CHAPTER 3

China and Taiwan in the Asia-Pacific global information and communication infrastructure

Electronic commerce is a key application driving the global economy. The relationships between many of the telecommunications providers and governments around the world are either in the midst of radical changes in their structure. This applies to governments that own and operate monopoly basic telecommunication providers, cable operators, individual global and local companies and all others who manufacture equipment, operate infrastructure or provide services for what has come to be called the Global Information Infrastructure.[1]

The Asian e-commerce market is not a single market, but rather a collection of economies, which are at the different stages of maturity. Taiwan is ranked fourth in the world in terms of broadband penetration. In Taiwan, the government has committed itself to the country being on a telecom infrastructure par with the US by 2010. Under the M-(Mobile) scheme, it is promoting the laying of 6,000 km of broadband cables. It is also working to promote the development of e-commerce and e-business, and to transform Taiwan into the most e-nation in the Asia.[2]

China is turning a great deal of attention toward international and satellite solutions for its expanding telecommunications infrastructure. Mainland China's government iResearch center "China Internet Market

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[1] Global Information Infrastructure Commission http://www.giic.org/papers/policy/pgisdev.asp

[2] FLAG Telecom Ltd. Report http://www.flagtelecom.com/media/PDF_files/Asia%20Broadband%20Explosion%20v0.1.pdf#search='iResearch%20in%20Taiwan'

Research reports" can be found on WWW,[3] provides information (research reports and Annual reports) about the China's listed companies and investments, Internet Access and E-commerce. In the E-government Committee in Hong Kong we can find that government is developing a common electronic interface for users who communicate in Chinese language. "As Chinese is the language used by most people in Hong Kong, the development of a common electronic interface for users who use Chinese in electronic communication are very important. Currently, the major problems of electronic communication conducted in Chinese are the existence of different coding standards and insufficient characters in some Chinese character sets used on computers. These problems may not have much impact on the operation of standalone computers, but will cause distortion of information in electronic communication and data exchange conducted in Chinese, thus creating inconvenience to users.[4] Other aspect of the mainland China's infrastructure is to provide a platform for development of wireless applications, solutions and services; the Government is supporting the Hong Kong Wireless Technology Industry Association to set up a wireless development centre at the Cyberport with funding from the Innovation and Technology Fund. The developers will have access to information on technology standards and market information. The centre will also identify anchor projects for the industry and assist in marketing outside Hong Kong, including the Mainland. The parties will work together to make the centre a focal point

[3] http://english.iresearch.com.cn/wireless_service/detail_report_catalog.asp?id=6775

[4] E-government in Hong Kong (Infrastructure and Common Language Interface)http://www.info.gov.hk/digital21/eng/structure/cli_main.html

of industry and a main driving force to "push" Hong Kong technologies in the Mainland and Asia.[5]

Mainland China's Ex-president Jiang Zenmin stated in 1997 that "Science and technology being a primary productive force, their progress is a decisive factor in economic development… We must make the acceleration of their progress a vital task in economic and social development….. Strengthen basic research and research in high technology and accelerate the pace of applying high technology to production (Jiang, 1997)." According to this developmental vision, incorporated into the Constitution of the Chinese Communist Party five years later, at the 16th Party Congress in November 2002, the CPC' persisted in taking economic development as the central task…. "Give full play to the role of science and technology as the primary productive force (Communist Party of China, 2002:4)."

Over the years, research and development of information technology in Taiwan has advanced Taiwan to be the fourth largest information hardware manufacturing country in the world. Taiwan's Internet penetration rate rose to 35.5% in 2002 and is projected to increase to 50% by 2008.[6] In 2004, 81% of Taiwan enterprises have Internet accesses, 96% of the online businesses have broadband connections. Moreover, rapid increase in Internet usage effects changes not only in information and telecommunication industries but also consumers' demands and

[5] E-government in Hong Kong (m-Government)
http://www.info.gov.hk/digital21/e-gov/eng/init/mgov.htm
[6] Strategy-USA Market Research Report: " The e-Taiwan project"
http://strategis.ic.gc.ca/epic/internet/inimr-ri.nsf/en/gr107339e.html

marketing management models. These inter-related factors, in turn, spur the creation of the digital content essential to the e- and the m-Revolution in Taiwan. In an attempt to make appropriate responses to this e-trend, Taiwan Government launched the e-Taiwan and the m-Taiwan Projects. Implementation of these projects aims to enhance Taiwan's overall competitiveness and economic advantages in its international trades worldwide. There are 59 subprojects in the e-Taiwan Project and they are classified into several major categories: (e-Taiwan Project Office, 2005):[7] **E-Infrastructure subprojects**. They serve as the pillar in promoting information and communication infrastructure development as well as network security. The objective is to establish a comprehensive network of wired, wireless, mobile and fixed broadband Internet networks. **E-Society subprojects**. They promote online education, entertainment, culture, health care, and transportation services. These initiatives will improve the quality of services available to the public. **E-Industry subprojects**. They serve as the pillar to promote industry digitization, facilitating Taiwan's transition into a high value-added manufacturing and service center.

