MYANMAR (BURMA) [1] (Complete 240407)

Introduction

In November 2005 the residents of Burma's capital Rangoon (Yangon) awoke to discover the military junta, led since 1992 by General Than Shwe, had moved the entire central government apparatus to the isolated mountainous region of Pyinmana in the centre of the country. As the *Financial Times*, 1 December 2005, suggested, this seemed a strange way to bring greater contact with remote parts of the country and 'upgrading the country's weak transport links and communications networks would probably be far less expensive as well as more beneficial to the economy in the long run.' From the outset, the new political capital did not even have facsimile communications, but uniting the country militarily and combating regional separatism or even federalism is the driving ideology of the junta.

Union of Burma

The Union of Burma created in 1948 was an effort to unify the many regional ethnic groups into a nation-state.[2] The elected government of U Nu [3] was overthrown in a bloodless military coup in 1962 by army chief General Ne Win who opposed the idea of a federalist constitution which he feared would lead to the break up of the Union.[4] The issue is compounded by the fact that Burman ruling families and cliques have dominated the subsequent military junta. In 1989 Burma was renamed Myanmar.

The 'Burmese Way to Socialism'

Assuming dictatorial power, General Ne Win installed himself as chair of a 24-member Revolutionary Council and expanded the role of the military in politics, bureaucratic administration and the economy. The junta formed the Burma Socialist Program Party (BSPP) as a means of mass mobilization and political indoctrination, while all other political parties were banned, eliminating institutional rivals to the Revolutionary Council. An autarkic and xenophobic economic policy was pursued, the disastrous 'Burmese Way to Socialism', bringing to a grinding halt the growth of an independent civil society based upon the private sector. Nationalization of businesses and property during the 1960s resulted in the departure of much of the Indian and Chinese entrepreneurial class and destroyed the emerging Burmese middle class. A non-aligned isolationist policy of 'disengagement' further insulated the country from direct political influence by foreign powers. The result has been that Burma changed from being one of Asia's most prosperous and growing economies to a less developed country called Myanmar.

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[1] 'Myanmar' is used by international organizations, but the decision to rename the country 'was not approved by any sitting legislature in Burma, and the US Government did not adopt the name, which is a derivative of the Burmese short-form name Myanma Naingngandaw.' (*CIA Factbook*)

[2] Ethnic diversity is as follows: Burmans (valley dwellers) 68 per cent of the population, Shan (borders with China, Laos and Thailand) 9 per cent, Karen (border with Thailand) 7 per cent, Rakhine (borders with Bangladesh and India) 4 per cent, Chinese 3 per cent; Indians 2 per cent; Mon, 2 per cent, Others, for example, the Chin, the Karenni and the Wa, 5 per cent, each with diverse local economies, from rice paddy and agriculture to fishing, hunting and gathering, from urban living to remote jungle villages.

[3] U Nu had assumed leadership of the Anti-Fascist People's Freedom League (AFPFL) following the assassination of General Aung San, father of pro-democracy leader Aung San Suu Kyi.

[4] Other reasons for the military's assertion of control over the state were a perceived turning away from the state's founding socialist principles and U Nu's policy of establishing Buddhism as the state religion. (Schock, 1999.)

Although Myanmar is the largest country of IndoChina, rich in natural resources, an estimated quarter of the population live below the poverty line and rural amenities and infrastructure are often non-existent. Economic ruin and civil repression led to mass pro-democracy and anti-regime demonstrations in 1988 which were violently suppressed by the Lon Htein, or riot police, who killed scores of students, workers and Buddhist monks.[5] Facing spreading unrest Ne Win stepped down and was for a short time replaced by Sein Lwin, the commander of the Lon Htein, whose appointment just intensified 'people power' protests leading to a nationwide general strike on August 8 (the 8-8-88 event). In September a group of generals organized by Ne Win and led by General Saw Maung took power, announced the formation of the State Law and Order Restoration Committee (SLORC), and imposed martial law. Arrests and summary executions of alleged dissident strike organizers continued and universities remained closed until SLORC ordered all people to return to work in October. After eight weeks the general strike collapsed and the people power movement with it.

Myanmar's 'Open Door' Policy
As a direct consequence of the anti-government demonstrations of 1988, the SLORC announced that key aspects of the 'Burmese Way to Socialism' were to be abandoned in favour of greater private sector participation, its so-called 'Open-Door' program of economic reforms. This especially applied to foreign trade, a move seen by some as designed to lessen international criticism of the regime, and it was followed by a slow process of market reforms that created a new business class tied to the generals. The reforms included new foreign investment laws and tax incentives, and succeeded for the first years of the 1990s in attracting an inflow of foreign funds, concentrated in the oil and gas, mining, hotels and tourism sectors. Elections were held in 1990 to increase international legitimacy and foreign aid but the landslide victory (over 80 per cent of the parliamentary seats) of the leading opposition group, the National League for Democracy (NLD) led by Aung San Suu Kyi, was entirely unanticipated by the junta who refused to hand over power. In May 2003 Suu Kyi was placed under house arrest for the third time since 1989, under the 1975 State Protection Law which allows for a person to be detained for one year without trial, a period that can be extended up to a total of five years.

