

**DEVELOPMENT OF ENABLING POLICIES FOR  
TRADE AND INVESTMENT IN THE IT SECTOR OF THE  
GREATER MEKONG SUBREGION\***

**CHAPTER 5: MYANMAR**

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## **Chapter 5**

# **MYANMAR**

### **5. 1 Introduction: The Background**

Myanmar presents the case of an economy that makes earnest efforts towards regaining the glorious past through series of market-oriented reforms initiated since 1988. But the structural transformation of the economy being pursued through policy reforms is yet to be completed; In 1936, prior to independence, the share of agriculture in GDP was of the order of 66 per cent (UNESCAP) and the situation seems to have not changed drastically even today. Going by the data provided by World Bank (2002)<sup>1</sup> on the contribution of GDP by different sectors of the economy over time, a critique might present the case of Myanmar as a case of “structural retrogression”, and contrary to the experience of most developing countries. The share of primary sector increased from 47 per cent in 1981 to nearly 59 per cent 1991 and recorded a marginal decline in the following decade to reach a level of 57 pr cent in 2000, where as most developing countries have witnessed decline in the share of primary sector with a corresponding increase in the share of other two sectors. Need less to say, while the share of agricultural sector increased that of industrial sector and services recorded a corresponding decline. To elaborate further, the share of industrial sector declined from a little over 12 per cent in 1980 to 9.7 percent in 2000. Within the industrial sector, the share of manufacturing declined by about 2 per cent, during the period under consideration from about 9 per cent in initial year (1980). The share of services sector also declined from about 40 per cent in 1980 to 33 percent in 2000. This however, is not to neglect the marginal increase of about 2 per cent recorded in the share of both the industrial and service sectors during 1990-2000. If the above evidence is any indication, Myanmar appears to be presenting an unconventional development trajectory, wherein not only that the primary sector dominates the share of industry, more specifically manufacturing sector and services recorded near stagnancy in their share in GDP.

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<sup>1</sup> We have been compelled to use the World Bank data because; the data provided by the Central Statistical Organization (CSO) follows a classification different from those adopted by most countries. Instead of following the conventional division of GDP into primary, secondary and tertiary sector, the CSO divides the GDP into following three categories viz. goods, services and trade.

At the same time, it must be noted that the Government has been highly committed towards bringing about all-round growth and transformation of the economy and welfare of people at large. It is evident from the economic objectives upheld by the government (see box 5.1)<sup>2</sup>

***Box 5.1***

***Economic Objectives Upheld by the Government***

*Economic objectives*

- Development of agriculture as the base and all-round development of other sectors of the economy as well,
- Proper evolution of the market-oriented economic system
- Development of the economy inviting participation in terms of technical know-hoe and investments from sources inside the country and abroad,
- The initiative to shape the national economy must be kept in the hands of the State and the national peoples

In achieving the economic objectives the government has also been taking a series of initiatives to attracting investment with more freedom for private sector. The per capita investment in the economy has more than doubled from about 233 Kyats to 586 Kyats during the last fifteen years (1985-86 to 2000-01) recording an annual compound growth rate of 6.34 per cent (at 1985-86 prices). The recorded annual compound growth rate in total investment was still higher- almost 8.5 per cent during the period under consideration. The crucial issue, however, is how efficient this investment has been or what has been the rate of return to the increased investment in terms of output growth? Higher growth in investment notwithstanding, the net output per worker, an indicator of labor productivity, has recorded a negligible growth rate of 2.07 per cent during 1985-86 to 2000-01. More importantly, given the lower level of productivity, the growth in GDP seems to have failed to keep pace with the population growth rate and the net result has been a negligible growth (AGCR) in per capita GDP at about 1.88 per cent. No wonder,

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<sup>2</sup> These objectives are published in a leading English Newspaper called *The New Light of Myanmar*.

the per capita consumption declined from about 1336 Kyats in 1985-86 to 1281 Kyats in 2000-01<sup>3</sup>.

The evidence presented above tends to suggest that for an economy like Myanmar, which is richly blessed with natural and human resources, to achieve the declared objectives, there is the imperative of, among other things, increasing the rate of investment on the one hand and improving the overall level of efficiency on the other. In a context wherein the budget deficit is growing in leaps and bounds (from about 11204 million Kyats in 1990-91 to 109725 million Kyats in 2000-2001 – almost ten fold increase)<sup>4</sup>, there are obvious limits for the government to fill the investment gap. Hence, there are not many options open, but to continue with the ongoing liberalized policy towards domestic and foreign investment and doing away with constraints if any that remain. To address the issue of efficiency and productivity and international competitiveness, there appears to be the need for an overall technological transformation, which in turn calls for providing increased access to both embodied and disembodied technology coupled with bringing about a more competitive environment. At the same time, given the all-pervasive nature of Information technology and its capability to bring about efficiency, productivity and competitiveness in almost all sectors of the economy, the role of IT in bringing about the structural transformation cannot be overemphasized. Here lies the need for trade and investment reform in the IT- the central issue being addressed by the present study. Being a founding member of WTO, and new entrant to ASEAN and signatory to e-ASEAN agreement, these concerns have indeed been getting reflected in the series of policy reforms initiated by the government since 1988.

Yet, given the fact that “reform is essentially a never ending process”, purpose of the present study is to make a modest attempt towards an overall assessment of the scene with respect to IT use and production in the country and review the policy towards trade and investment in the economy in general and IT sector in particular with a view to

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<sup>3</sup> All the estimates presented above are based on the data provided by CSO (2001)

<sup>4</sup> Please note that the figures are in current prices and hence are overestimates.

facilitate reflection on the possible policy reform options for enhancing the production and use of IT in the country.

This chapter is organized in six sections including this introduction. In the second section, we present a critical analysis of the specific policies that are having a direct bearing on the production and use of IT in the country. This is followed by an examination of the present state of IT use and production in the country (section 3). Investment policies in general and those having a bearing on IT in particular are the focus of discussion in fourth section. Section five deals with trade policy and trade performance and tries to locate certain areas where IT could be instrumental in attaining enhanced export performance. Here the study also explores into the plausible implications of e-ASEAN and ITA. Concluding observations and reflections on plausible policy options are made in the last section.

## **5. 2 Policies Governing the Production and use of IT**

Though the government, as of now, does not have an explicit IT policy, significant initiatives have been made by the government not only for promoting the production, but also for harnessing the new technology for the growth and development of the economy and society. For example the government passed the computer Science Law as early as in 1996. In 2002, the Myanmar Computer Science Development Council<sup>5</sup> developed a draft Information Technology Master Plan for the country. Though the master plan explicitly deals with all the different aspects of IT production and use, it is yet to be approved by the Government. In addition the ministry of Post and Telecommunications issued additional guidelines to govern the use of computers and Internet in the country. What follows a brief examination of these policy documents to reflect on likely policy options for furthering the cause of production and use of ICT in the country.

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<sup>5</sup> The Computer Science Development Council is a statutory body having the constitutional powers and responsibilities which include, among other things, formulation of appropriate policies for the growth of IT sector and for promoting the use of IT in the country.

## **The Computer Science Law (1996)**

The use of computers in the country has been guided by the Computer Science Development Law passed by the Government in 1996<sup>6</sup>. The law has following objectives;

- to contribute towards the emergence of a modern developed state through computer science;
- to lay down and implement measures necessary for the development and dissemination of computer science and technology;
- to create opportunities for the youth, especially students, to study computer science;
- to study computer science, which is developing internationally and to utilize the same in a manner which is most beneficial to the state;
- to cause extensively development in the use of computer science in the respective fields of work;
- to supervise the import and export of computer software and information.

The law also formed the Computer Science Development Council (CSDC)<sup>7</sup> which has the following duties and powers;

- laying down the policy and giving guidance for the development of computer science in the State to keep abreast with the times;
- laying down the policy with respect to the systematic dissemination of utilization of computer science in the State;
- laying down the policy, giving guidance and controlling with respect to computer network;
- making arrangements for the youth, especially students to get the opportunity of studying basic computer science;
- laying down the policy, giving guidance and controlling with respect to information technology;
- supervising and giving guidance with respect to activities of the federation and computer-related associations formed under this Law;
- prescribing the types of computer software and information which are not permitted to be imported or exported;
- laying down measures to cause extensive development in the utilization of computer science in the respective fields of work in the State;
- forming necessary working committees and bodies related to computer science and assigning duties thereto;
- abolishing any computer association formed or existing not in confirming with the provisions of this law or any computer association not functioning in conformity with the provisions of this Law or not in conformity with the constitution of the relevant association;

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<sup>6</sup> See for details, <http://www.myanmar.com.gov/laws/computerlaw.html>

<sup>7</sup> The CSDC has a person assigned by the State Law and order Restoration Council as the Chairman and the following as the members. Minister or deputy Ministers from relevant ministries, Heads of the relevant Government Departments and organizations, suitable Computer Scientists, and the Deputy Minister of Education as the Secretary.

- laying down and carrying out measures necessary for the attainment of the objectives of this Law.

The law also made the provision for and laid down the guidelines for the formation of computer associations and the formation of the Federation, comprising of representatives chosen from the Myanmar Computer Enthusiasts' Associations and Myanmar Computer Entrepreneurs Association. The law also laid down the duties and powers of the Federation which deals with different aspects of IT manpower generation, development of an IT industry and promoting the use of computers (see for details please see Box 5.2).

### **Box 5.2 Duties and Powers of the Federation**

- (a) carrying out for the development of computer science in the State to keep abreast with the times.
- (b) conducting research in computer science, giving assistance to the persons conducting research;
- (c) promoting extensive utilization of computer science in the respective fields of work;
- (d) prescribing the syllabi and curricula for computer training schools;
- (e) inspecting teaching in computer training schools as may be necessary so as to determine whether it is up to the standard or not;
- (f) running computer science courses, holding lectures, competitions and organizing study tours;
- (g) holding examinations in computer science, conferring certificates and medals;
- (h) submitting advice to the Council from time to time on the development of computer science;
- (i) giving assistance to manufacturers so as to enhance the quality of computer hardware and computer software;
- (j) giving assistance for production of computer hardware and computer software and for sale inside and outside the country;
- (k) laying down projects on information technology in accordance with the guidance of the Council;
- (l) communicating with international computer organizations;
- (m) making arrangements for holding and dispatching delegates to local and foreign conferences, meetings, workshops, seminars, paper-reading sessions as may be necessary;
- (n) fulfilling a target to devise a system that can use Myanmar Language in the computer;
- (o) tendering advice to government departments and organization which seek advice with respect to computer;
- (p) compiling, publishing and distributing books, papers, periodicals and journals on computer;
- (q) setting up a library to collect books on computer from inside and outside the country;
- (r) carrying out for the youth especially students, to acquire basic computer knowledge and to cause emergence of outstanding computer scientists;
- (s) awarding monetary prize to outstanding computer scientists and inventors;
- (t) recommending to the Council to confer honorary titles and awards on outstanding computer scientists and inventors by the State;
- (u) submitting advice to the Council in order to protect the benefits of computer scientists and inventors;
- (v) forming necessary committees and bodies, and determining the functions and duties those of;
- (w) carrying out tasks with respect to computer science, assigned by the Council.

It is also laid down by the law that

“Whoever imports or keeps in possession or utilizes any type of computer prescribed under sub-section (a) of section 26, without the prior sanction of the Ministry of

Communications, Posts and Telegraphs shall, on conviction be punished with imprisonment for a term which may extend from a minimum of 7 years to a maximum of 15 years and may also be liable to a fine.”

Also

“Whoever sets up a computer network or connects a link inside the computer network, without the prior sanction of the Ministry of Communications, Posts and Telegraphs shall, on conviction be punished with imprisonment for a term which may extend from a minimum of 7 years to a maximum of 15 years and may also be liable to a fine.”