On the economic front, Taiwan remained one of Asia's most powerful economies and enjoyed a strong economic recovery fueled by growth in both the US and Asia. The strong economic performance and progress with reforms bolstered public confidence and renewed resolve to press on

[7] Chao Chen-Chen "Going Digital: Taiwan Experiences," National Taiwan Normal University, http://www.white-clouds.com/iclc/cliej/cl20joyce.htm

with needed changes. Maintaining strong growth and Taiwan's global competitiveness requires expanded infrastructure.[8]

The environment of a nation is defined by the World Competitiveness Yearbook WCY[9] by four Competitiveness Factors: Economic Performance, Government Efficiency, Business Efficiency and Infrastructure, which altogether consist of 312 competitiveness criteria. Taiwan came 18th in the overall ranking, 27th in Economic Performance, and 24th in Government Efficiency, 14th in Business Efficiency and 20th in Infrastructure. Four of the top five countries held their places as in last year, with Denmark being the only newcomer in 5th place. [10]

From above quasi-document data we can say that both: China and Taiwan promotes international cooperation and coordination to achieve a cost-effective global communication environment.

3.1 Mainland China's telematics policy

China's over communications is crucial concomitant of political-economic power. China's emergence as an important force within the global capitalist system is thus giving rice to a substantially greater presence in the system of international communication. A

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[8] Government Information Office http://www.gio.gov.tw/taiwan-website/5-gp/yearbook/p010.html

[9] The World Competitiveness Yearbook (WCY) published by the International Institute for Management Development (IMD) annually since 1989 analyses and ranks the ability of nations to create and maintain an environment that sustains the competitiveness of enterprises.

[10] Focus on Internet News and Data (FIND), 2006/05/17
http://www.find.org.tw/eng/news.asp?pos=0&subjectid=2&msgid=234

worldwide communications and information industry continues to function as a fountainhead of economic development. China's media content and hardware industries and Chinese media advertisers are establishing transnational affiliations, and using them to broaden and reorganize the domestic market.[11] In 2002, Xinhua Financial Network, a Hong Kong joint venture in which China's state-owned Xinhua News Agency claims a minority stake, purchased the Asian business-new operations of Agence France-Press (Pottinger, 2002). In 2001, China allowed AOL Time Warner and News Corp. to transmit Mandarin language television entertainment channels into Guangdong, via CETV and Star TV respectively – in exchange for the two media conglomerates' agreement to carry CCTV 9's 24 hour mainly English language TV channels over US cable systems. In 2003, however, after having fallen from its comfortable perch in the aftermath of the internet bubble, a straitened AOL Time Warner sold a controlling interest in Chinese Entertainment Television Broadcasting (CETV) to Tom.com, a Hong Kong-based media group controlled by billionaire Li Ka-shing. In 2003, TCL, China's second-largest set maker, partnered with Thomson – the French electronics company that owns the RCA brand – to create the world's largest transnational TV manufacturer. In communications, profit-making opportunities arising from new technologies and strategic leverage built up over the domestic market have combined in support of transnational expansion by Chinese equipment suppliers and system

[11] Schiller Dan (2005), "Poles of market growth? Open questions about China, information and the word economy." Global media and Communication, Volume 1, SAGE publications, p. 79

operators. Global telecommunications faces depressed market conditions as a consequence of a huge buildup of network facilities through the 1990s. China avoided the wholesale global privatizations of the 1990s, whose in general result was to transfer significant control over national telecommunications infrastructures to foreign investors and system operators. The result was to grant Chinese network operators, which had presided over the growth of the world's largest national telecommunication market (boasting several hundred million wireline and wireless subscribers by 2004), exceptional opportunities for transnational expansion at bargain-basement prices. A consortium led by China Netcom, the second largest carrier in the country, paid $80 million to acquire a partially owned affiliate of bankrupt regional network Asia Global Grossing with a book value of $2 billion; after China Netcom bought out its partners to become sole owner, this major regional carrier, renamed Asia Netcom, passed entirely into Chinese hands, and began to compete for regional traffic. "A partially liberalized authoritarian media system, even as commercial and market pressures deepen their hold; the Chinese party-state continues to impose a formidable array of political and ideological controls (Chan and Qiu, 2002)." The return of Hong Kong to Chinese sovereignty in 1997 added a national hinterland, but placed a wealthy "capitalist" economic system under control of an impoverished "socialist" state (Welsh 1993). Trade and financial bonds of Hong Kong reach two broad groups – Asian countries and developed countries outside Asia. The rice of China as destination of re- exports overwhelms other shifts, and that change has a compensating balance in soaring value of imports from China. Those exchanges reflect the massive move of

