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1996 COMPUTER AND TELECOMMUNICATIONS LAW UPDATE NEW DEVELOPMENTS: ASIA PACIFIC

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I. INTRODUCTION

In the telecommunications, computer, broadcasting, and content provider industries, "convergence" connotes the blurring of the traditional lines delineating each industry as one or the other of them develops. New developments in the Asia-Pacific region reflect global trends. These developments highlight difficulties that foreign companies experience in the telecommunication markets as a result of jurisdictional idiosyncracies.

Part one of this paper explores telecommunication developments from an industry perspective, looks at the impact of competition in the industry, and examines the most relevant issues of the industry in Asia and the Pacific. Part two of this paper focuses on the most relevant new developments for the computer industry in the area of copyright. Specifically, this part discusses developments in copyright law for reverse engineering and copyright protection for computer interfaces. Finally, part three discusses rapid developments in relation to privacy. These developments have enormous implications for banking and other industries which operate on a global basis and need to rapidly exchange computerised database information among different countries.

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II. TELECOMMUNICATIONS

A. CHANGES IN THE TELECOMMUNICATIONS INDUSTRY STRUCTURE

The telecommunications industry is changing as the market becomes global, and as the pace of technology accelerates. Traditionally, monopolies provided essential facilities, like telecommunications services. They were generally national utilities. The government owned them and operated them because of the economies of scale and because of the investment in infrastructure required.

Now, however, governments are abolishing and privatising these monopolies in the area of telecommunications at an increasing rate. As a result, governments are becoming regulators rather than providers of telecommunications services. The desire to serve consumers and protect the public from private monopolies, inevitably opens the telecommunications market to competition.[1] This tends to attract foreign investors needed to financially support this industry.

The word "liberalisation" explains the process of opening telecommunications markets to competition, which tends to follow soon after privatisation. The introduction of competition into the telecommunications market generally has two phases. The first phase allows new suppliers in the areas of value-added services. The next phase introduces competition into core areas of local, trunk (long-distance), and international services. However, in practice high capital costs and economies of scale limit the development of competition in local services.[2]

1. *Asian Developments in Telecommunications*

In late 1995, the European Community ("EC") urged member countries of the Association of South-East Asian Nations to speed up liberalisation of telecommunications. For example, the EC requested that these nations support negotiations for overseas investment guarantees.[3] The Director-General of Telecommunications in Hong Kong commented on this push toward liberalisation:

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1. Andrew Adonis, *Survey of International Telecommunications (3): Liberalisation is Bound to Accelerate the Pace - European Progress towards Privatisation of Telecoms*, FIN. TIMES, Oct. 17, 1994, at II. The first nation to open competition of long distance and international services was the United States as a result of a series of Federal Communication Commission decisions in the 1960's. *Telecommunications in Australia*, REPORT 87 (Bureau of Transport and Communications Economics), Feb. 1995, at 140. These decisions broke up the monopoly owned by AT&T, thus enabling new operators, such as MCI and Sprint, to provide long-distance services. *Id.* Britain, in a similar move in 1984, sold off a minority share of British Telecom and opened its long distance market to a competitor, Mercury. *Id.*

2. *Telecommunications in Australia*, REPORT 87 (Bureau of Transport and Communications Economics), Feb. 1995, at 140.

3. Ted Bardacke, *EU Urges Asean Telecoms Liberalisation*, FIN. TIMES, Dec. 12, 1995, at 6.

> [L]iberalisation of markets and market access issues increasingly take on a trade perspective and it is no accident that groups like APEC and the EC are putting telecommunications at the top of their agenda. Nor is it surprising that [the World Trade Organization ("WTO")] as part of the [General Agreement on Tariffs and Trade] has telecommunications as a priority for a multilateral agreement by April 1996.[4]

The deadline for the multilateral agreement reportedly was postponed until February 1997.

a. Singapore

In May of 1996, the Singapore government announced that it plans to open its telecommunications industry to competition in 2000, seven years earlier than expected.[5] Allegedly, the Government made the announcement after pressure from the WTO.[6]

b. Japan

The Japanese government privatised Nippon Telegraph and Telephone ("NTT"), Japan's dominant telecommunications carrier, in 1987, but allowed NTT to retain a monopoly position in the local service market. Analysts expect that privatisation of the local service will not take place this year.[7]

c. Malaysia

In 1990, Malaysia "spearheaded South-East Asia's move towards privatisation" with the partial sale and public listing of Telekom Malaysia.[8] The Malaysian government also liberalised the mobile service.[9] The Malaysian telecommunications industry is now moving from full governmental control to partial governmental control.[10] The share of the market held by the private sector increased from 4.9% in 1989 to 15% in 1993.[11] In February 1996, the Malaysian government decided to limit the number of full-service-telecommunication operators to three (Telekom Malaysia, Cellular Communications, and Binariang) in an at-

4. Alex Arena, Address (Nov. 13, 1995) (speaking as the Director-General of Telecommunications, Office of the Telecommunications Authority, Hong Kong).

5. *SingTel Will Lose Monopoly in 2000*, SYDNEY MORNING HERALD, May 14, 1996, at 26.

6. *Id.*

7. *Hanging on the Line: Telecoms in Japan*, ECONOMIST, Feb. 24, 1996, at 67.

8. *Malaysia's Helter-Skelter Liberalisation Drive*, TELECOMM. DEV. REPORT, (Pyramid Res., Inc., Cambridge, Mass.), 1993, at 8.

9. Carl E. Law, *Asia-Pacific Telecommunications to 2000*, FIN. TIMES MGMT. REP. (Fin. Times Bus. Info., London) 1994, at 112.

10. *Malaysia's Fast-Growing Economy*, available in MAID, June 1995.

11. *Id.*

tempt to rationalise the industry and avoid duplication.[12] However, mobile telephone service will continue to be highly competitive.[13]

d. India

One reason for privatising the industry is the excess demand in the market. For example, India's Telecom Commission projects an investment requirement of $33 billion to meet the demand for an estimated forty-five million main lines by 2002.[14] In 1995, eighteen licenses were awarded to Indian-foreign joint ventures to install cellular services.[15] A parallel bidding round for basic telephone services fell into political controversy in late 1995.[16] A legal challenge to privatisation was rejected in February of 1996.[17] Given that there is only one line per one-hundred people in India, the expectation is that the Indian government needs $60 billion to reach a level of line penetration on par with Brazil and Malaysia—foreign investment is vital.[18]

e. Indonesia

In Indonesia, Permuatel was a state owned monopoly. In 1989, partial deregulation for basic telephony services was introduced in consultation. A partial privatisation offering for Indonesia's state telecommunications company in 1994-1995 resulted in the sale of more than $1 billion worth of ADR stock on the international market.[19]

f. Philippines

The Philippine government has sought private consortia to expand wireline, cellular, and long-distance services.[20] A telecommunication law, Republic Act No. 7925, was enacted on March 1, 1995.[21] The Act encompasses recent liberalisation plans and prioritise for expanding ba-

12. Jennifer Jacobs, *Telecom Field to be Limited to 3*, BUS. TIMES (Malay.), Feb. 27, 1996.

13. *Id.*

14. *Regulatory Hurdles Slow Basic Services Licensing in India*, PYRAMID RES. ASIA (Pyramid Res., Inc., Cambridge, Mass.), 1994, at 2.

