hosted on any web server and contains security measures that prevent the downloading of the file onto the end user's computer. Protection against copying is achieved by first using a 'secret handshake' that authenticates the destination of the file as a RealPlayer, then activating a 'copy switch' that prevents the download of the streamed content.

20. Streambox made a suit of software products that facilitated different uses of content transmitted from RealServers. The Streambox VCR allows end-users to download Real Media files by replicating its authentication procedure (the secret handshake) and then ignoring the copy switch. The Streambox VCR also allowed end-users to download RealMedia files and store them on their computers. A 'Ripper' application allows files to be converted from their RealMedia format to other music or video file formats that are used by other software programs. There was also the Streambox 'Ferret' which was a plug-in application that allows the end-user to switch from the default search engine of RealMedia to a search engine operated by Streambox.

21. RealNetworks brought an action against Streambox under section 1201(b) DMCA. It claimed, *inter alia*, that the Streambox VCR circumvented both security features of the RealPlayer upon which content owners relied for protection against the unauthorized works, thereby violating both the access control and copyright protection circumvention device provisions of the DMCA.

22. It was held that the Streambox VCR circumvents an access control measure by replicating the 'secret handshakes' to gain access to the RealMedia files; and circumvents a copy protection measure by ignoring the copy switch feature. The Streambox Ferret feature was enjoined on the basis of contributory copyright infringement, due to its alteration of the user interface of the RealPlayer. The Court held, however, that the Ripper feature did not violate the DMCA since the conversion feature was distinct from copying and potentially served beneficial uses for the copyright owner.

23. Two concerns were emphasised by RealNetworks . First, content owners would lose significant advertising revenue from decreased website traffic, as a result of users viewing their downloaded copies rather than streaming the content from the copyright owner's website each time they wanted to view it. Secondly, the downloaded files would be easy fodder for piracy. Once an unauthorised digital copy of a real media file is created it can be redistributed to others at the touch of a button. Streambox argued that there were substantial non-infringing uses of the Streambox products, analogising it to the foundational fair use case of *Sony v Universal*. The Court held that the *Sony* doctrine did not apply to the DMCA. It stated that the users' conduct was irrelevant to the circumvention device bans, since Congress had specifically prohibited the distribution of the tools by which such circumvention could be accomplished. The Court stated, unequivocally, that

manufacturers of consumer products with substantial non-infringing uses that would otherwise immune them from liability under the *Sony v Universal* doctrine are nonetheless subject to prohibition under section 1201 DMCA.

24. *Universal v Reimerdes* concerned the circumvention of the encryption system for Digital Video Disks (DVDs), the CSS or content scrambling system.³¹ CSS is an encryption-based system that embeds the digital sound and graphics files on a DVD in an encryption algorithm. An enterprising teenager from Norway reverse-engineered a licensed DVD player and developed a program that was capable of performing the decryption. He then posted DeCSS (the program) on his website, and informed software developers of LINUX, who needed the decryption of CSS for the development of a LINUX-compatible DVD player.

25. The Defendant posted the source and object codes of DeCSS on the 2600.com website, as part of a story on the hacking of the DVD encryption system. The website also contained sites to other websites where DeCSS was available. The Plaintiffs obtained an injunction against the Defendants barring them from posting DeCSS.³² The injunction extended to linking to websites which contained DeCSS. The Court took the view that DeCSS was clearly "...a means of circumventing a technological access control measure."³³ The defendants argued that DeCSS was not designed to facilitate piracy but rather was created as part of a project to develop a DVD player for Linux.³⁴ The Court interpreted the anti-trafficking provision as indifferent to the actual use of the technology or the context in which it developed, concluding that whether 2600 Enterprises made DeCSS available "in order to infringe, or to prevent or encourage others to infringe, copyrighted works... simply does not matter for the purposes of section 1201(a)(2)."³⁵ The Court reasoned that the fact that DeCSS circumvented the protection measure in DVDs, was sufficient for the violation of the anti-trafficking provision, except to the extent that motive may be germane to determining whether conduct falls within one of the statutory exceptions.

26. The defendants argued that embedding CSS in DVDs prevented some of the legitimate uses that one can make of a DVD.³⁶ Whilst the Court acknowledged that "technological means of controlling access to works create a risk, depending upon future technological and commercial

³¹ *Ibid* at 309-310. CSS is an encryption-based system that embeds the digital sound and graphic files on a DVD in an algorithm. A DVD that contains CSS "can be decrypted by an appropriate decryption algorithm that employs a series of keys stored on the DVD and the DVD player." The DVD Copy Control Association (comprising consumer electronics manufacturers and movie studios) licences the technology that contains the key to decrypt CSS so that the content can be viewed.

³² *Ibid* at 312.

³³ *Ibid* at 317.

³⁴ *Ibid* at 320. The Court concluded that this claim was not credible since the defendants were aware of the program's utility in facilitating the copying of movies.

³⁵ *Ibid* at 318.

³⁶ *Ibid* at 322.

developments, of limiting access to works that are not protected by copyright...”, it also stated that Congress had obviously considered the impact and decided nonetheless that protection of copyright against device circumvention trumped fair use.³⁷ The inclusion of statutory exemptions and the Copyright Office’s rule-making procedure on exempted classes of works circumscribed the legitimate uses that can be made of works that are protected by technological measures.³⁸

27. The Defendants also relied on the reverse engineering exemption in section 1201(f) DMCA on the grounds that “DeCSS is necessary to achieve interoperability between computers running the Linux operating system and DVDs.”³⁹ This argument was duly dismissed by the court, which considered that the defendant had not reversed the DVD player. Even if the defendant had originally obtained the information, the exemption does not allow for the public dissemination of a software developer’s work, but permits him to share only that information with individuals collaborating on the interoperability project.

28. Several observations have been made of the *RealNetworks* and *Universal* decisions. It is significant that the principles in *Sony v Universal*⁴⁰ were not applied. By holding that legitimate non-infringing uses of the Streambox VCR and the DeCSS were rendered irrelevant, the entire balance that is sought in the copyright cause is endangered.⁴¹

29. Much of the debate over the interpretation of the DMCA is the survival of fair use as a defence against liability under the anti-circumvention provisions.⁴² The question is whether this defence can be applied to the violation of the anti-circumvention provisions, or whether they only apply in cases of copyright infringement. If anti-circumvention prohibitions are distinct from copyright infringement, defendants can be held liable for circumventing an access control measure even if the uses made of the work are held not to infringe the rights of the copyright owner. Surely a distinction has to be made between circumvention aimed at getting unauthorised access to a work and circumvention aimed at making non-infringing uses of a lawfully obtained copy. In *Sony v Universal* the Court distinguished the application of fair use to circumvention violations from copyright infringement claims, stating that “..[I]f Congress had meant the fair use defence to apply to such actions, it would have said so.”⁴³ Based on current

³⁷ *Ibid* at 304.

³⁸ *Ibid* at 323.

³⁹ *Ibid* at 320.

⁴⁰ In *Sony* the Supreme Court declared that Congress had been assigned the task of defining the scope of the limited monopoly that should be granted to authors in order to give the public appropriate access to their work product: 464 US 417 at 429 (1984).

⁴¹ See Samuelson, “Intellectual Property and the Digital Economy: Why the Anti-Circumvention Regulations Need to be Revised” 14 Berkeley Tech LJ 519 at 545-6 (1999).

⁴² Section 1201(c)(1) states that “[n]othing in this section shall affect rights, remedies, limitations or defences to copyright infringement, including fair use.”

⁴³ *Universal v Reimerdes* 111 F.Supp 2d 294 at 322 (SDNY 2000) .

law in the US it would appear that there can be no defence of fair use pertaining to the circumvention of an access control, given that such an act is not an infringement – a position of triumph for right owners.

IV. Position in Europe

30. The long-awaited EU Copyright and Related Rights Directive⁴⁴ (the “EU Directive”) provides that Member States shall provide adequate legal protection against the circumvention without authority of any effective technological measures⁴⁵ designed to protect any copyrights or any rights related to copyright, which the person concerned carries out in the knowledge or with reasonable grounds to know that he or she pursues that objective.⁴⁶

31. The EU Directive also imposes a requirement for Member States to provide adequate legal protection against any activities, including the manufacture or distribution of devices, products or components or the provision of services which (a) are promoted, advertised or marketed for the purpose of circumvention or (b) have circumvention as their sole or principal purpose or as their commercial purpose, or (c) are primarily designed produced, adapted or performed for the purpose of enabling or facilitating the circumvention of, any technological measures designed to protect any copyright or any right related to copyright.⁴⁷ Moreover, the EU Directive respects national treatment between EU states in relation to national provisions which may prohibit the private possession of devices, products or components for the circumvention of technological measures.⁴⁸

32. The EU Directive has ensured that rightholders have complete control over the manufacture, distribution of devices designed to circumvent anti-copying devices. It is observed that the EU Directive, unlike its US counterpart (DMCA) , does not create an overreaching ‘access’ right which exists independently from copyright.

33. The EU Directive has also entrenched an extensive range of exceptions, limitations (under Article 5 EU Directive) and a framework of voluntary agreements.⁴⁹ Above all, a recital provides that “Such legal protection should

⁴⁴ Directive 2001/29/EC Harmonisation of Certain Aspects of Copyright and Related Rights in the Information Society (22 May 2001) OJ L 167.

⁴⁵ For the purposes of the EU Directive, the expression "technological measures" means any technology, device or component that, in the normal course of its operation, is designed to prevent or restrict acts, in respect of works or other subject-matter, which are not authorised by the rightholder of any copyright or any right related to copyright as provided for by law or the *sui generis* right provided for in Chapter III of Directive 96/9/EC. Technological measures shall be deemed "effective" where the use of a protected work or other subject-matter is controlled by the rightholders through application of an access control or protection process, such as encryption, scrambling or other transformation of the work or other subject-matter or a copy control mechanism, which achieves the protection objective. (Article 6(3), EU Directive).

⁴⁶ Article 6(1), EU Directive.

⁴⁷ Article 6(2), EU Directive.

⁴⁸ See Recital 49, EU Directive.

⁴⁹ Article 6(4), EU Directive.

respect proportionality and should not prohibit these devices or activities which have a commercially significant purpose or use other than to circumvent the technical protection. In particular this protection should not hinder research into cryptography.”⁵⁰

34. A limited protection for devices that provide access was created in November 1998, with the adoption of the Conditional Access Directive⁵¹ in the EU. This Directive gives protection to providers of conditional access services against ‘illicit devices’ that enable unauthorised access to protected services.⁵²

35. Unlike the EU Directive, the Conditional Access Directive focuses exclusively on devices and preparatory activities that enable circumvention, rather than on the act of circumvention itself; and declares the following activities to be unlawful:

- a. the manufacture, import, distribution, sale, rental or possession for commercial purposes of illicit devices;
- b. the installation, maintenance or replacement for commercial purposes of an illicit device;
- c. the use of commercial communications to promote illicit devices.

36. The Conditional Access Directive does not prohibit acts of circumvention or other preparatory acts for private non-commercial purposes.⁵³ Under this Directive, an ‘illicit device’ is defined as “..any equipment or software designed or adapted to give access to a protected service in an intelligible form without the authorisation of the service provider.”⁵⁴

⁵⁰ Recital 48, EU Directive.

⁵¹ Directive 98/84/EC of the European Parliament and of the Council on the Legal Protection of Services based on, or consisting of, Conditional Access (1998) OJ L320/54; 20 November 1998.

⁵² ‘Conditional access devices’ are defined in Art 2(c) as “..any equipment or software designed or adapted to give access to a protected service in an intelligible form...”.

⁵³ Therefore it is arguable that publishing a set of passwords on Usenet gratuitously would not be an offence. At the same time the Directive does not restrict Member States from imposing liability for such abuses for private non-commercial purposes. For example, in the United Kingdom, s 298(2) of the Copyright Designs and Patents Act 1988 (as amended) prohibits the publishing of fraudulent information such as passwords and decoding programmes. Similarly under s 8 of the Computer Misuse Act (Cap 50A, 1998 Rev Ed) , any person who, knowingly and without authority, discloses any password, access code or any other means of gaining access to any program or data held in any computer shall be guilty of an offence if he did so – (a) for any wrongful gain; (b) for any unlawful purpose; or (c) knowing that it is likely to cause wrongful loss to any person. The offence is punishable by a fine not exceeding S\$10,000 and/or imprisonment for a term not exceeding 3 years.

⁵⁴ Article 12(e), Conditional Access Directive.

V. Position in Australia

37. Australia's recently enacted Copyright Amendment (Digital Agenda) Act 2000 (Cth)⁵⁵ ("Australian Act") substantially mirrors the DMCA in that it prohibits the manufacture and supply of devices which are designed to aid the infringement of copyright in the electronic environment. The Copyright Act 1968 has been amended by the inclusion, *inter alia*, of provisions governing the protection of "technological protection measures", which are defined as "...measure[s] designed to prevent or inhibit the infringement of copyright by use of either access and/or copy control mechanisms." Unlike the DMCA, the Australian Parliament did not outlaw the use of a circumvention device *per se*. Instead, the "provision reflects the government's view that the greatest threat to the commercial interests of copyright owners is posed by commercial dealings in circumvention devices."⁵⁶

38. A new section 116A of the Australian Act provides that a copyright owner may bring an action against a person if a work or other subject matter is protected by an effective technological protection measure and, without the permission of the copyright owner or licensee, a person:

- Makes a circumvention device capable of circumventing or facilitating the circumvention of the protection measure;
- Conducts commercial dealings in a circumvention device;
- Imports a circumvention device into Australia for the purposes of commercial dealing;
- Makes a circumvention device available online to an extent that will prejudicially affect the owner of the copyright; or
- Provides a service capable of circumventing or facilitating the circumvention of the technological protection measure

39. Liability under section 116A is dependent on whether the person knew, or ought to have known, that the device or service would be used to circumvent the technological protection measure.⁵⁷ At the same time, the Australian Act also does not appear to prohibit the use of circumvention devices as such.⁵⁸ The Australian legislature evidently perceives that a greater threat lies in preparatory acts of circumvention, such as importation,

⁵⁵ Act No. 110 of 2000 (Cth). A copy is available at <http://www.aph.gov.au>. The objectives of the Australian Act are to, *inter alia*, (a) ensure the efficient operation of relevant industries in the online environment by promoting the creation of copyright material via the continued availability of financial rewards and enforcement regimes, and (b) promote access to copyright material online, particularly reasonable access and certainty for end users. (section 3)

⁵⁶ Parliament of Australia, Bills Digest No. 1021999-2000.

⁵⁷ Section 116A(6), B(3) and C(3) of the Australian Act.

⁵⁸ It has been argued that a prohibition on use, rather than availability, is necessary to maintain the existing balance between the interests of rights holders and users. See further Hawkins "Technological Measures: Saviour or Saboteur of the Public Domain?" (1998) 9(1) Journal of Law and Information Science at 56.

manufacture and distribution, compared to individual acts of circumvention. Moreover the monitoring of, and enforcement against private use could also be problematic, and thus the view is commonly held that potential rights users would be less likely to engage in acts of circumvention in the absence of a device's commercial availability.⁵⁹

40. As with the DMCA, there are several exceptions to the circumvention prohibitions, including interoperability, security testing and permitted uses for libraries, archives, educational institutions and the Crown, and law enforcement activities.⁶⁰ Two types of exceptions to the general prohibition exist. The first is the "permitted purposes" exception. There is a range of exceptions which are designated as "permitted purposes". These include reproducing computer programs to make interoperable products and to correct errors and security testing.⁶¹ Other permitted purposes pertain to the existing exceptions for libraries and archives, the Crown, educational institutions and institutions assisting with a print or intellectual disability. Interestingly, fair dealing is not classified as a permitted purpose under the Australian Act. The second general exception pertains to purposes of law enforcement and national security.⁶²

41. By way of general observation, the Australian Act does not contain any prohibition relating to the act of circumvention *simpliciter*, in contrast to the US and EU solutions (discussed above). This is contrary to earlier recommendation made by the House of Representatives Standing Committee on Legal and Constitutional Affairs, to provide for civil liability in respect of the intentional use of a circumvention device for the purpose of infringing copyright in a work or other subject matter, regardless of whether the copyright in the work or other subject matter is actually infringed.⁶³

VI. General Observations

42. Apart from of a few judicial decisions, the extent and scope of anti-circumvention legislation in the US, EU and Australia still remain to be defined, and their long-term effectiveness will be tested through the effluxion of time. For now it is appropriate to draw attention to specific issues which have arisen from the legislation that has purported to give effect to Article 11 of the WIPO Copyright Treaty.

⁵⁹ See Coco, "Anti-circumvention: The New Song and Dance Routine" (2001) 12 AIPJ 199 at 203.

⁶⁰ To escape liability, a manufacturer or retailer must receive a declaration from the end user prior to the acquisition of a circumvention device to the effect that the device will be employed for one of the permitted purposes: s 116A(3) of the Australian Act.

⁶¹ Section 116A(7), Australian Act.

⁶² Section 116A(2), Australian Act.

⁶³ House of Representatives Standing Committee on Legal and Constitutional Affairs, *Advisory Report on Copyright Amendment (Digital Agenda) Bill 1999* (November 1999) at page 68.

A. Approach towards Devices

43. Article 11 of the WIPO Copyright Treaty stated a general prohibition on circumvention of technological protection measures, but the ensuing debate has focused on how this basic concept should be implemented. Much of the controversy stems from the fact that the anti-circumvention provisions of Article 11 are silent as to the means to be employed in achieving the goal of providing legal protection and remedies against the circumvention of technological protection measures. Article 11 does not specifically mandate a prohibition against either ‘circumventing’ conduct or against manufacturing/dealing in circumvention devices. The question should then be asked: Have the legislators in the US, EU and Australia gone too far? It has been argued that Article 11 does not require a device ban, and so a ban on unauthorised uses of such devices would be within Article 11. It follows that the implementation of a device ban runs the risk of prohibitions extending to devices which have legitimate and socially valued uses, as opposed to unlawful infringing uses.⁶⁴

B. Approach towards Preparatory Acts of Circumvention

44. The anti-circumvention regimes outlined above focus on activities which are preparatory to circumvention, such as importation, manufacture and distribution. It has been noted that focusing on preparatory activities may risk the prohibition of activities which would otherwise fall within the general copyright infringement exceptions.⁶⁵

C. Extension of Copyright

45. There is a lurking question as to whether Article 11 of the WIPO Copyright Treaty includes a prohibition in respect of an access control measure. A necessary nexus should form between a protection measure and copyright infringement. For this reason it can also be argued that to include access control measures in the definition of a technological protection measure would be to extend the reach of copyright rather than merely enforce it.

46. The question should be asked that if copyright law aims to prevent unauthorised copying of works, why did law makers from the US and Australia see the need to prohibit acts resulting in unauthorised access?

47. One possible argument could be that access is in fact achieved by copying. For example a temporary cache copy of a web page has to be made prior to browsing the same on users’ computers. With digital works, it may be that gaining access to a work necessarily causes a reproduction to be made, and by way of corollary, where access is facilitated by copying, complete control of copying would mean control of access as well.

⁶⁴ See Hawkins, above n 58 at 55-6.

⁶⁵ See Middleton “Copyright Beyond the Digital frontier – Australia’s Proposed Digital Agenda Reforms.” [2000] *Journal of Law & Information Science* 73.