The periodic detention and on-going house-arrest of 1991 Nobel Peace laureate Aung San Suu Kyi has been a lightning rod for international and diplomatic protest. In 1996 Motorola and Philips Electronics N.V. pulled out of Myanmar [6] and in 1998 Ericsson suspended all business ties for fear that its involvement in Burma, one of its smallest markets, could harm its business in the US.[7] In 1997 Washington banned new investment by US companies and imposed additional economic sanctions in 2003 in

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[5] 'In September 1987 Ne Win demonetized currency notes in already quixotic 75, 35 and 25 kyat units and replaced them with 90 kyat and 45 kyat notes, currency units divisible by nine, his lucky number! Nine didn't prove lucky after all for this demonetization triggered off violent protests led by enraged students.' Mohan Guruswamy, *The Rediff Special*, http://inhome.rediff.com/news/2003/jun/26spec.htm
[6] To avoid criticism Western companies sometimes do business with Mynamar indirectly. For example, in 1995 Nortel worked with Loxley of Thailand to sell and install a US$3.38 million cellular digital telephone system and in 1996 Nortel (Canada) used a 20 per cent stake in Israeli company Telerad to sell its switching equipment.
[7] An equivocal senior Ericsson official stressed the decision to pull out was taken on commercial grounds and was not a moral judgment. (*Financial Times*, 2 September 1998)

light of what the International Labour Organization (ILO) identified as the systematic use of child and forced labor. Even though Myanmar has received virtually no assistance from international financial institutions like the IMF and the World Bank [8] due to the US embargo, it has become adept at 'resource diplomacy', giving its Asian neighbours a bigger slice of its natural wealth in return for political, financial and military support. This strategy was successful in getting Myanmar membership of ASEAN in 1997 despite strong international opposition. A cosmetic change in 1997 was the renaming of the SLORC to the State Peace and Development Council (SPDC) and the dismissal of some of the more obviously corrupt members of the Council.[9]

One of Myanmar's biggest backers has been China which has denounced Western sanctions against the regime it props up with loans while Chinese firms build bridges, roads and factories, and dominate teak logging near the border. In September 2004 a large China Telecom delegation visited Myanmar to discuss telecom cooperation between the two countries. In June 2004 Alcatel Shanghai Bell of China signed a US$30.2 million contract with the state monopoly to install 38,500 landline connections by 2005 in addition to a US$20m 55,000 digital line contract it won in 2000 which included a US$17 million low interest loan from the Chinese government. In July 2004 the ZTE Corporation of China agreed to provide 95,000 cellular phone connections under a US$12.5 million contract. This followed a China Exim bank supported US$6.5 million contract to build 13,500-line exchanges in twelve Myanmar towns in 2002. Japan while temporarily suspending aid, has also refused to join the economic boycott and in 1995 Sumitomo received a 1 billion yen order from the MPT to install switchboards and optical fibres to update the communications network in the capital Yangon. But fellow ASEAN member countries such as Malaysia and Indonesia have showed frustration at Myanmar's failure to make appreciable progress toward restoring democracy, to the point of pressurizing Myanmar against hosting the 2006 10-country ASEAN annual summit.

Mafia Wars for Control
Generals, their families and a handful of businessmen have profited in what is one of the world's most corrupt economies, but internal rivalries among the different military cliques have engendered battles over economic turf.[10] Military leadership upheaval impacts on who gets lucrative government monopolies and contracts. In 2003 General Khin Nyunt, the powerful chief since the 1980s of the National Intelligence Bureau, the body controlling the secret police and a kind of shadow government, was appointed prime minister as part of a 'road map' to democratization (or 'national reconciliation process') which involved pushing ahead with a national convention to draw up a new constitution, a process that because it excluded Aung San Suu Kyi's National League for Democracy was condemned by the United Nations. But in October 2004 following a power struggle Khin Nyunt was sacked and replaced by

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[8] The World Bank has approved no new lending for Myanmar since 1987, and has no plans to resume its program. (World Bank Website)

[9] November 15, 1997, the SLORC announced reorganization to SPDC which is currently smaller than the SLORC with younger officers and Cabinet members. The more corrupt SLORC members and the Cabinet retired. The Tatmadaw is now the permanent military government. (*Jane's Intelligence Review*, 1 March 1998)

[10] 'As the size of the military elite grows, more and more influential families are competing for a slice of the same pie… the crushing of Ne Win's empire [in 2002] is a necessary step for those syndicates linked to today's rulers, if they want to ever truly control Burma's business sector.' (*Inter Press Service*, 20 March 2002)

Soe Win as hardline junta members, opposed to Khin Nyunt's relative tolerance of the pro-democracy movement, accused him of insubordination and corruption.[11] Government agencies and commercial enterprises associated with Khin Nyunt's faction were seized and dissolved, his supporters purged, and his power base dismantled.