15. Mark Nicholson, *Row Over Basic Services Mars Indian Telecoms Licensing*, FIN. TIMES, Dec. 14, 1995, at 8.

16. *Id.* The aim of this process was to bring private investment into basic telephone services. *Id.*

17. Narayanan Madhaven, *Indian Court Paves Way for Telecoms Privatisation*, REUTERS NEWS SERVICE, Feb. 19, 1996.

18. *Id.*

19. *Telecommunications Reports International*, Vol. 5, Nos. 24, 25 Nov., 1994, at 21.

20. M. Bentman, *Private Lines, Infrastructure Finance*, Dec./Jan. 1995, at 48.

21. *Telecom-New Requirements on Operators*, 3 ASIA UPDATE 3 (1995) (on file with Allen Allen & Hemsley).

sic services.[22] The Act deregulates value-added services, such as electronic mail and information databases, and allows more flexible rate setting.[23]

g. Taiwan

In 1996, the Taiwanese government passed legislation ending the government monopoly.[24] There is a proposal that in the future the new China Telecommunications Corporation will be listed on the stock exchange and privatised.[25] The industry sector of value added services will be opened to private domestic and foreign companies.[26]

2. *Pacific Developments in Telecommunications*

a. New Zealand

In New Zealand, until 1987, telecommunications came under the auspices of the New Zealand Post Office. In 1987, a state-owned enterprise called Telecom New Zealand ("Telecom NZ") became responsible for telecommunications. The government deregulated the industry in 1989. In 1990, a private consortium led by Ameritech and Bell Atlantic purchased Telecom NZ.

b. Australia

In the late 1980's, the Australian government controlled and dominated the telecommunications market. The state-owned enterprise consisted of Australian Telecommunications Corporation ("Telecom"), a monopoly controlling domestic services, the Overseas Telecommunications Commission ("OTC"), a monopoly controlling international services, and Aussat, a monopoly controlling satellite communications. In the early 1990's Telecom and OTC merged to form Telstra. Optus Communications, a new carrier licensed in 1992, purchased Aussat.

The Telecommunications Act of 1991 establishes the policy and regulatory regime for the industry. Until July 1997, when full competition will be introduced, there are two carriers: Telstra (the incumbent carrier, still 100% Government-owned) and Optus. There are three mobile phone carriers: Telstra, Optus and Vodafone. The carriers have land access powers and legal immunities conferred by statute. Optus and Vodafone both received a period of grace, until July 1997, in recognition of the sig-

22. *Id.*

23. *Id.*

24. Laura Tyson, *Taiwan Ends Telecommunications Monopoly*, FIN. TIMES, Jan. 17, 1996, at 3.

25. *Id.*

26. Dennis Engbarth, *State Monopoly Ends in Spite of Stiff Opposition*, S. CHINA MORNING POST, Jan. 17, 1996, at 1.

nificant investment they each must make in network infrastructure to compete with Telstra.

The recently elected Coalition government plans to privatise up to a third of Telstra. According to a policy statement released before their election, the Coalition government stated it would not break up Telstra; rather, the government preferred to partially privatise the company.[27] One of the advantages of partial privatisation, according to the Coalition government, is, "Scrutiny of the marketplace . . . will contribute to making a more dynamic company—both domestically and globally."[28] According to the Coalition government, it would help "to reduce phone prices and improve service" allowing Telstra to compete on an international basis with private companies.[29]

The new Government recently began the process of privatisation through the introduction of the *Telstra (Dilution of Public Ownership) Bill* 1996. As of April 1996, negotiations between the government and minor parties concerning passage of the bill are ongoing.

B. The Legal Environment and Competition in Telecommunications

As liberalisation progresses, regulation shifts from the monopolist to the legislature. This shift is a result of the need for competition and the extremely technical nature of the industry. In most instances, the legislature enacts industry specific legislation to regulate the market by controlling access to networks and the interconnection of networks. This regulation prevents the incumbent carrier from exploiting its competitive advantage, i.e., the incumbent carriers investment in infrastructure, by granting to competitors access to the infrastructure. For example, the regulation of the price paid for access is vital to effective competition in the market. If the access fee is too high, the new carrier cannot set a price for services competitively. On the other hand, an extremely low access fee dissuades new development of infrastructure. Physically, the carrier's network still must interconnect with other networks to ensure that networks inter-operate. Similarly, the technical elements associated with interconnection and access require regulation of the physical interconnection between networks and switching.

27. The Liberal and National Parties' Telstra Policy Entitled *Telstra Serving Locally Thinking Globally* (Feb. 1996).

28. *Id.*

29. *Id.*

1. *Pacific*

a. *New Zealand*

The legislature in New Zealand does not directly regulate its telecommunications industry preferring to rely on general competition law principles.[30] This structure of New Zealand industry impacted on the resolution of a dispute that arose between Telecom NZ, the New Zealand incumbent carrier, and Clear Communications, a new carrier to the New Zealand market. This dispute began in 1989 when the industry opened to competition and lasted for five years until the courts resolved the dispute.[31] The parties disagreed on the terms and conditions on which Telecom NZ would grant Clear Communications access to the public-switching-telecommunications network owned by Telecom NZ.[32] This was an expensive and time consuming process. The government losing patience threatened to impose price controls and dispute resolution procedures.[33]

Although the *Clear* case appears to provide an example in support of retention of an industry specific regulator, at least one commentator has argued otherwise:

> The New Zealand regime shows that it is possible to achieve substantial efficiency gains, consumer and user benefits and foster the introduction of new technology within a competition based regime. Moreover, these gains are possible at least in the New Zealand environment, with light handed regulation, without a specialist regulator but relying upon general competition law to resolve interconnection disputes.[34]

b. *Australia*

Australia has an industry-specific regulator, AUSTEL, and industry-specific regulation, the Telecommunications Act 1991. AUSTEL was established in 1989. Some of its functions include licensing carriers, regulating technology and setting technical standards. One of AUSTEL's main functions, however, is the promotion of fair and efficient market

30. Andrew Adonis, *Survey of International Telecommunications (1): It's Time to Cut Through the Hype—Despite the Excitement Over Telecom "Superhighways," Most of the World's Population Does Not Yet Have Access to a Basic Phone Line*, FIN. TIMES, Oct. 17, 1994, at I.

31. Bloomberg, *Way Clear for Local Call Competition*, THE AUSTRALIAN, Sept. 7, 1996, at 25.

32. Clear Communications Ltd. v. Telecom Corp. N.Z. Ltd., [1992] 27 IPR 481. *See generally* Rex J. Ahdar, *Battles in New Zealand's Deregulated Telecommunications Industry*, 23 Australian Bus. L. Rev. 77 (1995) (explaining *Clear Communications v. Telecom*).

33. *NZ Government Loses Patience with Clear & TNZ*, 7 EXCHANGE 25 (July, 7 1995).