D. The End of Exceptions?

48. In granting copyright owners the right to control public access to protected works by outlawing the circumvention of technological protection measures, the law makers in the US and Australia have conferred a significant extension of author rights, one that was expected to have a negative impact on fair use. This is a larger question which turns on whether anti-circumvention legislation successfully achieves a balance between owners and users. A starting point will always be Article 9(2) of the Berne Convention⁶⁶ which provides:

It shall be a matter for legislation in the countries of the Union to permit the reproduction of such works in certain special cases, provided that such reproduction does not conflict with a normal exploitation of the work, and does not unreasonably prejudice the legitimate interests of the author.

49. The question which is raised by the various anti-circumvention regimes is whether there has been an impairment of the normal exploitation of the work? Secondly, whether there has been an extension of the creator's rights? A concern which appears to have been systematically raised is that anti-circumvention regimes may run the risk of 'locking up' works, thus preventing users from exercising legitimate rights by way of exception to copyright infringement.⁶⁷ To properly give effect to the spirit and intent of Article 9(2) of the Berne Convention, anti-circumvention legislation, if they should extend to access-control as much as copy-control technologies, should include an operative fair use/fair dealing defence which must necessarily survive the operative prohibition.

E. Other Miscellaneous Issues

50. On the subject of authorisation, the DMCA encryption exception⁶⁸ allows for a potential circumventor to obtain authorisation before engaging in the otherwise illegal act. A question arises: from whom does one obtain authorisation? Is it the manufacturer of the technological protection measure? Or is it the owner of the works protected by the measure? Or is it both? This presents another matter for consideration in the future.

51. Further, with the Australian and US legislation, only devices which have only a limited commercially significant purpose other than circumvention are prohibited.⁶⁹ The question then arises as to whether it is the manufacturer's, distributor's or user's purpose which is material.

⁶⁶ See also Art 10, WIPO Copyright Treaty.

⁶⁷ Marks and Turnbull "Technical Protection Measures: The Intersection of technology, law and Commercial Licences." [2000] EIPR 76.

⁶⁸ Section 1201(g), DMCA.

⁶⁹ Contra EU Directive, which alludes to a 'primary purpose' test.

VII. The Way Forward - Protecting the Balance

52. Based on the foregoing discussion, some key questions which are raised by anti-circumvention include the following:

- Are there substantial justifications to enact anti-circumvention legislation?
- What are the objectives of this legislation?
- Do rightsholders perceive a need for this legislation?
- What is the scope of such legislation?
- Should circumvention devices be targeted in the legislation as opposed to simply the act of circumvention?
- Should access control methods – which seek to prevent all access to copyright material, not just that access which is unlawful – be protected as much as copy-control methods?
- Whether copyright exceptions and exemptions survive with implementation?
- To what extent will works still exist, or be readily accessible, in non-digital form?

53. At present, the answers to the above questions prove to be elusive, which renders the formulation of copyright rules in this sphere to be very much an exercise in enlightened prediction.

54. We have to be first convinced that copyright owners will in fact use technological protection measures to restrict the distribution and availability of their works. Samuelson has written:

“[I]t is perhaps worth noting that as yet relatively few copyrighted works are being distributed with technical protection systems built in. Much research and development work is, however, underway to develop such systems. Many copyrighted owners seem to hope or expect that such systems will be widely used for a broad range of work in the not-too-distant future.”⁷⁰

To this end, an informed presentation on the present state of the art, *apropos* technological protection measures, would go a long way to inform a future determination.

55. But the issue of anti-circumvention legislation abstracts a larger question of how copyright law should be adapted to reflect the changes wrought by digitisation, and specifically, whether it is desirable to replicate the copyright balance that currently exists in the non-digital world. It has been argued:

⁷⁰ Samuelson “Intellectual Property and the Digital Economy: Why the Anti-Circumvention Regulations Need to be Revised” 14 Berkeley Technology Law Journal 519 at 564 (1999).

“Currently, in academic publishing and with academic use, the cost burden is not reasonably shared among users of the content. Also, authors are generally not compensated directly though they’re compensated indirectly by tenure or by professional status. There are a lot of people who are looking at digitisation and online communication as an opportunity to remedy what is a somewhat dysfunctional system in terms of the economics of and the access to information.”⁷¹

56. There is a certain amount of truth that copyright users have enjoyed traditional liberties resulting from the inability of copyright owners to perfectly control the use of their work. There is a cynical school of thought that views fair use as the granting of rights in an area which was not possible to meter and charge for use. The challenge is therefore to decide, for the future, whether fair use is just a latent imperfection in the old system that is now solved, or whether it is a public value/right that should exist regardless of the technological regime.⁷²

57. Another liberty enjoyed by copyright users is the non-policing of countless small-scale infringements. By contrast copyright owners can now exercise perfect control over their work and, consequently, such small scale infringements can be prevented. Anti-circumvention forces the question whether to allow the erosion of previous freedoms. Alternatively, there is the alternative solution recommended by Lessig, to “erect other limits to re-create the original space for liberty.”⁷³ The consensus appears to be that “[t]rusted systems shift the balance and put more power in the hands of the publishers.”⁷⁴

58. Cohen has suggested that a better way to preserve the current copyright balance, apart from creating exceptions to anti-circumvention, is to impose limits on the kinds of technological protection that may be used by copyright owners, and limits on the contents of permissible standard-form contract

⁷¹ Secor “Digital Technology and Copyright: A Threat or a Promise?” 39 IDEA: Journal of Law and Technology 291 at 308 (1999).

⁷² Lessig, *Code and Other Laws of Cyberspace* (1999) at 136.

⁷³ Lessig, *ibid*, at 139.

⁷⁴ Stefik “Shifting the Possible: How Trusted Systems and Digital Property Rights Challenge Us to Rethink Digital Publishing” 12 Berkeley Technology Law journal 137 at 155 (1997).

restrictions.⁷⁵ This may well be within the contemplation of drafters of the Agreed Statement to Article 10 of the WIPO Copyright Treaty, which provides that it might be necessary for states “to devise new exceptions and limitations that are appropriate in the digital networked environment.”⁷⁶

59. In a seemingly ultra-protectionist ethos, the ultimate efficacy of anti-circumvention legislation may depend not so much on copyright, but “copy-duty” – the duty of owners of protected property to make that property accessible.⁷⁷

⁷⁵ Cohen “WIPO Copyright Treaty Implementation in the United States: Will fair Use Survive?” [1999] EIPR 236 at 240.

⁷⁶ Forsyth “the Digital agenda Anti-circumvention Provisions: A Threat to fair Use in Cyberspace” (2001) 12 AIPJ82 at 100-101.

⁷⁷ See Lessig, above n 72 at 127.

RESPONSE TO: “ANTI-CIRCUMVENTION AND ITS CHALLENGES TO THE LAW OF COPYRIGHT”

Liew Woon Yin

Biography

Ms Liew Woon Yin (LLB, Singapore) is currently the Director-General of the Intellectual Property Office of Singapore (IPOS). She began her career as Deputy Registrar of Trade Marks & Patents at the Registry of Trade Marks & Patents, Ministry of Law. Ms Liew then spent several years working at the Headquarters of the Ministry of the Environment as a Legal Officer and as a Deputy Public Prosecutor. She then returned to the Registry of Trade Marks & Patents and became the Registrar. When the Registry was converted into a statutory board in 2001, Ms Liew became its Director-General.

Ms Liew is responsible for promoting the importance of intellectual property in Singapore and for improving and strengthening the legal framework of IPOS. All the intellectual property legislation is now under the purview of IPOS.

I. Anti-circumvention Legislation

A. *Are there substantial justifications to enact anti-circumvention legislation? Do right holders perceive a need for this legislation?*

1. In this age, copyright owners can use digital technologies to make available their works through revolutionary ways. Unfortunately, works in digital form are also more vulnerable to intellectual property ('IP') violation. With the Internet, pirates can mass replicate and distribute perfect copies of copyrighted works to millions of users in a matter of seconds. Copyright owners thus look for technological solutions to this problem. It would have been perfectly fine if technological solutions can take care of the problem. But the advancement of technology is also such that whatever new technology copyright owners come up with, it is a matter of time that research and “newer technology” surface in a way that undermines the “older technology” and pirates take advantage of such “newer technology” or research findings to facilitate their illicit activities. In this race, copyright owners seem to be losing out. It is for this reason that copyright owners lobby for exclusivity for their technological measures. Is there any justification for the exclusivity of technological measures? As a matter of fact, it is recognised that the exclusivity in such protection does not come under the traditional domain of copyright in that it is not an exclusive exploitation right. It can be seen as a new “access right” or a monopoly over particular technological measures employed by copyright owners since the protection focuses on technology and a restriction on access to copyright works as opposed to a restriction on exploitation of works without authorisation.

2. Proponents for such protection use this analogy to argue for its existence: if a copyright owner should lock his work in a cupboard, certainly the law should not allow a user to break the lock in order for him to gain access to the work, regardless of whether his subsequent dealing with the work is going to be justified as fair use of the work or not? They thus see technological measures protection in the digital world as something fundamental to the respect for intellectual property as it is for private property.

3. On the other hand, opponents of technological measures protection see it as causing an unfair imbalance in favour of rights holders. They argue that the protection completely cuts down fair use, thus hampering the dissemination and advancement of information and knowledge that is much needed for progress and advancement in a knowledge-based economy.

B. What are the objectives of this legislation?

4. Technological measures enable copyright owners to exclude access to as well as uses of their copyright works. Whilst copyright protection is limited by fair use exceptions and limited in the scope of restricted acts and term of protection, technological measures can be used to restrict acts and access without any of these limitations. Technology need not be designed to restrict only use and access that falls within the scope of protection. It is fully possible for copyright owners to use technological measures to exclude excepted uses and even to protect materials that have fallen into the public domain.

5. Bearing all these in mind, the question is how does one deal with the issue of protection for technological measures. As the protection comes under copyright, should the starting point for legislators be to ensure the effective implementation of the same limitations of copyright? If so, should the effective implementation of the same limitations of copyright be restricted only to certain sectors of the public such as the educators, librarians, archive people or should it have the same coverage as under existing legislation (i.e., including individuals)? Further, if so, is it possible to ensure the effective implementation of limitations by legislation? Is it possible to strike the same fair use balance between the digital and non-digital world? It has been said that exceptions permitted under the Berne Convention are endorsed in the WIPO treaties and this signifies that the digital environment is no different. Or should the policy be to endorse a broader exclusivity based on technology? Are there justifications for this policy? Are there differences that justify the policy erring on the side of exclusivity protection and not on the other side of the balance? Further, in practice, how does one ensure that materials that are in the public domain do not get locked up together with copyright materials and thereby enjoy a perpetual protection through the protection for technological measures? These are questions that policy makers have to answer.

6. In the US DMCA, there are specific exceptions but these exceptions do not mirror fair use exceptions at all. The protection for technological measures is treated as an extra-copyright protection independent of copyright

protection. In fact, the US DMCA expressly states that the protection is independent of whether there is an infringement of copyright or not.

II. Circumvention Devices and Acts of Circumvention

A. *Should circumvention devices be targeted in legislation as opposed to simply the act of circumvention?*

7. The current Attorney-General of the US, John Ashcroft, when he was a US Senator participating in the debate on the adoption of the DMCA said, "Product manufacturers should remain free to design and produce the best available products, without the threat of incurring liability for their design decisions. Technology and engineers – not lawyers – should dictate product design."¹

8. If the current Attorney-General of the US has got it right, then the argument is against protection for technology or "devices" since such protection would invariably threaten the free development of encryption technology and other technological devices used in conjunction with copyright materials. If one pauses to think, theoretically a whole range of technology may be affected (the design of DVDs, DVD-players, the Diamond Rio, even the I-POD, the I-DVD and the PC can all be affected). The other argument against protection of devices is that technological development and advancement should not be in the hands of a few players who have copyright materials to protect.

9. The proponents for technological measures protection will argue that the problem of piracy should be tacked upstream. If you prevent the production and distribution of circumvention technology, you would have nipped the problem in the bud. If not, they argue that it is ineffective for copyright owners to chase after people who circumvent at the usage end. And copyright owners will have the same problem of enforcement that they face with regard to enforcement of their copyright vis-à-vis millions of users out there on the world-wide-web. They thus argue that a solution that is only targeted at acts of circumvention is as bad as not having a solution at all.

B. *Should access control methods – which seek to prevent all access to copyright material, not just access which is unlawful – be protected as much as copy-control methods?*

10. If protection should target technology, what should the extent be? Should it aim at technology that restricts copying only or should it include technology that restricts access as well? If it should be the former, the present reality is that there is no foolproof technology that restricts copying but does not restrict access. So far, the technological solutions available have focussed on restriction of access through some form of scrambling algorithm for content (CSS for DVDs and SDMI for example). Thus, what good will the legislation be if only very narrow "copy-control" methods are protected? On the other hand, if the protection extends to access control technology, then

¹ See <http://www.isoc.org/isoc/media/releases/010917pr.shtml>

access to almost everything on the Internet is implicated (including password access and so forth). The next question is, what about access control methods that have nothing to do with prevention of copyright infringement? For instance, the DVD-CSS is merely a licensing control system that allows DVD-CCA members to license and thus control DVD player manufacturers. Would not the effect of access-control technology protection be to eliminate or at least whittle away public domain materials and fair use exceptions?

11. In this aspect, the US seems to have gone way out compared with the rest. In the US DMCA, protection is given to expressly restrict the production and distribution of both "technological measures that effectively control access" as well as "technological measures that effectively protect the right of a copyright owner". A "technological measure that effectively control access" is defined as a measure that "in the ordinary course of its operation, requires the application of information, or a process or a treatment, with the authority of the copyright owner, to gain access to the work". Further, given the wide scope of technological measures that are covered, even bypassing of password would amount to circumvention.

12. Japan, however, has not gone to that extent. The amendments to the Copyright Law of Japan² in June 1999 introduced regulation against the production and distribution of devices that circumvent measures which prevent copying of music CD or videogram without authorisation by making it a criminal offence. The protection is confined to measures that restrict copying and does not extend to measures that merely restrict access.

13. The EU Directive however forbids circumvention to technological measures that control both access and use. Whilst the scope is seemingly broad in that it does not allow users to bypass access measures, the Directive requires Member States to ensure that there is a mechanism that allows access by users who would enjoy the exemptions specifically listed in the Directive. This is done by allowing qualifying users to receive circumvention tools contracted for through voluntary agreements between rightholders and trusted third parties. Thus, on first impression at least, the Directive enables the continued application of the exemptions that are specifically spelt out in the Directive (see below, however).

14. Australia's Digital Agenda Act introduced prohibitions against the development and sale of copyright circumvention devices. The definition of circumvention devices is fairly broad: "a device (including a computer program) having only a limited commercially significant purpose or use, or no such purpose or use, other than the circumvention, or facilitating the circumvention, of an effective technological protection measure." And "technological protection measure" is defined to mean a product or device, or a component incorporated into a process, that is designed, in the ordinary course of its operation, to prevent or inhibit the infringement of copyright in a work (i) by ensuring that access to the work is available solely by use of an access code or process (including decryption, unscrambling or other

² Copyright Law of 1970.

transformation of the work) with the authority of the owner or licensee of the copyright; (ii) through a copy control mechanism. Though the scope of coverage is wide, the protection is cut down by the requirement that the targeted user must know that the device would be used to circumvent or facilitate the circumvention of the technological measure. Further, the prohibition does not apply to the supply of a circumvention device or a circumvention service to a person for use for permitted purposes ("permitted purposes" include uses under the fair use exceptions of the legislation).

III. Copyright Exceptions and Exemptions

15. Since there has been some litigation as to the parameters for fair use based on the US legislation, we would examine this question based on these cases.

A. Reverse Engineering and Research

16. The suit against Prof Edward Felten to prevent his planned disclosure of research findings on digital music protection and the arrest of Russian Ph.D. student, Dmitry Sklyarov who went to the US to deliver a presentation at a computer security conference on the insecurity of Adobe's eBook encryption technology sparked off a debate as to whether the DMCA results in a suppression of research. Whilst the US legislation provides for an exception, it is restricted to good faith activities carried out by an "appropriately qualified" researcher (*one factor that has to be considered is whether the person is engaged in a legitimate course of study, is employed or is appropriately trained or experienced, in the field of encryption technology*) who has lawfully obtained a copy of the work and who has obtained authorisation from the copyright owner for the research activities. Further, the research activities must only be to the extent necessary for the sole purpose of identifying and analysing flaws and vulnerabilities of technologies for scrambling and descrambling of information. Given such a narrow exception, apart from the question of whether there is circumvention of a technological measure, it is really curious whether and how the US courts could absolve Felten from civil liabilities and criminal penalties if the suit against him had been pursued to its conclusion. The same may be said of the case against Sklyarov.

17. Whilst the EU Directive allows exemptions to be enjoyed through the obligation to supply circumvention tools to qualifying users, it is expressly stated in the Directive that the voluntary mechanism does not apply to interactive on-demand services and contractual terms will prevail. This allows right holders to undermine the exemptions through contract as well as through the provision of on-demand services. Given that the Internet comprises largely on-demand services, the voluntary mechanism may be of hardly any benefit at all. Since the regime requires a user to apply to a trusted third party to receive the circumvention tool, the regime would also reduce spontaneous use. Thus, it may only be theoretical to say that a fair balance has been struck between protection of technological measures and fair use.

B. Fair Use for librarians, educators

18. Protection for technological measures can affect the services that libraries can provide to their users and the conditions on which they can provide access to copyright materials as it gives right holders the power to demand payment for unlocking materials for access. If in future, all access and use of information in digital format becomes subject to payment, this will affect equal access to information to both the haves and the have-nots. For the public good, librarians and archive professionals thus argue for a regime which would allow them to grant to users access to copyright materials without payment. Information is increasingly being produced in digital format. Librarians and archive professionals argue that the law should not empower right holders to use technological or contractual measures to override the exceptions and limitations to copyright and distort the balance set internationally through the Berne Convention.

19. Librarians thus want to maintain the exceptions permitted under the Berne Convention and the WIPO treaties which would allow them to use copyright materials for preservation purposes, for resource-sharing purposes as well as to provide access to copyright materials for research or private study purposes. However, the US DMCA permits circumvention for libraries and archive professionals only for the purpose of making acquisition decisions. Thus, the DMCA protection for technological measures will disallow inter-library resource sharing of locked digital information, will render it impossible to make digital information that is locked to be part of lending stock or make such information available to users for browsing and research, and will make it impossible to preserve and conserve locked digital information. If the exceptions permitted under the Berne Convention are to be maintained vis-à-vis digital works, then the balance has not been struck in the DMCA. But, there is also the argument that fair use should be confined to the non-digital world where there are checks and limitations. As fair use is still exercisable in the non-digital world, the argument is that protection for technological measures have minimal impact on librarians. The counter-argument that has been given against that is that there is also the fear that more and more works could be locked up, thereby eroding fair use completely. On a practical level, even if circumvention is permitted, it may only be theoretical since libraries still need the technological capabilities to circumvent in order to exercise their fair use privileges. Then again, perhaps, at the end of the day, economics of demand and supply would prevail and librarians' fears may be unfounded.