Besides the control of the state and business, the other 'control' issue is territory. The military leaders do seem to be preoccupied with the integrity of Burma's sovereignty, not just against foreign powers but against their own diverse ethnic populations, mostly along the eastern border with Thailand.[12] In one of the world's longest running insurgencies Shan, Karen and Karenni ethnic rebel groups have for more than half a century fought for autonomy from the Burmans who dominate government and the military,[13] and an estimated two million people have been expelled from their homes since the civil war began. Any thought of bringing modern telecommunications to rural areas, or of the junta opening the doors to direct foreign investment in networks, has to deal with the fact that the junta at the highest levels seems to be as much influenced by atavistic notions of Burma's glorious past as a major regional power as by today's economic realities.

Telecommunications
Strict adherence to ideology and commercial self-interest, in the guises of 'national security' and military-controlled state-enterprises, has confined access to telecommunications to a few. A World Bank report of 1995 notes the general lack of private access to physical infrastructure, including telecommunications, and how this skews foreign investment towards joint ventures with the state (World Bank, 1995).

> Apart from the inadequacies of Myanmar's physical infrastructure, private businesses have only limited access to these facilities and services compared to state enterprises and government departments. It appears to take private entrepreneurs considerably longer than state enterprises to obtain power, water and telephone connections, or to have goods cleared through the port and stored in warehouses. Apart from the advantages of incumbency enjoyed by state enterprises, the lack of formal interaction between representatives of the domestic private sector (such as the Myanmar Chamber of Commerce) and key policymakers is a contributing factor. And, the fuzziness of land ownership and use rights even in urban areas makes it difficult for private firms to acquire land and get access to public services. These relative advantages enjoyed by state enterprises in their access to infrastructure and

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[11] Khin Nyunt ostensibly resigned because of 'health reasons'. Myanmar watchers saw the tension between Khin Nyunt and Than Shwe and his close deputy Maung Aye as the interplay of three different levels of 'tension': one, the classic tension between an intelligence czar and the regular army; two, a turf rivalry in the business deals which are an integral part of the military-run system; and three, disagreement over the approach to the NLD and ethnic rebel groups. (*Straits Times*, October 21, 2004)

[12] According to Ye Zaw Aye, Myanmar's consul in Hong Kong, 'The civil war originated in Myanmar's independence in 1948 – because of a cunning divide-and-rule conspiracy by the colonialists. Our government is patiently trying to end this "chronic" situation.' He added that 'Aung San Suu Kyi is not under house arrest. Our government is just taking care of her security because of the severe split in her party, the National League for Democracy.' Letters, *South China Morning Post*, 19 March 2007.

[13] By 2005 the Karen are the last resistance group not to have signed a permanent cease fire, but then renewed fighting broke out between the military and the Shan.

public services can be seen also in the preference that foreign investors have shown to enter into partnerships with state enterprises rather than with domestic private firms.

Myanmar's short-lived success in the early 1990s to attract foreign investment under the 'Open Door' policy had all but ended by the time of the Asian financial crisis of 1997. A period of structural retrogression set in and by the end of the nineties Myanmar had shut down the only two independent Internet service providers (ISPs) in the country.[14] There has been some foreign investment in value-added services, for example in 2002 in a US$12 million deal Shin Satellite (Thailand) set up a broadband satellite gateway with 'semi state enterprise' Bagan Cybertech, partly owned by Ye Naing Win, the son of ousted premier Khin Nyunt (see above).[15] Bagan Cybertech was established in 2001 as part of Myanmar Teleport to be the ISP for a chain of Internet cafés. The Burmese deal was agreed to after a visit by Khin Nyunt to Bangkok in September 2001. At the time, it was reported that Burma's ruling junta wanted to cancel the use of Shin Satellite for transmission of the government's TV programmes as Yangon did not have the money to pay for the service, but Shin Satellite allowed the Burmese government to continue using the satellite service.