34. P. McCabe, *Recent Developments in New Zealand Telecommunications Policy*, 2 COMM. RES. F. 557 (1994) (Bureau of Transport and Communications Economics).

conduct within the industry and implementation of the government's telecommunication policy.[35]

Part 8 of the Telecommunications Act 1991 promotes competition and consumer protection by regulating access and interconnection. This regulation enables carriers to compete with each other on an equal basis. Part 8 protects each carrier from the misuse of market power by regulating access to essential facilities and consumers, and by giving carriers the right to interconnect to networks of other carriers.[36] Eligible service providers also have the right to access the network of a competitor to supply services.[37]

Under the Telecommunications Act of 1991, the Minister has the power to set price caps or price controls. The current charging principals apply between Telestra and other carriers. These caps will terminate when Telestra no longer dominates the market for those particular services.

The Labour government, which was in power until 1996, undertook significant consultation with the industry about the post-1997 regime when full competition will be introduced to ease the transition to full competition.[38] The government anticipated that there would be more players in the market including carriers, service providers, content providers, as well as competition in infrastructure. The Labour Government released its telecommunications policy principles in August of 1995. Following the policy principles, in December of 1995, the Government released exposure drafts of the Telecommunications Bill 1996 and Trade Practices Amendment (Telecommunications) Bill 1996. After 1997, the competition functions of AUSTEL would be transferred to the Australian Competition and Consumer Commission.

However, the new Coalition government abandoned the Telecommunications Bill 1996 and Trade Practices Amendment (Telecommunications) Bill 1996 due to heavy industry criticism although it has endorsed significant elements of both bills, in an industry discussion paper released in May 1996. Prior to election, the Coalition government released two policy statements relevant to telecommunications.[39]

First, the new government indicated that its focus would be on the development of advanced telecommunication infrastructure and lower

35. Telecommunications Act, § 36 (1991) (Austl.).

36. *Id.* § 136(2).

37. *Id.* § 234.

38. *Beyond the Duopoly Australian Telecommunications Policy and Regulation*, ISSUES PAPER, Sept. 1994.

39. The Coalition Government's Policy Statement Concerning On-line Systems Entitled *Australia Online* (Feb. 1996) and the Coalition Government's Policy Statement on Telecommunications entitled *Telstra Serving Locally Thinking Globally* (Feb. 1996).

prices for telecommunication services.[40] The government mentioned lowering the cost of digital connectivity.[41] Second, the Coalition government indicated a commitment to greater competition with no limit on the number of carriers or service providers after July 1, 1997. Members of the government also proposed a statutory right to access and interconnection for all carriers. They argued that a technological neutral regulatory approach to communications is in the best interest of the consumer and the industry.[42]

The Australian Competition and Consumer Commission will administer regulation of competition, while the Australian Broadcasting Authority will administer content regulation. A single body, which incorporates AUSTEL and the Spectrum Management Agency (which currently regulates the spectrum), will administer technical regulation.

Since the election, the Coalition government has been developing its policy in order to release another policy statement in late 1996.[43] The government is currently developing legislation to become effective after 1997. The government released the first part of its package of post-1997 legislation in August 1996. This package deals with amendments to the Radiocommunications Act, and the operation of the industry regulator to be known as the Australian Communications Authority. A second package dealing with carrier licensing, access, and carrier and service provider obligations is expected in September 1996. The government has released a discussion paper and established a Telecommunications Working Forum to examine carrier licensing, access, competition, technical regulation, universal service, and consumer safeguards for future legislation.[44]

In summary, Australia is moving away from legislative regulation to reliance on competition in controlling access and interconnection. The premise underlying this policy is that competition is the best way to ensure lower prices, innovation, efficiency and competition.

2. *Asia*

Similar trends to those in Australia and New Zealand can be seen in Asian countries.

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40. *Id.*

41. *Id.*

42. The Liberal and National Parties, *supra* note 27.

43. Senator Richard Alston Address to the Australian Telecommunications Users Group in Melbourne (Apr. 30, 1996) (speaking as Minister for Communications and the Arts).

44. Richard Alston, Discussion Paper Post 1997 Telecommunication Legislation (May 16, 1996) (unpublished manuscript, on file with The John Marshall Journal of Computer and Information Law).

a. India

The Indian legislature in August of 1995 established an independent regulator, the Telecommunication Regulatory Authority of India ("TRAI"). Under the legislation, the government will not be able to override TRAI's decisions. However, TRAI's decisions will be open to challenge by the Indian courts.[45]

b. Japan

In late 1995, NTT announced the opening of its local network to competitors and suggested establishing an independent regulator to deal with access disputes.[46] The threatened break-up of NTT has resulted in reduced prices for Japanese consumers and competitors who use NTT's network.[47]

c. Philippines

In the Philippines, Republic Act No. 7925 provides that the National Telecommunications Commission can exempt any specific Telecom service from its rate or tariff regulation, if the service has sufficient competition to ensure fair and reasonable tariffs.[48]

d. Hong Kong

In Hong Kong, the Office of the Telecommunications Authority ("OFTA") was established in July 1993 to assist the Telecommunications Authority ("TA").[49] TA is responsible for economic and technical regulation of telecommunication services.[50] TA can determine the terms and conditions of interconnection arrangements between networks.[51] This determination is the essence of an agreement between licensees.[52] OFTA assists TA to meet its requirement to ensure effective competition in the industry and the protection of consumers.[53] Hong Kong, unlike Japan and Australia, opened its local market to competition first, as opposed to its long distance and international markets.[54] Hong Kong opened local service to competition on June 30, 1995, after expiration of

45. *India-Telecom Regulatory Bill Passed*, 3 TELENEWS ASIA 17 (Aug. 24, 1995).

46. Michiyo Nakamoto, *NTT to Open Local Network*, FIN. TIMES, Sept. 29, 1995, at 5.

47. *Telecom*, *supra* note 21.

48. *Telecom*, *supra* note 21.

49. Alex Arena, Address to the Australian Chamber of Commerce (Nov. 9, 1995) (speaking as the Director-General of Telecommunications, OFTA, Hong Kong).

50. *Id.*

51. *Id.*

52. Russel Emery, *Regulation of Telecom in Hong Kong*, INT'L BUS. LAW., July/Aug., 1995, at 311.

53. Arena, *supra* note 49.

54. Arena, *supra* note 49.

the exclusive telephone concession held by the Hong Kong Telephone Company.[55]

In a speech to the Australian Chamber of Commerce in November of 1995 the Director-General of Telecommunications said, "In Hong Kong there is ample evidence of how competition can work to produce greater benefits for consumers."[56] He cited as an example mobile telephony.[57] In Hong Kong, there are four competing cellular operators, with approximately 620,000 customers at the end of September 1995.[58] The service is still growing by an average of 3% to 4% per month.[59] In November 1994, TA decided to introduce a new, technology-neutral regulatory regime for mobile telecommunications. This regulation was to be capable of dealing with new mobile services operating from a variety of technology platforms.[60]

3. *Summary of Trends*

What can be drawn from the Australian and Hong Kong developments and the New Zealand position seems to be a movement to general-competition-law principles, rather than industry-specific regulation. The move to general-competition-law principles may be a sign of a maturing market and of convergence. This development takes the industry from one end of the continuum to the other: state owned monopoly to competitive private ownership.[61]

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55. Arena, *supra* note 49.

