

**THE ASIAN ECONOMIC CRISIS
AND
THE INFORMATION REVOLUTION**

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The global information revolution, and the remarkable economic rise of East Asia, are closely linked. The wide scope and the rapid pace of change of the global information revolution of the past decade would be unthinkable without the intimate engagement of Asian countries like Japan, Malaysia, Singapore, India and Korea. For more than 20 years this developing region has been an important source of ever-rising demand for information and communications goods and services (ICS) and a key venue for low cost, high quality production and market-leading innovation.

But in light of the 1997-98 turmoil in international currency markets, the subsequent collapse of speculative bubbles and severe shocks to the real economy of the region, what is the future relationship between Asia and ICS?

To try to answer this question the author travelled through the region in the first quarter of 1998. Seeking a range of different exposures to the "East Asian Flu", and different approaches to IT policy, I travelled to India, Thailand and Malaysia. Specifically, I asked senior business and government leaders:

- o What has been the impact of the economic crisis on the region's information and communication sectors? What are the effects on local demand, investment and the **national plans** of leading countries in the region? What are the impacts on **private** corporate plans for investment?

o Are the economic shocks cyclical, so that the region will grow out of them, or more fundamental and structural? In other words, will the relationship between East Asia and the Information Revolution remain as tightly bound as in the recent past?

In brief, despite the dour tone of much of the Western press, my findings led me a more mixed perspective. On the one hand there is the fundamentally correct insight of the president of ACER Computers of Korea who takes the longer term view:

"Today, the right side of the Pacific has 10 times as many computers as the left side. But the left side has ten times as many people." [Stan Shih, CEO ACER, at Asia-Pacific Information Technology Summit, Nov 1977, quoted in LA Times, 11/24/97, p1, Section D]. At the same time, 'crony capitalism' and the tight links between bankers, bureaucrats and businessmen; and the apparent limits on the supply of highly trained local technicians and aggressive IT entrepreneurs, pose severe structural impediments to some Asian countries that must be overcome if the ICS boom is to be sustained.

Since the focus here is information and communications and not the economy as such, we won't dwell on the crisis. But a few figures are illustrative of the nature of the crisis, and the somewhat different starting points of the three states.

Table 1

July 1997 and January 1998 Consumer Prices

January	July	
1998	1997	
India		
Latest 3 Month Index Average	348.3	357.4
% change previous 3 months	+1.9	+1.4
% change year earlier	+9.2	+5.6
Thailand		
Latest 3 Month Index Average	136.4	142.7
% change previous 3 months	+0.9	+2.9
% change year earlier	+4.6	+6.2
Japan		
Latest 3 Month Index Average	100.2	102.2
% change previous 3 months	-0.2	+0.6
% change year earlier	+0.6	+2.1
Malaysia		
Latest 3 Month Index Average	108.5	109.9
% change previous 3 months	+0.9	+0.5
% change year earlier	+3.3	+2.3

source: *Far Eastern Economic Review*, July, 1997 and January 28, 1998

Table 2
Interest Rates - % (Prime Lending)

	July 1997	January 1998
Indonesia	15.75	35.00
Thailand	13.00	22.00
Japan	2.90	2.60*
Malaysia	9.10	10.35

**Long Term*

Source: *Far Eastern Economic Review*, July, 1997 and January 28, 1998

Table 3
**Expenditure on electric Data Processing Equipment
Per Capita, 1995**

Capita \$US inhabitant	EDP Sales 1995 \$US Million	Population 1995 million	EDP per per
India	807	929	0.87
Thailand	1,727	59	20.07
Malaysia	1,021	20	50.72
US	82,946	263	315.24
Japan	50,045	125	399.69

Source: Calculated from EDP sales-Elsevier, *Yearbook of World Electronics Data*, 1996, Population-ITU, *World Telecommunications Development Report 1995/96*, 1997.

India

The economic turmoil of the region is proving less of a threat to the Indian IT sector than the country's own domestic political uncertainties. Against a background of prolonged and profound state control of all sectors, especially the 'commanding heights' like energy and telecommunications, the Indian government has more recently been on a sustained path of liberalization in most of its IT sectors that has reduced red tape and controls. However, with the arrival of a new party in power, India's future status as an emerging IT power is clouded more by political uncertainties than economic ones.

The striking fact of India today is its aggressive and successful **content industries**. It is truly in **content and broadcasting** that India's global comparative advantage seems to be greatest, thanks in part to a 200 million plus educated middle class) There is a growing economic importance and subjective national pride in its burgeoning computer software industry, and its long-successful Bombay-based movie industry.