20. A possible answer to these fears may be found in the Australian Digital Agenda Act. Firstly, using a circumvention device for by libraries to exercise their existing fair use rights is not prohibited. Further, the legislation provides that the prohibition does not apply to the supply of circumvention devices to librarians who have made a signed declaration that the device is to be used for permitted fair use rights for librarians. Practically, librarians would be able to continue with their fair use rights. The only limitation would then be the unavailability of circumvention devices that can circumvent technological measures employed by copyright owners. This effectively renders the

protection of technological measures of little effect vis-à-vis certain people such as librarians and educators who will be allowed to enjoy fair use through the mandated supply of circumvention devices. The other answer could lie in the EU's proposal although that proposal has limitations which have been highlighted.

IV. Conclusion

21. The protection for technological measures is a difficult area. This is evidenced by the different solutions that have surfaced to tackle this issue in various jurisdictions. What is clear though is that the WIPO treaties mandate that signatory countries must *"provide adequate legal protection and effective legal remedies against the circumvention of effective technological measures that are used by authors in connection with the exercise of their rights under the treaties or the Berne Convention and that restrict acts, in respect of their works, which are not authorised by the authors concerned or permitted by law."* As to what would be sufficient as "adequate legal protection and effective legal remedies" and how a fair balance between this protection and fair use can be struck, many policy makers are still working this out.

SYMPOSIUM PROCEEDINGS – SECOND SESSION

MR DANIEL SENG:

1. Having heard two excellent presentations - one from Stanley, and the other rather impromptu one from Ms Liew as well - concerning anti-circumvention measures and their challenges to the law of copyright, I would like to open the discussion now for any contributions from the floor.

2. Maybe I can start by asking Stanley a few questions. I have been very interested in this area of the law myself and have been following developments and, over lunch, somebody asked me whether there have been any Constitutional challenges to the US DMCA in the States; so perhaps you can enlighten us on that.

DR STANLEY LAI:

3. As far as US Constitutional challenges are concerned, I think there are a few actions in the works. Ultimately, this is an issue that I think the Supreme Court has to decide and pronounce. What they really need is *Sony v Universal*, something on the same scale and magnitude, for the Supreme Court to actually deliberate and, thereafter, we will know the interaction between corporate legislation which is the Federal Act, on the one hand, and the US Constitution.

4. That, I think, would inform our debate here as well, because I think the danger with following US laws piecemeal, from the Singapore perspective, is that we have to understand that they have a lot of other public law doctrines and constraints; for example, federal pre-emption doctrines which prevent parties contracting more obligations than that conferred under the US Federal Copyright Statute. These are doctrines that I think will inform our debate once these challenges reach their final determination.

MR DANIEL SENG:

5. Thanks, Stanley. There have been several challenges to the US DMCA in the US on the premise of infringement of US Constitutional protections safeguarding free speech.

6. To date, I think all the challenges have failed. But Stanley is absolutely right: I think it takes, again, for the US Supreme Court to resolve the matter conclusively one way or the other before we can say with definite certainty whether the DMCA is constitutional in the US.

DR STANLEY LAI:

7. I should also mention that in the US position intellectual property rights are actually a Constitutional right, which is why that question arises. It is

mandate that you have to “promote the progress of science and useful arts” - I think that is the wording of Article 1, section 8 of the US Constitution - and I think that is why there is a basis for challenge.

MR DANIEL SENG:

8. Thank you, Stanley. What about ACM in Singapore: has it caught on in a big way? Maybe that is a question we can ask our industry contributors.

MR BERNARD TAN:

9. I am not aware of too many people taking on ACM. I think, in fact, there may be some groups of industry players who are moving against ACM, in a sense. I think you can see that in the growth of open licensing and movement with the use of LINUX and other open licensing sort of regimes. So I think there is a counter-movement somewhere; we are not sure where it is heading now.

MR DANIEL SENG:

10. Thanks to Bernard for pointing that out. I think IBM is one of the supporters of open source movement and, in particular, the move towards the use of LINUX on your servers. Does anyone have any further thoughts on ACM?

MS JOYCE TAN:

11. I was just going to raise a question mostly for Ms Liew. Her concluding note was a little bit interesting, I thought.

12. I was wondering whether, as we sit around here and talk about the jurisprudence of to ACM or not to ACM, whether the final conclusion will be more driven by political expedience under some trade-off somewhere, for trade reasons rather IPR jurisprudential reasons.

MS LIEW WOON YIN:

13. I am here not as a policy maker, but in my personal capacity. But I would feel that if we do give in for ACM itself, it is more part of a political package itself, and we need to see what we will get in return to be fair to the copyright owners and the users.

MR DANIEL SENG:

14. Actually, I think the most difficult issue now for the policy makers is to decide the limits of ACM legislation.

15. Singapore is considering acceding to WCT [WIPO Copyright Treaty]. It is part of the package to implement ACM. The question is: what can we live with, and what can the rights holders live with? But therein lies the problem. The devil, as they say, is in the details.

MR JIM LIM:

16. Let me venture this comment. We are always reminded that we are a little red dot in the scheme of things, and I notice in our legislative track

record we are catching up. I think in very many areas, actually, in the way Singapore practices governance in different disciplines, we actually are ahead in quite a few of those jurisdictions; but simply because we do not have the financial, economic and political clout, we do not set the pace.

17. At the risk of being shouted down, may I suggest this, in terms of Singapore testing the waters. If we accede to ACM, for example, then I think the trade-off would be that we should then remove copyright protection so long as the ACM devices work. This is food for thought.

18. Copyright protection, basically, is designed to protect the sweat and labour of the author, the originator of the work, in the times prior to the industrial revolution, before an artist or an author was able to reap the benefits of what he had done, or his toil, his time. But in today's age, reaping the rewards is almost instantaneous. The moment you get the right software, or you get the right product, you hit the market and you are an instant rich man; I wouldn't say a millionaire.

19. Using the same argument, or the same line of thinking, so to speak, now, the copyright law serves to police the rights of the copyright owner in the same way these circumventing devices would do so for the proprietors. So I would venture to suggest that maybe we could do a trade-off where we agree to the ACM, but we limit the copyright protection, or we do away with them in a sense, where it can be applied logically and sensibly. This, of course, is my personal view. I take the view that copyright is actually over-extended in many areas.

MR DANIEL SENG:

20. Although, of course, Jim, the direct consequence of that is that if ACM is implemented properly, it will drive a lot of lawyers out of work.

DR STANLEY LAI:

21. God forbid that should happen. But in the context of open source, I just want to make some oblique reference to paragraphs 24 and 25 of my paper where, in the *Reimerdes* case, one of the things which the defendant raised, one of the arguments raised was that he was trying to circumvent the contents scrambling system to create the basis for creating a LINUX based DVD player.

22. I just wanted to point out the fact that raising open source as an argument did not persuade the court. They, nevertheless, held to follow the trafficking provisions.

MS LIEW WOON YIN:

23. This is a personal view. I have got this problem, actually, when I look at access control and copyright protection itself, because the products or things that we actually brought in have both access control and copyright protection. Are we saying that it is all right to circumvent access control, but not copyright protection itself?

24. If we do that, how will we fare in the international scene, and the reputation or image that we will actually get, because when I look at the Japanese legislation it does not control access; it only controls copyright protection, and I wonder how long it can hold on to that position.

MR DANIEL SENG:

25. It is actually not difficult to see why the Americans have both access and rights control, because in the electronic environment the two at least shade into each other. You can't really discriminate one from the other. In fact, data base subscription models are a combination of both access and rights control. But, on the other hand, Japan has the clout to stand on its own.

MS KOH LIN-NET:

26. I just want to throw this thought out, as well: bearing in mind our current economic situation where, I don't know if it is fair to say, we are more rights users than rights owners, and if we are trying to get on to this thing called the knowledge-based economy where we are coming up with more and more of our own inventions, I wonder whether or not eventually we will become more rights owners than users; and, with that perspective, how much will that change our current perspective of the kinds of legislation we should start to have. So I am just throwing that thought out.

MR GOH SEOW HIONG:

27. Maybe I maybe could add something. I spoke at the start of the day about companies in Singapore being sensitive to knowing IPR is their asset. I think that is something we haven't reached yet. MNCs are very aware of it, but many of the smaller companies that I have had a chance to talk to do not see protection of IPR as their first priority. Perhaps, as a result, the climate or the mindset of according more importance to IPR, having more rights, is not there; even if we, as policymakers, want to do it.

28. Another perspective that I will share is that our starting point is not necessarily the WIPO Copyright Treaty. If I remember correctly, when we negotiated the Treaty there we only agreed to making circumvention illegal. I can't remember what the exact words were, but we were very careful not to make it criminal when we drafted the Treaty.

29. But Americans treat it as criminal and when they come to us to negotiate the FTAs, their starting point is what their legislation is. In some sense, as a little country here, we are in a very difficult position to try and fight that position. Even if we think that civil remedies are enough, we would probably still be pressured to do something with criminal remedies.

MR BERNARD TAN:

30. I actually agree with you on the point about some of the smaller players in Singapore not being too aware of their IP rights.

31. But I also think that Singapore, being the way it is, the Government has some part to play in cultivating an environment that appreciates the sort of IPRs that industry players have. One example of how that might work against

growth of a local IT industry is some Government contracting practices and terms where, typically, they require some ownership of the IP that is generated or developed by either a local company or the service provider.

32. So I think, for the benefit of non-lawyers here, if copyright or IP ownership is lost, you can't patent it, you can't really exploit it any more, and we just don't know whether it actually promotes the growth of the IT industry if such IPR is owned by the Government, and we just don't know whether it is being exploited unfairly.

MR DANIEL SENG:

33. On that note, we have to end the discussion on the Anti-circumvention and Its Challenges to the Law of Copyright.

LEGAL AND REGULATORY HURDLES TO E-COMMERCE IN SINGAPORE

Associate Professor Ang Peng Hwa

Biography

Associate Professor Ang Peng Hwa is Vice Dean at the School of Communication & Information ('SCI'). A lawyer by training, he teaches media law and policy in both the undergraduate and graduate programmes of SCI. He spent his sabbatical as a Fulbright Visiting Scholar and fellow at the Harvard Information Infrastructure Project, Kennedy School of Government, in 2000 and as a visiting fellow in 2001 at the Programme in Comparative Media Law, Centre for Socio-Legal Studies, Oxford University. He has published and presented his research on Internet content regulation in many countries. He is currently a member of both the main board and advisory council of the Internet Content Rating Association ('ICRA'), which was officially launched on March 21, 2002.

Abstract

The paper does not cover policy issues in any detail but some areas felt to be key are discussed. First, e-business owners need to be informed and educated about the applicability of offline rules to the online world. Second, government agencies may need to examine their own distinct efforts in the light of promoting IT in Singapore. The paper concludes with a caution that in throwing out the old rules in the name of deregulation, the original rationale for them needs to be understood.

I. Introduction

1. Singapore has among the most advanced physical transportation and telecommunications infrastructure in place for supporting e-commerce. Both the World Competitiveness Report and the Global Competitiveness Report place Singapore on top in their ranking of countries in terms of competitiveness of infrastructure. Singapore's logistics services industry deploys information technology extensively. Many of the logistics players are already world leaders, with operational efficiencies among the highest in the world. Not surprisingly therefore, Singapore's air and seaports have consistently been ranked as the most efficient in the world.¹

2. In an Accenture report, "Rhetoric vs. Reality - Closing the Gap", Singapore was ranked top with Canada and the USA in leading 19 other countries surveyed for e-government. Nevertheless, less than half the work for e-government services had been completed.²

¹ Wong, (2001). *Singapore global EC report: Globalization and E-commerce: growth and impacts in Singapore*. Singapore: Center for Research on Information Technology and Organizations.

² Saliba, (2001, April 4). Report: Worldwide E-Government Still Overcoming Hurdles. *E-Commerce Times*.

3. Yet there is a gnawing sense that things could be better in Singapore. South Korea for instance, has put itself on the Internet map by having 10,500 technology start-ups as of end-November 2001.³ There is no doubt that most of these start-ups will fail. But even in failure, the impact of 10,000 CEOs, CFOs, CTOs (chief executive, finance and technology officers) can only be positive in the long-term for the Korean economy.

4. This paper hopes to answer one part of the gnawing question about improving the environment for the information technology industry in Singapore: are there legal or regulatory hurdles to the e-commerce and information-communication and what are some actions that may be undertaken?

II. Legal and Policy Framework for E-Commerce Regulation

Policy And Legal Issues	Brief Description Of Concerns
A. Access and service provision	<ul style="list-style-type: none"> • How to manage technical standards in a networked environment • How to ensure interconnection and interoperability of computer systems and networks • How to regulate pricing and service quality of information services • Responsibilities and liabilities of access and service providers
B. Issues relating to electronic commerce	<ul style="list-style-type: none"> • Identification, certification and authentication of buyers and sellers, and administration of certification authorities • Legal status of digital signatures and digital certificates • Legal status of electronic payment mechanisms and electronic payments • Applicability of contract law: rights, responsibilities and liabilities of various parties and dispute resolution mechanisms • Fraud and crime, and law enforcement in electronic commerce • Money flow and taxation in electronic commerce

³ Cho, (2001, November 29). *Information Technology (IT) and Services in Asia: the Case of Korea*. 17th World Communications Forum, Awaji Island, Japan.

Policy And Legal Issues	Brief Description Of Concerns
C. Content regulation	<ul style="list-style-type: none"> • How to block objectionable materials on the Internet • How to protect national interests against foreign undesirable materials • How to reconcile conflicting cultural values in information content
D. Security and encryption	<ul style="list-style-type: none"> • How to protect against breaches of security in computer systems and networks • How to prevent crime in the digital environment • Rules on the use of encryption technology
E. Intellectual property rights	<ul style="list-style-type: none"> • How to manage and acquire rights in the digital environment • How to prevent piracy of copyrighted works • How to extend the current copyright regime to include digital works
F. Privacy and data protection	<ul style="list-style-type: none"> • How to protect against intrusion into individual's private information • How to control use of personal information • How to facilitate transborder data flow

Table 1: Legal and Policy Framework for Regulation of Cyberspace

5. Table 1 shows the legal and policy framework for the Internet and e-commerce. This was developed in 1996 with Yeo Tiong Min of the Law Faculty of the National University of Singapore and has proven to be robust. One source of comfort is the Virginia Internet Policy Act. The Act encompasses the entire framework except for one key area - copyright. And the reason is that US federal law applies to copyright and so states have no jurisdiction over that area.

6. The framework has been arranged more or less in order of urgency for policy makers in formulating rules. Singapore has addressed all of the issues in the framework. However, some issues, such as privacy and data protection, may have been less thoroughly dealt with and would need a re-visit. Nevertheless, the point is that Singapore is much more e-ready than many other countries.

7. The comments from many interviewed⁴ are that there are no pressing legal issues that affect all of e-commerce. Several of those interviewed in fact had no comments and no complaints for that reason. Most industry professionals felt there were no legal or regulatory hurdles, but highlighted practical problems, such as a lack of awareness and understanding amongst laymen, and a need to develop standard business practices, such as legal terms and conditions for e-commerce.

8. Others expressed the view that the required changes were more in the area of policy than in law. The distinction between law and policy is a fine line but needs to be drawn in order to narrow the scope of this paper. As an example of policy, Singapore has implemented some rules for minimum standards in the area of Internet access and service provision. This is a policy decision to impose quality standards on a medium that was intended to function as a robust but “unreliable” channel of communication. Although it is clearly a good idea, not all countries have such Quality of Service (‘QoS’) performance indicators because there are clearly some costs associated with QoS.

III. Issues

A. Content

9. Singapore has received wide publicity for its attempt at being the first in the world to develop a comprehensive code for content regulation of the Internet. By and large, the rules have not hindered e-commerce insofar as they parallel offline commerce. That is, businesses that exist offline in Singapore can go online. However, e-businesses such as online porn or online gambling continue to be disallowed.

10. However, content rules that apply from different regimes continue to befuddle users. A good example is advertising. Two merchants who advertised *lin zhi* and condoms respectively were fined by the Ministry of Health for violating the guidelines on the sale of medical products. Condoms were considered as medical devices under the guidelines. In those cases, it was ignorance of the law that cost them. However, they are not alone. Many online companies are not aware of the laws that apply to business and seem to assume that the Internet is somehow free of offline rules.

⁴ Special thanks are due to the following for their comments in interviews:
Kung, Wai Ming, Tax director, PricewaterhouseCoopers Services.
Lim, Gideon, Managing director, Web Synergies Pte Ltd.
Lim, Jui Khiang, Managing director, Adroit Innovations Ltd.
Mak, Andrew, Partner, Tan Kok Quan Partnership.
Tan, Harry, Assistant Professor, Nanyang Business School, NTU.
Tan, Jeremy, Director Research, BowtieAsia.com.
Tan, Joyce, Partner, Joyce A. Tan & Partners.
Tan, Tin Wee, Associate Professor, Director, BioInformatics Centre, NUS.

11. An area of concern is the issue of liability for third-party content. Singapore's section 10 of the Electronic Transaction Act immunises a network service provider from both civil and criminal liability for third party content.⁵ It is at once too broad and too narrow. It is too narrow because it applies only to a network service, which suggests a conduit such as a telecommunications carrier. A bulletin board service provider is not exempted. It is too broad because it exempts from liability both criminal and civil liability. The network service provider can continue to carry the content unless obliged to block or deny access to the material by law.

12. Section 10 has been used as a starting point for the Indian and Bermudan e-commerce law. In both instances, the legislators backed away from adopting the Singapore position wholesale. Instead, they exempted from civil liability a service provider who had no knowledge of the offending material. When the offending material has been brought to the attention of the service provider, it is under obligation to remove the content within a reasonable period, typically within five working days.

13. The position of the Indian and Bermudan laws is closer to those in Germany, France, Sweden and the European Union. Such a position, requiring reasonable action by the ISPs and bulletin board service providers, is intuitively more appealing and arguably more logical.

14. The Singapore position does not provide enough protection for those websites that carry third party content.

B. Intellectual Property Rights Protection

15. The basic challenge in the area of intellectual property is to ensure quick and effective IP protection. While there were no pressing needs for

⁵ Section 10, Electronic Transactions Act 1998 - Liability of Network Service Providers:

10 (1) A network service provider shall not be subject to any civil or criminal liability under any rule of law in respect of third-party material in the form of electronic records to which he merely provides access if such liability is founded on —

- (a) the making, publication, dissemination or distribution of such materials or any statement made in such material; or
- (b) the infringement of any rights subsisting in or in relation to such material.

(2) Nothing in this section shall affect —

- (a) any obligation founded on contract;
- (b) the obligation of a network service provider as such under a licensing or other regulatory regime established under any written law; or
- (c) any obligation imposed under any written law or by a court to remove, block or deny access to any material.

(3) For the purposes of this section —

“provides access”, in relation to third-party material, means the provision of the necessary technical means by which third-party material may be accessed and includes the automatic and temporary storage of the third-party material for the purpose of providing access;

“third-party”, in relation to a network service provider, means a person over whom the provider has no effective control. .

amendments to the law, there were comments that developments in the West should be closely monitored, as they are likely to have an impact on Singapore.