56. Arena, *supra* note 49.

57. Arena, *supra* note 49.

58. Arena, *supra* note 49.

59. Arena, *supra* note 49.

60. Arena, *supra* note 49.

61. Arena, *supra* note 4. The Director-General of Telecommunications of Hong Kong summarized this trend during a speech in 1995:

> [T]he telecommunications industry has embarked on a one way journey to what I call "normalisation." That is that soon it will be accepted as conventional wisdom that telecommunications is not a particularly special industry that somehow needs to be shielded from the normal market mechanisms that operated in generality of industries in any open economy anywhere in the world . . . . Dominance must be acknowledged and its potential abuse checked but notions of tilting playing fields have not found favour because of the perverse consequences that are likely to arise . . . . Success resulting from the regulatory tilt in the field can only be illusory as eventually competition on a more level field must be encountered. That is not to say that the TA [the regulator] has no role in the transitional phase of liberalisation but only to say that TA's role should be seen as exactly that—a transitional role . . . . I expect that as competition becomes established and new players gain market positions that TA's role in dispute settlement, interconnection etc[.] should diminish. Regulation will persist for many years to come but TA's role will need to evolve in concert with the industry. It would be odd indeed if in this most dynamic of industries, a static view was to be taken of regulation. Clearly regulation will, and must, change.

Arena, *supra* note 49.

4. *Convergence*

Convergence makes it impractical to pigeonhole industries into neat boxes. For example, in Australia, the regulators of broadcasting, telecommunications, spectrum management, censorship, and competition have overlapping important functions.

In fact, industry-specific regulation may become ineffective with convergence. For example, in 1995 in Japan, an advisory body to the Ministry of Posts and Telecommunications, after reviewing the convergence of telecommunications and broadcasting laws, proposed changes to telecommunications legislation to accommodate developments in multimedia.[62]

The legislature in the United States passed a Telecommunications Act that recognised the effects of convergence.[63] James Cullen of Bell Atlantic Corporation expects this Act will "tear[ ] down the 10 foot-high-walls that have separated the industry."[64] The Act opens to competition markets previously controlled by monopolies. For example, local services provided by "Baby Bells" are now open to competition, as are telephony traffic to cable operators and cable television to telephone companies.

C. Industry Developments

1. *Cellular Telephony*

Worldwide, there has been an explosive growth in cellular telephony. In 1985, there were 203,000 users in the United States. In 1994, there were nearly twenty million. The growth in subscribers between 1993 and 1994 in Malaysia was 69%, in Indonesia 59%, and in Thailand 58%.[65]

For this reason, the cellular phone is "on the threshold of becoming a mass consumer good."[66] Therefore,

> Operators are increasingly focusing on the potential for radio systems to replace 'fixed' networks in the local loop. Such 'fixed cellular' systems are set to provide low cost local networks, dramatically cutting the investment required to provide networks in competition with those of existing fixed-wire operators and offering new prospects for . . . growth in the developing world.[67]

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62. *Japan Mulls Telecom, Broadcasting Law Changes*, Reuter News Service, June 9, 1995.

63. *Telecommunications: Telecom Vote Signals Competitive Free-for-All*, Wall St. J., Feb. 2, 1996, page B-1 (quoting James Cullen vice chairman of Bell Atlantic Corporation).

64. *Id.*

65. Law, *supra* note 9, at 118.

66. Adonis, *supra* note 30.

67. Adonis, *supra* note 30.

Cellular telephony also allows cellular operators to bypass their fixed-wire networks altogether, thus reducing the market power of fixed-wire carriers.

While carriers with fixed networks once had a competitive edge because of their extensive investment in infrastructure, the growth of cellular telephony poses a competitive threat. Compared to fixed-wire-telephony carriers, cellular telephony does not require the same level of investment or infrastructure. Increased competition from cellular competition, means other carriers have concentrated on their core territorial business with the advances in fibre optic technology, broadband networks, and multimedia.

Some commentators are of the opinion that competition from cellular telephony "may drive existing fixed-wire operators to develop superhighway services fast, since the greater bandwidth of fibre optics will provide their main competitive edge."[68]

2. *Alliances with Content Providers*

In order to meet the competitive threat posed by cellular telephony, traditional telephony carriers are protecting their market share by forming strategic alliances with content providers. These carriers are investing in significant infrastructure projects to install new broadband networks and to upgrade existing networks.[69]

3. *Globalisation*

Another major industry development is globalisation. As markets become international and economic activities occur on a global scale, the

68. Adonis, *supra* note 30.

69. In Australia, both carriers, Optus and Telstra, have formed strategic alliances with content providers in television or publishing. Optus has formed a joint venture with Continental Cable Vision, the third largest cable television company in the United States, called Optus Vision for provision of pay television. Kerry Packer's Publishing and Broadcasting Limited is also a shareholder. Telstra has formed a joint venture with the News Corporation Limited called FOXTEL for pay television services. In 1995, Microsoft chose Australia as a test market for their gateway to the Internet. The joint venture between Telstra and Microsoft is known as *On Australia*. However, in a recent announcement the joint venture was dissolved. Also announced was a joint venture between Lend Lease, IBM and Telstra's information technology services called ISSC. Steve Lewis, *Telstra Deal Raises Privatisation Issue*, AUSTL. FIN. REV., Dec. 4, 1995, at 3. In New Zealand, Television New Zealand Limited is a shareholder with 25% interest in Clear Communications Limited, the second carrier. P. McCabe, *Communications Policies in New Zealand*, Ministry of Commerce, *Communications Research Forum*, 1994, at 557. In the United States, MCI, a long distance carrier, and the News Corporation formed a worldwide joint venture in 1995. Subsequently, MCI and the News Corporation announced another joint venture to develop and run on-line services. Beverley Head, *News—MCI Sign $2.7bn on On-line Deal*, AUSTL. FIN. REV., Aug. 11, 1995, at 47.

telecommunications industry becomes increasingly international.[70] The Internet is evidence of this trend toward internationalisation. Strategic alliances have been formed between telecommunications companies to protect market shares in their home country and to take advantage of globalisation. Increasingly, telecommunications carriers are planning to offer regional or global services.

Singapore Telecom ("SingTel"), Singapore's largest company, is looking overseas for opportunities to invest because deregulation is coming to Singapore's telecommunication industry, whereby SingTel will lose its present monopoly.[71] SingTel invested in Belgacom, the Belgian telephone company. SingTel was part of a three-way consortium, the other members of the consortium are Ameritech of the United States and Tele Danmark.[72] However, Mr Lee, SingTel's President and Chief Executive, said "the company wanted to concentrate increasingly on Asia."[73] He considered that the opportunities thus far had been greater in Europe because of the difference in deregulation between Europe and Asia-Pacific.[74]

Deutsche Telekom, France Telecom, and Sprint United States recently launched the world's third global telecommunications alliance to be called Global One.[75] Global One will compete with the other two global alliances: AT&T's Uniworld and BT and MCI's Concert.[76]

In Australia, Telstra is pursuing or examining business activities in India, Indonesia, Vietnam, Kazakhstan, the United Kingdom, and China. The shareholders of Optus, Australia's second carrier, include Bell South and Cable and Wireless. Vodafone, the third mobile carrier in Australia, is owned by a British parent company and has investments in Hong Kong, India, Mexico, Germany, France, Greece, Malta, Sweden, Denmark, and South Africa.[77]

Global carriers, for example, AT&T and BT, are also offering their multinational customers prices for international calls that undercut prices being charged by national carriers.[78]

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70. *Beyond the Duopoly*, *supra* note 38, at 20.