Later a number of laws to regulate different aspects of internet use were issued by the MPT. Given the fact that free flow of information, with some qualification for activities that are illegal, is a *sine qua non* for harnessing the new technology for development, the series of restrictions are likely to have the effect of undermining the effect of various initiatives that the government might undertake to use IT for development. Hence, phasing out, if not abolishing altogether, restrictions on the use of internet and computers seems to be a promising policy option.

### **The Draft IT Master Plan**

The IT master plan, which has been prepared by CSDC based on a systematic analysis of the present status and future trend of IT in Myanmar and rest of the world, specifies the mission, strategies and action plans for the period up to year 2010. The explicit recognition of the role of IT in the development of the country is evident when the master plan states

“IT will surely play an important role in implementing the political, economic and social objectives in Myanmar. Especially, IT will be the basic input for economic development. It is widely accepted that developing countries need to use IT to leapfrog and be competitive internationally. Application of IT such as internet will be key element for effective distribution of knowledge and skill.....IT as a key element for technology transfer and distribution of knowledge will also contribute considerably to uplift education standard of the entire nation”

The master plan also recognizes the direct contribution of the IT sector to the economy when it states “IT has become the biggest economic sector by itself. Further more it is growing rapidly. ... and it has become a main source of creating employment”.

The master plan also presents the status of IT, in rest of the world, and more specifically in the South East Asia region thus

“IT market is increasing rapidly.... The value of IT products and services is expected to reach \$2 trillion in the twenty first century from \$ 530 billion in 1996. While the world IT industry is expected to grow 10 per cent annually, it is expected to have 20 percent annual growth in South East Asia region.... There is acute shortage of IT professional in developed and newly industrialized countries and their cost is already very high. The quality of IT professionals in some of the developing countries such as India, Philippines and Ireland is well recognized internationally”

Against this background the master plan rightly foresee many opportunities for countries like Myanmar. While discussing the status of IT in Myanmar, it recognizes that the IT level of Myanmar is still at the early stage in comparison with the international standards. Hence calls for considerable effort to develop IT in the country wherein the state has been assigned a key role by doing the tasks which cannot be done by private sector such as building IT infrastructure, amalgamation of law, rules and regulations, setting standards and then creating an environment for fair competition. At the same time, the master plan also calls for, among other things;

- coordination and cooperation between public and private sectors,
- improving the quality of IT manpower through effective human resource management
- improving the IT awareness among the responsible personnel at ministry, directorate, and private enterprise level,
- overcoming the shortage of books, journals, magazines teaching and learning materials for teachers and trainers
- Taking IT beyond cities like Yangon and Mandalay
- Identifying the competitive factors and earnest effort to attain them

The mission elements highlights the need for wide spread application of IT - in the state management with the intention of providing better services to the public; improving efficiency and reducing costs, in the business organizations to improve productivity and rendering better services, as an infrastructure for the smooth operation of socio economic organizations by improving communication and reducing costs, to create an IT intelligent society, to reduce digital divide, as a vehicle for business organizations penetrating into

the international markets, to facilitate e-commerce and to improve the educational level. The master plan also underscores the need to develop an IT industry and to develop human resources to facilitate the production and use of IT.

The Strategy underlines *inter alia* the need for public private cooperation, creation of demand base by the state, provision of incentives for business organizations to promote IT use, foreign investment and technology transfer, creating a software industry, promoting international cooperation, provision of internet access, establishing an IT zone, facilitating a liberalized investment climate, developing the legislative framework for the promotion e-commerce.

For the development of IT in Myanmar by the year 2010, the following are identified as priority areas for implementation.

- IT application,
- IT in Education,
- Foundation for IT Industry
- ICT Infrastructure and
- Legal Infrastructure.

IT application essentially implies the development of information systems for public organizations which come under the rubric of e-governance and include, but not limited to, computerization of public organizations, public sector with a view to achieve cost reduction, efficiency enhancement and greater access to information by the people at large. It also includes creation of better database on all economic activities including science and technology, natural resources and environment, information system for the health care system, and use of IT for enhancing international competitiveness. Here the master plan calls for appropriate incentive systems to encourage application of computers.

IT in education involves the development of a human resource development for IT at the national level, certification scheme for computer professionals, provision of computers in all the courses, increased internet access in a phased manner (beginning with universities and colleges, later for the high schools, middle and primary schools), program for

providing IT education for government employees, implementing a scheme of training the IT trainers and so on.

Creating a foundation for IT industry is envisaged through generating an adequate supply of software engineers for the establishment of software industry, provision of government support for entering the international market and by establishing an IT zone wherein infrastructure facilities and single window clearance system for facilitating investment.

Construction of IT infrastructure involves building up a national data communication network connecting local and international networks. Given the high cost of the project, and the critical role of IT in business and for developing the IT production base, the master plan proposes to provide a data network in the first phase for providing communication facilities for the business organizations and IT industry. Further the plan underlines the need for integrating the information systems of public and private organizations and calls for a standardization committee.

Finally, the plan calls for the development of regulatory and legal framework that creates IT confidence for consumers and facilitates the wider use of IT. This involves the formulation of laws and policies like the laws for e commerce, digital signature, electronic transactions and payment settlements at national and international level, protection of intellectual property, establishment of authentication authorities etc.

By realizing the fast changing nature of technology and the inherent difficulties involved in predicting the likely changes, the plan also calls for appropriate changes whenever necessary so that the plan can be successfully implemented.

On the whole, the master plan recognizes the limits, highlights the opportunities, forward looking and realistic in its targets and unambiguous in its approach. Yet, given the fact there is nothing like a “perfect master plan” certain issues might be worth considering: What is the role that the provincial governments could play in achieving the objectives? While the role of private and public sectors and the coordinated effort has been

underlined, there are other stakeholders, say like NGOs who could play a very constructive role especially in addressing the issue of intra national digital divide and harnessing ICT for the rural masses in general and agricultural sector in particular- the mainstay of the economy. This becomes all the more important when viewed in the context of achieving the first economic objective (see box 5.1). Should the master plan not explain how IT could be an instrument in improving the welfare of rural masses, depending primarily on agriculture? How to address the issue of last mile connectivity, which is likely to be critical issue in countries like Myanmar? How effective will be the approach of “training the trainers” in a society like Myanmar, wherein the premium for knowledge is and returns to tacitness are likely to be high? While the plan rightly acknowledges the role of state in creating demand base, it is also important to specify the appropriate budgetary allocation for IT. While the master plan rightly underscores the importance of developing an IT production base, the critical issue is where to begin with? Should we begin with IT goods or services or both? Given the heterogeneous nature of technology and varying skill requirements in different IT goods and services, it is also important to specify type of goods and services wherein the country currently has comparative advantage and come up with products/services wherein comparative advantage could be built up. This essentially means specifying in more clear terms, the short-term, medium-term and long- term targets and strategies. What role could be played by trade and investment policies in achieving these targets? Being a member of WTO and signatory to the e-ASEAN framework agreement, it is also important to reflect on the likely implications of these agreements on the overall objectives highlighted by master plan. While I do not have any tall claims in terms of providing the final answers to these and other related issues, it is the hope that the study will provide at least some raw materials to facilitate reflection on further policy reform options to achieve the declared objectives. In our effort to accomplishing this objective we shall begin with an examination of the current state of IT use and production in the country.

### 5.3 Present state IT Use and Production

#### ICT use: Selected old Technology Indicators:

In an economy wherein almost a little over 75 per cent<sup>8</sup> of the population live in rural areas, it is natural to expect greater relevance for the old technology indicators like TV, radio news papers etc. According to the data provided by the World Bank (2002) the number of radios per 1000 population in Myanmar is found to be 66. This has to be compared with 156 in the low-income countries and 112 in South Asia. Also, it has been observed that in 2000 there were only 11 countries reporting lesser radio density than Myanmar. Relatively higher level of literacy notwithstanding, number of daily newspapers is also found to be only 9 per 1000, which is also at a rather low level.

But in the case of television, as a result of the concerted effort by the government, TV transmission now reaches the entire country, including the remote areas with the use of ASIA SAT (1). As of 2000-01, there are over 101 TV relay stations in the country and it may be noted that except Magway division all the states and Divisions are having at least one TV relay station. The highest number of TV relay stations is reported in Shan state (45) followed by Kachin (15) and Sagaing Diviosn (9)<sup>9</sup>. The achievement becomes more striking when we consider the fact that in 1990-91 there were only 5 relay stations and the recorded increase has taken place in a short span of five years (during 1995-96 to 2000-01) It has been reported that at present television coverage is over 82 percent or TV broadcast can be received in 267 out of 324 townships of Myanmar.

The commendable efforts by the government towards increasing the TV transmission coverage notwithstanding, the number of TV sets is found to be only 7 per 1000 and this has to be compared with 91 for the low income countries in general and 75 for South Asian countries. Also in the year 2000, as per the data published by the World Bank (2002), there are only 10 countries reporting a lower TV density than Myanmar. The cable TV is yet to have its beginning in the country. Hence, home satellite receivers are

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<sup>8</sup> According to the 1983 Census as reported in CSO (2001)

<sup>9</sup> CSO (2001)

found very popular at least in the cities. Their number has almost doubled during the six years beginning with 1994-95 (see table 5.1).

Low level of diffusion of TV and radio, notwithstanding the earnest efforts towards the building up of needed infrastructure by the state, tend to suggest that the infrastructure and public investment *per se* may not be instrumental in taking the technology to the people. There are indeed a number of complementarities to be assured if the huge investment by government is to provide corresponding social marginal returns. After all, “railroads without locomotives make no economic sense”. It appears that such complementarities are not adequately available in Myanmar. To begin with, people need to have the purchasing power. In a country wherein the per capita income is only about \$300 (The World Bank 2002) and consumption has shown a declining trend coupled with galloping inflation (ADB 2002), no wonder the rate of diffusion of so called “luxury items” like Television is at a low level. The low level of affordability is further compounded licensing system for radios, TVs, satellite receivers, and VCRs. It is also to be noted that the revenue from radio license is not substantial and has been showing a declining trend (see table 5.1) Even if revenue is important for the exchequer, given the importance of radio and TV for the rural masses it may be worth considering the abolition of the licensing system. If revenue is the prime consideration, to avoid evasion and under reporting, it may be worth considering imposing a lump sum as license fee at the time of purchase. Such a strategy might also be instrumental in bringing down the transaction cost involved in license fee collection, both by the Government and by the owners of these gadgets. Additionally, this also has the merit of not sending wrong signals to the rest of the world regarding the state of affairs in the economy.

### **Use of New Technology: Telecommunication**

Telecommunications were introduced in Myanmar in 1979 when a satellite communication (SATCOM) ground station was commissioned at Thanlyn, across the Bago River from Yangon (Rangon), and microwave systems were installed in Yangon and Mandalay. As the government considers telecom as a priority area for development, and it being an integral part of information technology, there has been a series of initiatives towards building up a modern telecom infrastructure. The result has been a

continuous up-gradation of the telecommunication system; at a rather fast rate with additional SATCOM ground stations, microwave connections and digital exchanges provided by China, Singapore, Israel, Japan, Germany and Australia<sup>10</sup>. The Installation of 960-microchannel digital microwave links at the Thanlyin Satellite Communication Station (Phase I) has resulted in further improvement in the telecom system. This has resulted in the availability of over 800 IDD channels for smooth communication with rest of the world. In February 2002, an agreement has been reached by the China National Electronics Import and Export Shenzhen Co and the Myanmar Telecommunication Authorities to build 13,500 line capacity digital automatic telephone exchange in 12 towns in Myanmar, including Meiktila and Mandalay, at an estimated cost of US \$ 6.5 Million<sup>11</sup>. This project is expected to be completed within 18 months. On the whole, during the last 13 years, modern digital auto exchanges have replaced the old communication system. The country also has established a most modern cellular phone system- the Code Division Multiple Access Wireless Local loop System.