C. Privacy

16. Privacy or data protection was deemed to be the most significant legal issue among lawyers interviewed. The recent National Internet Advisory Committee's code on privacy and data protection is a tentative first step towards greater privacy protection. Surveys done by renowned privacy scholar Alan Westin suggest that privacy concerns may loom large for Asian websites. According to a survey he conducted, Japanese consumers distrust Japanese websites on privacy more than American consumers distrust American sites. No similar comparative survey on Singapore sites has been done by him but he said he suspected that the results would resemble that of Japan.⁶

17. Admittedly there is no hard evidence pointing to the harm to business from a lack of privacy. However, there is anecdotal evidence that when there is a breach, consumers shun businesses that brush aside or violate privacy concerns. There were outcries against RealAudio and Microsoft for their attempts to track their customers surreptitiously. In the case of Real Audio, the company's software, RealJukebox, surreptitiously monitored and collected data about the listening habits and some other activities of its users. The company later apologised for its conduct and stopped collecting the data.⁷

18. In Singapore, the National Internet Advisory Committee ('NIAC') Model Data Protection Code for the Private Sector has only been introduced recently. It should therefore be given time to be tested. However, in all likelihood, the issue of privacy and data protection will need to be re-visited.

IV. Taxation

19. Singapore is one of the more cybertax friendly nations, ranking along with the USA, Netherlands and Bermuda. The issue is therefore to move beyond this and to see if there are areas where these may be stumbling blocks nevertheless. The following are some areas highlighted.

A. Withholding Tax

20. It is common when transferring technology from overseas that the foreign party charges a fee packaged as a form of licence or royalty free of tax. Under Singapore law, the package may attract withholding tax of 30%. In many cases, the Singapore firm bears the tax.

⁶ Westin, *Conversation*. New York (October 2000).

⁷ Robinson, "CD Software Said to Gather Data on Users". *New York Times* (1 November 1999).

B. Taxes on Lower-Priced Shares

21. With the dramatic drop in the price of shares, employees and owners who had bought shares may now have to pay taxes on shares for which there is no earned income. For example, an employee is given the right to buy shares at \$1 at the beginning of the year when they are worth \$2.50. The employee buys the shares. At the end of the year, however, are worth \$0.50. In the illustration, the employee will have to pay taxes on the gain of \$1.50. If the employee had bought shares using a loan (because it looked like a sure-win case then and one is investing in one's company after all) it is possible that the employee would still owe money after selling off the shares. However, it is acknowledged that this is not an issue unique to the Singapore case and will require further study of global accounting standards.

V. Specific Provisions

22. Section 77A(1)(b) of the Banking Act,⁸ which covers stored value cards, needs looking into. Under the section, only banks and the direct service provider may issue cashcards. However, the definition of the "stored value card"⁹ recognises the possibility of the third party in the transaction. The

⁸ Section 77A, Banking Act - Authority to approve issue of stored value cards:

- (1) No person shall issue any stored value card except —
 - (a) a bank which has obtained the approval of the Authority; or
 - (b) a person for payment only of goods or services or both goods and services provided by that person.
- (2) The proceeds arising from every issue by a bank of a stored value card may be subject to such reserve and liquidity requirements as the Authority may by notice in writing determine.
- (2A) The Authority may, for any failure to comply with the reserve and liquidity requirements, impose a penalty interest charge of \$100 per day or such larger amount as the Authority may determine.
- (3) The Authority may determine the terms and conditions under which a stored value card may be issued by a bank and that bank shall comply with such terms and conditions.
- (4) The use of a stored value card to operate a machine provided by the issuer or by some other person under an agreement with the issuer shall be regarded as the production of the stored value card to the issuer.
- (5) The Authority may exempt from subsection (1) for such period and subject to such terms and conditions as the Authority thinks fit any person who has, before 8th October 1993, issued stored value cards.
- (6) Section 14 of the Currency Act (Cap. 69) shall not apply to a stored value card issued by a bank in accordance with this section.
- (7) Any person who contravenes this section shall be guilty of an offence and shall be liable on conviction to a fine not exceeding \$250,000.
- (8) In this section "stored value card" means a card for which a person pays in advance a sum of money to the issuer in exchange for an undertaking by the issuer that on the production of the card to the issuer or a third party (whether or not some other action is also required), the issuer or the third party, as the case may be, will supply goods or services or both goods and services; and, for the purposes of this definition, "card" includes any token, coupon, stamp, form, booklet or other document or thing.

⁹ Section 77A(8) In this section "stored value card" means a card for which a person pays in advance a sum of money to the issuer in exchange for an undertaking by the issuer that on

Section appears to have been crafted to ensure that those who collect the funds through cashcards and other electronic means are also the service providers and do not abscond with the money. But in the e-commerce world, it is possible for more than one intermediary to provide an e-payment service for the merchant without dealing directly with the end-consumer. It is not possible to make a recommendation at this stage and more study may be needed before the law is amended.

VI. Other Policy Issues

A. Education/Enlightenment of E-Business Owners

23. The most frequent answer to the question “What should government do to enhance e-commerce in Singapore?” was: educate website owners about the laws that apply. There were a couple of strands of thought.

24. The first was that there was ignorance about the existence of the law in the first case. Many e-businesses were entering into industry areas unfamiliar to them. As a result, they were unaware of the offline industry rules.

25. Second, there appeared to be the belief that the Internet is a new medium and that only new laws applied. Some online businesses assume that laws pass before 1994 (before the Internet became publicly available in Singapore) were not applicable. After all, the laws had been enacted without anticipating the existence of the Internet.

26. Third, there were apparently some who felt that it was not possible to enforce law on the Internet and that therefore laws were either inapplicable or had limited applicability.

27. These severely mistaken and possibly costly assumptions suggest that education and publicity may be necessary for e-businesses to avoid legal pitfalls.

B. Terms of Use/Acceptable Use Policy

28. An illustration of the possible cost arising from ignorance is the Terms of Use or Acceptable Use Policy statement for a website. An informal survey among ISPs in Asia by the author last year found that there were more sites having privacy than terms of use policies. (ISPs were chosen as a sample for comparability and for size; the survey could have looked at content providers but that would require screening the large sample for comparability and size.) In Singapore, the largest ISP, SingNet, did not have a terms-of-use policy on its site; Pacific Internet has.

29. The absence of the policy is puzzling because the terms of use for a site shield the site-owner. If a problem does arise, a policy can help the ISP

the production of the card to the issuer or a third party (whether or not some other action is also required), the issuer or the third party, as the case may be, will supply goods or services or both goods and services; and, for the purposes of this definition, “card” includes any token, coupon, stamp, form, booklet or other document or thing.

demonstrate to the court and community, that it made some responsible and prudent efforts to prevent the problem.

30. ISPs who do have some formal policy that defines acceptable and unacceptable behaviour online said they did so because they perceive some risks. They hope a policy will:

- reduce the likelihood of injury to some party's interests; or
- head off legal disputes; or
- define legal responsibilities of the parties if something untoward happens.

31. Those ISPs who do not often say they have no such policy because:

- they believe that cyberspace is such a chaotic environment that it is impossible to control risks or define responsibilities; or
- they do not perceive any new risks not already covered by existing policies; or
- they have never given thought to it.

32. Policies vary widely according to individual ISPs' circumstances and country. Some look like contracts, while others are nothing more than a few tips on netiquette. It is very likely that the findings can be replicated for content sites. If so, website owners should be educated on the benefits of having such a policy and be advised to create one.

C. Government Agencies

33. As noted earlier, a number of policy-related matters were raised. A key one was whether government agencies were aligned in their "ultimate mission" to promote Singapore because there appeared to be conflicts resulting from different specific missions. For example, the Economic Development Board aims to attract investments into Singapore. So a local company may get tax breaks and other incentives to hire Singaporeans and invest in Singapore. But IT services may be more efficiently rendered elsewhere. And so the Info-Comm Development Authority has recognised that and is encouraging Singapore companies to invest outside Asia. While each pursues its internal logic, there are contradictions when looked at from the point of view of the local IT companies.

34. It may be that these contradictions or tensions are inevitable. If so, one suggestion made was to have a "Super Agency" as a one-source point of contact and to resolve some of these tensions.

D. Caution

35. Singapore is in the midst of a transition. The formation of the Remaking Singapore committee says as much. In the legal arena, the fashionable word is deregulation. The word suggests the removal of regulations. The lesson from deregulation in the West, however, is that the better word is "liberalisation". The reason is that often, the removal of one rule may require

the imposition of another rule elsewhere. Certainly in telecommunications, of which the author has some familiarity, the removal of rules on pricing may require the introduction of rules on fair competition.

36. The issue here is not that rules are always necessary. Rather, the rationale for the rules needs to be understood before they are done away with.

37. For example, when Singapore websites wanted to organise auctions on their sites, they found that they needed to apply to the Inland Revenue Authority for an auctioneer's licence: only licensed auctioneers may conduct an auction. To remove the impediment to the online auction business, the law was changed to accommodate it. However, it is now well known that the No. 1 area for consumer fraud on the Internet is the online auction. In other words, on 20-20 hindsight, the law licensing auctioneers had a purposeful intent. So the repeal of the law licensing auctioneers may necessitate, for example, a law to toughen the sanctions on those who abuse auctions.

38. In the haste to de-regulate, it would be wise therefore to understand the rationale for the old laws and to be sure the rationale is not discarded in the process of deregulation.

VII. Conclusion

39. All in all therefore, Singapore is in good shape when it comes to the framework to enable e-commerce. As always, there is room for fine-tuning of the law. Content rules and privacy protection are areas to be worked on. The fine-tuning will have to be an on-going process as technology develops.

40. A major area for government agencies to work on is the education of site owners about the applicability of offline laws to the online world. This paper has attempted to show some snippets of the possible cost of ignorance.

41. Another major area would lie in the issue of policies, rather than laws, that impinge on e-commerce. It is beyond the scope of this paper to discuss even a handful of them. These policies, which may range from administrative rules to over-arching themes of government or ministry, are likely to have a bigger impact on the day to day running of e-commerce than hard law.

42. Finally, it was noted that in the haste to change or lift rules, the rationale for the old rules have to be clearly understood lest the proverbial baby be thrown out with the bathwater.

RESPONSE TO: “LEGAL AND REGULATORY HURDLES TO E-COMMERCE IN SINGAPORE”

Lee Mei Poh
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Biographies

Ms Lee Mei Poh was the Chief Legal Counsel and the Senior Director for Policy at the Infocomm Development Authority of Singapore (‘IDA’). She was responsible for overseeing the legal department of IDA, as well as guiding IDA’s ICT policy formulation. Prior to joining IDA, Ms Lee held the positions of the General Counsel for New T&T, a telecommunications operator in Hong Kong, and the Director for Regulatory Affairs at ICO Global Communications, a provider of mobile voice and wireless satellite communications services.

Lawrence Tan is Manager (Strategic Planning) and Consultant (eGovernment Planning and Management Division) with the IDA. In these roles, he is involved in architecting Singapore’s overall ICT strategy as well as the government’s ICT strategy for the public sector.

Prior to his current appointment, Lawrence was Manager (Infocomm Development Policy). In this appointment, Lawrence was involved in policy formulation to facilitate the development and growth of the e-commerce and infocomm industries in Singapore. He also participated in efforts to develop a harmonised e-commerce framework for the region as a member of the e-ASEAN e-commerce legal infrastructure sub-committee.

Lawrence graduated from the National University of Singapore (NUS) in 1997 with a LLB (Hons). He is currently pursuing a MSc in IT from the University of Wales, Aberystwyth.

I. Introduction

1. This paper will attempt to respond to the issues raised by Dr Ang Peng Hwa in his excellent paper entitled “Legal and Regulatory Barriers to E-Commerce in Singapore” (the ‘Paper’).

II. Access and Service Provision

A. *Managing technical standards in a networked environment*

2. IDA regulates Quality of Service (‘QoS’) standards in the telecommunications arena through the relevant terms and conditions of licence of its Facilities-Based Operators (‘FBO’) and Services-Based Operators (‘SBO’) based on availability of network indicators, amongst other things. Where such standards are breached, IDA may impose penalties on operators. As to whether similar QoS standards should be imposed on purely

* Mr Lawrence Tan delivered the paper at the Symposium

content providers, for example, regard would have to be given to the extent to which such content providers have control over the relevant transmission medium through which the content is provided.

3. On the issue of open standards, while IDA encourages the use of open standards and platforms, we are mindful that the imposition of technical standards in an industry where the creation of intellectual property rights ('IPRs') is the major driver behind innovation and research and development could be a negative driver. Therefore in an age where telecommunications, information and broadcasting technologies are converging, and there are increasing calls for interoperability and open standards, proprietary systems will continue to be a fact of life. Regulating to make proprietary systems comply with an open standards system may be a disincentive to innovation and investment in new technologies. We have to find a balance between managing technical standards and not imposing unduly onerous demands on innovative enterprises.

B. Interconnection and Interoperability

4. Where interconnection and interoperability of telecommunications networks are concerned, IDA has put in place a very specific and comprehensive interconnection regulatory framework within the Code of Practice for Competition in the Provision of Telecommunication Services ('Telecom Competition Code')¹, which, amongst other things, requires a Dominant Licensee (as defined in the Telecom Competition Code), to provide access to its network facilities and services to new operators on a cost-based basis. IDA will facilitate the commercial negotiations between negotiating parties in relation to the technical, charging and operational terms of such interconnection, interoperability and access. IDA's policy is that interconnection charges should be cost-oriented, based on forward looking economic, and long run average incremental costing methodologies. The IDA also requires the unbundling of network elements, through the disaggregation of the network into economically and technically feasible elements. The policy rationale here is to enable FBOs to make their own build-buy decisions based on their operational requirements. IDA's position is that whilst the incumbent should not be allowed to derive monopoly rent from the leasing of its network elements, neither should new operators be allowed to "free-ride" on the incumbent's network.

5. Whether similar considerations should apply generally to the interconnection of computer systems and networks, which are used for the purposes of electronic transactions, needs to be examined carefully. It is important to achieve a careful balance between achieving policy goals and not placing undue economic burdens on the industry. As has been observed in the Paper, more regulation is not always the best way to address some policy issues.

¹ See, in particular, Appendix One and Appendix Two

C. Regulation of information services

6. It would be useful to define what “information services” means. The United States’ Federal Communications Commission has defined “information services” as follows:

“[T]he offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilising or making available information via telecommunications and includes electronic publishing, but does not include any use of such capability for the management, control or operation of a telecommunication system or the management of a telecommunication service.”²

7. Providers of such information services could take the form of Internet Access Service Providers (‘IASP’),³ Internet Service Providers (‘ISP’) or Internet Content Providers (‘ICP’)⁴ in the Singapore context. Our current broadcasting and telecommunications licensing regimes already regulate in relation to such service providers, albeit pursuant to different policy considerations. As to whether a separate regulatory framework should be developed so as to regulate matters such as pricing and service quality of such information services are issues which the Singapore Broadcasting Authority (‘SBA’) and the IDA are already turning their collective minds to.

D. Responsibilities and liabilities of access and service providers

8. The responsibilities of access and service providers are set out in their respective FBO or SBO licences, which provide in relation to, *inter alia*, matters relating to interconnection and interoperability. To the extent that a licensee has breached its terms and conditions of licence, there are sanctions and penalties under the Telecommunications Act⁵ that may be imposed by the IDA in relation to such breach.

9. To the extent that liabilities may arise as a result of a commercial arrangement between an operator and other operators and an operator and its customers, it is our view that such matters are outside the purview of the regulator, and should be determined by the courts in accordance with the relevant laws applicable in Singapore. The issues raised in the Paper regarding the liabilities of network service providers under section 10 of the Electronic Transactions Act (Cap 88) (‘ETA’) are being dealt with under the current review of the ETA.

² FCC, Notice of Proposed Rulemaking – Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, Universal Obligations of Broadband Providers (February 2002).

³ These are considered to be Services-Based Operators (‘SBOs’) under the telecommunications licensing framework administered by the IDA

⁴ ISPs and ICPs are regulated by the SBA

⁵ (Cap 323, 2000 Rev Ed).

III. Issues relating to E-Commerce

A. Overall Policy Objectives for E-commerce in Singapore

10. Singapore aims to develop into an international e-commerce hub. In 1998, Singapore launched the Electronic Commerce Master Plan,⁶ which aims to bring e-commerce to mainstream businesses and the public, and to attract international e-commerce activities to Singapore. Businesses are encouraged to use e-commerce strategically. To this end, incentive schemes and other support programmes are used to attract international and local companies to locate their e-commerce activities in Singapore.

11. E-commerce holds great potential and opportunities for businesses. Apart from access to new and bigger markets, e-commerce can help to bring about reduced costs and faster turnaround times by streamlining and integrating processes along the entire business value chain. On the national level, by developing Singapore into an international e-commerce hub, the Electronic Commerce Master Plan will also help to create and sustain an e-commerce services sector. This will comprise business strategists, creative designers, system integrators, network operators and other e-commerce intermediaries. Another important contribution is the additional activity that can be generated for Singapore's port, logistics, financial and telecommunications services, as a result of the multiplier effects that e-commerce has on these key sectors of the economy.

12. Singapore has, and maintains, a conducive and pro-business e-commerce environment to support the implementation and deployment of online services. This environment is the foundation and infrastructure for conducting electronic business on the Internet safely and reliably. The environment consists of the physical network, components and services. It also includes a collection of standards, support and incentives to assist the online business community. Steps are also taken to ensure that the infrastructure is internationally linked in order to support cross-border transactions, and that policies are harmonised with international practice.

13. According to the Asian Development Bank ('ADB'), Singapore is most advanced in ICT in Asia.⁷ Singapore's infocomm infrastructure is arguably the best in Asia. Singapore has been ranked first in Asia and eighth in the world for E-business readiness by the Economist Intelligence Unit.⁸ The World Competitiveness Yearbook 2000 has ranked Singapore as first in Asia and fourth in the world in electronic commerce infrastructure.

⁶ An E-commerce Action Committee ('ECAC'), led by then Minister of State, MCIT, Lim Swee Say and comprising members from various economic agencies, were set up to implement the Master Plan.

⁷ "Toward E-Development in Asia and the Pacific: A Strategic Approach for Information and Communication Technology", ADB Report (June 2001).

⁸ "The Economist Intelligence Unit/Pyramid Research e-readiness rankings." *Economic Intelligence Unit*, (8 May 2001).

14. A recent e-commerce survey commissioned by IDA and conducted by Gartner Consulting⁹ on the Business-to-Business ('B2B') and Business-to-Consumer ('B2C') e-commerce activities in Singapore revealed that e-commerce revenues in Singapore have grown steadily over the first three quarters of 2001. This is a clear indication that businesses have continued to engage innovative business models which leverage Internet technologies, despite weak market sentiments. Likewise, consumer spending in e-commerce remained strong with a growth rate of 13% from Q1 to Q3 of 2001. Singapore companies derived 18% of total revenue from B2B e-commerce in Q3 2001, which is higher than Australia (16%), Hong Kong (16%), Taiwan (14%) and South Korea (11%). Singapore companies derived 16% of total revenue from B2C transactions in Q3, which is higher than Australia (11%), Hong Kong (7%), Taiwan (12%) and South Korea (9%).

B. Legal and Policy Initiatives in relation to E-Commerce

15. The Singapore Government believes that the growth of e-commerce requires transparent, market-favourable regulation and laws to be put in place. Unlike the traditional enterprise environment however, the legal, regulatory and business environments required to support industry development and growth in the digital economy are significantly different. This presents challenges to the government, which must adapt national and international policies to the new digital economy. The Singapore Government also believes that the industry must take the lead in this area while ensuring that our laws, which are designed for an earlier and different era, do not unnecessarily impede the development of new and innovative services. Regulations are necessary to the extent that they do not hamper growth of new or existing markets. New regulations should also be flexible enough to cater for technology changes and new global policy. In other areas, the Government encourages industry self-regulation where industry practices are aligned with international practices.