Hong Kong factories to nearby Guangdong province following opening of China to investment with the reforms of Deng Xiaoping in 1978, but the major shift came in the late 1980s (Ho, 1992).

Fiber-optic cables link all telephone exchanges and major commercial buildings, and the internal system has reached 100 percent digital format. It has the greatest array of fiber-optic international cables of any metropolis in Asia; numerous submarine cable systems link it with Asia, Oceania, North America, and Europe, and its satellite contacts permit global reach. Business rapidly moved into the Internet domain, with forty thousand companies registered under HK.com, and more than fifteen hundred dotcom companies started in Hong Kong in a fifteen – month period preceding 2001. [12] Hong Kong, along with other global metropolises, witnesses an ongoing shift of back-office jobs to sites away from the agglomeration, especially in nearby Guangdong province; thus, telematics maintains this traditional impact of innovations in transportation and communication (Meyer 2000; 227). Its number of leased circuits – high-capacity lines that firms use to transmit global communications among units within the firm – more than quadrupled from 295 in 1972 to 1,205 in 1979; and buy 1999 approached 2,300. Hong Kong continues to rapidly upgrade telematics infrastructure. A communications center in Hong Kong serves as the switching node for thirty – five hundred international leased circuits and local extension lines, and Hong Kong operates the largest teleport in Asia. Internet use exploded, with almost two hundred Internet service providers, and about

[12] Sassen Saskia " Global networks; Linked cities." p.264

50 percent of the population with Internet access by 2000. In 1998 the government announced its Digital 21 IT (information technology) strategy that presented a vision and goals, with efforts directed to developing high-capacity telecommunications networks, building information infrastructure, promoting IT education.

Singapore Telecom finished linking Hong Kong to its pan-Asian fiber-optic network during 2001, and its motivation was growth of broadband demand from international business in Hong Kong and its position as gateway to China. Local firms such as Hutchison Global Crossing continue expanding fiber-optic lines in Hong Kong to link with growing external telematics capacity, and specialized services emerge to support swelling telematics demand from global businesses. China's leading telecommunication firm such as China Telecom and China Netcom continue to expanding high-capacity fiber – optic lines between Hong Kong and all major cities (including Guangzhou and Shenzhen) of Guangdong province; and these lines connect with Hong Kong's global networks. As China's international metropolis, Hong Kong requires enormous telematics infrastructure to integrate it with the mainland economy; the capacity of large Chinese and Hong Kong firms to supply infrastructure supports it as a pivotal hub in global telematics.

Compared with East Asian competitors, Shanghai is a latecomer in telematics development. Since 1995, investment in postal and telecommunications – related infrastructure as a percentage of total investment in infrastructure compared with those in transportation – related infrastructure. Between 1991 and 1995, U.S.$7 billion was spent

by China on telecommunications infrastructure, especially optic fiber cabling and digital switching. Shanghai is the junction of three transnational fiber-optic cable systems, including the Sino-Japan, the around-the-world submarine lines, and the Asia-Europe land line, and several nationwide linkages such as the southern and the northern coastal lines, together with satellite earth station, Shanghai is one of the very few teleports in China through which digital information can be transmitted to the outside world.

Location is a key factor and may allow the long-run development of Shanghai and Hong Kong in parallel, with each serving separate subnational and international economies. Shanghai, in east China, is a node in the Yangtse Delta and Valley, eastern coastal China, and Northeast Asia, while Hong Kong, in the south, forms the core of the Pearl River Delta and southern coastal China and links strongly with economies in Southeast Asia.