In April 2002 Khin Nyunt was instrumental in the arrest and detention of family members of former Burmese dictator Ne Win for allegedly plotting a coup attempt against the junta. Maybe it was not coincidental that those in detention had recently launched their own terrestrial mobile cellular service, SkyLink, a potential rival to Ye Naing Win's own telecom mogul ambitions.[16] This event was a reflection of the vagaries and unpredictability of quickly accumulating (and just as quickly being dispossessed of) wealth by leveraging connections through the state apparatus. This was demonstrated two years later when Khin Nyunt proved equally powerless to protect himself and his family interests in Bagan Cybertech when he was deposed as Prime Minister. In October 2004 Bagan Cybertech was raided by the military after Khin Nyunt's arrest and officials went through the company's books, searching for incriminating evidence of malfeasance. Ye Naing Win is being held secretly and faces as yet unspecified charges, though the courts will likely rule on whether he was legally permitted to do business with foreigners.[17] Bagan Cybertech was subsequently placed under the control of the Myanmar Ministry of Posts and Telecommunications.

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[14] Eagle IT, one of the independent ISPs, was closed down because it would not transfer to the Ministry the domain initials .mm which denote Myanmar in Internet addresses. *Asiaweek*, 13 January 2000.

[15] Ye Naing Win apparently reconciled with his father after a bizarre incident in 1998 where Khin Nyunt took out an advertisement in the New Light of Myanmar newspaper to announce that Ye Naing Win 'was disowned by the parents for his inexcusable deed', that of getting married to a woman from Singapore. (*Pittsburg Post-Gazette*, December 15, 1999) Under a law passed years ago by the junta to prevent Suu Kyi from taking office, a Burmese citizen married to a foreigner cannot hold government office, and neither can his or her parents. Suu Kyi had been married to a British citizen, Michael Aris, who died in 1999.

[16] 'Ne Win's daughter, Sandar Win, who is being held under virtual house arrest along with her father at their Yangon home, is a prominent businesswoman who was a major shareholder of SkyLink. The family's involvement in the project was one of the elements believed to have led to their downfall, after they began selling the handsets before being given permission by MPT, cheating other powerful investors in the scheme. Myanmar's communications minister was forced to resign amid the scandal.' *i.t.matters*, Manila, 26 March 2002, itmatters.com.ph/news/news_03262002e.html

[17] *BBC Monitoring Asia Pacific*, 30 March 2005.

With Western companies under pressure to pull out, Asian firms have filled the void, especially Thai ones. The close economic ties between Thailand and Myanmar were formally sealed by the so-called Pagan Declaration, a pact signed by Thailand, Laos, Burma and Cambodia at the Economic Cooperation Summit held in Pagan (Myanmar) in November 2003. The only foreign investor of any significance who chose to remain in Myanmar's telecommunications sector was Thailand's Shinawatra group, and its involvement was limited to leasing satellite transponders and selling equipment to the government and state enterprises.[18] In 2004 the MCPT requested assistance from the Thai government on three projects: satellite broadband communications, installation of 1,500 kilometres of fibre optic cables and ICT development. But the Shin group ran into scrutiny back in Thailand over its business dealings with the family of Myanmar's Prime Minister Khin Nyunt when he was sacked in the fall of 2004.[19]

As part of a 'Look East' foreign policy to forge closer economic and political ties with its Southeast Asian neighbors, India is the latest non-Western investor to enter Myanmar's telecoms sector, and Myanmar is in an ideal position to balance Indian geo-political interests and influence against those of Thailand and China in pursuing its own national agenda of development. India, along with Thailand, is funding a US$800 million 1,400 km trilateral Trans-Asian highway network project linking the three countries and including Indian loan aid for an optical fiber telecommunication network along the highway. In 2004-5 India extended to Myanmar a line of credit of seven million US dollars for two telecom projects, the commission of a CorDECT WLL (Wireless Local Loop) based basic telephone and Internet network in Yangon and Mandalay and installation of an Optical Fibre Cable between the border towns of Moreh and Tamu, and announced a grant of three million US dollars for implementation of IT-related projects.[20] The loan was used to establish a direct telephone link between the two countries to remedy a situation where telephone links between Myanmar and India previously had to be routed via Great Britain.