71. *Singapore Telecom Targets Asia for Growth*, FIN. TIMES, Jan. 25, 1996.

72. *Id.*

73. *Id.*

74. *Id.*

75. Michael Lindeman, *Telecoms Operators Launch Global Alliance*, FIN. TIMES, Feb. 1, 1996, at 27.

76. *Id.*

77. *Beyond the Duopoly*, *supra* note 38, at 20.

78. Ross Gittins, *Telecompetition: Born of the New Technology*, SYDNEY MORNING HERALD, Mar. 25, 1995, at 38.

III. COPYRIGHT

Converging technologies affect the transmission and protection of copyrighted materials and therefore challenge copyright laws.[79]

A. Right of Transmission to the Public

For example, in Australia the copyright law has not kept pace with technology. The previous federal government recognised this and established a number of bodies including the Copyright Convergence Group ("CCG"). The CCG was briefed to report on legislative changes necessary to the Copyright Act 1968 to address technological changes. After review and consultation, the CCG recommended introducing a new right of transmission to the public. The CCG proposed that this right be neutral, broad based and available to all copyright owners. According to the CCG, this right should encompass the existing right to broadcast by replacing and extending the present right to transmit a diffusion service to subscribers. The CCG also suggested examination of the scope of statutory license schemes in relation to electronic delivery and copying of material.

The recently elected Coalition government supports the introduction of a new right of transmission to the public,[80] and plans to introduce amendments to the Copyright Act of 1968, after consulting with the industry and the arts communities.

B. Protection of Computer Software

Another important area of development in copyright law is the extent to which computer program interfaces may be copied from existing programs. The development of this area is an important economic issue as it determines the extent to which software engineers may develop competing or compatible programs. Differences between jurisdictions will tend to channel software development projects to those countries with the least regulation.

Modern computer systems almost always involve a complex interaction between software from various vendors. Such a complex web of interdependence necessarily increases the importance of program interfaces. Where copyright protects interfaces or those portions of a program which underlie the program's interface, copyright law may create a *de facto* monopoly for the copyright holder over programs which interoperate with the copyright holder's program. Furthermore, once interoperable programs have established a group of users, network exter-

79. *Highways to Change—Copyright in the New Communications Environment*, Report of the Copyright Convergence Group, Aug. 1994, at 1.

80. *Australia On-Line*, Coalition Policy Statement, released Feb. 1996.

nalities are such that the copyright owner will be able to lock users into its program.

While these were solely the concerns of the academic and the software engineering communities, they are becoming the concern of the manufacturing and business communities. For example, computer software often controls machinery and in-built diagnostic functions of machinery. Copyright protection over the interfaces of such software can extend *de facto* monopolies over the maintenance of the machinery to the copyright holder. Copyright protection of program interfaces includes the form of protection, the extent of protection, and the access to basic concepts, i.e., reverse engineering or decompilation.

Below is an examination of the major Pacific Rim developments in each of these areas, with the United States as a reference point; the focus is on Australia, Japan, and the People's Republic of China ("PRC").

C. Copyright protection of interfaces

1. *Form of protection*

Although the underlying code implementing an interface may be expressed in a variety of ways, certain elements generally need to be reproduced as program data in order to interface. These elements include words or icons appearing on a screen, or control codes used to communicate with hardware. Accordingly, copyright of the program data may protect interfaces—user, hardware, or software.

Another way copyright law may protect user interfaces is as a separate work, these works are literary, artistic, or audiovisual. In the United States, courts have accorded user interface copyright protection separately from the protection accorded to underlying program data.[81] However, there is some uncertainty as to when user interfaces will be copyrighted. A similar uncertainty is evident in the laws of various other Asia-Pacific nations.

a. Australia

Copyright case law in Australia protects program data as part of a computer program or separately as a table or compilation.[82] In addition, user interfaces in certain circumstances are protected as cinematographic films. In *Sega Enterprises Ltd. v. Galaxy Electronics Pty Ltd.*[83] and *Sega Enterprises Ltd. v. Gottlieb Electronics Pty Ltd.*,[84] Justice Burchett held that both computer games were protected as cinemato-

81. Digital Communications Assoc., Inc. v. Softklone Distributing Corp. [1987] 10 IPR 1; Broderbund Software v. Union World [1986] 7 IPR 193.

82. Autodesk v. Dyason, 173 CLR 330 (Austl. 1992).

83. Unreported.

84. Unreported.

graphic films because there were only a limited number of variants in the "screening" of the games.

b. Japan

The Japanese position differs from the Australian position because the copyright law in Japan may not protect program data. In *ICM Corp. v. Met's, Inc.*, the Tokyo High Court held that data contained in a separate date file did not constitute a computer program under the Copyright Law.[85]

On the other hand, as in Australia, the Tokyo District Court has specifically held that the behavior of a video game is protected as a "cinematographic work" under the Copyright Law.[86] In *K. K. Namco v. Suishin Kogyo K. K.*, the Tokyo District Court held that use of a pirated video game machine by a coffee shop amounted to a public showing of a cinematographic work and thus infringed the plaintiff's rights.[87]

In a second case, *K. K. Namco v. K. K. Gijutsu Hyoronsha*, the defendant produced a clone of the game *Pacman*.[88] The Court noted that the three criteria of a cinematographic work were:

> 1. the work is expressed by a process of producing visual or audiovisual effects analogous to those of cinematography (requirement as to the method of expression);
> 2. the work is fixed on a tangible support (requirement as to the form of existence); and
> 3. the work is a creative expression of thoughts or emotions and falls within the literary, scientific, artistic or musical domain (requirement as to the contents).[89]

The court concluded that these conditions were met and held that the defendant infringed upon the plaintiff's rights of reproduction, integrity, and paternity.[90]

c. The People's Republic of China

The position in relation to both issues is unclear under the PRC Copyright Law. Computer programs, protected under the Regulations for the Protection of Computer Software (hereinafter "Software Regula-

85. Dennis S. Karjala, *Programs and Data Files under Japanese Law*, 8 EUR. INTEL. PROP. REV. 267 (1993) (citing the Tokyo High Court decision as March 31, 1992, *Heisei* 3 (ra) no. 142).

86. Teruo Doi, *Infringement of a Videogame "PACMAN" by the Manufacture and Sale of a PC Game Called "Chomp,"* 16 EUR. INTEL. PROP. REV. D-202 (1994).

87. *Id.* (citing this case as K. K. Namco v. Suishin Kogyo K. K., 16 Mutai Saishu 676 (Tokyo Dist. Ct. 1984)).

88. *Id.* (briefing *K. K. Namco v. K. K. Gijutsu Hyoronsha* (1994)).

89. *Id.*

90. *Id.*

tions"), are defined as "a sequence of coded instructions which can be executed by such devices as computers that have the information-processing capacity for achieving a specific result or a sequence of symboled instructions, or a sequence of symboled statements which can be automatically converted into a sequence of coded instructions."[91] Whether this definition covers program data is not clear.