16. Singapore's national policy on electronic commerce is premised on the following guiding principles:

- The need to conform to international standards and international models in order to plug into the emerging global electronic commerce framework;
- The need to avoid over-regulation;
- The need to be flexible and technologically neutral to adapt quickly to a fluid global environment; and
- The need for transparency and predictability in our laws.

⁹ See IDA press release: "IDA Releases Quarterly E-Commerce Survey Findings to Keep Industry Abreast of Trends and Developments - B2B, B2C transactions value grew over first three quarters of 2001", (6 March 2002).

17. To this end, Singapore has passed enabling legislation but otherwise believes in adopting a "light-touch" regulatory approach towards electronic commerce. Singapore believes that this approach best promotes e-commerce.

C. Identification, certification and authentication of buyers and sellers

18. The ETA provides a legal foundation for electronic signatures, and the authentication of online transactions. Singapore is one of the first countries in the world to enforce a law that addresses the issues that arise in the context of electronic contracts and digital signatures.

19. The ETA has been well received by the industry. However, to ensure its continued relevance in a period of rapid technology changes, IDA is reviewing the legislation together with the AGC to see how the ETA can be further improved. Apart from studying the implications of recent international developments, IDA has sought informal feedback from a variety of sources to achieve a more rounded assessment of the legislation. IDA has been working closely with the Attorney-General's Chambers ('AGC') to develop proposed amendments to the legislation. The review of the ETA will include issues such as exclusions, contract law issues, dealings with electronic agents and liabilities of network service providers and content hosts.

D. Legal status of digital signatures and digital certificates

20. The ETA essentially provides the legal foundation for the recognition of digital signatures. As stated above, Singapore is one of the first countries in the world to enact legislation which addresses the issues that arise in the context of electronic contracts and digital signatures. The Electronic Transactions Regulations (Certification Authorities) : Regulations set the legal framework for the licensing of certification authorities ('CA') and the regulation of CAs which issue digital certificates of authentication of digital signatures. As stated above, the two pieces of legislation are currently undergoing policy and legal review.

E. Legal status of electronic payment mechanisms and electronic payments

21. We agree that the legal status of electronic payment mechanisms and electronic payments are important legal issues which should be given due consideration.

F. Applicability of contract law

22. During the deliberations of a draft proposed Convention at the 39th session of the UNCITRAL Working Group on Electronic Commerce held recently in New York, many delegations, including the International Chamber of Commerce ('ICC') warned against the creation of two legal regimes, one for paper-based contracts, and another for electronic contracts. Indeed, one of the issues that was raised at the above session was the difficulty of distinguishing between automated transactions and those that are

not. The ETA provides legal validation of offers and acceptances of offers which are expressed by means of electronic records, and does not attempt to create another regime for the formation of contracts through electronic means.¹⁰ The traditional principles of contract law still apply. We would welcome input from the legal fraternity in relation to this issue.

G. *Prevention of fraud and crime*

1. Computer Crime

23. To deal with new potential abuses of computer systems, the Computer Misuse (Amendment) Bill 1998 was introduced in Parliament on 1 June 1998. It came into force on 1 August 1998. The increase in the number of computer crimes and the serious implications of these offences "requires broader, tougher and more modern measures," was the rationale behind the amendments made to the Computer Misuse Act (Cap 50A) ('CMA') in 1998, as explained by Home Affairs Minister Wong Kan Seng. Minister Wong stated further that "the legislative framework must keep pace with developments to ensure the integrity of our computer systems against would-be cyber criminals and hackers."

24. The amended CMA takes a more sophisticated approach to provide for enhanced penalties proportionate to the different levels of potential and actual harm caused. It also addresses new potential computer abuses such as denial or interruption of computer services and unauthorised disclosure of access codes. Amongst other things, the CMA defines a class of critical computer systems and provides them with greater protection. The CMA also seeks to enhance security, deter computer criminals with harsh penalties, and broaden powers to investigate such misdeeds.

25. New penalties for tampering with "protected computer" systems include fines of up to 10,000 Singapore dollars (about US\$5,600 at current currency rate of S\$1 to US\$0.56) and 20 years' imprisonment. This would apply to computers used by important institutions: the police, civil defence force, national utilities and telecommunications companies, transportation services, major banks, the military, and various emergency services.

26. The CMA also increases punishment for unauthorised access to or modification of computer material, including computer viruses, unauthorised use or interception of computer services, such as phone cloning, and sabotage of industrial computer systems. The CMA targets new electronic transgressions not addressed in the original law, and cases where individuals with authorised access to a computer system commit disruptive acts. This covers so-called "e-mail bombing", where enormous amounts of e-mail are sent to a victim. It also includes more recent developments that disrupt a network or user's computer, and the illegal use of someone else's password to gain access to a computer or network. The CMA also gives the police additional powers of investigation, including access to encrypted data and the

¹⁰ The UNCITRAL Model Law on Electronic Commerce

right to compel computer administrators to help retrieve required information. The comparative table below describes the amendments made to the CMA in 1998.

1993 - CMA creates 4 new offences:
<ul style="list-style-type: none">• Unauthorised access to computers e.g. "Mere" hacking• Unauthorised modification of contents of computer e.g. Defacing website• Unauthorised use or interception of computer services e.g. Tapping of cable broadcast service• Use of computers to commit offences
1998 - CMA Amended:
<ul style="list-style-type: none">• Unauthorised disclosure of access codes e.g. X sells Y his password• Denial of service attacks e.g. causes degradation in performance of servers• Enhanced penalties for "protected computers" e.g. computers used for public safety, national defence, hospitals, etc.• Police given up-to-date powers of investigation and evidence gathering

Table 2: Amendments made to the Computer Misuse Act

2. Fraud

27. According to a Gartner G2 survey,¹¹ about 5% of online customers in 2001 were victims of credit card fraud, a crime which accounted for more than US\$700 million, and which was 19 times higher than offline fraud. This is a disturbing statistic, although it appears that despite legislative and regulatory efforts, such fraud continues to proliferate. Due to the generally trans-border nature of electronic transactions, it is suggested the successful prevention and prosecution of such activity could be achieved through the harmonisation of international laws, and the cooperation of law enforcement agencies worldwide.

H. Taxation Issues

28. We consider the Internal Revenue Authority of Singapore ('IRAS') to be the proper authority for comment in relation to the taxation issues raised in the Paper, and in particular, the income taxation issues described therein. As observed in the Paper, having reactive laws and more regulations does not

¹¹ "Online fraud loss 19 times offline's", Gartner, Newsbytes (4 March 2002).

appear to be the appropriate response to some of the policy issues given rise to by the advent of, and increase in, electronic commerce. It is suggested that the creation of parallel regulatory regimes, one for online business, and another for offline business, would appear to be more confusing. It is also queried whether having a dual regime for online/technology transactions and offline/non-technology transactions will be effective in developing a thriving and innovative ICT industry in Singapore.

I. Section 77A(1)(b) Banking Act

29. Similarly, the IDA would not consider itself competent to comment on the issue raised in the Paper in relation to section 77A(1)(b) of the Banking Act, as this is an issue which is best addressed by the Monetary Authority of Singapore ('MAS').

IV. Content Regulation

A. The Singapore Broadcasting Authority and Content Regulation

30. The SBA adopts a three-pronged approach "to encourage the healthy development of the Internet". The approach emphasises a light-touch regulatory framework set out in its Class Licence Conditions and Internet Code of Practice, an Industry Content Code of Practice, and the promotion of online safety awareness through public education programmes.¹² Whether the SBA has the relevant powers to enforce its Code of Practice has been queried.¹³ Be that as it may, we believe that a balance has to be found between preserving the cultural, social and political environment and encouraging entrepreneurship in cyberspace.

B. National Internet Advisory Council's Industry Content Code of Conduct

31. The NIAC stated in its 1999-2000 Annual Report that "the moral and social concerns brought about by the emergence of new media cannot be addressed by regulations alone. No single approach, relying on one form or one set of actors, can provide a solution to content concerns in the changing and shifting environment that is the Internet. The industry and the individual can and should play a greater role." In this light, the NIAC recommended the following 3-stage approach towards encouraging greater industry self-regulation in Singapore, which culminated in the formulation of the Industry Code of Practice. This voluntary code aims to protect young people and public morals by recommending guidelines for Internet services and content providers. It is intended to complement the existing laws, codes of practice (including the SBA's Internet Code of Practice) governing Internet content in Singapore. The NIAC hopes that its adoption by the industry will send a strong signal to the public that the Internet industry is prepared to act responsibly and commit itself to protecting users from harmful materials on

¹² See http://www.sba.gov.sg/sba/i_guidelines.jsp.

¹³ See <http://elj.warwick.ac.uk/jilt/01-2/anil.html>.

the Internet. It further seeks to impose obligations on participating industry members as to how to content should be managed (including placing, removal, information on inappropriate objectionable or illegal content), rating and labelling of content on websites using internationally recognised rating systems/technologies, compliance with the Singapore Code of Advertising Practices published by the Advertising Standards Authority of Singapore, respect for the confidentiality of user details, and the handling of public complaints.

32. The IDA agrees with the NIAC position that regulation alone cannot resolve the concerns and issues brought about by new media. Industry must and can act responsibly in the online space, and should not approach it in a cavalier fashion, as if it were a new lawless frontier in which offline laws do not apply, and hence socially irresponsible behaviour is allowed. We believe that an industry with sophisticated vendors and users will help develop a sustainable and thriving sector, rather than one that is too reliant on regulatory intervention or direction from the regulator, who may sometimes have scope only to act reactively rather than pro-actively.

1. Spamming and other privacy issues

33. It appears that spamming continues to be on the increase, despite legislative and other efforts to curtail such behaviour.¹⁴ This is a sensitive but important policy issue that needs to be addressed. Again, a balance between commerce and the privacy rights of citizens must be found.

2. The Internet Policy Act of Virginia

34. The State of Virginia describes itself as "the nation's leader in information technology, the Internet and Internet policy. The Internet Policy Act outlaws spam, prohibits the use of encryption in criminal activities, strengthens privacy protection, allows information sought under the Freedom of Information Act to be posted on the Internet and sent via e-mail, and creates a new Cabinet-level position."¹⁵ Clearly Virginia had specific policy and socio-political reasons for enacting this apparently forward-looking piece of legislation. However, we have to understand these reasons better to determine the applicability of similar provisions in the Singapore context.

V. IPR Protection

35. Singapore has ensured that its intellectual and copyright laws are harmonised with the principles found in global IPR laws. In doing so, it has sought to strike a balance between the protection of rights for copyright owners and increased public access to intellectual property. Hence in September 1998, Singapore acceded to the Berne Convention for the Protection of Literary and Artistic Works. Accordingly, works first published

¹⁴ See <http://www.ecommercetimes.com/perl/story/16874.html>.

¹⁵ See <http://www.govtech.net/publications/govintenetguide/GIG99/HomeSweetHome/homesweet.html>.

in Singapore, as well as works created by citizens and residents of Singapore will be entitled to copyright protection in more than 100 countries which are parties to the Berne Convention.

36. The Copyright Act was amended in 1999 to implement recommendations of Electronic Commerce Committee on IPR issues. The Copyright (Amendment) Bill 1999, which was given Presidential Assent on 24 August 1999, reinforces Singapore’s commitment to ensure that its intellectual property laws concur with underlying principles in the World Intellectual Property Organisation (‘WIPO’) Copyright Treaty 1996 and the WIPO Performances and Phonograms Treaty 1996.

37. The amendments to the Copyright Act aim to inter alia:

- Improve copyright protection and enforcement measures for copyright owners in the digital environment, thus promoting the use of the Internet for business; and
- Promote legal certainty in the usage of the Internet by clarifying the rights and obligations of copyright owners, intermediaries such as network service providers and users such as educational institutions.

The table below sets out the amendments made to the Act in 1999.

Area	Description
Definition of “reproduction” (s 15)	Includes making of a copy which is transient or is incidental to some other use
Liability of Network Service Providers (‘NSPs’) (Part IXA)	NSP does not infringe copyright by copying for the following purposes: <ul style="list-style-type: none"> • Caching • Carrying out direction of a network user “Take-down procedure”
Browsing exception (Part IXA – s 193)	Browsing of copyright materials made available on the Internet does not infringe copyright. Browsing means viewing, listening or utilising materials made available on networks.
Rights Management Information (‘RMI’) (Part XIII)	New civil remedy against a person who removes or alters RMI with intent to mislead or induce or facilitate an infringement of copyright. RMI is information identifying the author of a work and terms and conditions of use of the work.

Table 3: Amendments made to the Copyright Act in 1999.

38. Subject to the outcomes from Singapore’s negotiations in the various Free Trade Agreements with its major trading partners and other international developments in relation to digital rights and electronic commerce, we may

need to review the Copyright Act again to ensure that Singapore's laws are harmonised with international laws, especially those of our trading partners.

39. It has been suggested that Singapore monitors international legislative developments in the area of intellectual property. Interestingly, the DMCA appears to have gained some notoriety from some recent cases being tried in the United States of America.¹⁶ Amongst other things, the DMCA:

- makes it a crime to circumvent anti-piracy measures built into most commercial software;
- outlaws the manufacture, sale, or distribution of code-cracking devices used to illegally copy software;
- permits the cracking of copyright protection devices, however, to conduct encryption research, assess product interoperability, and test computer security systems;
- provides exemptions from anti-circumvention provisions for non-profit libraries, archives, and educational institutions under certain circumstances;
- in general, limits Internet service providers from copyright infringement liability for simply transmitting information over the Internet;
- expects service providers to remove material from users' web sites which material appears to constitute copyright infringement;
- limits liability of non-profit institutions of higher education -- when they serve as online service providers and under certain circumstances -- for copyright infringement by faculty members or graduate students;
- requires that "webcasters" pay licensing fees to record companies;
- requires that the Register of Copyrights, after consultation with relevant parties, submit to Congress recommendations regarding how to promote distance education through digital technologies while "maintaining an appropriate balance between the rights of copyright owners and the needs of users"; and
- states explicitly that it does not affect rights, remedies, limitations, or defences to copyright infringement, including fair use.¹⁷

40. Clearly the DMCA goes beyond what is currently provided for in the Singapore Copyright Act. However, whether Singapore should adopt similar language or provisions involves many policy considerations which will require inter-agency and industry dialogue.

¹⁶ See <http://www.wired.com/news/print/0,1294,50832,00.html> and <http://www.microcontentnews.com/articles/googlechurch.htm>

¹⁷ See <http://www.gseis.ucla.edu/iclp/dmca1.htm>.

VI. Security and Encryption

41. IDA has a national security role to ensure that the national information communications infrastructure is resilient and secure for both government and commercial use. Its security programmes include standard operating procedures for the prompt and effective response to incidents, including emergency planning and implementation of mitigation and recovery strategies, as well as the conduct of necessary audits for the purposes of uncovering security risks and or threats to the ICT infrastructure.

42. It is noted that the Virginia Internet Policy Act prohibits the use of encryption in criminal activity. This may be a policy worth considering in the Singapore context, although further study needs to be taken as to how this could be enforced effectively.

VII. Privacy and Data Protection

43. We agree with the views expressed in the Paper in relation to the importance of data protection in connection with electronic transactions. This view is shared by other jurisdictions including Australia, which in its revised Explanatory Statement of Privacy Amendment (Private Sector) Bill 2000 indicated that "[s]urveys conducted in Australia and other countries such as the US have indicated that consumer confidence in electronic commerce depends largely on the level of protection afforded to their personal information. The Government acknowledges that if this issue is not adequately addressed, it has the potential to hamper the growth of electronic commerce."

44. We agree that a secure transaction environment is the first step to boosting user confidence in e-commerce. To nurture such an environment, a secure and robust infrastructure provides the crucial foundation. To complement this, online merchants have to engage in sound e-business practices such as safeguarding customers' personal data and using the information in a responsible manner. In today's information economy where vast amounts of data are collected and transmitted via the Internet, data protection is becoming a growing concern for both businesses and consumers. To facilitate the growth of e-commerce in Singapore, relevant data protection measures are necessary to safeguard the interests of businesses and consumers. With this objective in mind, NIAC developed a Model Data Protection Code for the Private Sector ("Model Code").

45. Prior to the development of the Model Code, Singapore's data protection regime was fragmented, with data protection variously captured in common law remedies such as breach of confidence, copyright, defamation and negligence, law of contract, public interest immunity, legal professional privilege etc, as well as disparate sectoral statutory provisions. This is still the position adopted in the US.

46. The Model Code is modelled after internationally recognised data protection standards as embodied in the following instruments:

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- OECD Recommendation Concerning and Guidelines Governing the Protection of Privacy and Transborder Flows of Personal Data¹⁸ (1980) (“OECD Guidelines”) .
- The more recent EU Directive on the Protection of Individuals with regard to the processing of Personal Data and on the Free Movement of Such Data¹⁹ (“EU Data Protection Directive”) .
- The Canadian Standards Association’s Model Code for the Protection of Personal Information (1996), which has since (with effect from 1 Jan 2001) been incorporated into law by virtue of the Personal Information Protection and Electronic Documents Act.

47. In formulating the Model Code, NIAC took into consideration the following matters:

- the strategic importance of the EU as Singapore’s third largest export market;
- the potential impact of Article 25 of the EU Data Protection Directive which prohibits EU nations from transferring personal data to third countries which do not guarantee adequate protection of such data;
- the possible interpretation of the EU Data Protection Directive as requiring third countries to restrict onward transfers of data to fourth countries which do not guarantee adequate data protection; and
- the “flow-on effect” (already occurring in Australia, HK and Taiwan) where countries wanting to ensure free flow of personal data from EU enact data protection laws, which include EU-like restrictions against onward transfers to countries without adequate data protection regimes.

48. The Model Code sets out 11 key data protection principles, which must be adopted by organisations in their entirety (save for principle 11). Principle 11 relates to transborder data flow, and ensures that local enterprises are able to engage in business transactions with businesses ordinarily resident in the EU member states which are bound by the EU Directive, so long as these companies adopt the Model Code, including Principle 11.

49. As observed in the Paper, the Model Code needs to be tested through adoption by the industry and practical application of the principles. The NIAC will be exploring whether in the longer term, reliance on voluntary controls in the private sector will be completely effective or whether an appropriate degree of legislative intervention will be required.

¹⁸ OECD Document C(80) 58 (Final) (1 October 1980).

¹⁹ Directive 95/46/EC on the Protection of Individuals with regard to the processing of Personal Data and on the Free Movement of Such Data of the European Parliament and of the Council of 24 October 1995.

50. The National Trust Council ('NTC') has adopted the Model Code and is launching a public consultation exercise to seek comments and feedback from members of the industry and the public. The consultation period started on 7 Feb 2002 and closes on 6 May 2002. A Working Committee which comprises NTC members, industry representatives and individuals, has been set up to review the feedback received and make recommendations for the NTC's consideration. The NTC will make public its decision on the implementation of the Model Code by the third quarter of 2002.

VIII. Alternative Dispute Resolution

51. In 1997, the Singapore Information Technology Dispute Resolution Advisory Committee ('SITDRAC') was established as an advisory committee to the Singapore Mediation Centre ('SMC') and the Singapore International Arbitration Centre ('SIAC') to deal with matters relating to the IT industry. Apart from its role as an advisory committee, SITDRAC also has as one of its objective to monitor, formulate and educate IT users and providers on issues, practices, and other matters relating to IT disputes. The Subordinate Courts of Singapore also provides an electronic ADR service called (e@dr) to aid in the resolution of IT disputes in a non-confrontational manner.