Till recently, The Myanmar Posts and Telecommunications (MPT), which employs about 20,800 persons, has been the monopoly provider of postal and telecommunications services in the country. Thanks to the initiatives by the government, the growth of telephone lines in the country has shown a marked increase during the post 1990 period. As compared to the recorded annual compound growth rate of 5 per cent during 1980-81 to 1985-86 and 7.8 percent during 1985-86 to 1990-91, the recorded growth rate during the third period (1990-91 to 1995-96) was almost twice (14.4%) that of the previous period. Growth rate during the fourth period was also much higher (10.55) than that of the first two periods under consideration (see table 5.2). Also during 1980-81 to 2000-01 the number of telephone exchanges increased from 206 to 556. Table 5.2 also reveals that in 1980-81 almost 61 per cent of the telephone lines were concentrated in Yangon, but by 1995-96 the share of Yangon declined to 49 per cent, though by 2000-01 its share showed a marginal increase to reach 52.5 per cent.

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<sup>10</sup> Myanmar has not purchased its own communication satellite, but it leases transponders aboard several regional satellites, such as AsiaSats and the Indonesian Palapa\_C satellite. Myanma Post and Telecommunications also has an agreement to use ThaiCom-3 satellite transponders in its internal SATCOM services.

<sup>11</sup> Shenzhen Daily, 03/02/2002

At the same time, going by the World Bank (2002) data, there is a waiting list of over 93,000 in the year 2000 and the average waiting time is as high as 5.3 years. The cost of obtaining a fixed line from MPT at present is K 500,000 and it is beyond reach of majority of the population. Also, we cannot ignore the fact that the intra-national telecom divide yet remains as an issue to be addressed. Data presented in table 5.3 reveals while the telecom density is as high as 2.54 in Yangon, the telecom density in most of the states/divisions is much lower. To illustrate, the telecom density in Ayeyarwaddy, which has population of 7.1 million only has 14970 telephones giving rise to a telephone density of 0.21. Rakhine has recorded the lowest telephone density (0.17). Needless to add, addressing the issue of intra-national digital divide is expected to take the country miles ahead in its over all development process. Yet, the moot question is how to address these issues? What role, the trade and investment policy could play? We shall reserve these issues for discussion in the forthcoming section. In the meanwhile let us examine the state Mobile telephone and the use of Internet.

### **Mobile Telephone**

Myanmar is one of the pioneering countries in south Asia to provide Cellular services which had its beginning as early as in 1992. However, for obvious reasons, the subscriber base grew at a rather slow pace – during the first four years the total number of cellular subscribers was only around 2000. Initially, Myama Post and Telecom, was the sole provider of Mobile services. The cost of mobile telephone charged by MPT is given Table 5.4

It is obvious from the data presented in table 5.4 that in a county with per capita income of about \$300, such high cost/prices are bound to stand in the way of diffusion of mobile technology. Hence there is the need for brining down cost/price of mobile phone. Hence the ways and means of bringing down the price telecommunication may form the priority agenda for the policy makers<sup>12</sup>.

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<sup>12</sup> Yet, it was learned from discussions with the senior officials at Myama Post and Telecom that there are about 40,000 mobile subscribers and most of them are in the urban areas.

Given the fact that in a vast country with widespread settlement patterns and unfriendly geographical terrains, it is only natural that a single agency might find it difficult to meet the all telecom needs of the entire country. Hence, in 1998, a Service Provider Agreement was signed between Myanmar Post and Telecommunications and the Iridium South East Asia for providing satellite telephones. The operation of Iridium products and services in Myanmar, strictly in line with the guidelines laid down by the government was started in 1999. Iridium used to charge US \$ 3.9 dollar per minute for both incoming and outgoing international calls with a weekly rental rate of US \$ 70 and monthly rental rate of US \$ 220<sup>13</sup>. Given the high cost of Satellite telephone its viability has been questioned even in developed countries, hence one does not need to talk about its relevance in the less developed countries like Myanmar.

### **Computers and Internet**

We have already seen that Internet in the country has been subjected to series of restrictions. This stands in the way of taking advantage of the full potential of information technology for development and therefore calls for ways and means of at least phasing out some of these restrictions. Against this background, the Government launched Myanmar intranet in 2001. Besides members at Bagan Cybertech, MPT mail users also can view the local intranet. Myanmar intranet can also be accessed by internet users abroad.

There are four types of users for the intranet<sup>14</sup>

**Member A** – has the access to use FTP Service, Intranet Service, and dial-up web access (web browsing). The user can request sites that she wants to see. The user can use this service from home or office.

**Member B** - The services provided are the same as Member A, but has to use it at the main office of Bagan Cybertech. FTP service is not provided.

**Member C** - Provides FTP service only.

**Member E** - Provides Intranet Service only.

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<sup>13</sup> See for details [http://www.abroad-phone-rental.com/Myanmar\\_iridium\\_satellite\\_phone\\_rental.htm](http://www.abroad-phone-rental.com/Myanmar_iridium_satellite_phone_rental.htm)

<sup>14</sup> See for details <http://www.myanmars.net/myanmar/internet.htm>

With a view to provide the necessary communication infrastructure for the IT companies, Bagan Cybertech was established in October 2000 as an economic enterprise. Bagan Cybertech has also built the Bagan Teleport which has the infrastructure for using the biggest wireless network in Myanmar. VSAT Network (Very Small Aperture Terminal) uses TDMA technology (Time Division Multiple Access) which is the latest satellite communications. About 50 terminals in Yangon are using VSAT Network and up to 180 to 200 terminals can be used in the whole system. A VSAT unit is US\$ 20,000 and the monthly fee is US \$ 250. The service was initially started in Yangon but later extended to Mandalay<sup>15</sup>.

The publicly owned Bagan Cybertech has doubled its available broad band delivery speed from 256 kpbs to 512 kpbs in early April 2003. The activation fee for broad band wireless access is K 1.95 million for an individual account and K 2.2 million for corporate subscribers. According to the speed of the connection and the volume of data downloaded the monthly fee for individual users ranges from K 28,000 to K 76,000 and those for the corporate users range from K 120,000 to K 200,000.<sup>16</sup> The monthly fee for an optional telephone is fixed at K 16,000 for individual and K 24,000 for corporate users. (This is indeed relatively low when compared to the cost of fixed line (K 500,000 charged by MPT).

The net result of the series of restrictions and high cost is that “the use of internet is restricted to a handful of privileged enterprises (government)” Kyaw (2002). It was discerned during discussion with the senior officers that about 30 government ministries/departments are currently having PCs and most of them are networked and have internet access. According to World Bank (2002) there are only about 10,000 Internet users in the year 2000, illustrating the fact that the benefits of new technology are restricted only to a privileged few.

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<sup>15</sup> See for details “Bagan Cybertech offers New Services in Mandalay”, *The Myanmar Times*, April 28 May 4, 2003.

<sup>16</sup> This may be compared with a monthly fee of about \$650 in India without any limit for data transfer. See <http://www.ddsl.net/>

On the whole, it appears that the series of efforts made by the government is not bringing the desired returns primarily because the lack of complementary innovations. If the government were to achieve the declared objective of harnessing ICT for the overall development of the economy and society on the one and to facilitate a vibrant ICT industry there seems to be no other way other than relaxing the restrictions and following a more open door policy such that the present monopoly/duopoly system is replaced by a more competitive one. If the experience of India is any indication, opening up the telecom sector for the private sector coupled with imaginative institutional innovations for regulations has had the effect of providing rich returns in terms of drastic reduction in cost and significant increase in access to wider section of economy and society.

### **Present state of IT Production**

As already noted earlier, the economic reforms initiated in the late 1980's underlined the need for promoting the private sector, especially in the manufacturing sector. While the share of manufacturing in GDP is only of the order of the order of 10 per cent, with in manufacturing and processing sector, the private sector contributes about 71 percent of the total. If we take productive sector of the economy as whole, the share of private sector is about 87.2 percent.

Although the contribution of the private sector to the total GDP is significant, the number of large private factories/establishments is only about 142: the share of large factories/establishments among the total private factories/establishments is only 0.3 percent (see Table 5.5). Most of the private factories/establishments (95.4%) are very small-scale, i.e., below ten workers. This economy wide trend appears to be holding good in the case of IT production as well.

During discussion with the representatives of the Myanmar chamber of commerce and industry it was discerned that the IT goods production in the country is at a low level. While there are two local producers of computers, almost 70-80 per cent is accounted by the so called grey market". While looking at the major areas of operations of the members of Myanmar Computer Industry Association, it was discerned that hardly any

one is engaged in computer production. Most of them are engaged in hardware/software supply and service, and software production. In consumer electronics, MNCs like Toshiba and Daewoo are having operations in the country. In the public sector, Myanmar Machine Tool and Electrical Industries (MTEI) has one electrical and electronics factory located at South Dagon, with following product lines - Fluorescent Lamps & incandescent bulbs, electric rice cookers, electric irons, electric hot plates and dry cell.

While the production base in the IT goods appears to be limited, Myanmar has already initiated some bold steps towards creating software/ service production in the country. This is manifested in the setting up of Software Technology Park at the instance of Myanmar ICT Development Corporation (a consortium of 50 private companies) with the active support and cooperation from the Government of Myanmar wherein the needed communication infrastructure is being provided by the publicly owned Bagan Cybertech. The project, set up in the Hline University Campus with a total investment of about Ks 2.5 billion, was initiated in March 2001 and the first phase was completed with a very short span of about 10 months and the park was inaugurated in January 2002. The first phase of the project, covering a developed area of about 11 acres has 32 rooms (100ft\*50ft). As of June 2003, the occupancy rate is 100%. The park has been able to attract two foreign companies; it is also the home for e-learning center, an incubation center for promising local software programmers and the Japan-Myanmar e-learning Centre. The activities in the Park include; software development, human resource development, national level projects, data processing services, consultancy services and provides employment to about 700 people. On the whole, the technology park experiment is a testimony to the positive outcome of public private participation. It is heartening to hear that the government is in an effort to replicate this success by setting up another park ay Mandalay<sup>17</sup>.

### **Human Resource Development in IT**

Realizing the importance of higher education and skill building especially in high technology areas, the Government has taken pro active steps in promoting education is

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<sup>17</sup> See for details, “Billions of Kyats, millions of Dollars spent in developing ICT infrastructure and facilities” Opening address given by Secretary- I at the Second Annual Myanmar ICT week.

Science and technology in general and IT in particular. Major institutions of higher learning have been kept under the administrative control of the S&T Ministry to enable better focus and attention. These are;

- a) Yangon University of Technology
- b) Mandalay University of Technology
- c) Pyay Technology University
- d) Yangon University of computer studies and technology
- e) Mandalay University of computer studies and technology

It could be observed that out of the five institutions two of them are specialized universities focusing exclusively on IT (d & e). Box 5.4 presents the evolution of the Yangon University of Computer studies and technology.