Policy and Regulation

Public telecom facilities, fixed and wireless, continue to be state-owned and controlled by Myanmar Posts and Telecommunications (MPT), known also as the Ministry of Communications, Posts and Telegraph (MCPT). Despite the history of profitable sectors of the economy coming under the control of influential military personnel, the government has been concerned to modernize its telecommunication

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[18] Shin Sat has to supply 6,000 broadband satellite terminals and accessories to Burma's Ministry of Communications, Post and Telegraph by 2006. It sold 5,000 broadband satellite terminals to Bagan Cybertech for its broadband satellite gateway. (*The Nation*, 21 October 2004)

[19] Thailand's Prime Minister Thaksin Shinawatra had to defend himself against accusations of a conflict of interest when the Export-Import Bank of Thailand (EXIM) approved a US$15 million loan (600 million baht) to Myanmar in August 2004 for a high-speed Internet project delivered by Shin Satellite's iPStar service. Exim Bank president Sataporn Jinachitra told the Senate committee on foreign affairs, 'We have no choice but to follow government policy. Although it was not a written order, it could be understood verbally… This is not a business to which the Exim Bank usually grants loans'. (*BBC Monitoring Asia Pacific*, September 2, 2004) Politically volatile countries such as Burma, Cambodia and Laos have so far been iPStar's best customers. Khin Nyunt's demise also raised concern in the Thai legislature about the capacity of the cash-strapped military regime to repay a 12-year, four-billion Baht loan (US$96 million) at interest of 3 per cent package with the Exim bank, of which the telecoms loan was one part.

[20] *BBC Monitoring South Asia*, 24 March 2005.

systems and is drafting a Telecommunications Law, sometimes called the 'cyber laws', to regulate the use of telecommunications equipment and services, and to replace the outdated Myanmar Telegraph Act of 1885. Under the 1989 State-Owned Economic Enterprise Law, part of the 'Open Door' policy, telecommunication facilities and services were the sole right of the government, but government-private sector joint ventures were permitted. The Ministry of Communications, Posts and Telegraphs with the assistance of the Office of Attorney General, e-National Task Force, and ICT specialists completed work on an initial draft in late August 2004. Other laws which impact the telecom sector are the Computer Science Development Law enacted in 1996 and the Electronic Transaction Law which took effect in April 2004.

To date, the junta has been more successful in regulating people than telecom, which remains rudimentary with less than 500,000 fixed lines, less than 200,000 cellular users, and less than 80,000 Internet users out of a population of over 47 million.[21] Since 1999 Internet access has been severely restricted in Myanmar,[22] and it is illegal to possess or use a fax machine without a permit. In the most draconian measure, unauthorized ownership of a fax modem or setting up a computer network without the telecom ministry's approval risks seven to 15 years imprisonment and a fine, according to the 1996 Computer Science Development Law. The Law also banned acts carried out by means of computer technology that negatively affected the stability and peace of the state or the national culture.

Following the 'Open Door' Policy the MPT drew up a Master Plan 1990-2010, and although networks have expanded by over 400 per cent since 1990, Myanmar simply does not have the funds to maintain a high growth rate.[23] According to the MPT's website, visited April 2005, in 2001 there were 273,000 direct exchange lines or just 0.6 fixed lines per 100 population, mostly in Yangon and Mandalay and even there penetration rates were only 3.6 per cent and 2.4 per cent. Two-thirds are digital exchange lines, but nearly 20 per cent remain manual.

Wireless systems consist of mobile cellular and wireless local loop (WLL). A GSM system, supplied by Siemens (Germany) and built by ZTE (China) in 2002, operates 35,000 lines in Yangon and 8,000 in Mandalay. A CDMA system, supplied by Singapore-based UCOM International (Thailand) and LG Electronics (South Korea) in 1997, operates 32,000 lines, over 90 per cent in Yangon. A WLL network of 15,000 lines based upon the European DECT (Digital Electronic Cordless Telephone) standard, supplied by InterDigital (USA) and installed in 1996-97, provides access to eight towns in addition to Yangon and Mandalay. A 1993 analogue AMPS system offers 4,500 lines, half of which have been redeployed to serve seven smaller mining and tourist towns. Counting WLL as a fixed line service, by 2002 Myanmar still had four times as many fixed as mobile lines.

Licensing

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[21] *The World Factbook: Burma,* CIA, 15 March 2007

[22] In 2003, an Internet application licence cost something like US$2,500. (*Asia Computer Weekly*, 24 February 2003)

[23] Myanmar is starting from a very low base. In 1988, the country had only 67,016 phones.

Licensing of equipment for use is the responsibility of the MPT with fees quoted in US dollars and Foreign Exchange Certificates (FECs),[24] and a licence is also required to obtain a fixed or mobile telephone line, with priority given to regime 'insiders'.[25] So the licensing mechanism has been used not so much to promote market entry, although in 2002 Bagan Cybertech and SkyLink were new entrants, but rather to control telecommunications access and usage.

Interconnection

The only way in which interconnection arises as an issue in a state-run monopoly is through what impediments exist to Internet access. Connection rather than interconnection is the country's primary problem.