IX. Education Issues

A. E-Businesses

52. The observation in the Paper regarding the general lack of awareness amongst website owners about "offline" laws that apply to them was an issue of concern during the "dot.com" rush when every company rushed to start an online business, without apparent regard to the legal ramifications of doing business online. Now that the "dot.com" hype is over, our e-businesses are mainly brick-and-mortar companies with sound e-business models operating in clear legal and regulatory frameworks. IDA recognises the importance and the need to educate both the businesses as well as the users in relation to the e-commerce environment and its benefits. In this respect, IDA has put in place the following initiatives:

- The www.ec.gov.sg website was created to help provide the public with a comprehensive guide to e-commerce, including the overall e-commerce landscape and environment, the legal, regulatory and policy frameworks, the benefits of e-commerce, industry guide on industry incentives and assistant schemes, etc. A Q&A section to help guide e-business owners was also included.
- Seminars and networking sessions were also organised to help showcase e-business best practices as well as to address issues faced in implementing e-businesses. Examples of seminars are the quarterly e-commerce networking sessions and annual User Forum.
- Newsletters such as "Singapore Wave" are published on a bi-monthly basis and disseminated to both users and companies on topical issues in e-business.

B. *Business and consumer confusion about the applicability of offline laws to online businesses*

53. Singapore is clearly not alone in experiencing consumer confusion regarding the applicability of laws (including off line laws) to on-line business that is highlighted in the Paper. The Better Recommendation Task Force of the United Kingdom highlights the problem as follows:

“People are often unclear about how much existing regulation applies to business conducted over the Internet. They are also not sure if there are any additional regulations specifically covering e-commerce. These concerns are heightened when businesses are trading across national boundaries - a key element of exploiting e-commerce opportunities. All businesses need to feel confident that they are aware of and understand the regulations that apply to e-commerce. Otherwise, UK companies might put off developing their Internet business, leaving the UK lagging behind in the world of e-commerce, or they might decide that trading over the Internet is too risky altogether.”²⁰

54. Accordingly, in the Task Force’s very first recommendations addressed to Patricia Hewitt of UK government’s Department of Trade and Industry (‘DTI’), UK’s first e-government e-Minister proposed that the government simplify access to information about the regulatory framework:

“Government should simplify its routes of access to guidance about the domestic and international regulatory framework for e-commerce and ensure that businesses are aware of points of access.

DTI should integrate the various initiatives and points of access to regulatory advice.

DTI should provide a single portal to clear, simplified, well-structured guidance, suitable for use by professional advisers and for direct access by businesses. This portal should capture regulatory requirements of cross border trading, particularly VAT and tax issues.”²¹

55. Consistent with the recommendations in the United Kingdom, IDA has put in place various initiatives, including creation of the www.ec.gov.sg website, to help provide the public with a comprehensive guide to e-commerce.

X. *Terms of Use/Acceptable Use Policy*

56. The authors agree with the findings of the Paper that it is probably out of ignorance that there are less acceptable use policies being published than privacy policies. This is an issue of good business practice which many companies may not fully appreciate. This is clearly an issue of education that

²⁰ See <http://www.cabinet-office.gov.uk/regulation/taskforce/ecommerce/04.htm>.

²¹ See <http://www.cabinet-office.gov.uk/regulation/taskforce/2000/PrinciplesLeaflet.pdf>

could be taken up by the legal profession generally, possibly on a *pro bono* basis, as an industry with sophisticated demand and supply conditions in Singapore will only bode well for the future of the ICT industry

57. On the IDA's part, some initiatives have been launched to educate and add incentive for online merchants to adopt good online business practices. In March 2001, the NTC implemented a nationwide trust mark initiative, known as the TrustSg Programme, to recognise online merchants with sound e-commerce practices. Existing and potential trust mark providers such as trade associations, chambers of commerce and businesses are encouraged to accredit themselves under the TrustSg Programme. If their Code of Practice meets the standards set by NTC, online merchants will be appointed as Authorised Code Owners ('ACO') and be given the authority to award the TrustSg seal to the worthy online merchants within their industry. To obtain the TrustSg seal, online merchants have to comply with the Code of Practice set by their respective ACOs. There are presently two ACOs for the B2C category; namely, the Consumers Association of Singapore ('CASE') and CommerceTrust Ltd. The TrustSg programme is an important initiative which will contribute towards the development of Singapore as a trusted e-commerce hub. The benefits are two-fold. Accredited online merchants will be recognised as trusted and secure players by end-users both locally and globally. Consumers in return, will feel assured to transact with a TrustSg accredited merchant, thus gaining the sense of confidence in online transactions.

58. The NIAC actually suggests in its 2001 Report that its Industry Content Code may be incorporated by ISPs and ICPs into existing user contracts (for e.g. acceptable use policies) with their subscribers. According to the NIAC:

"SITF has agreed to incorporate the Code into the proposed SITF trust mark Code of Practices, and is planning to submit it to NTC as part of its plans to apply to be an Authorised Code Owner (ACO) of the NTC's TrustSg programme... In particular, NIAC feels that it is important for the three main ISPs in Singapore to play their part in contributing to the industry self-regulation movement by adopting the Code into their Acceptable Use Policies. NIAC also emphasises the need for government agencies to lend strong support to the movement by providing financial and other incentives to encourage more industry players to adopt the Code."²²

59. We believe the approach suggested by the NIAC to be a sound one. We encourage the legal fraternity to counsel their clients from the online world to embrace good business practices, including adopting the Industry Content Code developed by the NIAC.

²² See http://www.sba.gov.sg/sba/Report_NIAC_2000_2001.pdf.

XI. Government Agencies

A. Is a “Super-Agency” required?

60. Whether or not there should be a “Super-Agency” which operates as a “one-stop shop” for all industry incentives appears to be an issue for the Cabinet or the Economic Review Committee to answer, and it would not be appropriate for IDA to respond to that question.

B. IDA’s International E-Commerce Initiatives

61. However, there appears to be a misconception that IDA “is encouraging Singapore companies to invest outside Asia” because “IT services may be more efficiently rendered elsewhere”. IDA, through its Local Enterprise Internationalisation Group (‘LEIG’), aims to build a sustainable and vibrant info-communications sector through strong international links by developing international operations, attracting key multinational Asian info-communication companies to Singapore and facilitating partnerships with local industry players. IDA also assists in developing market access through assisting promising info-communication local enterprises (‘iLEs’) to gain the inside track in the regionalisation or globalisation of their businesses and operations, and to foster strategic partnerships and alliances overseas with key overseas entrepreneurs, companies, info-communication associations and research institutes.

62. The global nature of electronic commerce has made it necessary for Singapore to ensure that its laws and regulations are developed to be consistent with the principles underlying international policies. We participate regularly in regional and international forums to ensure that the evolution of its regulatory and legislative framework is in concert with international practice. Singapore also plays an active role in several of the ongoing e-commerce projects and has forged bilateral agreements with several countries in relation to collaboration on e-commerce.

63. Regional e-commerce projects in which Singapore actively participates in include the following:

64. E-Commerce Multi-Media Resource Network. Singapore, Canada and Thailand had proposed the development of the E-Commerce Multi-Media Resource Network. This initiative was subsequently endorsed in the Asia Pacific Economic Cooperation (‘APEC’) Blueprint for Electronic Commerce. In addition to promoting the training and education aspects of electronic commerce, this project aims to collect, disseminate and share information on electronic commerce in the APEC.

65. Paperless trading initiatives. Singapore is working with the APEC economies towards “paperless trading”. “Paperless trading” seeks to eliminate the requirement for paper documents (both regulatory and institutional) for the key messages relevant to international sea and air transport and trade. Singapore is equipped with a well-established EDI platform, TradeNet, which enables customs declarations to be submitted electronically. Singapore is using its experience in TradeNet to actively

contribute to APEC's goals towards regional paperless trading by the year 2005 for developed member economies and by 2010 for developing ones.

66. Secured e-commerce study project. Singapore is spearheading a smart card project at the APEC Telecommunications Working Group which has received funding from the APEC Central budget for 2001. This project deals with the investigation of the systems and security aspects of a cross-country secure e-commerce system. The study is to address the design and architectural aspects of cross-country public key infrastructure for digital certificate generation. The project aims to refine the cross-certification model and systems and deliver a well-structured cross-country public key infrastructure system for supporting borderless e-commerce. Another research aspect of secure e-commerce is to study the feasibility of adopting smart card for supporting e-commerce transactions. This project also aims to study schemes that optimise the memory and computation needs of security operations, and delivers a smart card design that is capable of handling the security and resource demand of e-commerce systems.

XII. "Deregulation" and "Liberalisation"

67. The comments in the Paper that "deregulation" is a misnomer is probably true, as it is almost always the case that the deregulation of a market usually entails the termination of monopoly rights, which intrinsically requires subsequent competition rules which regulate the market conduct of the ex-monopolist. To speak of the "liberalisation" of a market is perhaps a more accurate term.

68. In Singapore, observations of the industry after the accelerated liberalisation of the telecommunications market reflects the characterisation of the problem stated above. The incumbents in this marketplace have behaved like those in any other jurisdiction with the introduction of more operators into the market.

69. To this end, the introduction by the IDA of the Code of Practice for Competition in the Provision of Telecom Services ('Telecom Competition Code'), together with the requirement for the incumbent operator to provide access to certain essential facilities through a Reference Interconnection Offer, was a necessary and proactive step. A review is currently taking place as to the efficacy of these pro-active measures after some 18 months of full liberalisation of the market. To this end, the relevant legislation and the Telecom Competition Code are currently being reviewed.

XIII. Conclusion

70. Singapore aims to be a premier global infocomm hub and among the top two Infocomm hubs in Asia-Pacific by 2005. To the extent that current legislation and regulatory frameworks relating to electronic commerce and content regulation represent inherent and real legal and regulatory barriers to e-commerce or the development of a sustainable and thriving infocomm sector, IDA would welcome ongoing and constructive dialogue with the legal fraternity as well as industry players to ensure that such legislation and

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regulatory frameworks continue to be relevant, and conducive to a thriving e-commerce sector.

SYMPOSIUM PROCEEDINGS – THIRD SESSION

MR DANIEL SENG:

1. I would like now to open the discussion to the floor. Would anybody care to start us off?

MR JOHNNY MOO:

2. There is one item that Peng Hwa was talking about, that is section 10 of the ETA, on the narrow or too broad categories.

3. I am glad to hear that something is being done there because I think, even in our industry content code of practice, we are already trying to get this industry self-regulated, and that the code actually calls for and assumes that if you have objectionable or inappropriate or illegal content, and if there are complaints, that within so many days you should take it out. But I didn't realise that it is not part of that thing; so I am glad to hear that you are doing something about that, because the industry is going ahead with doing that; so that if we are at odds with the regulations that would not be very nice.

DR FRANCIS YEO:

4. When I was reading the paper by Seow Hiong, I noted an issue that was tossed up about whether it makes sense for - well, not really makes sense, but whether having the regulatory and the developmental function in one agency could lead to confusion or some conflict of interest.

5. I was just wondering whether, in light of what we discussed, and the talk about having a "super-agency" and bringing all this in together, would that really help; or would it be better to separate the regulatory part from the promotion, and have all the industry promotions and functions in one agency and all the regulatory functions in another.

MR LIM JUI KHIANG:

6. Just a comment on the idea of the super-agency kind of concept. We started business in 1993, and we are one of the ten leading companies that NCB then was kind of nurturing, and there was an understanding that these companies are known as promising local enterprises, or poor local enterprises, or whatever you want to call it. So there was some focus.

7. I thought it was very interesting because I just needed to go to one agency and shared with them our vision and the sort of things that we wanted to do, and they basically, on the back of a tie-up with folks like EDB, worked out a pioneer scheme for us. So, in a sense, I thought if you followed some of the IT companies where, for example, they have accounts representatives that will then deal with the customers, I think if the super-agency is of that kind of

nature, looking at it from the promotional point of view, I think it has worked before and I don't know why it was removed.

MR GOH SEOW HIONG:

8. When I presented this morning I kind of glossed over this point, given the constraint of time. But I thought, since it was brought up, let me just elaborate a bit more on what I was saying this morning as to what are the problems that I see in having the promoter and the regulator together.

9. The point about conflict of interest, I think, is fundamental. If you think about it, these two roles are not necessarily in agreement all the time; and if you are in the promoter role and the regulator role and make a decision over any particular issue, somewhere, someone, the person who has made the decision, has this conflict that he has to manage. That one, you can't run away from.

10. But if you look one step deeper, when you have a promoter, save when it was NCB, and you add the regulator, what is the problem you have there? The promoter, in the past, could go all out and fight for the interests of the private sector. It could go and lobby the other government agencies in order to have better access or better privileges, better grounds. You can safely say that he truly had your interests at heart. But once you add the regulator role in, can the promoter continue to assert himself as having industry interests at heart? I think, in all fairness, you can't say the same with a straight face.

11. If you do the reverse - if you have the regulator and now you add the promoter to it - if you have a very strict regulator he will appear somewhat distant but fair. But once you add the promoter role to it you have him being seen as a little bit *laissez faire*, a little bit unwilling to enforce or take actions against people they are supposed to regulate. [This is] not necessarily true, but [there is] just the impression of it, because you combine the two into one agency. The person from the outside sees that agency as one agency. He doesn't see it as two persons within the agency doing two different jobs. So you have got that problem.

12. The promoter may want to go out and help the industry; but if this same guy has to enforce the rules on this same industry, he can't go around changing the rules and making new rules, otherwise he creates uncertainty in the market.

13. So I think, fundamentally, when you try and bring these two together, if one clearly has a priority over the other, it will work. But if, on day one, you assume that they have equal footing, I think that may not be possible.

DR ANG PENG HWA:

14. I thought the one thing that really struck me about what Seow Hiong wrote was the fact that having combined roles means that the authority actually keeps information away from the private sector. That was a direct thing appearing in your paper, if I remember rightly. You actually say that directors are not given the full information because they may have a competitive advantage. That is irrational and that, to me, with all due respect,

is not sustainable. So I think that reason alone is enough to make authorities think that they have to divide the two functions: regulation and promotion.

15. As for the super co-ordinating agency, what I intended was that it just co-ordinate. I am sure that they can agree it would make sense, at this stage, anyway, to have a super regulatory agency.

MR LAWRENCE TAN:

16. On the question of the division between the promotion and regulatory function in the government agency - and I am very much speaking personally here - this whole idea of Chinese walls, I think the reality of life is that there could, between one entity, potentially be a situation of a conflict of interest, and it is really about putting in place the necessary procedural systems to ensure that this is minimised.

17. So I do not think that, intrinsically, it is not possible to have the promotional and regulatory function in a single agency. There could potentially be, in fact, benefits in having the two together, in that, because a promotional body has this regular contact in the same organisations, it is that much easier to influence the rules, the regulations, to create a more pro-business environment.

18. Secondly, on the question of the super-agency: one possible way of looking at it is really not so much a super-agency that combines all the regulatory and all the promotional responsibilities, but one idea that I think has been tossed up is to have all the promotional functions across the various government agencies come together, because now we have a number of different authorities that are engaged in the business of promoting their industry. I think this may have been the source of confusion, and this is the feedback we have been getting. So from that perspective, speaking personally, I find the idea quite intriguing, really. Thank you.

DR ANG PENG HWA:

19. Just to clarify, Lawrence. I think the thing about the Chinese wall, I guess, it is effective up to a point. I think what I have read, or at least I remember reading, was that some information is deliberately kept from some members of the board because they are from the private sector. So the result is that, to me, in my mind, you don't get the best decision, and the thought remains in my mind I cannot see how it can be the best, being a thought leader, if you don't have the best decision. So my take is that if you want the best decision, somehow this irrational aspect of the operation, this irrational part of the decision-making has to be removed or ameliorated.

MR GOH SEOW HIONG:

20. I just want to clarify that point. Most promotional government agencies have private sector representatives on their boards because they help to guide the promotional activities. Most regulatory bodies don't. You can see that from the then TAS and the current MAS. Most of the board members are not industry members.

21. So when we purely had a regulator or a promoter, that conflict did not exist. The problem we had with IDA was that it was both a promoter and a regulator, and what happened was that the board played the promoter role, the ministry played the regulator role, as in consulting for directions, and so on. It worked to a certain extent but, conceptually, even though the Act actually places the responsibility of IDA on the board, it is odd that the policy decisions are not always taken by the board. I just want to clarify that point.

MR DANIEL SENG:

22. I think we have a representative from IRS here. The issue was raised, just now, about withholding taxes and the taxation of share options and the exercise thereof. I wonder whether you are in a position to offer us your personal opinion on the matter.

MR LEUNG YEW KWONG:

23. Yes, again, my personal opinion. Let me first say, on the withholding tax aspect, this morning, I was speaking to Jui Khiang and he did raise that point, and I was looking at the paper that Professor Ang was bringing up. Maybe I can give you a bit of background.

24. Withholding tax is actually a tax collection mechanism. Traditionally, we have viewed the source of income in the use of technology to be where that technology is used, and that has been embodied in section 12(7) of the Income Tax Act. Therefore the royalty income derived from the use of technology in Singapore is sourced and taxable in Singapore. Of course, we understand from the industry people that because of the bargaining power of the people who export the technology and the people who use the technology, very often, the people in Singapore who import the technology end up paying the tax because, as far as the technology exporter is concerned - it will be, maybe, the US - they are only interested in the net price. So in the end you end up paying for that.

25. I think this issue was maybe brought up to the Economic Review Committee - and ultimately, it boils down to dollars and cents. Are we willing to give up this amount? Actually, on a case to case basis, on a reciprocal basis, I think it has been done where we have double tax treaties in various countries. Where they have given up levying tax on royalties for our technology exporters, we have given that reciprocal treatment, because do we then want to say, okay, we lift taxation on all this altogether so there is no withholding tax. Basically, it is a policy decision that I think has probably been deliberated on before the Economic Review Committee.

26. The next point is stock options. Of course, this issue is heightened because of the value of shares coming down. If it was the other way, probably there is no issue. I don't think anyone would volunteer to be taxed at a higher figure.

27. So basically, on the stock options, it is at the point of valuation. Do you take it at the point of granting it? Do you take it at the point of exercising it? Under the law as it stands, the valuation of the benefit, the income, is at the

point of exercise of options. Of course, the argument may be that when you exercise the option, at that point it is possible for you to sell it and then realise the income.

28. Of course, I do understand, speaking to Jui Khiang earlier in the morning, that sometimes certain people in the company are prevented from disposing of their shares at that point of exercise of the option for various reasons - maybe because of insider trading regulations, or because they possess sensitive information, or because there is a period or moratorium, imposed by the SGX, where they cannot sell. For these various reasons they may not be able to sell, so this argument that maybe we should not value it at the point of exercise - maybe that is an element there.

29. Basically, then, the people proposing an alternative have to come up with another valuation rule, I suppose. Earlier, when I was discussing it with Jui Khiang, he suggested - why not take a period instead of a particular point in time. I suppose nothing is sacrosanct, I think, if you read the newspapers this morning; it is up to the industry people, and I think there are feedback channels, and if they have a proposal and if it is reasonable enough, I think they may consider that. Those are my comments.