<b>Box 5.4</b> <b>Evolution of Yangon University of Computer Studies and Technology<sup>18</sup></b>	
1971	It was opened as University Computer Center (UCC) under the Ministry of Education It gave training to university and government departments with ICL Mainframe 1902s.
1975	It conducted M.Sc (Computer Science) and D.A.C (Diploma in Computing) in cooperation with Department of Mathematics of Yangon University.
1983	It started using PDB 11/70 (Digital) Mini machine.
1986	It initiated undergraduate courses in B.Sc ( Computer Science ) and computer Technology
1987	It was upgraded as Institute of Computer Science and Technology on March 29.
1990	It bought and installed PCs. It changed the name of the degrees.
1993	It began IDCS undergraduate diploma course in collaboration with NCC and was a great success.
1994	It held its first convocation on October 8.
1995	On December 9 the second convocation was held
1996	It held its third convocation on December 17
1997	It was transferred to the Ministry of Science and Technology

Source: Kyaw Aye (2002)

<sup>18</sup> Information in this box is drawn from Kyaw Aye (2002)

The Yangon University of Computer Science and Technology, the leading university in IT education, provides 12 courses in IT education (see table 5.6).

In addition to these universities, there are 24 government colleges and 80 university colleges and all of them have IT departments and offer diplomas or degrees in IT education. All these universities are having access to computers with LAN. It is understood from discussion with the senior faculty of universities under the Ministry of S&T that all of them have collaboration with foreign universities and faculty exchange programs. It was also discerned from discussion that most of the teachers have access to training opportunities abroad. Today, it was understood that the outturn of students with IT qualification is as high as 3000 per annum and the government has the target of reaching 25,000 by 2010.

In addition, the government made collaborative efforts with Government of Japan, Government of India and the Government of Singapore. To address the issue of IT illiteracy among the government officials and familiarizing them with issues in e-governance, the ministry of Post and Telecom organizes e-government training workshops. It is a part time program with duration of six weeks. During June 2003, the second workshop was organized. It was attended by 59 trainees from 31 ministries<sup>19</sup>. On the whole, the efforts made by the government in the field of IT manpower development are praise worthy. The key issue however is: are there complementary policies, particularly in the sphere of trade and investment, with a view to take advantage of the full potential of manpower being generated?

#### **5. 4. Investment in IT: Policies, Performance and Challenges**

##### **Investment Policies**

In an economy characterized by low saving rate coupled with low level of technological capability, the role of private investment in general and foreign investment in particular cannot be over emphasized. No wonder the government as early as in 1988, as part of the

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<sup>19</sup> See for details “ Senior officials go back to school over e-government” Myanmar times, June30-July 6, 2003.

economic reforms underscored the need for promoting private sector and assigned an increasing role for foreign direct investment. This was manifested in the Union of Myanmar Foreign Investment Law (FIL) of 1988, which provided for a propitious environment for the growth of private investment by encouraging entrepreneurial activity. The FIL was followed by the Private Enterprise Law of 1990 aimed at further increasing the role of private sector in the economy. This law was designed primarily to promote the development of small and medium sized firms. This law was followed by the Cottage Industry law to further the cause of small industries Development. In 1994, the Myanmar Citizen Investment Law complemented the existing investment laws.

The main agency for all issues related to investment is the Myanmar Investment Commission (MIC), which was established in order to oversee and administer the FIL. Among other duties, the MIC is responsible for scrutinizing FDI proposals and for issuing specific investment permits after getting approval from the Trade Council and the Cabinet.

The specific objectives of the FIL are the following;

- Promotion and expansion of export,
- Exploitation of natural resources, which require heavy investment;
- Acquisition of high technology,
- Supporting and assisting production and services involving large capital,
- Opening up of more employment opportunities;
- Development of works which would save energy consumption and
- Regional development.

Needless to say these objectives reflect a realistic understanding of the basic character and needs of the economy on the one hand and the commitment of the state towards taking the economy to a higher growth path on the other. At the same time, after reading through the whole law, certain doubts may remain in the minds of a careful reader: for example, the law highlights the need for acquiring technology for facilitating the technological transformation. It needs to be noted that there are many different ways for accomplishing this objective. The promotion of FDI is only one among them and the law

rightly calls for facilitating the same. Technology acquisition, analytically speaking, can take the form of embodied or disembodied technology. The former involves the import of capital goods and spares which fall in the realm of trade policy. At the same time, it needs to be noted that a major source of technology acquisition takes the form of transfer of disembodied technology mainly through technology licensing. Here, the extent of technological capability that could be built up and other economic benefits depends on the terms and conditions of technology transfer in terms of royalty rate, technical fee, duration of contract, and others like restrictions on export and so on. The law keeps silence regarding these issues.

Secondly, the law rightly underscores the need for regional development. In an economy like Myanmar, wherein the inter-regional variation in the levels of development is substantial this is a highly laudable objective. Having said this, it appears that the law is not explicit in terms of achieving this objective. Hence it might be advisable to divide the economy into different zones based on definite indicators of development and the incentive structures may be turned in such a way as to achieve the objective of balanced regional development. At the same time, given the fact that the regional governments are better able to assess the regional requirements, it is advisable to explore the possibilities of providing greater role for the regional government. While, this might have the potential danger of competition between regional governments and the consequent adverse effects, the MIC could act as a watchdog to modulate the behavior of different state governments.

In accomplishing the stated objectives, the law provides for the setting up of both joint venture and fully owned foreign subsidiaries. In the case of fully owned foreign subsidiaries, the law stipulates that the minimum foreign investment should be at least US \$500,00 in the case of industrial sector and US \$ 300,000 in the case of a service organization. The stipulation of minimum capital requirement of \$ 0.5 million is likely to have the effect of erecting entry barriers to certain foreign enterprises; especially the small and medium sized ones. This in turn could have its adverse effect on the total investment inflows. This is because, in the current era of globalization, it has been

observed that large multinational firms are not the only source of investment resources, management expertise and technology that is badly needed by the developing world. But, there are a large number of small medium enterprise having the financial and other resources and keen on investing in the developing countries. In the Indian context, for example, an over view of the foreign collaborations approved during the post 1991 period reveals that in each year there a large number foreign investment proposals involving investment less than \$ 0.5 million. More specifically in the year 1999, out of the 1352 financial collaborations, almost 36 per cent were with foreign investment less than 0.5 million. Hence, by opening the doors of investment for such small and medium firms might be instrumental in attracting more investment to Myanmar.

A joint venture could be between a foreign firm and a local partner (and individual, a private company, a cooperative society or a state owned enterprise). Here the law stipulates that the minimum foreign contribution should be at least 35 per cent. Here again, if the evidence from other countries any indication, setting the minimum foreign share might act as an entry barrier. Hence it may be worth considering the economic rationale for setting the minimum contribution at 35 per cent for such a minimum contribution appears to be not a necessary condition for reaping the benefits for foreign investment. Perhaps it may be better to leave to the foreign and local counterparts to determine the sharing of investment. Such an approach is also likely to enhance the invest inflows to Myanmar. Here it may be worth noting that in 1999; almost 15 per cent of the financial collaborations in India were involving less than 39 per cent foreign equity share.

The law also provides for a number of incentives, which include among others:

- Exemption from income tax for three consecutive years beginning with the year in which the operation commences and further tax exemption or relief for an appropriate period in case if it is considered beneficial for the state
- Exemption or relief from income tax on profit which is re invested with in one year;
- Relief from income tax up to 50 per cent on the profit from export;
- Right to pay income tax on behalf of the foreign employees;
- Right to deduct R&D expenditure
- Right to accelerate depreciation;

- Right to carry forward and set off losses up to three consecutive years, from the year loss is sustained
- Exemption or relief from custom duty and other taxes on imported machinery and equipment for use during the construction period;
- Right to import raw material for the first three years commercial production following completion of construction.

These concessions and incentives appear appropriate to attract investment as well as maximizing the linkage from the investment in the short term and long term. At the same time; there appears to be an element of ambiguity in some of the provisions, which might in turn lead to a situation of lack of transparency and corrupt practices. To illustrate, the provision to give tax exemption beyond the initial three years; it will be given for “appropriate period” and also “in case the project is considered beneficial to the state”. How to decide the appropriate period? What is the criterion for deciding the usefulness of the project? From the investors point of view it is only appropriate that these are defined in more clear terms. Another point related to the tax exemption for profits on exports: It appears that regardless of the nature of exports such incentives are offered. This tends to suggest that the law does not differentiate between potato chips and micro chips. Given the fact that the entry barriers as vary across different commodities, the incentives offered need to have some relationship with the entry barriers faced by the exporters. From the point view of the present study, if government were to attract more investment into the high technology areas and to promote high tech exports there appears to be the need for targeting incentives.

The law also specifies the procedure for registering a foreign firm, and the required documents, guide lines for recruitment of labor, different taxes to be paid by the foreign firm and so on. Notwithstanding the fact that the law underlines its commitment towards developing a market oriented economy, there has been a series of criticisms being raised against the foreign investment policy and procedures of the state, notably by the US department of commerce.<sup>20</sup> Given the international context wherein different developing countries are competing each other for foreign direct investment, and also given the

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<sup>20</sup> See for details <http://www.usatrade.gov/website/ccg.nsf/ShowCCG?OpenForm&Country=BURMA>

limited investment capability by the country on account of the infancy of domestic private sector, it is important that the government addresses some of these issues so that more investment is attracted to the country.

At the same time it is also to be noted that in the list of items considered by the Government as having opportunities to make investment, IT goods or services at present do not find a place. Given the fact that the Government has been making earnest effort towards developing the human capital stock, and communication infrastructure, it is also important that more skill and human capital intensive sectors like IT which make use of these endowments find due place in the agenda for investment promotion.

### **Trend in Foreign Direct Investment**

Other things remaining the same, the effectiveness of FDI policy in any country may be gauged by examining the trend in foreign investment approvals and actual inflow. Hence let us now examine the amount of foreign investment approved as well as the actual inflow into the country. Table 5.7 presents the data on these variables. Here it needs to be noted that we have reported investment in US dollars. Given the fact that the investment has been converted into US dollars using the official exchange rate (1 dollar=6 kyats), which is only a small fraction of the open market exchange rate (about 900 Kyats at present), there is indeed an underestimation. Yet the data presented in the table is highly revealing. To begin with it may be noted that the investment approval as well as the number of projects showed an upward trend till 1996-97 wherein the number of projects peaked at 78 and the investment approval reached an all time high of US \$ 2814. Both the number of projects as well as investment approved showed a down ward trend from 1996-97 to reach an all time low level of 7 projects and \$ 19 million investment 2001-02. It is however, heartening to note that, going by the data available for the first six months of 2002-03, there appears to be a revival not only in terms of number of projects but also in terms of the amount of investment approved. Nonetheless, no definite conclusion is warranted as to whether this indicates the beginning of a revival. The table also presents data on actual investment obtained from UNCTAD (2002). The broad trend in actual investment follows that of approved investment. Using the approved

and actual data which is available for the period 1995-96 to 2000-01 we have estimated the fructification rate and it is turned to be as low as 29 per cent. To the extent that this represents the case of contact failures, it is important that the Government explore the reasons for the same to squarely address them. *A priori*, it appears that, the FDI policy, apart from focusing on attracting more investment, should also give equal importance to the issue of investment implementation. This calls for identifying the road blocks in investment implementation and correcting them in time. Perhaps, the Government might consider the formation of an Investment Implementation Agency (IIA), which is empowered to address the issues in relation to investment implementation.

### **Role of FDI in Myanmar Economy**

The issue is whether additional efforts need to be undertaken to implement the investment proposals has to be based on a fair understanding of the role of foreign direct investment vis a vis local investment in different sectors of the economy. Data presented in table 5.8 which shows the share of foreign and local investment till 2000-01 may be an appropriate pointer. It is evident that in most of the sectors the bulk of the investment was undertaken by the foreign sector. The share of foreign sector was more than 90 per cent in four sectors, and between 80 and 90 per cent in five sectors. To cut the story short, except the construction sector, in all the other sectors foreign investment is predominant.