The Indian software industry is growing by 55% annually, and contributing about \$1.5 billion to exports. It possesses world class companies at the cutting edge of the content industries, many based around the West Coast city of Bangalore. Other Indian

regions are now trying to copy its successes. According to private sector managers interviewed, there has been a substantial shift in government's once-chilly relationship with the industry.

The head of the Indian software association insists that government has moved "From red tape to red carpet." He and his colleagues believe that by 2010 or so they will be competing head-to-head with software firms in Silicon Valley.

In film making, the ultimate content industry, "Bollywood", the Indian film industry in Bombay, produces twice as many films as Hollywood. ZEE TV and other Indian broadcasters are using all the sophisticated technological resources of the information age, especially satellite, using mainly national themes and local values, but with big doses of MTV and CNN grafted on as it competes for the large Indian market. Market surveys by Indian media companies reveal interesting patterns of language preferences within the national market. Contrary to some of the more globalist assumptions of a few years ago, consumer polling reveals that given a choice, 80% of those queried would prefer content to be produced in Hindi, not English. Of those who prefer English, more than half want local productions by Indian producers, reflecting Indian culture. Indians prefer their entertainment locally-made, not imported, although there is

clearly interest in having a mix available of foreign and domestic content.

Telecoms policy in India has also made great strides in recent years. Government made substantial commitments to liberalize the telecommunications sector, in 1994 opening up the state monopoly to private competition in twenty 'circles' or administrative regions (but retaining monopoly controls over long distance service.) New investment has been attracted mainly to big cities, but the government's original hopes to encourage private firms to enter commercially marginal markets have not been met; the regional economic crisis may make it harder still to do so, since investment money from Thailand, Malaysia and other regional centers has dried up.

In contrast to other Asian nations, the regional currency and economic crisis has had a limited impact on the Indian economy because its currency the rupee is not convertible and was not in play during the turbulence. Nevertheless, there are some indirect influences as regional demand weakens, and as regional investment by other companies in India drops.

The government has also recently introduced a much more liberal **Internet policy**, in effect privatizing the market, cutting taxes for five years, and building a new Internet backbone.

But will the forward trajectory of selected liberalizations continue? According to my senior respondents in government and the private sector, the answer is yes. Despite the regional economic crisis, and despite the domestic political uncertainties, the recent reforms in Internet, the coming new National Information Infrastructure policy, the liberalization of telecoms and other reforms will continue. They argue that the Indian elite, within the senior ranks of the bureaucracy, and their counterparts within the private sector, have concluded that India's future economic growth really does lie in promoting a modern IT industry that will help transform the rest of the economy. "There's no turning back now", said one senior ministry official. He and other colleagues believe that even the political leadership of the conservative Hindu BJP party recognize this sea change. There is also an emerging political constituency for these changes within the entrepreneurial class, both on the supply side, as well as among IT user companies who seek cheaper, more reliable and up-to-date IT services. The new politicians in power will resist pressures for protectionist, anti-privatization re-control of industry, IT as well as others. However, to appear responsive to their culturally conservative constituency, they may try to clamp down somewhat on broadcast and publishing to counterbalance more

liberal economic policies on ownership and competition.

The other large, relatively autonomous country in the region is of course China, and its experience of the economic crisis parallels India's. Interviews conducted in Beijing reveal similar dynamics. China too is rather isolated from direct impacts; not only did it run a \$40 billion trade surplus, but foreign trade is only about 20% of China's Gross Domestic Product, the lowest percentage of all the developing countries in the region. Furthermore, "only about a fifth of China's exports compete directly with those from other countries in the region."

[Wall Street Journal, April 30, 1998, p. R3]

When the regional crisis hit, China too was already in the midst of an extremely ambitious projects in telecoms, computers, applications and the construction of an integrated NII. Over the last five years China had installed 73 million telephone lines, more than the rest of the developing world combined. [Milton Mueller, Zixiang Tan, China in the Information Age. Washington, D.C.: CSIS, 1997, p.viii] Perhaps more so than India its concern is with the loss of traditional export markets as demand in the region falls (for example, China's exports to South Korea have dropped 40% this year. But Beijing is relatively self-contained.

Interviews with Chinese officials and researchers suggest

little direct impact in their national IT programs, beyond putting a strain on national export earnings, which may translate into less money to upgrade IT infrastructures. Even one of the biggest changes in the recent history of China's IT system, the forced consolidation of the largest IT ministries (Post and Telecommunications, Electronic Industries (ME) and elements of broadcasting, is driven much more by domestic trends than by sector-specific international pressures. No one interviewed in China felt the crisis was in any way responsible for the sectoral changes.