MR JOHNNY MOO:

30. Mr Leung, thank you. On the withholding tax issue, withholding tax has been around since even before I came back in the 1960s. I think it is something that in the past we wanted to tax people that used technology, or whatever the thing is, as part of the import. But today, when we are talking about a knowledge-based economy, and so forth, by imposing this withholding tax on technology, for example, it seems to me to go against the grain of what the general trend is, if we are in fact going into the knowledge-based economy.

31. I would sincerely hope that the government would look into this from the perspective of our priorities, given the fact that Singapore's competitive advantage - that is, whatever we had - is shrinking, you know. There has been withholding tax on the form of technology use. Coming in the form of magnetic tape, every time you use it, you are charged a licence fee. Then, of course, with PCs, now, as long as it is shrink wrapped it comes in as a product: no tax. So I urge the government to take a look at that.

MR LEUNG YEW KWONG:

32. If you look at the IRAS website, I think the tax treatment of many of these technology products has been liberalised, and from time to time I think we do announce that. This whole issue actually, I suppose, has been discussed by people who are in the industry, and if you brought up many of these issues to the working group I am sure that they will be looking at this with great seriousness.

MR DANIEL SENG:

33. Thank you, Mr Leung. I think the point about the changing nature of Singapore's economy is quite consistent with the point brought up by Ms

Koh Lin-Net, about whether or not we need to re-look at our laws once we change the way the economy behaves from a consumer of knowledge to a producer of knowledge. So I think, along similar lines, we have to look into possible upgrading or patching of our laws, as the case may be, when the circumstances arise. Thank you everyone.

PANELIST CASE STUDIES MODERATED OPEN FORUM

MR JOHNNY MOO:

1. We have heard very excellent papers today on perspectives on contractual law and e-commerce, and we have heard about copyright, and we have also heard about obstacles to e-commerce. So when this was put together we thought it might be useful to have a panel session to talk about the business aspects of e-commerce, which may include some legal issues that they might want to bring out, but this will be from more of a business perspective of the Internet service place.

[The panelists gave their industry presentations at this point]

2. Now, I would like to answer one question. Earlier on, somebody over there suggested that, perhaps the industry does not need to have a change of laws or any governance on this e-commerce base. Well, that is not true. I am speaking again on my own behalf. I would say this: this industry is still immature. All kinds of people are getting into this because the growth is fantastic, or seemingly fantastic. But when you get into it, and when you are committed, that is when you find that you may not be able to meet payroll, you may not be able to pay your creditors, and so forth. That is part of business. So your priority is to get out there and get business. You are not so worried about the laws governing cyberspace that you are in. But, believe me, five or ten years from now when this thing has matured, if we start thinking about the laws then, it may be a bit late.

3. I think there is a place for an ongoing parallel discussion that can foresee what that space might be out there, five or ten years down the road, and prepare ourselves for that so that the successful businesses, the e-commerce business that can be successful five or ten years from now, will have a regulated - not a regulated, but will have a less chaotic environment.

4. Today, there are no rules as such, quite honestly; and the only reason I would say is that this is not a high priority for the players today because they have got other things that are more important: getting business. If the business is not there, they don't have a company.

5. With that, I conclude this session and open it to the floor. Thank you.

MR TONY CHEW:

6. Can I put one question to Ms Poh? I think it has been recognised that you have an immaculate pedigree of shareholders, as well as a veritable client base. Despite that, SESAMi is still looking for a profitable business model. It is perhaps one of the few e-commerce hubs that is still fighting for a chance to succeed. Let's put it this way.

7. Now, why is it that difficult - given all the factors supposedly in your favour as against smaller players, and so on, who do not have the financial backing that you do have?

8. The second question that intrigues me is that, looking at your slide, there was one circle that denoted authentication and security. There was no reference to PKI. It was mentioned earlier that there was a view that PKI is necessary for e-commerce, and yet, clearly, it does not feature in SESAMi's model.

MS POH MUI HOON:

9. Let me answer the second question first. As I said just now in my presentation, a lot of my clients are actually people who know each other. They are business-to-business. We are not in the B2C environment. Therefore, the relationships are trusted. For example, we run the system for SIA. SIA obviously know all their suppliers and, basically, they outsource the entire platform to us. But the suppliers are known entities to them, and to the suppliers obviously SIA is a very known entity. Obviously, we have security systems on the platform itself which are sufficient. We do not need to get into PKI ECI, which is very essential in the B2C environment where you do not know who you are transacting with, and you need to validate the identity of the person coming on line. That is my answer to the second question.

10. In answer to your first question, I think we obviously have a very strong advantage in the broad and blue chip clients, and all that. But this whole business is a matter of scale, a matter of being able to ramp up the transactions. I think at this instant SESAMi still needs more scale in order to become profitable. So despite whatever we have right now, we still have to work very hard to get more customers, both in suppliers and in buyers, in order to ramp up to a scale where it makes sense for us.

DR ANG PENG HWA:

11. I have a comment about e-Exchanges, SESAMi's e-Exchange, because the model for e-Exchange has not worked too well. I can't think of a single e-Exchange that has worked. The way to look at it is if the Stock Exchange of New York makes US\$18 million a year, IBM makes US\$8 billion a year, what IBM makes in three days the New York Stock Exchange makes in one year. So the margins, in other words, just aren't there to support e-Exchanges. I cannot think of a single profitable e-Exchange in the world!

MR HARRY TAN:

12. I have got a question directed to Koh Thong Joo. I rather enjoyed his presentation. Regarding the balance that you have with the fulcrum in the middle, you placed the legal concerns on the left side as a "cost". I just wanted to ask you to clarify, in terms of your clients who are making decisions to go on to e-commerce, in what respect is it a cost concern? Are you talking about costs because they don't know the law, or is it expensive legal costs here? Which aspect of legal concerns is it? Because if you focus on fraud, it happens everywhere, not just here.

MR KOH THONG JOO:

13. The legal aspect is more on the ignorance of the law, not so much on the high cost. Of course, we talk about transaction costs - I mean it is a bit high in Singapore, but it is still higher cost compared with the fiscal environment.

14. Then I stress again that the legal is always the second factor. They always look at the business, and then look at the second aspect of the legal; especially when you want to go overseas. When they say "overseas transactions", where they are used to having only local transactions, then the question is what are the things they have to look at, and who can they check with regarding this particular transaction, which are the aspects that they don't know who to ask, and don't know what to ask, because it is a new market.

15. When you talk about e-commerce, it is actually moving from Singapore to international. Anyone in the world can buy things from you. So there are things they don't know will happen to them and I would suggest if, let's say, the statutory board could maybe put on some FAQs or hotline for them, at least, then, there is the one body to ask and check, and save on the cost.

MR HARRY TAN:

16. Can I just make a response to that? Speaking from a business school point of view - and I go on record to be different from the rest of you; this is on record, this is from the business school - I am not excluding liability from business school! If a business decides to go on line and do business, and they are now facing a completely new environment because they are overseas, they are dealing with overseas markets, that exposure is not new because it has been around all the time. Even in pre-Internet days, when businesses do business overseas, the same set of conditions, and the same set of problems arise. I think the problem is that it is a complete culture shock when businesses become global overnight. They don't have the ability to manage an international business.

17. So, on one hand, I think it is okay to ask the regulatory body to help, but it is actually internal, I think, within each organisation as to whether they are able to ramp up their ability to manage an international business, because it is very separate. It is just not about the technical side of it, but it is actually about the business side of it.

MR KOH THONG JOO:

18. I do agree with you. But the thing is that if, let's say, a company is going overseas to a specific country, they have a certain market in mind, which means there is a certain substantial amount of transactions from that particular country. But then when you put your e-business on line, there could be just one transaction from this particular country and another transaction from another country, and it is impossible for you to know the laws of all the various countries.

19. The other thing about costs is that if, let's say, I were to ask the questions, first of all, I must know a good legal friend; and, you see, the legal

profession is very diversified just like IT, so there is a high chance if I ask him, he may not know [the answers to my questions]. He would need to chat with the person who is in charge of international law, etc. Then there are tax issues, etc. So, in the end, for them to ask the question and get a solution is almost impossible; and I think the law firms also don't want to give a commitment if it's a free-of-charge ('FOC') type of question. In the end, nobody wants to give an answer. Then they say, "Okay, I just try", and in the end they say, "If I lose, at least I control my costs."

20. That's like the example about the company that is actually selling motor cars for a couple of hundred dollars, the ones they sell to Indonesia. Actually, they are having a lot of fraud. Then they say "Look at it this way: in this market there is fifty per cent fraud, fifty percent not fraud; so I say I will cover the costs and at least the profit will match my fraud. Instead, for me to check on the legal position, I have got to sue them for \$300, and the legal fees could be a couple of thousand dollars." So in the end a lot of businesses are more entrepreneurial, or try to work a way around the law, try to think of how to resolve these things, rather than waiting for the laws to be implemented.

MR JIM LIM:

21. May I just respond to that? As a practitioner, I have had my share of dealings with SMEs, MNCs, and Mr Koh Thong Joo, I think, is a representative of a typical SME in Singapore. I think it boils down to, basically, the need to understand that legal services and legal knowledge is a commodity.

22. I find it ironic because in e-commerce you sell a service, just as lawyers sell a service. But, unfortunately, in the business computation our local entities and SMEs fail to provide for legal service as a cost. Mr Koh underscored it by saying FOCs. Unfortunately, if you go to a friend or lawyer and you ask him for FOC advice, either that lawyer cannot commit his firm because he is taking a position; or simply he is a friend, but he obviously does not specialise in the area for which you are seeking information and advice. That is the unfortunate thing. So maybe what the Government or the relevant agencies could do is provide some form of funding for these SMEs to acquire legal services, at least at the outset, in the beginning.

23. Mr Koh has actually mentioned an alternative because, as an entrepreneur, he says that they evaluate what the risks are and they run with it. That is what entrepreneurs do, and this, I think, is the hallmark of true entrepreneurs, and entrepreneurs I have encountered from Hong Kong, Taiwan and Mainland China. They run with the risk. They don't use a lack of knowledge of the law as an alibi; but they evaluate it, and they say "I cannot afford it. I have no budget for legal advice. I look at what the returns are. I take the risk." This attitude, unfortunately, is missing from the Singapore entrepreneurs.

24. I don't speak from personal experience, but I thought I should give my perspective. Thank you.

MR P. BALACHANDRAN:

25. I asked, sometime ago, a lawyer friend from the United States, “Why is it, if you have an equal SME, one in Singapore and one in the US, how is it that the chances of the US SME doing better are greater, apart from the market situation where finance is concerned?” One of the reasons is really in the legal market place. The legal market place is a bit different.

26. The kind of assistance that goes towards SMEs in the US, for instance, is quite different. To give an example: law firms can do things on a contingency fee pay basis. A lot of consultants and venture capitalists (‘VCs’), and all that, act together in a group. For instance, if you are in California there is a whole range of services that are available. Unfortunately, that is not available in Singapore.

27. I have heard of some foreign law firms being paid on a contingency fee basis here. But we do not have the same set-up as in the US, and I think that is one of the handicaps here, because over there, if you have a great idea you can take it to an audit firm, an accountancy firm, a law firm, a VC, and you can sell that idea, and they will do it for you on some different arrangement.

28. The other comment I would like to make is really regarding going back to a database of legal support. I think it doesn’t quite exist in Singapore. It is disparate. It is available on various government websites. I think we should have, perhaps, a website which is dedicated to e-commerce, so that SMEs, and the like, can actually log on and gain a lot of information.

29. A lot of our legal service is also on a pay basis. I was surprised to find, when I surfed the net in Hong Kong, in the United States and many other countries, it is available for free, and I think we should perhaps consider making some sort of information available, very targeted, for the e-commerce players.

30. The third point I want to make is, I once compared Singapore and Germany, and it was explained to me that in Germany they have organisations which actually come with bodies that help SMEs, and also major players incidentally.

31. I found this out, actually, from the German Business Centre here. You could actually go to this organisation in Germany and they will fund you, both for the research as well as for all the legal work and everything that goes with it. But the interesting part is they will even undertake the research for the SME. So there is a lot more “behind” support for the SME, without having the SME come up with a lot of up-front money. Thank you.

MR JIM LIM:

32. I think it is important, as a practitioner, that I actually disabuse members here. I beg to disagree with my friend, especially as to this perception of the contingency fee basis by which lawyers charge in the US. I think this has been largely sensationalised by television and media.

33. Now, if you were to do a survey and you asked US practitioners, contingency fee matters of charging for advice only arise in ambulance chasers, accident cases, where there is a sure way of recovering money because there is an injury and you can recover from insurers. The second case where their firms are likely to do this will be for immigration cases where you sue the Government. I have not, in my limited experience in all these years, encountered any single law firm in the US that practices corporate law, or law in this area, where they actually do work on a contingency fee basis. They may do a deferred fee where they take a stake.

34. I think it is important to make this clear, because otherwise our friends from the SMEs will go off with the idea that "Why can't we follow the American model?" There is no such American model where they actually do contingency fees for corporate work. I think that has to be clarified. I think it is important. Thank you very much.

MR LEE KWOK CHEONG:

35. I think when we talk about promotion and regulations, there is a lot of emphasis on making it easier to get into e-commerce, making it easier to sustain e-commerce. Actually, I feel we may be barking up the wrong tree.

36. Whether it is e-commerce or any kind of business ventures, say, four out of five would fail. So let's accept that, and let's not make it artificially easy for people to come in, maybe making it so easy that people would jump in without really thinking through what it takes to be successful. My suggestion is that while we look at the promotion and regulatory aspect, we look at the failures; how to make it easier for people to unwind failures and recycle the resources.

37. Many of my friends who operate in Silicon Valley say one of the things that stopped them from starting things up in Singapore is they think it is very difficult to fail, both from a social standpoint and, apparently, there are lots of legal issues - bankruptcy, you can not do this or not do that. So, yes, let's do all those things that facilitate people to get into e-commerce; but perhaps also look at regulatory issues around company failures. Make it easier for people to fail and then quickly move on, recycle the resources, recycle the learning experience and start another business. That is input from an industry perspective.

MS LAINA RAVEENDRAN GREENE:

38. I have a company that started up in Singapore back in 1996 as an SME doing e-learning, and also an SME just started up in Silicon Valley, since November 2000, so I can give a bit of a dual perspective there.

39. There was a comment made about the difference, and I can say that from my personal experience it has been significant. I have made this comment in the committee, and I have made this comment before: largely, I find, in Singapore, part of it is because of the infrastructure of our success. Our success has been made out of multi-national companies, and our success has largely been also the success of the GLCs. So a lot of our infrastructure that

is in place - regulatory, financial, the whole works, the legal advice, everything - is really structured around that.

40. If you really want to look at it from quite a different perspective than a lot of the other companies that you have just heard from - I consider myself a struggling SME, not quite part of this little clique - one of the perspectives that I would see, in addition to the one that was mentioned, is the role of the regulator versus the promoter that the government plays in this market.

41. On the one hand, I am very enthused about it, because I can see the difference between operating as a business in 1996 and operating the business after the technopreneurship fund and everything started [in 1999]. There are definitely many pluses that I have benefited from. On the other hand, I am also concerned, because of the culture that we have had of big companies and GLCs and MNCs. What tends to happen is that a lot of structures and the funding tends to go to the bigger companies, the more established companies.

42. In the e-learning phase, for example, I just found out that IDA just gave S\$5 million and S\$9 million to two of my competitors, which is going to make it really hard for me to compete with them. So there is an issue here of another situation of a level playing field. A lot of the time people think that companies are just sitting back and asking the government to help. I wouldn't say that I fall into that space. All I am asking for is a level playing field.

43. It is very difficult to compete in Singapore when you have the likes of GLCs, when you have the likes of government, giving funding to some companies, and not the others. It doesn't then become a merit[-based system]. I find it a lot easier for me to survive as a company in the Valley. In the region, I supply services to Thailand, to Geneva, rather than in Singapore itself. That is the first point.

44. The second point is this point I mentioned about the structure. We are here talking about the regulatory framework on e-commerce and, as you heard from a lot of the legal perspective today, there was an input that perhaps a lot of the changes may not be such drastic changes. But as we heard from the industry panel, they mentioned a lot of business-type issues; so the business-type issues, I think, are relevant. For example, I have been planning, as an on-line company, I would love to go e-commerce. But it is very expensive. I cannot go to a bank directly. I cannot go to Visa directly and get a payment gateway because I am not big enough; so I have to end up going through a third party, which I actually did do two or three years ago, and ended up paying 30 per cent commission and, if my profit margin is 30 per cent, there goes all my money.

45. I have thought about putting it up in the US since I do have my US company; but I will have a double taxation issue to deal with. I will have both the IRS there and in Singapore to deal with. Also, there is an issue of payment in different currencies, and where you want to be.

46. As was pointed out by Mr Moo, yes, it is very important to be progressive, and I would like to see, as he mentioned, us reviewing our

policies and regulations to make sure that this market improves and strengthens. But I am also very concerned if we tend to be very heavy-handed - the Indonesians you mentioned, and Hong Kong, and I meet my Valley compatriots, working in an environment where, if you have got a great idea, you get the great funding from the private sector and you go and you run with it. It is a very different market than here, where it is sort of who you know, who you can get.

47. I have dealt with the IDA since 1992 when they were TAS as well. Until today, it is still a mystery to me. I end up having to talk to five different departments about five different things. PSB, by the way, has just started their one-stop solution shop, and they do have a website, so they are moving in the right direction.

48. I would like to see Singapore adopt something like the SBA, the Small Business Administration, and perhaps, under that, Jim's suggestion of financial advice, legal advisers. They do have a scheme called LETAS or Local Enterprise Technical Assistance Scheme in PSB. They pay for financial advisers. Perhaps you could suggest to them to pay for legal advisers too. It might help. These are my quick comments from a surviving SME since 1996.

MR LAWRENCE TAN:

49. Just a few quick points. In response to the suggestion of having a single website that lists various laws: currently, there already is such a website, but before proceeding I should stress that I am speaking in a personal capacity. There is such a website in existence: www.ec.gov.sg. That website sets out in simple terms the basic legal framework for doing e-commerce in Singapore, so that is a resource which SMEs could consider tapping on.

50. Going beyond that, to talk about providing comprehensive analysis and guidance of laws and international laws, personally, I don't think that is something that we wanted to do. I don't think it is healthy. I don't think we can do it, to begin with. As a statutory board, it is not possible. The kind of research and resource that would be required to handle those sort of queries is not something which I think properly should be done by the statutory board and, really, it is for the private sector. It is for the companies. It is part of doing business. So really, business should turn to the legal community for that sort of assistance.

51. Secondly, I think it is unhealthy. I think Jim made the point, and it is a very valid one, that perhaps something that is lacking, compared to our Taiwanese and Hong Kong counterparts, is this "entrepreneurial spirit", I think was the term he used. I am not sure that, really, giving a handout or grant in the form of actually providing comprehensive legal advice is the solution to that problem.

52. On the other hand, I think government is cognisant - that is my personal perception - of this need; that maybe it is not fundamentally about giving grants. It is about collaboration. It is about creating opportunities. For instance, I think last year the IDA rolled out this program called PATHS or

Pilots and Trial Hot Spots, which basically is a call for collaboration. We invite companies along the entire value chain to come together on a specific project. I think that one was the mobile e-commerce payments system, for example. The idea is to create a compelling event for companies to get together and create something which, if not for that event, would not happen naturally. The incentive there is that you get funding if you are successful. But the interesting thing about it is that the grant is not given to a single company, but actually to a consortium of companies. All proposals are by consortia.