Tariffs

The cost of obtaining either a fixed line or a mobile connection is kyat 500,000. At the official exchange rate at the end of 2003 of US$1:K6.42, this is close to US$80,000. At the United Nations 2003 exchange rate of US$1:K830, this is US$600. At the prevailing black market rate in 2003, this is US$450. Only the powerful and the rich have access to US dollars, and the prices in kyat already put telephony way beyond the means of the average Burmese.[26]

The black market thrives under these circumstances, including smuggled handsets from China and Thailand for the equivalent of US$80. For example, under the CDMA and AMPS systems that were then operating in tandem, only 15,500 handsets were in circulation and they exchanged hands for up to 3 million kyats, or around US$3,500 at the black market rate. In March 2002, with the opening of Myanmar's first GSM mobile telephone services in Yangon and Mandalay, around 100,000 GSM handsets were available at a cost of more than US$4,000 per handset. At the time mobile tariff rates were 2 kyat per minute for incoming calls and 4 kyat a minute for outgoing calls.

With limited access to finance and a wildly over-valued official exchange rate, the MPT has been forced to raise tariffs and charge for IDD calls in US dollars, so in 2003 the MPT raised the fixed phone tariff from 3 to 15 kyats per minute and the mobile phone tariff from 4 to 25 kyats per minute. Calls to other public phones rose by 400 per cent to 20 kyat, while domestic long-distance calls were charged at 25 kyat per minute. In 1999 international calls were permitted from all telephones, but costs were raised sharply and since all calls are operator connected, preference is given to calls paid for in US dollars.[27] According to the *BBC Monitoring Asia Pacific*, 9

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[24] For details see http://www.mcpt.gov.mm/ptd/index.htm. 1 FEC = 1 US$ and officially 6 kyat, but the black market rate is closer to 1,000 kyat.

[25] 'In January 2001, MPT sold 3,000 CDMA handsets after applications were invited through the state media. MPT was obliged to set up two more stations to receive the flood of thousands of applications. None, however, were sold to the general public as they were sold on a "priority" basis. The going rate then to sign on was 600,000 kyat.' itmatters.com.ph/news/news_03262002e.html

[26] The lowest monthly salary of Myanmar government employees is rated at 3,000 kyats which is the equivalent to 3 US dollars according to market exchange rate, with the average government salary coming out to 12,000 kyat a month or US$15.

[27] When the system was first introduced, calls to Bangkok were to be charged at US$1.40 per minute, compared to kyat 17 (five U.S. cents) per minute previously charged by operators. However, subscribers with existing direct dial telephones got a rate cut. They previously had to pay US$2.69 per minute for calls to Bangkok. *Reuters*, 5 August 1999.

February 2005, SMS users were being charged a monthly fee of 500 kyats, plus 10 kyats for each message.

Scarce Resources

According to an ITU questionnaire filled out by the MPT in January 2000, there is no national law governing spectrum management but consideration has been given to designing one with a request put in for technical assistance from the ITU and the APT (Asia-Pacific Telecommunity), especially since the only published regulations date back to 1958 on radio service and license requirements.[28] There is a need to devise an appropriate method to calculate spectrum usage fees and to redeploy spectrum.

Wireless networks are used for AMPS, CDMA, and GSM cellular systems and a DECT wireless access network, and also for seven 6-GHz analogue microwave systems with a maximum capacity of 960 channels each. These also serve as bearers to TV broadcasting in provincial towns, and together with UHF/VHF systems, provide subscriber trunk dialing services to 30 towns including Yangon. [29] In 2000 a new seven-digit call numbering system was introduced to facilitate national network expansion.

Given the shortage of networks, not spectrum, satellite services are widely used. All domestic Vsat stations are connected to Shin Sat's ThaiCom 3, and until Myanmar recently installed a landing station to the SEA-ME-WE3 submarine cable, all international calls were routed through one of two satellite earth stations. In 2002 Shin Sat concluded an agreement with Bagan Cybertech to provide the first iPSTAR (satellite-over-IP) gateway and 5,000 Vsat terminals to offer high-speed Internet access. Bagan Cybertech's plan was to provide broadband services to government and commercial offices as well as access to rural areas, but since the fall of Prime Minister Khin Nyunt in 2004 the future of this venture remains uncertain.