Thailand.

If India is one of the least affected economies with limited consequences for its national IT industry, then Thailand is one of the most affected, and its national industries have definitely felt the pinch. Thailand, despite some efforts through government IT centers like NECTEC and various study groups and commissions, nonetheless has neither the senior private leadership and vision of India, nor the top level governmental commitments of Malaysia. There are astute and visionary leaders throughout the sector, but they have apparently been unable to coalesce into a winning political coalition. Furthermore, in Thailand the severe economic

downturn has pushed many individual IT consumers to turn in their pagers, cellphones and other value-added appliances, and forced the country's leading Internet suppliers to revise their growth estimates downward. All the IT industries are suffering as a result.

Of course, it was in Bangkok that the regional economic crisis originated in June 1997 when the incoming minister realized the country's foreign exchange holdings were dangerously low. The impacts of the subsequent collapse have been substantial on growth, investments and overall employment. 53 financial institutions have closed, helping push unemployment beyond 400,000, with estimates that it will eventually top 1 million.

Interviews with local and foreign private sector managers reveal the sentiment that the government's policy toward the IT industry is just to muddle through, and they are not doing it particularly well. Several national level IT initiatives have hit the skids. For example, a high tech IT park proposed by the government never materialized. An 'IT 2000' masterplan is more visible on paper than in real world policy, and some of the technocrats despair at the infrequent meetings and slow progress of the initiative. Although recent policy changes opened the telecommunications industry to greater competition in core and

value added services, several firms have had to renegotiate their contracts with the Telephone Operators of Thailand (TOT), in part because of the decline in demand for telecoms services.

The political firestorm that erupted over proposed Internet controls is indicative of the lack of leadership and vision in the sector. According to one source, Internet use has soared since 1995, with more than a dozen Internet Services Providers operating today, of which the largest is KSC. When the President of that company, which has some government equity participation, became President of the local Internet Society, the proposals he put forward were extremely restrictive in the area of freedom of expression. By late January he was receiving over 100 email messages a day from around the world uniformly condemning the initiatives. Combined with critical articles and editorials in the local Thai business press, government had to back down.

Thailand, in its public and private sectors, has no senior level consensus on the importance of the IT industry, and the country lacks the promotional policies and private initiatives of some of its regional neighbors. It is not likely to change in the near future, and may indeed fall back relative to some of its neighbors, as the country tries to dig out from the economic decline of the past year.

Malaysia

Although next-door neighbors, Malaysia and Thailand could not be more different in their ICS strategies, in the commitment of senior leaders to ICS development, and in the institutional reforms put in place to advance those strategies. And while both countries have been struck by the currency crisis, Malaysia has suffered less severely in employment, demand, GDP growth -- and impact on the ICS sectors. Michel Camdessus of the IMF gave the country a relatively positive but still cautious clean bill of health during a January visit, and has subsequently issued positive statements about the country's reforms of the financial sector and its 'rebalanced' macroeconomic policies. [IMF Survey, April 6, , p. 100]

In the face of a clear economic slowdown, the Prime Minister Dr. Mahatiar (sp) has cut back funding for half a dozen mega-projects (such as a new airport), while insisting publicly and repeatedly that he is protecting his ICS strategy from the downturn.

When the economic crisis struck the region, Malaysia was already well-launched with its major national IT strategy. Under Mahtiar's personal direction, this was a vision to substitute an

IT-focus for the country's earlier national development strategy built around a mixture of agricultural exports (especially palm oil) and its \$35 billion (US) exports of computer chips and electronics equipment. The Malaysian President had been convinced by his advisors that the earlier strategy would not achieve his much-ballyhooed "Vision 2020"; the problem was that the earlier approach was build around import substitution industrialization combined with assembly plant operations for export that did not generate much value added. The country exported a lot of finished electronics products; but it imported a lot of components. The net gain for the Malaysian economy was less than the impressive export figures alone might initially suggest. Value added was modest.

Dr. Mahatiar's advisors from McKinsey and others urged the PM that the best way forward would be to concentrate on global IT markets. The result was a new national priority, embodied in a bold vision of Malaysia in the Information Age -- the MultiMedia Super Corridor (MSC). The MSC is a kind of industrial park for ICS, 150 square kilometers of high bandwidth, state-of-the-art research facilities, housing and a new legal structure that will be IT-friendly. The MSC boasts an impressive international advisory board including Bill Gates (MicroSoft) and Les Alberthal (CEO of EDS), the head of NTT in Japan, as well as local business

elites, especially the Malay elite. The development authority responsible for actually constructing the MSC includes a 15% share bought by NTT.