3.2 The role of the Taiwanese MNCs in the regional and global communication infrastructure

"The role of the overseas Chinese communities is no powerful anymore. In the beginning they bring money to China and Taiwan, but now in the globalize world the most powerful become MNCs."[13]

[13] Steven Yen, Managing director of the branch office in Singapore, from the trade company: "Longshine Technology Co.Ltd." p. 123. All text of Interview in Appendix

Multinational corporations (MNC) and their global networks, represent a distinct locus of power that have a significant impact on an increasingly global economy. Sixteen multinational enterprises have set up 19 R&D centers in Taiwan. These centers are expected to bring in more than NT$17 billion in R&D investment and inject 500 man-years of foreign experts into Taiwan's R&D effort, leading to more than 270 R&D projects in cooperation with domestic companies and other related organizations. Under the Plan to Encourage Multinational Corporations to Establish R&D Centers in Taiwan, foreign companies are offered incentives including the offsetting of a set ratio of R&D spending from the current year's profit-seeking-enterprise income tax; for emerging, important, and strategic industries, investment tax credits for shareholders or a five-year tax holiday; the provision of trained reserve personnel for national defense industries; assistance in bringing in technological personnel from foreign countries and mainland China; and subsidies for some operating costs.[14]

In the past, global companies worked with what seems to be a "patchwork" of information and telecommunications systems and standards. In order to succeed as truly "global" firms, MNCs today seek to establish networks that serve to connect the systems and people of an MNC into a single integrated network, allowing users to communicate and "share" information in an timely and efficient manner. Global Networks: the Need for Connectivity; the increasing globalization of business, as well as the trend for world-wide corporate restructuring is

[14] Ministry of Economic Affairs of Taiwan
http://w2kdmz1.moea.gov.tw/english/index.asp?p1=home&p2=subhome&pid=20040

leading MNCs to evaluate and establish global networks. Global companies today no longer wish to establish traditional networks on a half-circuit basis but on an in circuit basis. Global Networks have the following characteristics:

- support different computer hardware
- integrate software from multiple vendors
- carry information across a multitude of cables with varying transmission sizes
- incorporate locations that often have minimal and unreliable telecommunication services
- handle network users who speak different languages and work in different time zones
- Abide by regulatory standards of different countries without violating any of the legal requirements that govern the transmission and receipt of data and information across national borders. [15]

The problems encountered by MNCs seeking to outsource from third parties are in essence the problems of establishing a "global network," namely: differences in regulation of telecommunications across boundaries; unreliable and inconsistent telecommunications services between individual countries and cities. Incompatible equipment and conflicting standards legal barriers: varying government regulations and

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[15] Chambers, Ian "Choosing a hub site in the Asia-Pacific region: Factors to Consider; Corporate Networks are expanding worldwide." Telecommunications, Vol. 28; No. 5, p. 63

tariff structures, strict data protection and security regulations, laws prohibiting cross-border data transferring, cultural barriers. IS managers are looking increasingly into to the Asia-Pacific region not only for its huge market potential but also because of the growing market for private networks. In addition, the private network market in the Asia-Pacific region exhibits rapid growth in incircuit quantity (14%) as well as in digital and analog private leased lines.

The essence of MNC lies in its dispersion of activities across national borders, which creates a competitive advantage that could not be accomplished (Caves, 1982; Kostova and Roth, 2002).

Informal mechanism used by MNCs with a high need for coordination/integration that has recently gained a great deal of attention is the creation of social capital. Social capital is defined as the intangible resources embedded in the networks of existing company relationships that assist in the accomplishment of necessary task (Shell, 1999).

From a globalization standpoint, social capital serves as an informal mechanism that allows MNCs to deal with the globalization-localization dilemmas. Sixteen multinational enterprises have set up 19 R&D centers in Taiwan since the Ministry of Economic Affairs began promoting the establishment of such facilities here (see attached table). These centers are expected to bring in more than NT$17 billion in R&D investment and inject 500 man-years of foreign experts into Taiwan's R&D effort, leading to more than 270 R&D projects in cooperation with domestic companies and other related organizations. Under the Plan to Encourage Multinational Corporations to Establish R&D Centers in Taiwan, foreign

companies are offered incentives including the offsetting of a set ratio of R&D spending from the current year's profit-seeking-enterprise income tax; for emerging, important, and strategic industries, investment tax credits for shareholders or a five-year tax holiday; the provision of trained reserve personnel for national defense industries; assistance in bringing in technological personnel from foreign countries and mainland China; and subsidies for some operating costs.[16] According to the Statistics published by the Economic Affairs Department in March 2001, the accumulated amount of money of Taiwan enterprises direct investment overseas was: 17,102 million dollars in Mainland China; 4,136 million dollars in United States; 1,320 million dollars in Singapore; 1,062 million dollars in Malaysia and 810 million dollars in Thailand.

Business firms investing in foreign countries face a more complicated environment than that of the business firms which invest in domestic market only.