As to protection of user interfaces under a separate copyright, again the position is not clear. The Copyright Law protects various types of visual works. They include works of fine art, photographic works, video works, and cinematographic works. However, cinematographic and video works must be "filmed" on certain material. Also, photographic works must be recorded on light sensitive material. Therefore, due to the ephemeral nature of screen displays, it is unlikely that screen displays will fall within any of these categories.

On the other hand, the "work of fine art" and "literary work" categories do not require fixation of a work in any material form. Therefore, protection of screen displays may occur under these heads.[92]

2. *Extent of Protection*

Regardless of the form, copyright protection over program interfaces may foreclose the development of interoperable programs. Preserving the copyright would then create a monopoly for the copyright holder.

In respect of programs which must interact with pre-existing hardware or software, courts in most of the nations under consideration have held that elements required for interfacing are unprotected because they lack originality. Where the interface is original the position is more difficult. For example, in the United States an interface that becomes standard will lose its copyright protection.[93] In addition, copyright laws may not protect user interfaces if they constitute "methods of operation."[94] However, copyright may protect program-to-program and program-to-hardware interfaces.

a. Australia

In Australia, the courts have not limited the extent of protection for user interfaces, except under the principles of merger and originality.

As recently as February 9, 1996, the Federal Court of Australia held

91. *Software Regulations*, Article 3(1).

92. K. H. Pun, *A Critique of Copyright Protection for Computer Software in the People's Republic of China*, 16 EUR. INTEL. PROP. REV. 227, 228 (1994).

93. Apple Computer Inc. v. Microsoft Corp., 799 F. Supp. 1006 (N.D. Cal. 1992).

94. Lotus Development Corp. v. Borland Int'l Inc., 49 F.3d 807, 815 (1st Cir. 1995), *cert. granted*, 116 S.Ct. 39 (1995), *aff'd*, 116 S. Ct. 804 (1996), *reh'g denied*, 116 S. Ct. 1062 (1996).

that Australian copyright law protects user interfaces.[95] In the case before the court, the respondents developed an application development system, Powerflex and later PFXplus, which was compatible with programs written using the DataFlex application development system.[96] Of the 254 words listed in the DataFlex Encyclopaedia, 192 appeared in the PFXplus language.[97] While the words performed the same function in each language, there was no objective similarity between the source codes of the two systems, except that the 192 corresponding words making up the language appeared in both.[98]

Justice Jenkinson referred to the United States case of *Lotus Development Corporation v. Borland International, Inc.*[99] in which the court held that the words and hierarchical arrangement comprising the Lotus 1-2-3 interface were not protectable because they constituted a "method of operation." However, he found this to be unhelpful given that unlike the United States Copyright Act, the Australian Copyright Act does not specifically exclude methods of operation from protection.[100]

Justice Jenkinson then analysed the doctrine of merger as applied in *Lotus Development Corp. v. Paperback Software International*,[101] of which the High Court approved in *Autodesk v. Dyason*.[102] His Honour held that because the expression of most of the corresponding words making up the two languages went beyond the functional elements of the ideas that they were trying to express, and because they were not simply obvious but were original and substantial, their replication in the PFXplus system constituted an infringement of copyright.[103] His Honour also made a similar finding in relation to a table copied in the PFXplus system. The table would compress data for file storage.[104]

The respondents argued that the table enabled the PFXplus system to operate with applications originally developed under Dataflex. In other words, the table merged with its *idea of function through compatibility*.[105] However, the court found that the compatibility requirements of the alleged reproduction could not be relevant considerations since the doctrine of merger is applied "before consideration of any question of in-

95. Data Access Corp. v. Powerflex Servs. Pty Ltd., 33 IPR 194 (1996) (This case is on appeal to the Federal Court and is expected to be heard later this year).

96. *Id.*

97. *Id.*

98. *Id.*

99. 49 F.3d at 807.

100. *Data Access*, 33 IPR 194, 200.

101. 740 F.Supp. 37 (D. Mass. 1990).

102. 173 CLR 330 (Austl. 1992).

103. *Data Access*, 33 IPR 194, 201.

104. *Id.* at 203.

105. *Id.*

fringing reproduction."[106]

On the issue of compatibility, this case is in line with *Autodesk v. Dyason*.[107] In *Dyason*, the look-up table was essential to the interface, in that no substitute software lock could operate without reproducing the look-up table containing the lock code (except through a hardware mechanism). Nevertheless, the court clearly did not regard the reception of the specific lock code as part of the function of the original program. The court did not find that the look-up table was merged with the program's function.

The *Data Access* case confirms that in Australia, original interfaces are protected even though such protection may prevent the development of substitutable and interoperable programs.

b. Japan

In Japan, copyright protection for user interfaces is less limiting. In *Systems Science*, the Tokyo High Court held that the copyright laws do not protect programming choices constrained by hardware because they do not have a sufficient level of creativity.[108] However, the same argument would not apply to remove copyright protection from original interfaces. Nevertheless, the Japanese copyright laws exclude "programming languages" and "rules" from protection.

"Programming languages" are "characters or other symbols, or their organization, used to express a program."[109] On a strained construction of this exclusion, one could argue that certain interfaces amount to programming languages. This would certainly have been the case had *Data Access* been tried in Japan.[110] However, the exclusion would not apply to many interfaces without stretching the term "programming languages" beyond its natural meaning. In particular, few hardware or software, as opposed to user, interfaces would fall within the exclusion.

A "rule" is "a special convention concerning the use of a program language in a specific program."[111] A representative of the Japanese

106. *Id.*

107. 173 CLR 330 (Austl. 1992).

108. Dennis S. Karjala, *Japanese Courts Interpret the "Algorithm" Limitation on the Copyright Protection of Computer Programs*, 31 JURIMETRICS J. 233, 234-38 (1991) (citing this case as *Systems Science Corp. v. Toyo Sokki K.K.*, Tokyo Dist. Ct. decision of March 31, 1989 (slip opinion), *aff'd in part, rev'd in part,* Tokyo High Ct. decision of June 20, 1989 (slip opinion)).

109. *Id.* at 236.

110. *See* Dennis S. Karjala, *Copyright Protection of Computer Software in the United States and Japan: Part II*, 7 EUR. INTELL. PROP. REV. 231, 233 (1991) (discussing Japanese limited protection of computer programs in comparison to the United States).

111. Karjala, *supra* note 108, at 236.

Cultural Affairs Agency indicated that this exception is concerned with interface information and methods:

> In making a program, in addition to the conventions applicable to a program language, it is sometimes necessary to follow specific conventions for the purpose of using the program in connection with a different program in the same computer or with a program in another computer through the medium of communication circuits. All these conventions are included within the term 'rules.'[112]

On this interpretation, the exception extends to program-to-program interface protocols, if not hardware-to-program interface protocols. These protocols must be copied in order to replicate the function of a particular interface. Therefore, the exception may well exclude such interfaces from copyright protection. However, the exception requires judicial interpretation before any firm predictive statements could be made about the exception's scope.