Table 5.9 presents data on the distribution of foreign and local investment across different sectors of the economy. It may be noted that four sectors (oil & gas, Manufacturing, Real estate development, and Hotel and Tourism account for almost 80 per cent of foreign investment. When it comes to domestic sector, almost 90 per cent of the investment is concentrated in four sectors (construction, manufacturing, hotel& tourism and industrial estate.) The discussion tend to suggest that while the government upholds the importance of investment in the rural sector especially that of agricultural sector, there is hardly any investment being attracted by thee sector. Though there is enormous potential for fisheries, investment is not getting targeted to these sectors. Since these sectors are the ones with higher employment potential, efforts may be made to attract investment into these and other lagging sectors. In this process, given the fact that the regional

governments have a better role to play the study underscores the need for more decentralized decision making.

Now let us examine the revealed preference of the foreign investors in terms of the mode of investment. Given the present law any foreign investor could have the following choices – fully owned foreign subsidiary, joint venture, on product sharing arrangements. The joint venture could be with local private sector, state economic enterprises, Myanmar Economic Holdings Ltd, Yangon city Development Committee, Cooperative societies, and the Myanmar economic Corporation. For our purpose we have divided them into four categories; foreign subsidiary, Joint Venture with private sector, Joint venture with others and Production Sharing arrangements. Table 5.10 presents data on the share of each of these categories during the last decade. Though no clear trend emerges from the table, following, inferences, though tentative, may be made. To begin with, the most preferred form of investment appears to be setting up fully owned foreign subsidiaries. Secondly, there appears to be disenchantment with having joint venture with government owned enterprises. In forming joint ventures, the preference is more towards private sector.

Given the fact that from the point of view of a developing country like Myanmar, joint ventures are perhaps preferable to foreign subsidiaries, particularly because the spillover effects are more easily reaped in the in the former as compared to the latter. To that extent, the policy should further promote joint ventures with private sector. The real question is what is the relevance of the foregoing analysis as far as the IT sector is concerned? It is to this issue that we turn now.

### **Working with Constraints: Promoting Investment in the IT Sector**

As already stated, investment in the ICT sector of Myanmar, is mostly confined to the firms operating in the ICT Park set up by the government in collaboration with the private sector. We have also noted that success in attracting a number of firms into the park in a short span of time notwithstanding, the IT sector is yet to emerge as a major source of income and employment for the domestic economy and Myanmar's presence is

yet to be felt in the international IT market so that the IT sector contributes significantly to the export earning of the country. These are the twin objectives that Myanmar might consider to achieve. Having said this, we must also add that that, to achieve these objectives, the journey that has to be undertaken is rather arduous. This is partly on account of the domestic and partly on account of the international environment which is less than friendly. Yet, it is the hope that with imaginative policies much could be achieved, for we are dealing with a country which is endowed with highly skilled manpower, the corner stone for promoting IT production and use.

The setting up of the ICT Park, and the plan for setting up another one in Mandalay, I consider as the bold initiatives in the right direction. As a next step it is important that short-term, medium-term and long-term plans, with dual role for trade and investment policies are devised and appropriate measures undertaken for their implementation. Indeed it is beyond the scope of the present study to elaborate the details of such a plan. Yet, it may be appropriate to put forward a few points for further reflection.

Given the high technology nature of the industry and limited capability (both financial and technical) available in the domestic economy on the one hand and the international organization of production of IT at present on the other, it may be unrealistic to assume that the IT production base could be developed without foreign participation.

Here the issue is what should be the form and content of foreign participation. If the analysis presented in the previous section is any indication, the preference pattern of foreign firms is primarily to set up fully owned foreign subsidiaries. It is also heartening to note that the next best preference is for setting up joint ventures with the domestic private sector. Given the situation, the investment policy should be one that promotes these two forms of investment especially the latter one because; the spillover effects are likely to be higher in such joint ventures.

But given the fact that the private sector in the country is still in its infancy, for obvious historical reasons, earnest efforts should be made to develop a vibrant domestic capital

base. This will call for among other things entrepreneurial development programs (EDPs).

Also it may be noted that given the low financial and technical capability of the domestic private sector at present, it is unlikely that the large MNCs find it advantageous to join hands with the relatively small Myanmar private sector<sup>21</sup>. This issue could be addressed, at least partly, by removing the minimum capital requirements such that investment from small and medium sized foreign firms are facilitated. Also, it may be advisable to do away with the minimum equity share so that the involved firms can freely decide on the economically optimal equity sharing.

As already noted, among the items listed in the activities, which are considered as opportunities for investment in Myanmar, ICT goods so far have not found a place. Against this background, it is important to identify the product/service wherein Myanmar could make a profitable entry. It is quite possible that the policy makers have been influenced by the high entry barriers coupled with high investment and technological/skill intensity that characterize the production of most ICT related goods. And when it comes to ICT services, it is generally considered as highly skill intensive which makes it appropriate for countries having a large pool of skilled manpower like India<sup>22</sup>. Yet, as we have already argued in the first chapter, high entry barriers notwithstanding, there might be real opportunities for countries like Myanmar to enter into those areas of ICT goods like passive and electro-mechanical components and entertainment equipment like TVs, radio<sup>23</sup> and two-in-ones which are characterized by relatively stable technology and low investment requirement. This however, calls for

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<sup>21</sup> Please note that in the late seventies when the government of India demanded the large MNC – IBM- to share their equity with Indian firms, they preferred to leave the country rather than sharing their equity with the relatively small Indian firms. The same computer giant chose to return to India by joining hands with Indian Conglomerate, Tata, in the 1990s.

<sup>22</sup> In India the large pool of human capital was not built up overnight. It has been achieved as a result of the sustained effort over the last 50 years. Hence, as argued by Kumar (2001) the present dominance of India I ICT may be considered as a delayed return for the effort that India has put in towards building human capital stock.

<sup>23</sup> As we have seen in the first section there are only about 143 radio sets per 1000 population and that there is scope for investing in a low cost radio assembling unit which is bound to have good domestic market as well.

earnest effort at attracting some of the contract manufactures who today dominate the ICT production in the world (see Ernst 2002 for details on the global production networks that characterize IT production). Here it may be noted that the presence of China is frequently regarded as a major threat. China has been immensely successful in attracting investment into IT Production. Driven mostly by FDI, China's exports have risen by over 30 per cent of total exports in 2001 as compared to 15 percent in 1995. In the first 9 months of 2002, trade in electronics segment has risen by 30 to 50 per cent compared to 8 to 20 per cent for the other traditional light manufactures. At the same time, MNCs are forced to expand their global out-sourcing and distribute various segments of the value added chain into other Asian countries to take advantage of the cost and capability structures (Tan Kong-Yam 2002). Under these circumstances the "Myanmar Antenna" should be able to send right signals such that at least some of the contract manufacturers are attracted to Myanmar.

In the sphere of ICT services, again there appears to be real opportunities to enter into some of the relatively low and medium skill intensive software services like system integration, data migration (see chapter 2 for a list of activities) and low skill intensive ICT enabled services like data entry and the IT enabled services like, medical transcription, call centers etc. It is also to be noted that thanks to the efforts made by the Government towards generating IT manpower, skill constraints may not be an impediment. Such IT services are ideal for generating large-scale employment in the short run. But they also call for better communication infrastructure at affordable prices and facilitating policy regime. If the experience of India and other countries is any indications, price reduction calls for bringing in more competition and removal of monopolies. Also it is important to phase out the restrictions on the use of Internet.

While venturing into such initiatives, it is important to keep in mind the lessons offered by the experience of other countries. To begin with, the strategy needs to not one of spreading thinly the resources across the country, instead the investment needs to be undertaken in such a way as to take advantage of the agglomeration economies. This issue has been addressed fairly successfully by Myanmar. It may also be worth

considering the introduction of a “single window clearance”<sup>24</sup> system for the firms operating in the Park so that the prospective investors need to have only limited interaction with the bureaucracy.

Secondly, such technology parks needs to be close to and have constant interaction with the centers of learning such that mutual learning and domestic technological capability is built up in the long run. This is also has been addressed by Myanmar while setting up the ICT Park.

Thirdly, there is the need for conscious efforts towards skill empowerment such that the economy does not get locked up in low/medium technology activities and an upward movement along the skill spectrum is ensured. Given the fact that skill empowerment is bound to bring about substantial social benefit; its cost cannot be left entirely to the private sector and hence it may be shared socially. This could be accomplished, perhaps, through providing additional incentives for firms undertaking such initiatives.

On the whole, it appears that given the specific characteristics of ICT sector, it may be worth considering a separate policy for investment in IT with the twin objective of attracting and implementing private investment by taking into account *interalia*, the points raised above.

### **5. 5 Trade in IT: Policy, Performance and Challenges**

Given the exorable link between trade and investment which, as we have argued in the chapter 2, is apparently much stronger in ICT production as compared to most other industries, let us examine the trade policy framework in the country to explore the possibilities of further policy reform options, if any, to promote the production and use of ICT in Myanmar. We shall also explore the plausible areas wherein ICT could help enhancing the competitive advantage of Myanmar Given the fact that Myanmar is a member of ASEAN and WTO it may also be important to explore the implications of an

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<sup>24</sup> It is understood that the government has already taken certain initiatives in this direction.

early implementation of e-ASEAN Agreement as well the signing the WTO Agreement on Information Technology.

### **Trends in the External Sector**

There is a two-way link between trade policy and trade performance. While the trade policy has a significant bearing on the overall performance of the external sector of an economy, it is also likely that the developments in the external sector influence the policy changes to a great extent. Hence to appreciate the trade policy changes in Myanmar, it is appropriate to begin with an examination of the major trends in the external sector with focus on trade. Table 5.11 presents data on the trend in exports, imports and trade balance since 1980-81. The following observations could be made from the table. During 1980-81 to 1998-99, while the exports almost doubled, imports recorded a more than threefold increase. The natural outcome has been the growing trade deficit recording more than six-fold increase during the period under consideration. Under such circumstances any economy has to adopt certain measures to contain the widening trade gap. The problem could be addressed either by boosting exports or restricting imports. The approach adopted by Myanmar appears to be the latter one as is evident from the reduction in the annual rates of growth in imports recorded since 1998-99. Notwithstanding the growing trade gap, the overall balance of payment situation was kept under control through borrowing, increased receipts on account of private services and remittances, FDI etc. Yet it has been argued that Myanmar had to manage very often with a foreign exchange cover just sufficient to meet one month's imports (ADB 2002). It is also important to note that during the terminal year (2002-03) Myanmar recorded a trade surplus in balance of trade for the first time since 1980-81. While this might *prima facie* appear as a major achievement, import compression is likely to have an adverse effect on the future growth prospects of the economy to the extent that the growth depends on imported capital goods, raw material, spares etc.

## Trade Policy: Present Scene

Ever since the initiation of economic reforms in 1988 the Myanmar government has undertaken a series of measures to promote trade. These included among others, permitting private enterprises to carry out exports and imports, promoting border trade, streamline the export import procedures by lowering tariff and non-tariff barriers, reactivating the Myanmar Chamber of Commerce and Industry etc (see the box 5.5 for details). As a founder member of WTO, its foreign trade policies are today guided by the rule-based multilateral trading system. In general the registered importers/exporters have the right to export all the commodities except rice and rice and rice products which are reserved to be solely exported by the State-owned Economic Enterprises. The registered Exporters are also allowed to enjoy 100 per cent export retention.

### **Box 5. 5 Union of Myanmar Federation of Chambers of Commerce and Industry**

#### **Major Landmarks**

1919- Burmese Chamber of Commerce (BCC) was founded during the British Colonial Period

1948-62 – After independence, BCC developed into Union of Burma Chamber of Commerce & Industry (UBCCI)

1962-88 – During the socialist regime, UBCCI became defunct.