In Taiwan, the state-business relationships also evolves from family-centred industrial organization to one in which large firms have much better access to state resources and subsidies (Mathews and Cho, 1998). Taiwan's top trade organization CETRA (China External Trade Development Council) moved to consolidate the market by opening trade offices to promote Taiwanese products in 22 major mainland cities.

Taiwan is a base for American, Japanese and European multinational corporations operating regionally. It has access to the China market and it has connections to the powerful overseas Chinese communities in

[16] Ministry of Economic Affairs of Taiwan
http://w2kdmz1.moea.gov.tw/english/index.asp?p1=home&p2=subhome&pid=20040422195905

Malaysia, Indonesia, the Philippines and Thailand.[17] "From one hand, both governments in China and Taiwan don't communicate with each other, but in spite of that B2B promote good business among both sides. From another hand, China is too sensitive and sometime aggressive on Taiwan's relations with other world. In this case, there are difficulties for MNCs to locate their headquarters in Taiwan, because of the mainland Chinas political domination in the international world communities and organizations. To avoid China's pressure, MNCs is moving their offices from Taiwan to Hong Kong."[18]

The Taiwanese-owned Pou Chen Corp., the world's largest supplier of branded sports shoes (16% market share), started out with one factory in central Taiwan in 1969. The family business grew, and in 1980 received its first contract to produce for adidas. By 1988, labor costs had increased and the Taiwan dollar had appreciated in value. Pou Chen moved its factories to China. Today Pou Chen employs a quarter of a million people worldwide, and has factories in China, Indonesia, Vietnam, and the United States. With a turnover approaching US$ 2 billion, the company's first quarter profits in 2003 nearly tripled to US $92 million. Pou Chen holds a majority share (49%) in the Hong Kong-based Yue Yuen Industrial, itself a branded sports shoe manufacturing giant with subsidiaries in China, Indonesia, and Vietnam. Yue Yuen also operates

[17] Klintworth Gary (1995), "New Taiwan, New China - Taiwan's changing role in the Asia-Pacific region." Longman, p.257

[18] Interview with the Steven Yen, Managing director of the branch office in Singapore, from the trade company: "Longshine Technology Co.Ltd." p.123. (Interview in Appendix)

approximately 100 footwear and apparel stores in mainland China. In 2001 Yue Yuen's net profits were higher than those of its customers Reebok and adidas. In the first six months of this year, the company posted a turnover of US $1.24 billion. Recently, Yue Yuen announced it would spend US $10-20 million later this year to acquire two new projects relating to its shoe and apparel businesses, possibly moving production lines back to Hong Kong, where they produced in the 1980s, in light of a pending new free trade pact between Hong Kong and China (Wu, 2003; Hoover's Online, 2003; Reuters, 2003; WGSN Daily, 2003; Merk, 2003).

Another successful example of Taiwanese MNS is the ACER Company. Acer ranks as the world's No. four branded PC vendor. Since spinning-off its manufacturing operation, Acer has focused on globally marketing its brand-name products: mobile and desktop PCs, servers and storage, LCD monitors and high-definition TVs, peripherals, and e-business solutions for business, government, education, and home users. Acer's Channel Business Model has been instrumental in the company's latest success. Established in 1976, Acer Inc. employs 5,600 people supporting dealers and distributors in more than 100 countries. Estimated revenue for 2005 is US$9.7 billion. [19] Acer's e-Enabling Services are based on "MegaMicro" business model, i.e., a mega infrastructure that supports micro services. Acer has invested considerably in building a complete IT communications infrastructure - particularly to create the e-Enabling Data Centre (eDC), dedicated to developing a comprehensive

[19] http://global.acer.com/about/index.htm

Information-Communication Technology (ICT) infrastructure. Acer has created an e-Caring services network - founded on the principle of global infrastructure. In Australia, Malaysia, Indonesia and Thailand, where Acer notebooks ranked No. one, Acer demonstrated year-on-year growths with 169% in Australia and 135% in Malaysia -- the highest among the top five vendors. In Indonesia and Thailand, Acer notebooks grew by 178% and 91% respectively.[20] Acer has separated its Greater China operations into two parts: mainland China and Taiwan, with immediate effect. Now in Taiwan, as new brands have emerged in the highly competitive PC market with key players vying for the top notebook position, it has become essential to have a dedicated leader for the Taiwan market. "Our China strategy is to maximize on our advantage as the world No. five PC brand, which includes our mass-procurement capability, effective business model, and commitment to the channel."[21]

[20] Acer News Release http://global.acer.com/about/news.asp?id=6614
[21] Acer News Release http://global.acer.com/about/news.asp?id=6614