53. On the question of going regional, IDA has gone through corporate reorganisation, and in the recent exercise we actually set up a whole group to look at what we called the Local Enterprise Internationalisation Group and, really, the role there is facilitative. Again, I think this reflects this recognition that it is collaborative, it is facilitative, and this is the kind of assistance that industry needs. So this particular group organises marketing trips, for example, to bring a group of companies to foreign markets like India, China, and to really help the industry go abroad, spread its wings. Thank you.

MS POH MUI HOON:

54. This is in response to the comment made by Dr Ang on the e-Exchanges.

55. I think the Stock Exchange example has been around for a long time, and I would say that over the last two years a lot has happened in this whole area of B2B. But my own take, and the way that we are positioning SESAMi is, definitely, we want to be one of the key players in this market, and we are already seeing key marketplaces starting to turn black. A lot of them are starting to actually turn black this year with some momentum.

56. I personally feel that the market will pick up for this area of business, and we are reasonably confident about achieving EBITDA¹ break-even next year. So I don't want to go away from this meeting with everyone thinking that this is a business that doesn't have a business model. Thank you.

MR LIM JUI KHIANG:

57. I would just add a comment on the point about the schemes or the initiatives that IDA is taking, for example, to encourage local organisations to move out of Singapore. Just as an illustration, that is the sort of guidance, where you say, "Hey, you guys, move out, because there are opportunities out there."

58. I was just giving an illustration about the alignment of the multiple agencies, because each is measured slightly differently. The IDA, in this instance, for example, is encouraging organisations like us to, say, move out, because things that you do over here you could actually replicate and monetise some of the IP you have built over time. However, we stand next to another agency who looks at pioneer status, for example.

¹ Earnings Before Income Tax, Depreciation and Amortisation.

59. Now, the measurement criteria over there is how many more assets you are going to put into Singapore, how many more people you are going to hire in Singapore, how many more jobs are you going to create in Singapore.

60. So you see the potential misalignment in the sense of, if you are trying to encourage organisations to go out to the region, for example, then some of the schemes of things, for example, may need to be modified to encourage building up of resources outside of Singapore. But, of course, we would like to make sure that the revenue flowed through Singapore. I am not sure whether that is clear.

MR LAWRENCE TAN:

61. If I may be allowed to briefly respond to that. I think, possibly, two different types of companies are being targeted. When we are talking about bringing companies abroad, we are really talking about local IT companies; whereas in the other kind of matrix, where we are talking about bringing investments into Singapore, we are really talking about foreign MNCs. It is a really different target audience. I don't see the two thrusts, if you will, as being mutually inconsistent. I think they are actually, in a way, reinforcing and supportive and complimentary of each other.

MS JOYCE TAN:

62. Just sitting here, not being from the business community, I couldn't help observing how everyone keeps talking about creating business opportunities, and the thought that just struck me, which I thought I would share, is that because in creating business opportunities you kind of create a transaction for a business, maybe what government can do, based on its experience, successfully in some cases, is perhaps an SDU² for businesses, bringing businesses together based on their resources, because they have a real wealth of information of what everyone is doing, and sometimes it means joining a couple of very synergistic factors together, both locally and abroad.

MS LAINA RAVEENDRAN GREENE:

63. I just wanted to note that the TDB also has that. In fact, they are going to start charging for the service, by the way. PSB does one as well. They call it Business Matching: the SDU concept.

DR FRANCIS YEOH:

64. Just to add on to that information, I think there are also matchmaking type of events. I am not sure how successful they are, but they are matchmaking between Singapore and Japan. In fact, when I was at NSTB there was a fund that was set up, between Israel and Singapore, to fund businesses that sort of make use of assets or competencies from both sides to form a company.

² Social Development Unit of Singapore – a division of the Ministry of Community Development and Sports, set up to provide matchmaking services for single graduates in Singapore.

MS LIN-NET KOH:

65. I would like to come back to Laina's earlier point about having a level playing field.

66. Observing all these discussions about what government can do and cannot do to help companies, I think at the end of the day it is not possible for the government to help every single company in Singapore. Ultimately, you will be helping a proportion; so I don't know how much that will contribute to the not level playing field, because that is also a problem.

67. Thinking back again to the legal infrastructure that we are trying to talk about, I thought there were possibly two approaches: one is to really have a very basic set of rules that make it easy for every single company, regardless of which industry you came from, what size company you are, which stage of growth you are at. But, of course, that means that, as an individual company, you don't benefit inordinately from it as the company next to you, and what you really want is to be competitively advantaged.

68. One possibility is to pick industries. I know this is a difficult area because it begs the question: how do you pick industries? But if you think about it from the Singapore point of view, perhaps, if we want to look at how the legal infrastructure can help create a competitive advantage we might want to start looking at specific sectors, because you either go very, very general or you start talking details; because otherwise I think the impact will not be there. Thank you.

MS LAINA RAVEENDRAN GREENE:

69. Thank you for taking up on that comment. It is definitely impossible to fund all companies. The point that I raised was not that I was asking for that.

70. I was part of the pro-enterprise panel that was chaired by MP Inderjit Singh, and it was a very interesting experience, actually, because there were several local Singapore companies, there were a couple of MNCs, and there were actually foreign enterprises, SMEs, entrepreneurs who had set up in Singapore.

71. It was very obvious in the discussion after a while that it was an eye-opener for the foreign entrepreneur, as well as the MNC, when they realised that they were, in fact, given red carpet treatment and the Singapore companies were not. In fact, the MNC went as far as saying that perhaps the government should take affirmative action for Singapore companies.

72. So the level playing field that I am talking about, and what I mentioned earlier about the 'unlevel' funding, sometimes when funding is given out organisations - like that company that I just mentioned that got S\$5 million is actually a French company that has come into Singapore - I know it is a difficult issue. It is hard to choose industries and it is hard to decide how to promote an industry. But we might be able to take examples from other countries. I will give Australia as an example.

73. The Australian Government has decided that their way of creating business opportunity is to become sort of an active buyer. What they do is, they have provisions in there that small companies actually get affirmative action, to some extent, for certain deals that don't require a big company to do it. In Singapore, again, you find the tender schemes and all that tend to bias towards a big company. We don't have that in place. In the United States, for example, in addition to just entrepreneurship in small companies, they do make provision for, say, minority-owned or women-owned companies, or whatever. So there are steps that could be taken.

74. In Singapore, it could be giving an advantage to a local entrepreneurial company that is Singaporean. I happen to be a Singaporean too; so when I hear the government talking about lack of talent, I see a lot of other talent around me as well. So there are other steps that can be taken for creating business opportunities. The concern is had when choice is made in terms of money, and then it becomes very hard to compete.

MR GOH SEOW HIONG:

75. I picked up the point you said about the government tender system being a bit pro large companies, or even pro-MNCs. I think, to be fair, that isn't an accurate statement. The evaluation process is based on merit, and it just turns out that when you have to make a choice on a tender between a big company and a small company, you, as the buyer, would naturally trust the big company to deliver rather than the small company, everything else being equal. That, in a sense, is a by-product of our system that is merit-based. The Singapore system is merit-based. The person that can best do the job gets the job; not necessarily the big or the smaller gets the job.

76. In a sense, if you wanted to do something like the Australians to make sure that the small companies get a share of it, we actually have to tweak that basic principle, which is you don't necessarily give the job to the best person who can do it, and I think that fundamentally may run against a lot of cultures that we have.

77. Also, building on a point that Lin-Net brought up, and Laina brought up, about the level playing field: actually, this can happen through competition law. With telecommunications we have precisely this problem of one or two very dominant players that can abuse their power in this market, and it is through a competition regime that we make sure that the new players have a chance to fight against them.

78. I am not sure how long it will be before we have a genuine competition law; but that is one thing that doesn't necessarily require the Government to give money to the companies, to all companies, in order to give them a fighting chance; but it balances the field so that everyone has a fair shot at making their way in the market.

MR JOHNNY MOO:

79. I had this discussion not too long ago. I think the Singapore model is very different from the Taiwanese model. With the Taiwanese model, fifteen

or twenty years ago the government designed the “motherboard”, and spent all the money doing that; and then, after that, they gave it to six manufacturers; so ACER, Mitech, all these were the recipients of those. That is Taiwanese law. Their objective was to create local companies in favour of efficiency.

80. In Singapore, the Government has taken the approach that we will be the best infrastructured society in the world. And we have always been. Look at our airport, our sea port, everything. It comes back to this: the Government either has to make up its mind and say “We are going to be the best infrastructured country in the world” - and by ‘the best’, in which case - very sorry, you are a small SME - either you go with somebody else who is really good and you are not going to get a piece of the action, or the Government is going to come back and say “We are going to change our stance and help the SMEs and help the Singapore companies to be the best.” That is a very fundamental change, a very fundamental shift.

81. In the last thirty years Singapore has stuck to its philosophy of making Singapore the best infrastructured nation city in the world, and it has succeeded to a very large extent. Now, as a Singaporean, I am proud of that. But if the Government is saying that, then the Government should come back and say “Hey, we want to help you guys. How do we help you guys?”

82. The same question was asked of me in the Economic Review meeting: how do we get a Singapore brand, world-recognised brand? It is too late now. We could have done it twenty, thirty years ago; but now, it is very difficult. However, the Enron situation has helped us. PWC was for sale, it was supposed to go to HP for US\$70 billion. Yesterday, I had a discussion with somebody, and I think they are valued at US\$6 billion. Now, if we are serious and we buy the company, you know, all of a sudden we are going to be a world player. Six billion dollars is not a lot of money for the Singapore Government, and we can put our people into all this. I am very serious about this. Either you are serious about being a world player, or you are not. You can be the best infrastructured city in the world. I don’t think we have all the resources to do everything. We have to be realistic about this.

MR KOH THONG JOO:

83. By the way, what I am saying is, in terms of the level playing field, I think the Government is doing a good job in the sense that we are speaking, now, on the prior experience of IDA. The government therefore, through IDA, is trying to create more creativity. Last time, when they shifted to PSB, PSB was actually focussing on smaller players and tried to raise the platform of smaller players where, after the big players, you go in and then you have higher ROI. You bring in big players you have higher ROI. So every Ministry is very focussed.

84. But just to mention an item raised just now: I don’t think government can help you do business; otherwise, you aren’t called businessmen because you will be working for people. What I am saying is they do a case about a PSB grant application. I think I raised the point a couple of times. Let’s say

the government is looking at S\$9 million for a grant. Maybe, due to certain constraints, the number of people who qualify for the grant are very limited, and it takes a few months for the grant to be approved. Again, I have one case where the grant is approved, and they say, "I did discuss it with you. You agreed on the project a few months ago, but I can't remember that." So my point is that, from the government point of view, I think it is up to businessmen to be funding, to fund people. They could, let's say, take a small percentage and increase the manpower to do processing, and in the end you will speed up the whole process - and actually, it is much better than giving money. So that is one aspect. I agree with him, that they need to step up [to the challenge].

85. Now, my question is, if everyone takes a step up, how do we expect SMEs to do it. My concept requires us to ask: could we do it collectively? Let's say a few companies always wanted to fund a project, so instead of them funding another company to do research on the same project, could they collectively do that research? And after that, because everyone is doing its own job, in the end the cost will be cheaper if you fund the project and share the results with everyone. This is just my point of view. Thank you.

MR LAWRENCE TAN:

86. I think that some interesting ideas have come up in today's discussion, and I just want to say that, certainly, I will bring these back to IDA. Thanks so much for that.

MR DANIEL SENG:

87. Thanks, Lawrence. If no one has any further pressing questions or issues to raise, I will close what has been a very interesting and stimulating panel discussion.

CLOSING ADDRESS

MR DANIEL SENG:

1. This morning, we heard from Seow Hiong who gave us insight into government policies and the way they are formulated in particular. We were informed about how there have been significant internal reorganisations of various government ministries and departments, particularly in response to changes in the industry. At the same time I think our attention was drawn to the fact that there may be external factors, such as our external relationships with our trading partners, that will have an important influence over the way our laws and our rules are created and formulated. But the interesting point that came out of Seow Hiong's presentation, I think, is the point that was highlighted about the possible tension between the role of the IDA as a regulator as opposed to its role as a promoter of the IT industry.
2. Next, we heard from Andrew and Tiong Min about contract issues in cyberspace, and we have a thoroughly academic and well-researched paper on the issues that arise therein. They covered a lot of ground and I could not do justice to the thoroughness of their research, except perhaps to mention that they have highlighted for us three, in my view, important issues that are worthy of perhaps some elaboration.
3. The first would be the continued significance of the postal acceptance rule, notwithstanding the fact that feedback has been obtained from legal practitioners, and from Khang Chau as well, that if the postal acceptance rule is left flexible as a rule of convenience and of risk allocation to be ascertained between the parties, that is the way and we shouldn't enact legislation to either implement or detract from the rule one way or the other.
4. There may be a need, for instance, I think as was pointed out by Andrew and Tiong Min, to actually see the extreme situations where either the rule applies or the rule doesn't apply in certain types of situations. I think they had in mind, as well, consumer welfare and consumer interests.
5. They also mentioned, in the course of their treatment of the issue, issues pertaining to terms that ought to be implied in cyberspace contracts. Their paper also touched on issues pertaining to electronic signatures and digital signatures, and the relationship between the two of them. Although I think Khang Chau was also quite quick to point out the fact that the difference between the definition of electronic signatures in our Electronic Transactions Act is quite similar to the definition in UNCITRAL's Model Law on Electronic Commerce.
6. Finally, Tiong Min ended off with a very brief discussion, concerning jurisdiction clauses.
7. On the point about anti-circumvention measures and the discussions therein, I think Stanley and Ms Liew both put together two very interesting presentations on ACM - the perspective from the practitioner and the

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perspective from the implementor and the regulator of intellectual property laws.

8. In essence, the scenario that we have here is a case where the technology has developed this new device called an anti-circumvention measure, that will both control the access which people can have to intellectual property works, as well as the use and extent of use which they can make of these same intellectual property works.

9. This right, apparently, is conferred by Article 11 of the WIPO Copyright Treaty. Unfortunately, Article 11 of the WIPO Copyright Treaty is inexact as to its scope, giving rise to a situation where three major jurisdictions in the world, which are three of our major trading partners as well, the United States, the European Union and Australia, have all enacted slightly different forms, or differing forms of ACM legislation.

10. The issue for us is not really whether we should or should not have ACM laws. From what I understand of what Ms Liew did not want to tell us - because I am sure many of these are confidential in nature - it is a case of the scope and extent of our own ACM legislation that we should try to implement; in particular, understanding that we must strike a balance between the rights they must give to rights holders, because this is indeed a legitimate device they can use to control the scope of intellectual property rights, versus the rights that we should accord to the people who use these intellectual property works; namely, people like you and I who go to the library, people like students and researchers who need to have access to these works who will find that their rights are limited in the electronic environment but not so limited in the physical environment.

11. Next, Peng Hwa, this afternoon, drew attention to several key e-commerce issues that he has identified through the course of his discussions with many of the participants here in today's proceedings. In particular, he identified issues pertaining to withholding tax and exercise of share options.

12. We have heard from the representative from IRAS concerning the Government's approach towards this. I walk away from today's proceedings thinking that the Government is prepared to be flexible and is, indeed, considering, via the Economic Review Committee, input or solicitations for input on possible attenuations of this rule.

13. Next, Peng Hwa talked about section 10 of the Electronic Transactions Act. I think Lawrence was also quick to point out that the Government is also in the process of reviewing section 10, with a possibility of introducing a reasonable opportunity to introduce a provision that is similar to sections 193C and D of the Copyright Act.

14. There is reference to the increasing awareness of privacy issues in Singapore, and the need for strength and enforcement, notwithstanding the fact that we now have in place, thanks to the efforts of the Singapore Broadcasting Authority and NIAC, a model code of privacy. The consideration there is whether or not a voluntary code would have enough bite in protecting privacy concerns of individuals as opposed to having some

kind of civil/criminal enforcement powers that are accorded to a regulatory agency.

15. Finally, Peng Hwa reminded us that we shouldn't be thinking about getting rid of laws unnecessarily, because this, of course, gives rise to a situation that we need more laws to fill the lacuna as a result of abolishing those laws in the first place.

16. After that, I think we had a very lively industry panel discussion with contributions from all our distinguished industry panellists, chaired by Johnny, who is also, himself, just as equally distinguished, wherein we brought to the attention of today's participants issues concerning operation of e-commerce businesses.

17. The issues are far ranging and they range from, for instance, business concerns to the necessity for easy availability and access to information about lawyers who practice in e-commerce. I am sure Jim and his Law Society committee are working seriously on that, because it is not the first time I have heard of this particular request.

18. There were also issues raised about possible government funding for legal advice that ought to be rendered for e-commerce start-ups. In fact, legal advice, as Jim pointed out, should be factored in as part of the getting up costs, to starting an e-commerce business.

19. Nonetheless, what we seek to do, I think, is to also ensure that notwithstanding that we are trying to selectively identify key industries for investments, the Government is also conscious of the fact that the award of tenders should be done on the basis of pure meritocracy alone, as was pointed out by Seow Hiong, and also that there should be no overt or covert discrimination between different companies, either between MNCs or between the small-time players.

20. There has been, of course, a very lively exchange of views about whether or not there ought to be an SDU for business, and we are quite happily assured that there are, indeed, two match-makers for e-commerce businesses in Singapore, namely, in the form of PSB and TDB. So maybe we should have more match-makers in this respect.

21. Finally, the chairman from NCS, IDA and Johnny mentioned that perhaps it is time for the Government to re-think its overall strategy as to how it wants to develop e-commerce businesses in Singapore; further than that, how it should re-position Singapore in the international arena. Should it be a case, drawing upon the brick-and-mortar analogy, where Singapore is essentially emphasising the good infrastructure that she has; or whether Singapore should become the new knowledge-based economy model that she appears to be struggling towards, which requires Singapore to totally change her mindset concerning the way she positions itself, away from the infrastructure, into higher value-added goods and services that she can provide in the international arena, and in that respect really deciding how to position Singapore, both in terms of marketing and in terms of her standing in

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the international marketplace. So I think we had a very thorough discussion and airing of all the issues.

22. Of course, there are a few other issues that we have not had time to sufficiently do justice to. We hope to take those issues up and develop them further in subsequent symposia, with the support of the Singapore Academy of Law.

JUDICIAL COMMISSIONER LEE SEIU KIN:

23. Well, it has been a long day. We have gone more than an hour beyond our scheduled time - that too with cutting short our lunch and coffee breaks. But I think I speak on behalf of everyone if I say that we have all had a very interesting session - that's partly why we went way beyond the time.

24. It just remains for me thank on behalf of the Singapore Academy of Law, the writers of the papers and the speakers for very excellent papers and very interesting presentations. And also the authors of the response papers for the very high quality of responses and presentations. I also would like to thank Johnny Moo and the panelists for most stimulating presentations and for provoking a very interesting round of discussion from everyone. Daniel Seng, I would like to thank him very much for doing an excellent job as a moderator as well as for organising this Symposium, together with the members of the TLDG Secretariat, and staff of the SAL. Last but not least, I would like to thank every participant for coming here today and participating in this discussion.

25. We will be compiling all the papers, the responses and the discussions. As soon as they are ready, we will forward a copy to each and every one of you. So once again, without further ado, I know the time is pressing. Thank you very, very much and have a good weekend.

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