In summary, even original interfaces may amount to programming languages or rules, and as such may not be protected under Japanese copyright law.

c. People's Republic of China

The extent of protection of software has not been specifically addressed in the PRC. The originality requirement, however, will most likely exclude from protection to the extent that they are constrained by existing programs or required by hardware.[113] In addition, the exclusion from protection of any method of operation (Article 7 of the Software Regulations) may form the basis of an argument similar to that in *Lotus v. Borland*,[114] that even where an interface is entirely original, it should not be protected by copyright. Note that the exclusions contained in the Software Regulations only apply to computer programs and documentation and not to the screen displays created by such programs. However, a court may apply the same exclusions where developers seek protection for programs under other heads of work, since to do otherwise may circumvent the intent of the Software Regulations.

d. Summary

Copyright laws in Pacific Rim nations will not protect interfaces constrained by preexisting programs or by hardware. However, the protection of entirely original interfaces varies across the countries.

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112. Karjala, *supra* note 108, at 234.

113. Article 3 of the Copyright Law requires that programs be "created" and Article 5 of the Software Regulations requires that programs be independently developed.

114. 49 F.3d at 811.

In Australia, there are no exclusions from copyright protection that are relevant to interfaces. Furthermore, the courts have specifically refused to apply the merger doctrine so as to allow development of substitutable or interoperable programs. In the PRC, on the other hand, as in the United States, many interfaces will be excluded from protection by the "methods of operation" exclusion.

In Japan, interfaces will not be protected to the extent that they amount to "programming languages" or "rules." While the "programming language" exception will probably exclude a narrower range of user interfaces than in the PRC and the United States, the "rules" exception may exclude a far wider range of program-to-program and possibly hardware-to-program interfaces than in either country.

3. *The Legality of Reverse Engineering/Decompilation*

The legality of decompiling programs is also an important issue. Most program ideas would be locked up if not for the ability to decompile them. These ideas include program-to-program and program-to-hardware interfaces.

In the United States, decompilation falls within the "fair use" defence under section 107 of the Copyright Act, provided that the decompilation is for a "legitimate purpose."[115] In both cases, the court found the development of competing products a legitimate purpose, although neither defendant developed an exact clone.

Decompilation, while permitted in the EC, following adoption of the *Directive on Computer Programs*, is limited for the purpose of achieving interoperability and may not be used to create a substantially similar program.

a. Australia

In Australia, those who decompile programs for commercial purposes are unlikely to be successful with the "fair dealing" defence of Copyright Act. The range of purposes that may constitute fair use is limited to "research" or "study." The equivalent range of purposes under the United States fair dealing defence is more extensive and non-exhaustive. Further, the Copyright Law Review Committee in its *Report on Computer Software Protection* cited an opinion, from the Chief General Counsel of the Attorney-General's Department, stating that "study" would probably be confined to study by individuals for their own purposes.[116] Meanwhile "research" would be limited to activities which are for the

115. Sega Enterprises v. Accolade Inc., 977 F.2d 1510 (9th Cir. 1992); DSC Communications Corp. v. DGI Technologies Inc., 898 F. Supp. 1183 (N.D. Tex. 1995).

116. *Computer Software Protection*, 1995 REPORT 149 (Copyright Law Review Committee).

purpose of increasing the knowledge in the community as a whole.[117] The opinion argued that private commercial purposes would not fall under either category.[118]

The Copyright Law Review Committee has recommended that the Copyright Act be amended to include express exceptions which would allow decompilation for the purpose of creating interoperable programs[119] or for the purpose of error correction.[120] The terms of the Committee's recommendation are largely similar to those contained in the EC's *Directive on Computer Programs* in relation to interoperable programs.

b. Japan

Under Japanese Copyright Law there are no fair use provisions that apply to research or study for most commercial purposes. The only fair use provision is limited to copying or modification for personal use.[121] In the only case on point, *Microsoft Corp. v. Shu System Trading, Inc.*, the Chisai District Court held that decompiling of the plaintiff's program constituted copyright infringement.[122] However, this position may change in the future. An advisory committee to the Japanese Cultural Affairs Agency is presently considering legislation on reverse engineering.[123] While the United States opposes these amendments, United States law permits reverse engineering within limits. This places the United States in a difficult arguing position.

c. People's Republic of China

In the PRC, as in Japan, the Software Regulations do not specifically deal with the question of decompilation. The only equivalent to the fair dealing defence appears under Article 22 which allows reproduction without the consent of the copyright owner where the reproduction is needed for non-commercial purposes such as classroom teaching, scientific research or by a state organisation in fulfilling its official duties. This would not extend to companies hoping to develop interoperable programs or clones.

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117. *Id.*

118. *Id.*

119. *Id.* at 162.

120. *Id.* at 171.

121. Mark S. Lee, *Japan's Approach to Copyright Protection for Computer Software*, 16 LOY. L.A. INT'L & COMP. L.J. 675, 695 (1994).

122. 1219 Hanji 48 (1987). *See generally* Jack M. Haynes, *Computer Software: Intellectual Property Protection in the United States and Japan*, 13 J. MARSHALL J. COMPUTER & INFO. L. 245, 263 (1995) (arguing that controversy exists within Japan's civil law system because the Copyright Law neither explicitly allows nor prohibits reverse engineering).

123. Lee, *supra* note 121, at 695.

By contrast, Article 21(3) of the Software Regulations permits "modifications" to be made to software by the lawful holder where necessary for using the software in the holder's specific application environment or for improving the software's functions and performance, provided that such modifications are not available to others without consent. An argument could be mounted that the modifications referred to may include decompilation, although the regulations appear to be aimed at modifications to source code where the source code has already been made available by the owner.

d. South Korea

The South Korean government did not include reverse engineering exceptions in amendments to the Computer Program Protection Act even though critics expected they would.[124] Thus, decompilation remains an infringement of copyright.

e. Singapore

On the other hand, in Singapore, decompilation may fall within the fair dealing defence under the Copyright Act of 1987. In the case of *Aztech Systems Private Ltd. v. Creative Technology Limited*, the High Court held that the reproduction in memory of the program *test.sbc,* during the process of analysing the function of the *Sound Blaster* card for the purpose of producing a clone, fell within the "fair dealing" defence.[125] The Court noted that the "research" defence did not extend to companies or persons carrying on a business, but the "study" defence was not so qualified.[126] Therefore, the court held that "study" for commercial purposes may still fall within the defence.[127] On this basis, it is quite likely that a court in Singapore would find that decompilation falls within the fair dealing defence.

f. Summary

While in the United States and Europe decompilation appears to be legal for the purpose of creating an interoperable program, this does not appear to be the case in Australia, Japan, the PRC, or South Korea. This is a significant omission from the laws of those countries. By contrast, Singapore is one Asian nation more likely than not to permit decompilation.

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124. C. Leon Kim, *Fair Use Exception for Decompilation of Computer Programs To Be Not Allowed*, 17 EUR. INTELL. PROP. REV. D-317 (1995).

125. FSR 54 (1995).

126. *Id.* at 62.

127. *Id.* at 63.

4. *Need for reform*

There is a significant market for programs which interoperate with existing programs. In order to take advantage of this market, developers need to be able to reproduce elements of program interfaces.

At present, most Pacific Rim nations have not opened their markets to developers for at least one of the following two reasons. First, in Australia particularly, and to a lesser extent in the PRC, interfaces are subject to copyright unless they are unoriginal. The narrow exceptions in relation to "methods of operation" in the PRC may exempt some interfaces, but will probably be limited to user interfaces. Second, in most Pacific Rim nations, decompilation remains impermissible. Thus many aspects of a program interface will remain inaccessible.