In March 2002 the MPT commercially launched the country's first GSM network in a BOT with Sky-Link. The service had been delayed for two years not because of technical difficulties due to spectrum allocation but because of conflicts among the shareholders.[30] Partly because of the delay in implementation of the US$144m project, Brigadier General Win Tin, Minister for Telecommunications, Post and Telegraph, was sacked and replaced by Brigadier General Thein Zaw in May 2001. Thein Zaw found himself under scrutiny at the end of 2004 for charges of 'excessive corruption' (similar to those which brought down Khin Nyunt), regarding a number of major telecom contracts that allegedly involved massive kickbacks.[31]

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[28] The questionnaire can be accessed at http://www.itu.int/ITU-D/study_groups/SGP_1998-2002/JGRES09/pdf/myanmar.pdf

[29] See *Telecoms in Asia, 2003* Paul Budde Communications Pty Ltd, http://www.budde.com.au

[30] The Ne Win family, sharing the patriarch's mystical beliefs, appointed an astrologer as a SkyLink adviser with a monthly salary of 300,000 kyat to advise on auspicious moments and *yedaya* (means to counter fate). (*BBC Monitoring Asia Pacific*, 13 March 2002)

[31] One of the contracts under review is a proposed deal with mainland mobile phone company ZTE. Under the contract, ZTE would provide a US$150 million loan for the infrastructure to provide 300,000 phone lines. But this is more than 10 times the real cost of the project, according to industry experts. Another ZTE contract for a million phone lines in another Southeast Asian country cost US$30 million. (*South China Morning Post*, 21 February 2005)

Universal Service and the Digital Divide

While eighty per cent of Myanmar's 53 million people live in the countryside, mostly engaged in agriculture-related activities, the majority of telephones are located in Yangon (3.6 per cent teledensity) and Mandalay (2.3 per cent teledensity). In contrast Ayeyarwaddy, with a population of 7.1 million, has only 14,970 telephone lines (0.21 teledensity) with Rakhine having the lowest teledensity at 0.17. As of September 2004 Myanmar had 418,698 telephones, including over 63,000 mobile phones. According to *The Irrawaddy*, March 2003 there were 6,560 villages in Myanmar without phone lines.

ITU data for Myanmar for 2002 suggests only 250,000 computers, or around 0.5 per 100 persons in the country where every computer has to be licensed and registered. In the same year Internet users were estimated at 25,000. By 2004 the estimated number of computers was no more than 300,000 and Internet users by end of 2006 less than 80,000.[32] Although the military government is clearly hostile to permitting uncontrolled access to computers and to the Internet, the promotion of the economic use of ICTs is part of policy and takes place mostly under the auspices of the Ministries of Science and Technology and of Education.

An e-Applications Working Committee co-ordinates various e-government initiatives such as e-passport and e-smart card projects,[33] while a project in 2004 to connect 3,000 villages to the Internet to facilitate commodity trading and the exchange of market information was launched by Bagan Cybertech and the MPT. In August 2004 the Myanmar Information and Communication Technology Development Corporation planned to open Public (Internet) Access Centres (PACs) equipped with computers and satellite television facilities in 300 townships with an investment between five and ten million kyat per centre.[34] Myanmar is also in the process of establishing an optical fibre network which would include links among government ministries and serve as the backbone of a national communications system. The Yangon and Mandalay divisions are already linked. As part of a program by the Association of Southeast Asian Nations (ASEAN) to narrow the development gap between its older and newer members, Myanmar has pledged to raise the nation-wide teledensity rate of 0.8 per cent up to 3 per cent by 2006 in a country of 53 million people. (*Xinhua*, May 2004) That will be difficult to achieve without substantial changes to the current system.

Looking Forward

Broadband and Internet connections to the outside world are very limited, which will hold Myanmar back, even assuming the regime was more encouraging to outside communications. Wireless broadband and digital subscriber lines (DSL) have been installed in Myanmar's two largest cities, Yangon (Rangoon) and Mandalay.[35] Bagan

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[32] 'ICT Profile of Myanmar' prepared by Myanmar's Posts and Telecommunications Department for 2004 APT (Asia-Pacific Telecommunity) meeting, http://www.aptsec.org/meetings/2004/ADF/ADF-INPUT/ICT%20Profile/Myanmar%20PTD.doc
[33] The e-passport project carried out by Iris a Malaysian Multimedia Super Corridor status company.
[34] The ITU assisted in the establishment of the pilot project Mutipurpose Community Telecentre at Phaunggyi village, 76.8 kilometres away from Yangon.
[35] There are around 1000 ADSL accounts and in the countryside about 100 iPSTAR satellite accounts. *The Irrawaddy*, March 2005.

Cybertech's Teleport doubled delivery speeds in 2003 from 256Kbps to 512Kbps.[36] The connection to SEA-ME-WE3 is only 2 Mbps with a cable landing station and international gateway switch in Yangon to be linked with terrestrial fiber optic transmission system. Given Myanmar's lack of international submarine cable capacity, satellite communications remain crucial for international services. Myanmar's military government has signed satellite telecommunications deals with firms from Thailand, Malaysia and Singapore for mobile phone roaming and cargo vessel tracking services.