A visitor to the Cyber city ("CyberJaya") travels outside the capital city of Kuala Lumpur, to the palm tree plantations that ring that city. After a half hour through palm forests, a left turn and a quick right puts one in the middle of what appears to be Silicon Valley, California, complete with condos, luxury hotels, and modernistic but environmentally-correct office buildings. The dream is to build a high tech park for the digital cyber age, attractive to the highly educated and highly mobile professionals whose gray matter and experience are the true life blood of the industry.

Aside from hard infrastructure like beautiful buildings and very high bandwidth capacity, the MSC claims CyberJaya also has such 'soft' infrastructure as ten new 'cyberlaws' governing such issues as protection of intellectual property rights and investment codes offering ten year tax exemptions. To further attract foreign and local investment, MSC spokesmen say their new digital Shangri-La also provides easy labor laws for companies to bring in skilled labor; easy profit repatriation; political and policy stability; and other benefits.

The MSC has developed a clever and well-conceptualized package of incentives and strategic opportunities it hopes will attract investment to the country. There are three central elements to this strategy. First, MSC wants to provide a **testbed for global markets**. Companies from anywhere in the world that are interested in advanced software development, for example, can do their R&D and production based in CyberJaya, using the high bandwidth capabilities. Second, MSC wants to provide a **regional export platform** into three of the world's largest national markets: China (1.3 billion), India (900 million), and Indonesia. As almost any private or public interviewee will tell a visitor, Malaysia is a multicultural society. MSC seeks to leverage that reality by providing firms with culturally and linguistically-sensitive insights, and transform them into inputs for the design of market-appropriate software, consumer applications and other potential IT goods and services that will be sold in the region. Finally, to address local, **national** needs, the government has designed new investments projects under the unified rubric of what it calls 'Flagship Projects'. These are eight projects involving intensive applications of IT such as smart cards, smart schools and smart government. Together these are estimated to require about one billion dollars US of contracts.

So far, about 100 companies have paid a fee indicating their potential interest to participate in the MSC, and the Malaysian leadership (in bodies like the MSC, or the information processing promotion center MIMOS) is optimistic.

Still, there are not only concerns generated by the cyclical downturn in regional markets, but also concerns about the structural changes in markets and politics that may be necessary to sustain this vision. The way these concerns are answered will in turn shape whether or not private investors will 'come to the party' that Malaysia has laid out so grandly.

There are at least four important structural caveats and concerns. First, the quality of the Malaysian labor force is a concern to foreign investors and local observers alike. The cadre of well-educated and technically trained 'knowledge workers' is much thinner than in India, for example. This is already imposing costs on Malaysia's IT initiatives. Second, the quality of Malaysian capitalists in this fast-moving sector is untested. According to Malaysian scholars, there have been few indigenous firms that have made the critical leap from small and medium-sized start-up enterprises, to become large scale corporations with high value added. Many Malaysian companies are still in the assembly stages. This distinguishes Malaysia from, for example, Korea or

Taiwan. Fruitful, egalitarian joint ventures between local and foreign firms have political as well as commercial benefits. Third, even if the MSC takes off as planned, there are also concerns whether this IT hothouse will generate sustainable economic spread effects to the rest of the economy. The risk is that the Super Corridor remains a high tech enclave separate from the 'real' Malaysia, with few jobs created for the majority of the population. Finally, a related political issue. Japanese and other foreign investors are especially concerned about the political sustainability of the ICS initiatives. Do they enjoy the backing of all the leaders of the diverse Malaysian communities? Are the local Malays as involved and committed as the minority Chinese? Will the new IT initiatives, with their emphases on cutthroat global competition and market logic, undercut the carefully balanced social compacts and political commitments that have permitted interethnic peace in the country for so long?

On top of these four structural concerns, there are the cyclical worries. One senior Japanese executive interviewed in Tokyo about Malaysia, mused that because of the economic crisis, Japanese IT companies must be more conservative about their overseas investments, and first protect their home market; then ensure their footing in the U.S. market; then try for China; then

maybe Malaysia follows.

Of course, the specific investment choices corporations make ultimately hinge on their overall competitive position, their current commercial exposures and their future ambitions. We return below to the private sector's responses to the crisis.

Malaysia's **telecoms strategy** again reveals the country's sophisticated appreciation of ICS. Telekom Malaysia got a jump on its neighbors by commercializing early in the game, so now is ambitiously seeking overseas markets in Asia and beyond. For example, with SBC (a US Baby Bell) it bought 1/3 of South African Telekom at \$1.3 billion, and has bought equity shares in Guinea, Ghana and other African and Asia countries. This international investment activity though is likely to be reined in due to the crisis.