As a result, the United States has received and will continue to receive a great deal of financially valuable development because it allows decompilation and because interfaces have a relatively low level of protection.

International consensus is required. Until this is achieved, most Asian countries would be well advised to create exceptions to their copyright laws to facilitate the development of interoperable and substitutable systems.

IV. PRIVACY

A final area of important new developments relevant to computer databases has been privacy and transborder-data flows. Many businesses record substantial quantities of personal data in computer databases. This data is often transmitted to other firms as part of specific transactions or to firms within the same group. Such transmissions, and even intra-firm transmissions may result in data crossing national borders. Aspects of personal data storage and use is potentially subject to privacy and transborder regulations, often in multiple jurisdictions.

A. Protection of Personal Data and Transborder Data Flows

The EC has adopted a *Directive on the Protection of Individuals with Regard to the Processing of Personal Data and on the Free Movement of such Data* (hereinafter "EC Directive"). The EC Directive sets out standards of privacy protection for personal data which are in line with the OECD privacy principles. In essence these principles do not require the collection of personal information, unless the person concerned either consents, or is informed why the information is collected, who will use the information and how they may access or correct the information. Further, principles limit use of the information to the purpose for which it was collected and do not allow disclosure to anyone unless the person

consents or the law requires disclosure. The EC Directive also provides that "the transfer to a third country of personal data which are undergoing processing or are intended for processing after transfer may only take place if . . . the third country in question ensures an adequate level of protection" (Article 25). This is in line with paragraph 15 of the OECD Privacy Guidelines.

Thus far, very few countries in the Asia Pacific region have adopted privacy regulations which meet the terms of the EC Directive.

a. Australia

The Australian Privacy Act of 1988 only applies to public sector bodies, credit providers, and credit reporting agencies.[128] Although the definition of "credit provider" is extremely broad, including any body that provides goods and services on more than seven days credit, most private sector bodies are not subject to the law. Furthermore, there are no direct restrictions on transborder data flows.

In response to the EC Directive, the Federal government has released a discussion paper in which it proposes extending privacy regulation to the private sector by way of broad privacy principles which will be supplemented by Industry codes of practice.[129]

b. New Zealand

The New Zealand Privacy Act of 1993 implements the OECD privacy principles in relation to both the public and private sectors. In relation to the private sector, this act also incorporates a procedure for the development and implementation of industry codes of practice. It is intended that industries will develop codes which will then be put to the Privacy Commissioner for approval. Once approved, these codes will take effect as normal government regulations with the full force of law. The strictness of the requirements contained in these codes are not limited by the privacy principles and will take precedence over the privacy principles in areas where they apply.

However, like the Australian Privacy Act, the New Zealand Act contains no prohibition on the export of data to countries with inadequate privacy protection regulation. The only restrictions on such export are indirect. That is, export will be possible where the body receiving the data overseas is of a kind that is permitted to receive the data.

128. The Commissioner also has power to issue Codes of Conduct, although thus far only the Credit Reporting Code of Conduct 1991 has been issued.

129. *Privacy Protection in the Private Sector*, DISCUSSION PAPER (Attorney General's Department) (Sept. 1996).

c. Taiwan

Taiwan has also introduced comprehensive privacy regulation in the form of its Computer Processed Personal Data Protection Law of 1995. This law contains separate privacy rules for private and public sector bodies. The private sector rules largely conform to the OECD privacy principles. The Taiwanese law differs from most other models in that rather than a single Privacy Commissioner, a variety of professional institutions are responsible for verifying infringement, although all of these institutions act under the umbrella of the Ministry of Justice.

Taiwan's law also contains provisions allowing for transborder data flows to be prohibited. The authority in charge of the relevant private sector body may prohibit a transborder transfer for the following reasons:

- to protect Taiwan's national interests;
- where provided for in an international treaty or agreement;
- where the receiving country lacks proper laws to adequately protect personal data and where there are apprehensions of injury to the rights and interests of a concerned party;
- where the purpose is to indirectly transmit to, and use from, a third country personal information so as to evade control of the Taiwanese law.[130]

d. Hong Kong

The Hong Kong Ordinance, the Personal Data (Privacy) Ordinance of 1995, largely enacts the OECD privacy principles, and, like Australia and New Zealand, creates the office of Privacy Commissioner to monitor and enforce compliance where necessary.

Hong Kong is the only other Asia-Pacific jurisdiction to incorporate transborder data flow regulations into its privacy regulation. The "control" test under section 2 operates so that a person who moves data out of Hong Kong will continue to be subject to the Ordinance while that person has control of the data. Where the transfer results in loss of control of the data section 33 applies. Section 33 prevents personal information being exported unless there are substantially similar laws or laws which serve the same purpose in the country to which the data is being transferred (which countries may be gazetted by the Minister) or the exporter reasonably believes that such laws exist, or unless certain exceptions apply. Those exceptions include:

- where the data subject has consented in writing to the transfer;

130. Lee and Li, *Taiwan's Tough New Privacy Law*, 2 PRIVACY L. & POL'Y REP. 160 (1995).

- where the exporter has reasonable grounds for believing that the transfer is to mitigate possible adverse action against the data subject, who would have consented to the transfer if it was practicable;
- where the data are covered by specific exemptions; or
- where the user has taken all reasonable precautions and exercised all due diligence to ensure that the data will not be dealt with in a way which, if it had occurred in Hong Kong, would contravene the Ordinance.[131]

B. Need for Reform

The EC Directive puts pressure on Pacific Rim nations to adopt appropriate privacy regulations including controls on export and re-export of data. Thus far, the only jurisdictions to adopt what would probably be considered adequate privacy regulation are Hong Kong and Taiwan. New Zealand while having comprehensive privacy regulation, has not imposed any restriction on the re-export of data. Australia's privacy regulation only extends to government and the credit sector and contains no export restrictions.

The process of achieving uniformity amongst nations in privacy protection is likely to hinder the free movement of information around the world. In particular, the process may inhibit remote access to databases held in a country with export restrictions, presently the European Union, Hong Kong, and Taiwan. Only when some level of uniformity is achieved will the conditions imposed by these laws be met, once again allowing information to flow freely.

V. CONCLUSION

As globalisation accelerates in the telecommunications, computer, broadcasting and content provider industries, and those industries converge, opportunities are created for new and existing players to move into expanding markets. These developments also allow players with strength in one industry to extend their influence into other industries.

What can be seen in all these industries is that with convergence, existing regulatory structures are becoming redundant and competition is emerging as an important check on industry players. In order for countries and jurisdictions in the region to take full advantage of the rapid developments in these industries, there is a pressing necessity for harmonisation of the relevant legal and regulatory frameworks.

In telecommunications, governments are increasingly liberalising and privatising the industry, recognising that competition is the best way to ensure lower prices, innovation, efficiency, investment, and infra-

131. Mark Berthold, *Hong Kong's Personal Data (Privacy) Ordinance 1995*, 2 Privacy L. & Pol'y Rep. 164 (1995).

structure development. In the area of computer software development, ensuring a competitive environment requires removing protection for those elements of computer software which would otherwise create *de facto* monopolies.