1989 – After adoption of market oriented economy; UBCCI was reconstituted in the name of Union of Myanmar Chambers of Commerce & Industry (UMCCI).

1999- UMCCI was upgraded as the Union of Myanmar Federation of Chambers of Commerce & Industry (UMFCCI)

#### **Objectives**

- To participate actively in implementing the four economic objectives of the State.
- To enhance national economic development
- To safeguard the interest of the State and the People
- To cooperate and coordinate with the State in economic and social activities
- To cooperate with business associations
- To act as a bridge between State and private sector
- To represent and safeguard the private business and national interests
- To enhance Myanmar SME's competitiveness.

- To leads Myanmar Business Community integrated into international trade and globalized economy.

#### **Domestic Activities**

- Representation and consultation with Government authorities/bodies
- Regular consultation and dialogue with private businessmen
- Interaction on day to day operations or on ad-hoc basis to address issues affecting the private sector
- Issuing commercial documents and certificates of origin for goods being exported
- Publishing newsletters, magazines, business information, business directories and trade enquiries
- Conducting HRD activities such as seminars, conferences, workshops, talks, and forums and trainings.
- To represent business interests and views to the Government and the public.
- Providing arbitration services, Dissemination of trade and market information, Export promotion and networking
- Organizing and participation in local and foreign Trade fairs.

#### **International Activities**

- Acting as an intermediary and providing services for foreign and local joint ventures in marketing and business transactions
- Consultancy services in industrial, economic, legal and environmental issues
- Enforcing the memorandum of understanding with foreign Chambers for bilateral trade and investment promotion
- Kunming Trade Fair, Yunnan, China
- Asia- Pacific International Trade Fair, Seoul, South Korea
- Joint meeting of Japan Myanmar CCI Business Cooperation Committees
- Trade Fair/Exposition/Show organized by JETRO
- South Africa International TradeExhibition'99, Johannesburg, South Africa
- Meeting of Joint Committee of GMS –Economic Quadrangle CCI
- Various Greater Mekong Sub Region Meetings/Forums
- BIMST-EC Meetings/Forums
- ASEAN- Meetings/Forums
- AEM-ASEAN-CCI Consultations Meetings
- Japan Myanmar Economic Cooperation Conferences
- International Chamber of Commerce Conferences

#### **Services Provided by UMFCCI for the Business community are:**

Trade enquiry and referral services  
 Current awareness services  
 Information Enquiry Services

Trade and Market Information Services
Business Contact
Membership Database
Publications
Business Advisory Service
Business Library
Briefing Service

Import is generally allowed against the export earning with a view to promote exports and to overcome the trade deficits. Since March 1998 the government has imposed a restrictive import policy, requiring that all imported items must fall within either the A<sup>25</sup> or B priority lists. "A" priority list items should be imported in a ratio of at least 80 percent, and "B" priority list items can be brought in as a maximum of 20 percent. B list items may only be imported after the arrival of the A list items. As of December 1998, the Ministry of Commerce stipulated that items which are not restricted but which do not fall within either the A or B lists will be treated as though they were B list goods. Import permits may be obtained by producing evidence of export earnings. In another initiative to contain the balance of payment situation, the government in July 2000 imposed a remittance cap on earnings of \$10,000 per month. However, this is not applicable to export earnings. The Government also imposed a 10 per cent tax on all exports. While discussing with Business people in Myanmar it was frequently stated that "we export to import". Such a practice is bound to affect the investment prospects and long-term growth of the economy. For example, a new venture which requires the import of machinery, might find it difficult to import because the export earning is yet to flow in as project has not been commenced. Hence, it is worth considering doing away with such policy measures which might be instrumental in achieving short-term goals only at the cost of long-term growth.

Myanmar follows the Harmonized System of International Nomenclature. Three types of taxes can be levied on imports: import duties, commercial taxes and license fees. After

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<sup>25</sup> Priority Item A include agricultural machinery, and farm implements, fertilizers, pesticides, high-yield quality seeds edible oil and fats for soap industry, construction stores and building material. Priority Item B includes about sixty items grouped under personal goods, household goods, food stuff, construction materials, textile products, electric and electronic products and general products.

joining ASEAN in 1997, measures have been undertaken to comply with the ASEAN Common Effective Preferential Tariff Scheme (CEPT). It is understood that Myanmar is in the process of meeting the CEPT tariff reduction commitments to be phased in between 2001 and 2008. At present, tariffs range from a low of zero to a maximum of 40 percent, with cars, luxury items, jewelry and items produced in the country facing the highest tariffs. IT goods in general attract tariff less than 5 percent. Tariffs on most industrial inputs, machinery and spare parts average about 15 percent.

The Customs valuation is based on CIF value, after adding landing charges equal to 0.5 percent of CIF value. For some commodities, Customs uses its own reference guide to determine the value of imports. The guide lists prices in kyat based on the price goods are sold for in Myanmar, and sometimes lists values substantially lower or higher than the value outside the country. The imports are valued for customs duty purposes at rates ranging from 100 kyat to 250 kyat per U.S. dollar. The rates depend on whether the item is considered as an essential or a luxury item. Private companies complain that due to the arbitrary application of customs valuation, actual customs duties are not transparent (US Department of Commerce).

The major impediment to trade perhaps relates to the foreign exchange regime in the country. Myanmar has a highly overvalued foreign exchange wherein the official exchange rate is about K 6 to a dollar where as the market exchange rate is as high as K 900 to a dollar. Such overvalued exchange rate coupled with high rates of inflation in the domestic economy has the effect of very high real effective exchange rates that undermine the export competitiveness. Foreign firms are also required to record transactions at the official rate when submitting forms to the government. When foreign firms bring in foreign exchange to be used for purchases from the local economy, they must deposit it in a state bank and withdraw any funds used in Foreign Exchange Certificates (FECs). Foreign firms sometimes avoid the official exchange rate by paying for services in dollars. The government is now demanding payment in hard currency for an increasing number of local expenses, including the local management salaries, telephone service and property rental. While one needs to appreciate the economic

imperatives that have induced the government to adopt the present foreign exchange policy, to the extent that the present exchange regime creates impediments to trade, it is advisable to explore the possibilities of reforming the exchange rate mechanism to promote export and restrict imports.

The following has been observed:

“Despite laws to encourage foreign trade and investment promulgated in the 1990's, cumbersome restrictions remain, including permits required for imports, exports and most other business activities. The concept of a market-oriented economy has not worked its way through the bureaucracy to eliminate burdensome regulations. In addition, frequent and sometimes arbitrary and unannounced policy changes make business unpredictable. Procedures for issuing permits are not transparent, providing opportunities for graft. Importers and exporters say it is extremely difficult to obtain the necessary business permits without paying for them "unofficially.”<sup>26</sup>

### **Structure and Direction of Trade**

Having dealt with the policy environment guiding trade, let us now briefly examine the export performance with focus on its structure and direction. Table 5.12 presents data on the changing structure of trade in terms of commodity composition. It may be noted that the food items, continues to dominate the export basket. Yet its share has declined from a little over 52 per cent in 1980-81 to 38 per cent in 2000-01. Another important development related to the significant increase in the share of manufactured goods, recording an almost three fold increase in its share during the period under consideration.

At the same time, estimates of revealed comparative advantage (Balassa Index) tend to suggest that the comparative advantage of Myanmar is limited a few products viz. Clothing (10.37)<sup>27</sup>, wood products (4.82), fresh food (3.4) and minerals (2.46). The estimated value of Balassa index for Leather products is found to be 0.93 indicating the potential. In general, it appears that the present commodity composition of Myanmar is characterized by traditional commodities and that there is an urgent need for product

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<sup>26</sup> See for details <http://www.usatrade.gov/website/ccg.nsf/ShowCCG?OpenForm&Country=BURMA>

<sup>27</sup> Figures in the parenthesis show the estimated value of Balassa Index.

diversification with focus on high value adding products. In this context, IT goods and services, among others, might be a possible option.

When it comes to the Direction of trade, it appears that there is fairly high level of regional concentration. To elaborate; a little over 60 per cent of the export is directed towards Asian countries. South East Asia accounts for over 26 per cent of total exports and of this almost 90 per cent is accounted by three countries viz. Thailand, Singapore and Malaysia (see table 5.13). Similar pattern may be observed with respect to other regions as well. Needless to say, given the fact that such higher level of regional concentration is likely to make Myanmar more susceptible to external shocks, there appears to be the need for more regional diversification. In this process the information communication technology, especially through e-commerce could play a major role.

We also find that there has been a steady deterioration in the terms of trade of the country (see table 5.14). This has to be seen against the domination of low priced traditional commodities in the export basket. Given the fact that the prices of imports are exogenously determined, any improvement in the terms of trade calls for moving up the value chain such that the unit value realization from exports are increased. This indeed calls for investment at different levels of production and exports, which in turn depends *inter alia* on the present financial sector policies especially those relating to the credit market. Though a detailed analysis of the financial sector is beyond the scope of the present study, it is timely to deal briefly with some of the issues which might form a part of further policy reform agenda.

The financial sector of the economy is controlled and monitored by the Central Bank of Myanmar. Its duties and responsibilities as laid down by the Central Bank of Myanmar law are presented in Box 5.6

**Box 5.6 Objectives of Central Bank of Myanmar (CBM)**

- ❖ To preserve the internal and external value of the currency;
- ❖ To promote efficient payment mechanisms;
- ❖ To ensure the efficiency of the financial system;

- ❖ To foster monetary, credit, and financial conditions conducive to orderly, balanced, and sustained economic development.

**And by law, the CBM is:**

- The sole issuer of domestic currency (including Foreign Exchange Certificate: FEC);
- The banker to the Government;
- To give Advise to the government in such matters as the state budget and economic development policies and planning;
- The advisor and agent in the issuance of government securities;
- To Formulate and implement of monetary policy;
- To inspect, supervise and regulate the financial system;
- The banker to financial institutions;
- To implement exchange rate policy and, as agent of the government, to control foreign exchange transactions;
- To manage international reserves and to implement measures to ensure a stable and viable balance-of-payments positions; and
- To perform transactions and other activities on behalf of the government arising out of the latter's participation in international banking, credit, and monetary organizations.

In general, functions of the central bank in any country, with the possible exception of countries with confederate banking system, are to issue bank notes, to act as the banker to the government, and the banker to the banks. The CBM Law certainly satisfies these three functions of the central bank. Also generally it is expected as the roles of the central bank to maintain the value of currency and to promote economic growth. Again CBM Law seems to satisfy these fundamental roles of the central bank.

However, the fulfillment of the objectives appears to be a too difficult task. An especially serious problem is that “the internal and external value of the currency” has not been secured. To preserve internal value of the currency means to stabilize prices, i. e., to restrain inflation. And to preserve external value of the currency means to stabilize exchange rate. These two important objectives seem to have not been attained in Myanmar. According to the mainstream view of economics, a major reason lies in the fact that CBM is only one department of the Ministry of Finance and Revenue, not an independent organization. Therefore, in reality, CBM appears less as the banker to government but more as the bank subordinate to the government.

CBM rigorously regulates almost all interest rates. As Table 5.15 shows Central Bank Rate (CBR) increased from 4 percent to 11 percent in 1989, to 12.5 percent in 1995, and further increased to 15 percent in 1996. But it decreased to 12 percent in 1999 and further decreased to 10 percent in 2000 in spite of rising inflation rates.

Deposit as well as lending interest rates substantially increased in 1989 in accordance with the increase of the CBR. However, when one takes into account the inflation level, except small personal loans at pawnshops, real interest rates of all other categories have been negative up to today. This leads to a situation wherein there is hardly any incentive for savings leading to a typical case of “financial repression”. Naturally, the preference pattern of the people will be for real assets such as gold, rice, and automobile. As a direct consequence, private domestic investment is subdued, hampering future growth. At the same time high lending rates, for trade and other related activities are bound to undermine the international competitiveness. On the whole, there appears to be a number of challenges that may be conceived as opportunities that might attract the attention of policy makers.