ICTs

Myanmar maybe short of ICTs but not short of laws. Strategic planning for ICT development efforts started with the promulgation of the Myanmar Computer Science Development Law in 1996. The law opened the way in 1998 for the formation of the Myanmar Computer Science Development Council, the Myanmar Computer Federation, the Myanmar Computer Professional Association, the Myanmar Computer Industry Association and the Myanmar Computer Enthusiast Association. An e-National Task Force was formed in 2002, the same year that the Computer Science Development Council developed a draft ICT master plan. Much of Myanmar's ICT vision is couched and packaged in a language that stresses defending national sovereignty from the predations of 'Western powers'.[37] In 2000 Myanmar signed the e-ASEAN Framework Agreement and compliance with its provisions spurred investment in the telecoms sector,[38] although the real driver may have been the vast sums of money to be made through reselling GSM handsets and subscriptions on the black market as demand far outstrips supply. An Electronic Transaction Law was promulgated in 2004 to assist e-government and e-commerce development, but few companies in Myanmar have facilities for online transactions. Those that do have websites must receive orders, reservations and inquiries through their xyz@mptmail.net.mm email address or offline orders by fax from their foreign-based affiliate.[39]

As part of the ICT master plan to stimulate the development of ICT applications and industry in Myanmar, the government has emphasized ICT Parks and built two. One is the Myanmar ICT Park which opened in Yangon in January 2002 at an estimated cost of some 10 million US dollars and is occupied by about two dozen IT companies doing software development and data processing and two Japan-Myanmar e-learning

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[36] The activation fee for broadband wireless access is 1.95 million Kyat for an individual account and 2.2 million Kyat for corporate subscribers. Monthly fee for individual users ranges from 28,000-76,000 Kyat and for corporate users 120,000-200,000 Kyat. (*The Myanmar Times*, 28 April – 4 May 2003)

[37] 'Now, some Western powers are taking full advantage of technological gap in order to widen the gap of development and wealth and they are resorting to all the possible ways and means to get the developing countries under their thumb. Only if a developing nation like Myanmar is able to make progress in science and technology, it can polish national prestige and integrity and safeguard the sovereignty.' Myanmar Ministry of Foreign Affairs, 31 August 2004, http://www.mofa.gov.mm/news/aug31_04_tue2.html

[38] The Framework Agreement has six focus areas: (1) to develop ICT infrastructure, (2) to enact sufficient ICT laws, (3) to use ICT effectively in education, (4) to widely use ICT application in government and private businesses, (5) to allow ICT to immerge as one of the state economic sectors and (6) to liberalize ICT product services and investments.

[39] A major problem everywhere for companies starting online transactions, quite separately from the collecting payments and fulfilling deliveries, is how to authenticate the status of an overseas buyer.

centers.[40] The second one is the Mandalay ICT Park which opened in August 2003 and provides an 'international level' environment for ICT development with broadband Internet access, reliable power source, and other facilities. For ICT human resource development, two computer universities and 24 government computer colleges have been established.[41]

Internet

Myanmar's tight control over the media extends to Internet for international access. Myanmar set up its first international data communications link in 1997, a 64 Mbps link between SingTel and Myanmar PTT, but to curb the flow of information the government blocks popular free international e-mail services such as Hotmail and Yahoo!, requiring people instead to buy accounts from tightly controlled government providers. While the regime produces its own colorful website, www.myanmar.com, access is restricted to the privileged few and emails are subject to content software filters. Even the business centers at five-star hotels do not provide unfettered Internet access, only allowing guests to send and receive email through hotel accounts. The staff prints out all e-mails received, handing paper copies of private messages to guests, ostensibly as a service, but making visitors feel monitored. All e-mails are read by military intelligence and one foreign visitor was presented a bill for US$2,000 after transmitting one photograph via a major hotel's e-mail system.[42] Price is also an effective way to restrict access. In 2001 Internet users could access the local 'Myanmar Intranet services' operated by Bagan Cybertech at a cost of US$3 per hour. [43] But Internet cafes have sprung up, the first was allowed to open in the capital city of Yangon in November 2002, and by 2005 there were around 20 in the country.

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[40] Government officials like to stress that the cost of developing software in the United States is about 10 times more expensive. (*BBC Monitoring Asia Pacific*, 9 February 2002)

[41] The country was aiming to have about 30,000 IT technicians by 2010.

[42] U.S. State Department Issues Burma Consular Information Sheet, 2005.

[43] The price of an hour at Cyberworld or Surf 'N Surf is US$1.50, an amount many in Myanmar can't earn in a full day. (*Dow Jones*, July 2003) Cyber cafe owners or operators pay a one-off 200,000 Kyat registration fee and a monthly charge of 50,000 Kyat to the Myanmar Information and Communication Technology Development Corporation (MICTDC).

Source: CIA *The World Factbook*