Still, unemployment is likely to go up, investment and consumer spending down. And it is unclear what the political uncertainty in Indonesia will do to economic and political peace in Malaysia.

Private Sector responses to the Regional Economic Crisis _____

As far as private companies are concerned, the overall impacts on their corporate earnings and strategies depend on the

balance of their exposure in Asia as an importer and exporter. Many indigenous companies IT companies have suffered deeply, or gone out of business. Other companies look for strategic partners or try to avoid corporate buy-outs.

International companies depending upon large sales to Asia suffered when regional demand for IT products and services fell. Oracle, for example, was badly hit by the "Asian flu". The region accounts for only 15% of the company's revenue, but 50% of its growth as recently as 1997. Deutsch Telekom, anticipating a hit, took a \$822.4 million charge against 1997 earnings for risk provision on its SouthEast Asia holdings and losses on its Global One venture. Its main holdings in Indonesia, Malaysia and the Philippines suffered from the turmoil. Even the mighty MicroSoft saw its Asia revenues decline by 8% from the previous quarter. (Financial Times) Motorola also took a 4th quarter hit which they believe will continue into the first quarter of 1998.

On the other hand, Compaq, the world's largest PC computer manufacturer, is a net importer of goods from Asia, with less than 9% of its revenues coming from the region, and it saw its total manufacturing costs tumble. Compaq's big US competitor, IBM, saw contradictory trends. While its overall sales grow 9% in the last quarter to \$10.4 billion, its Asia-Pacific sales were flat at \$4.4

billion. But if Asia in crisis did not contribute to growth, European earnings declined by 4% to 7.7 billion. And, echoing the sentiments cited earlier by the CEO of Acer, the European company Siemens Nixdorf Informations Systems reported it will proceed with its investment plans in the region. The Executive Vice President Mr. Axel Haas insisted that "The momentum, the population, the speed, the power are all there. The economy of the Asia-Pacific countries are strong enough to overcome the turmoil. We will not run away and we will continue our programmes in the Asian market." [quoted in the New Straits Times Press, Business Times, Nov 20, 1997, p.1. For its financial year ending 30 September 1997, the company posed a 97% growth in sales in the region. They predict that 1/3 of their sales will come from the region by 2005.

The region is also home to many chip manufacturers. In light of faltering regional demand, large companies are cutting back their previous plant expansion plans. Korean chip manufacturers announced plans to cut their investment by 60%, for example. While initially a blow, retrenchment may help slow the price slide for dynamic random access chips, which in the fourth quarter of 1997 alone fell by 40%.

CONCLUSION

India, Thailand and Malaysia have been affected in different ways and to different degrees by the crisis in Asia. In some instances their IT sectors have been buffeted by falling investment and slack demand. Yet in each case, the quality of the national leadership and the strength and flexibility of local institutions were important.

Building on a base of more than a decade of semi-conductor and chip manufacturing, Malaysia had already developed a very ambitious and sophisticated cyber-strategy that included targeting national, regional and global markets, and mobilizing private firms at each level to help it pursue its chosen strategy. By contrast, Thailand was still trying to design and develop a national IT strategy when the economic crisis struck in Bangkok. India, with more indigenous production than either Malaysia or Thailand, has less of a coherent, top down national strategy than Malaysia, but its industrial base in the ICS sectors is arguably stronger.

With their mirror image strategies, India and Malaysia will each benefit and suffer from their national choices. And as their governments look to the future, they will need to adjust their strategies in complementary. Malaysia could usefully harken to India's capacities to grow its own technical and knowledge-based

class. India could benefit from more consistent, transparent guidance in some of its IT sectors like telekoms. And neither country has a strong aggressive program for dramatically enhancing universal access for its least favored populations.

Important challenges remain to be met if the full potential of the region's IT sectors are to be realized. These countries, especially Malaysia and Thailand, must substantially expand the number and quality of trained, educated modern IT workers. Second, they must do everything possible to ensure more and better linkages between the growing IT sector on the one hand, and the rest of the real economy on the other, both agriculture and industry. Third, they must do everything possible to ensure that political stability is maintained by cleverly managing the ethnic and class tensions inevitably affected by the process of globalization and restructuring. Finally, the emerging public-private partnerships among the top national elites must be more transparent and successful in promoting the growth of locally-owned, indigenous firms that actually innovate in this fast-moving field. Indeed, the use of modern information systems may introduce greater transparency into these relationships. By so doing, IT-buoyed reforms may help better protect regional political economies should another economic crisis loom on the horizon.