### **Promoting Trade: the Role of IT**

Having identified the various challenges towards a more open trade regime, let us now reflect on the possible areas where in ICT could plausibly play a role in trade promotion. We have already seen that the present export structure is dominated by low value adding primary commodities and there is high regional concentration in terms of export destination. Under these conditions, the export promotion strategy has to underline the need for product diversification as well as diversification in terms of trading partners. Given the resource endowments of the country, the government has rightly emphasized the important role of agriculture in exports. The economic history, however, teaches us that no country in the world has so far been able to achieve a per capita income higher than \$ 500 by focusing on primary agriculture; also empirical evidence tend to suggest that under the new trading environment, the primary exporting countries are unlikely to reap any significant return unless they go up the value chain (Kapilinky 2001, Joseph & Brigit 2003). Hence, there is the need for concerted efforts towards greater value

addition, by investing in post harvest operations, new product development, and in this process, countries like Myanmar should be able to join hands with the large MNCs which dominate the processing and marketing of primary commodities. Here again, ICT could play a facilitating role not only through e-commerce but also by delivering real time information and customized knowledge to improve farmers decision making ability leading to better quality product, productivity enhancement and improved price realization<sup>28</sup>. Here it needs to be noted that IT is only an enabling tool and to harness the power of new technology there is the need for complementary innovations, which include but not limited to, creation of new institutional structure, bringing together different stake holders like the private sector, state and regional government and the Non-Governmental organizations (NGOs) which are considered as active agents in diffusion of ICT. Here the study also underscores the need for greater decentralization in decision-making and grater role for the provincial/state governments. Moreover, there is also the need for better communication infrastructure and for increasing the possibilities to use IT in an innovative manner.

Give the fact that the country is already emerged as a major player in the traditional industries like textiles and building up comparative advantage in leather products, it is important to modernize these sectors wherein the role of IT cannot be overemphasized. This could take the form of new design development, better supply chain management and locating market through e-commerce. It is heartening to see that the power of e-commerce has already been fully recognized by the government. Other areas where IT could be profitably used for promoting international competitiveness include tourism dairy development<sup>29</sup> and fisheries.

The crucial issue is whether the production information technology goods/services offer any opportunity for Myanmar in diversifying the export basket. As we have already noted

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<sup>28</sup> See in this context, among others, the e-Choupal initiative undertaken by a leading Private sector in India (India Tobacco Company) by bringing together diverse agencies, each with specialized competencies in a bid to empower the Indian farmer. <http://www.echoupal.com/default.asp>

<sup>29</sup> Much could be learned from National Dairy Development Board of India. [www.adb.org](http://www.adb.org)

the Government has taken imaginative steps in this direction and the study only underscores the need for not looking back but forging ahead. At the same time we shall reiterate the need for complementary innovations which are instrumental in reducing the cost and enhancing the access to telecommunication facilities.

### **Implications of e-ASEAN and ITA**

Before concluding the study, let us briefly reflect on the plausible implication of advancing the implementation of e-ASEAN agreement and signing the ITA. As we have already discussed in Chapter 2 there are positive and negative implications of e-ASEAN and ITA. We have argued that the ultimate effect depends on the country specific factors and therefore the specific country context has to be taken into account while reflecting on the plausible implications. The positive aspects, we have argued, related to greater access to IT goods and services as well as the secondary effects on account of the greater diffusion of ICT facilitated by trade liberalization and efficiency gains on account of increased competition. The negative implications related to the revenue loss and loss of income and employment opportunities in the domestic economy on account of the increased mortality of infant firms.

A realistic empirical analysis of the likely implication of tariff reduction calls for estimation of a Computable General Equilibrium model, which is beyond the scope of the present study. Hence the present study underscores the need for such a study for drawing more precise policy conclusions. In the absence of such a study, we draw from results of a partial equilibrium analysis based on the SMART model provided by UNCTAD using the import data (mirror data) for the year 2000-01. The model allows for the estimation the trade creation and trade diversion, likely increase in the stock of IT goods, consumers' surplus, revenue loss on account of tariff reduction etc. For our purpose we report here the results of estimates with UNCTAD standard parameters on the likely revenue loss on account of reducing tariff to zero level and the increase in the stock of IT goods. Here it may be noted that the results may be considered at best as indicative because of the data problems and assumptions involved in the estimation as presented in chapter 2.

As a prelude, it may be instructive to look at the structure of IT imports as revealed by the mirror data gathered by UNCTAD. It is found that during 2000-01 total imports of IT goods amounted to \$ 56.98 million. Of these five product lines; 8470 (calculating machines), 8471 (digital automatic data processing Machines), parts of 8471, 8517 (telecommunication equipment) and 852520 (transmission and reception apparatus) put together accounted for about 68 per cent of total IT imports. (see table 5.16) What is important to be noted is that in each of these product lines, one country accounts for bulk of imports. To illustrate, in 56 per cent of imports in the product category 8470 was from China where as 69 percent of the product category 8471 was from Singapore. In 8517 also china has a dominant share of 74%. In general, two countries, China and Singapore together accounts for almost 63 per cent of total imports.

Table 5.17 presents data on the likely implications (in terms of enhanced supply and reduction in revenue) of reducing the tariff rates to zero level. It may be noted that with the reduction in tariff to zero level, the domestic supply is likely to be enhanced by \$2.5 Million. At the same time the revenues loss on account of tariff cut is likely to be only \$9081. This has to be seen against the fact that Myanmar, being a founding member of WTO, has already brought down the tariff on most of the goods. Thus, it appears that both the adverse impact arising from revenue loss and positive effect on account of enhanced access to IT goods is likely to be limited. At the same time, given the fact that the present level of IT goods production is limited, the adverse impact on account of exit of local firms and consequent reduction in income and employment also is likely to be limited. Given this empirical evidence, one may be tempted to conclude that Myanmar could take an indifferent approach to both e-ASEAN and ITA. But, such a strategy has the potential danger of not exploiting the advantages offered by e-ASEAN and ITA. By signing the ITA, Myanmar could send right signals to the outside world and could attract more investments into the IT sector. Such a strategy appears to be important to reap the full returns from the investments already made by Myanmar in building the human capital stock. Given the fact that e-ASEAN is not simply a tariff cutting mechanism but also underscores the importance of capacity building, much could be gained by

advancing the implementation of e-ASEAN and making use of e-ASEAN forum to build up an IT production base in the country which in turn could lead to increased employment and income earning opportunities in the domestic economy.

### **5. 6. Concluding Observations and Reflections on Policy Options**

In the context of a series initiatives made by the Government of Myanmar towards harnessing IT for the overall development of the economy, the present chapter sought answers to certain issues in the realm of trade and investment having bearing on the production and use of IT in the economy. These issues *inter alia* included: to what extent the present policies having bearing on IT production and use are conducive to achieve the stated objectives? What is the present state of IT use and production in the country? What are the factors that constrain the IT diffusion? To what extent the policy initiatives by the state have been successful in developing the human capital base for IT? How conducive is the present policy regime for attracting investment into the country in general and IT sector in particular? Are there any scope for further trade policy reforms to improve the health of external sector in general and providing greater access to IT goods/services in particular? What are the implications of advancing the implementation of e-ASEAN agreement and signing the ITA?

An examination of the computer science law which governs the use of computers and internet in the country and IT production to great extent revealed that, though the objectives were highly laudable, the series of restrictions have had the effect of mitigating the positive effect of various initiatives that the government has undertaken to use IT for development. Hence the study highlighted positive consequences of phasing out, if not removing, various restrictions on the use of internet and computers.

The study noted the bold initiatives made by the government towards increasing the access to old technologies like TV by increasing transmission coverage and new technology like telephones (both fixed and mobile) and internet by spending billions of Kyats. But the returns to these investments are yet to be fully reaped. This is evident not only from the low diffusion of old technology like TV and radio but also from the high intra national telecom divide and low levels of use of mobile telephones and internet.

Give the fact that reaping the full benefits of any technology depends to a great extent on the innovations in the related areas, lack of such innovations in Myanmar seems to have stood in the way of reaping the full benefits of new technology. To elaborate; while huge investments were made towards increasing the transmission coverage, low affordability on account of low income levels coupled with restrictions in the use of TV and radio in the form of licensing seems to have an adverse effect. Similarly, while efforts were made towards modernizing the telecom infrastructure, lack of competition and resultant high prices seems to have had led to the reduced access. Here the study points towards the need for creating a more competitive environment in the telecom sector and to simplify the licensing system for TVs and Radios.

While the present production base for IT goods appears to be limited, concerted efforts have been made towards laying the foundation of a software sector. This has been accomplished by the setting of a software park, with another one being planned to be set up at Mandalay. The series of initiatives made by the Government towards IT education and building up IT manpower base is likely to provide rich dividends in the near future, provided a more conducive environment for the production and use of IT goods and services are created.

Various improvements made in the foreign investment law notwithstanding, the present study finds certain areas where further improvements may be considered. For example, the study tends to suggest that the stipulation of minimum capital requirement of \$ 0.5 million for the fully owned foreign enterprises is likely to have the effect of erecting entry barriers to certain foreign enterprises; especially the small and medium sized ones. Similarly, setting the minimum foreign share of 35 per cent for the joint ventures also might act as an entry barrier. Hence the study underlines the need to consider the economic rationale for setting the minimum contribution at 35 per cent and minimum investment requirement (at \$ 0.5 million) for such a minimum contribution appears to be not a necessary condition for reaping the benefits for foreign investment.

The study also underscores the need for more transparency with respect to the provision tax exemption beyond the initial three years. Also it may worthwhile to reconsider the present practice of providing tax exemption for profits on exports for all commodities. Given the fact that the barriers to enter the international markets vary across different commodities; the incentives offered need to have some relationship with the height of entry barriers faced by the exporters.

An analysis of the trend in investment approvals and actual inflows shows that since 1996-97 there has been a steady decline in both approvals and actual inflows. A real reversal in this trend is yet to take place. It was also found that the fructification rate is rather low at 29 per cent. This calls for simultaneous effort to promoting and implementing the investment projects. Study also shows that FDI accounts for bulk of the investment in almost all the sectors of the economy and the most preferred mode of FDI is the fully owned foreign subsidiary followed by joint venture with local private sector. But given the low financial and technical capability of the domestic private sector at present, it is unlikely that the large MNCs find it advantageous to join hands with the relatively small Myanmar private sector. Hence the study reiterates the need for removing the entry barriers for the small and medium sized foreign firms.

High entry barriers notwithstanding, the study argue that there are real opportunities for countries like Myanmar to enter into those areas of ICT goods like passive and electro-mechanical components and entertainment equipment like TVs, radio and two-in-ones which are characterized by relatively stable technology and low investment requirement, provided restrictions on trade and investments are removed.

In the sphere of ICT services, in the short run it may be worthwhile to enter into the relatively low and medium skill intensive software services like system integration, data migration and low skill intensive ICT enabled services like data entry medical transcription, call centers etc. Such strategy might be instrumental in fully utilizing the manpower being generated through various state initiatives.

At the same time, there is the need for conscious efforts towards skill empowerment such that the economy does not get locked up in low/medium technology activities and an upward movement along the skill spectrum is ensured. Given the fact that skill empowerment is bound to bring about substantial social benefit; its cost cannot be left entirely to the private sector and hence it may be shared socially. This could be accomplished, perhaps, through providing additional incentives for firms undertaking such initiatives.

On the whole, it appears that given the specific characteristics of ICT sector, it may be worth considering a separate policy for investment in IT with the twin objective of attracting and implementing private investment by taking into account *interalia*, the points raised above.

The trade policy regime has been characterized by series of changes mainly aimed at restricting imports in the context of widening trade gap. While such reforms has had the effect of generating a positive trade balance in the current year, the study note that import compression is likely to have adverse effect on the future growth prospects of the economy. A major issue in the trade policy front related to the overvalued exchange rate regime. The study therefore proposes the need for using exchange rate mechanism as an effective tool for managing the balance of payment. This however, calls for, among other things, reforms in the financial sector and more specifically a change in the status of the Central Bank of the country.

Based on an analysis of the present structure and direction of export the study calls for policy initiatives, including the use of IT to diversify the export basket. The study also explored, albeit briefly, the implications of advancing the implementation of e-ASEAN agreement and signing the ITA. It was found that the adverse impact of reducing the tariff to zero level in terms of revenue loss and positive effect on account increased access to IT goods are likely to be minimal. This does not mean that the country could remain indifferent to e-ASEAN and ITA. Instead, Myanmar might consider signing the ITA such that the right signals are sent to the rest of the world and more investments are attracted

especially to the IT sector of the economy. Similarly much could be gained by advancing the implementation of e-ASEAN agreement, for there is an inbuilt provision for capacity building which could be exploited for building up IT production base to generate more employment and income earning opportunities in the country.

## Tables

**Table 5.1 Number of Licenses Issued for Radios, TVs and Satellite Receivers and the Revenue collected**

Year	No. of Radio Licence	Revenue (Million Kyats)	No. of TV licences	Revenue (Million Kyats)	No. of Home Satellite licences	Revenue (Million Kyats)
1990-91	3916	0.12	129036	15.59		
1994-95	71271	1.89	223886	28.6	995	5.51
1995-96	22643	0.81	279251	35.4	1716	32.33
1996-97	13007	0.41	282504	33.93	1823	24.96
1997-98	32293	1.11	284642	35.4	1754	20.4
1998-99	35591	0.38	260724	32.54	1411	18.49
1999-00	9380	0.15	278161	34.77	1679	25.42
2000-01	18500	0.27	396353	31.78	1758	29.47

Source: Central Statistical Office (2001)

**Table 5.2 Growth of Telecommunications in Myanmar**

Year	Telephone Lines (Number)	Exchanges (Number)	In Yangon
1980-81	46374	206	28625
1985-86	59343	228	30796
1990-91	86333	317	45575
1995-96	169530	469	83234
1996-97	199017	493	98736
1997-98	225315	517	114909
1998-99	240673	528	123674
1999-00	260579	539	136676
2000-01	282853	556	148577

Source: CSO (2001)

**Table 5.3 Inter-regional variation in the Tele communications in Myanmar**

Regions	Telephones (Number)	Population (Million)	Density
Kachin	5653	1.31	0.43
Kayah	1374	0.30	0.46
Kayin	2728	1.52	0.18
Chin	1330	0.48	0.28
Sagaing	11429	5.52	0.21
Tanintharyi	3886	1.42	0.27
Bago (east)	9236	2.90	0.32
Bago West	5957	2.30	0.26
Magaway	12637	4.87	0.26
Mandalay	32623	7.14	0.46
Mon	7274	2.55	0.29
Rakhine	4749	2.81	0.17
Yangon	149619	5.90	2.54
Shan (south)	6961	2.11	0.33
Shan (north)	7888	2.00	0.39
Shan East)	2894	0.77	0.38
Ayeyarwaddy	14970	7.10	0.21
TOTAL	281226	51.00	0.55

Source: Kyaw Aye, "IT Needs and Readiness Assessment of the Union of Myanmar" Myama Posts & Telecommunications, Ministry of Communications, Posts and Telegraph, Yangon April 2002.

**Table 5.4 Cost of mobile Telephones in Myanmar**

Item	Retail Price Us \$
<b>Handset:</b> Motorola ISU	5200
Motorola Pager	750
<b>Airtime:</b> Domestic	5.00
Regional	6.00
International from Myanmar	8.00
International outside Myanmar	5.50
<b>Services Voice:</b> Monthly fee	50.00
Activation fee	40.00
Re activation fee	20.00
Deposit	750.00
<b>Paging:</b> Monthly fee	100.00
Activation fee	40.00
Reactivation fee	20.00

Source: Lwin Tint, GMPS Implementation in Myanmar presentation made at GMPS Regional workshop, Seoul, 5-7 July 1999.

**Table 5.5 Factories and Establishments by Numbers of Workers and Ownership  
1998-99 (provisional)**

Category	State-owned	Cooperatives	Private	Total
Below 10 workers	719(45.6)	443(65.4)	50,844(95.4)	52,006(93.7)
10-50 workers	291(18.5)	175(25.8)	2,134( 4.0)	2,600( 4.7)
51-100 workers	257(16.3)	57( 8.4)	150( 0.3)	464(0.8)
Over 100 workers	309(19.6)	2( 0.3)	142( 0.3)	453 ( 0.8)
Total	1,576(100)	677(100)	53,270(100)	5,523 (100)

Source: Review of Financial, Economic and Social Condition, 1998-99.

**Table 5.6 Courses offered at the University of Computer Science**

Name of Course	Duration
Bachelor of Computer Science	5 Years
Bachelor Computer Technology	5 Years
Master of Computer Science	3 Years
Master of Information Sciences	3 Years
Master of Computer Technology	3 Years
Diploma in Computer Sciences (part time)	2 Years
Diploma in Computer Science ( Full Time)	1 Year
Diploma in Computer Science (full time, Ministers office)	1 Year
Diploma in Computer Science (Full time, Defence)	1 Year
Diploma in Computer Science (Full time, USDA Hmawbe)	1 Year
Computer Maintenance (staff of the Ministry of S&T)	6 Months
Computer Maintenance (staff of the Ministry of Defence)	6 Months

Source Kyaw Aye (2002)

**Table 5.7 Trend in Foreign Direct Investment: Approved and Actual (US \$ Million)**

Year	FDI Approved	No of Cases	Actual Inflow
1990-91	280.57	22	
1994-95	1351.88	35	126
1995-96	668.17	39	277
1996-97	2814.25	78	310
1997-98	1012.91	56	387
1998-99	54.39	10	315
1999-00	58.15	14	253
2000-01	217.69	28	123
2001-02	19.00	7	
2002-03*	47.68	5	

Note: date for the year 2002-03 refers to the period April to December.

**Table 5.8 Share of foreign and local investment in different sectors (per cent)**

Sector	Local Investment	Foreign Investment
Agriculture	11.07	88.93
Fisheries	17.99	82.01
Mining	5.55	94.45
Oil & Gas	0.00	100.00
Manufacturing	13.89	86.11
Transport	0.12	99.88
Hotel & Tourism	11.41	88.59
Real Estate Development	0.59	99.41
Industrial Estate	39.88	60.12
Construction	93.81	6.19
Others	21.45	78.55
Total	13.91	86.09

**Table 5.9 Distribution of foreign and local Investment Across different sectors of Economic activities (per cent)**

Sector	No of Enterprises	Local Investment	Foreign Investment
Agriculture	4	0.35	0.46
Fisheries	20	5.38	3.83
Mining	51	2.62	7.08
Oil & Gas	51	--	31.85
Manufacturing	143	21.14	21.34
Transport	14	0.02	3.83
Hotel & Tourism	43	11.48	14.32
Real Estate Development	18	0.49	13.86
Industrial Estate	3	10.59	2.61
Construction	2	47.36	0.51
Others	6	0.53	0.32
Total	355	100.00	100.00

**Table 5.10**  
**Distribution Foreign investment approval across different**  
**Ownership categories (Per cent)**

Year	Wholly Foreign	JV Private	JV Others	Production Sharing basis
1990-91	28.0	--	46.7	25.3
1994-95	5.00	4.06	56.91	34.03
1995-96	67.89	0.28	26.87	4.96
1996-97	38.52	2.05	34.62	24.81

1997-98	51.21	23.32	7.91	17.56
1998-99	44.83	5.75	40.32	9.10
1999-00	57.13	3.83	2.04	37.00
2000-01	48.43	11.81	17.64	22.12
2001-02				

Year	Export		Import		Balance of Trade
1980-81	3225.1		4635		-1409.9
1985-86	2653.9	-17.71	4802	3.60	-2148.1
1990-91	2961.9	11.61	5522.8	15.01	-2560.9
1994-95	5405.2	82.49	8332.3	50.87	-2927.1
1995-96	5043.8	-6.69	10301.6	23.63	-5257.8
1996-97	5487.7	8.80	11778.8	14.34	-6291.1
1997-98	6446.8	17.48	14366.1	21.97	-7919.3
1998-99	6755.8	4.79	16871.7	17.44	-10115.9
1999-00	8947.3	32.44	16264.8	-3.60	-7317.5
2000-01	12736	42.34	15073.1	-7.33	-2337.1
2001-02	17130.7	34.51	18377.7	21.92	-1247
2002-03	15289.6	-10.75	11967.5	34.88	3322.1

**Table 5.12 Structure of Exports**

Commodity Section	1980-81	1985-86	1990-91	1995-96	1998-99	1999-00	2000-01
Food	52.18	45.09	29.35	50.99	37.79	36.28	38.09
Beverages and tobacco	0.04	0.00	0.37	0.04	0.04	0.65	0.33
Crude materials, inedible except fuel	36.03	47.54	43.03	30.03	18.33	29.50	12.85
Mineral fuels, lubricants and related materials	5.38	0.61	0.28	0.57	0.15	0.51	14.03
Animal and vegetable oils and fat	0.00	0.00	0.00	0.00	0.04	0.00	0.00
Chemicals	0.14	1.07	0.30	0.05	0.15	0.02	0.03
Manufactured goods classified chiefly by materials	5.37	4.05	6.96	6.87	10.25	9.77	18.53

Machinery and transport equipment	0.00	0.00	0.00	0.97	0.77	4.54	4.25
Miscellaneous manufactured articles	0.40	0.44	0.56	6.47	7.83	2.85	1.38
Miscellaneous transactions and commodities	0.46	1.21	19.14	4.02	24.66	15.89	10.50
<b>GRAND TOTAL</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

**Table 5.13 Direction of Trade**

Country	1980-81	1985-86	1990-91	1995-96	1998-99	1999-00	2000-01
<b>SOUTH EAST ASIA</b>	<b>25.49</b>	<b>27.97</b>	<b>47.36</b>	<b>41.75</b>	<b>26.15</b>	<b>21.60</b>	<b>26.58</b>
Thailand	6.41	18.14	30.43	25.41	31.99	28.59	53.93
Singapore	47.82	47.59	66.34	46.87	39.70	42.07	22.62
Malaysia	10.56	12.51	3.21	7.00	14.30	17.34	14.46
<b>REST OF ASIA</b>	<b>30.62</b>	<b>39.89</b>	<b>55.72</b>	<b>42.15</b>	<b>55.49</b>	<b>37.90</b>	<b>33.92</b>
China, People's Republic	4.07	15.61	26.42	9.19	15.22	24.98	18.22
India	5.49	17.84	34.95	48.76	27.75	39.69	40.55
<b>MIDDLE EAST</b>	<b>3.84</b>	<b>5.83</b>	<b>0.42</b>	<b>0.34</b>	<b>0.89</b>	<b>1.03</b>	<b>0.68</b>
United Arab Republic	0.21	0.00	0.00	0.13	0.65	0.71	0.54
<b>AMERICA</b>	<b>8.97</b>	<b>1.90</b>	<b>0.01</b>	<b>5.16</b>	<b>3.91</b>	<b>6.99</b>	<b>13.86</b>
United States	4.92	41.12	0.22	83.00	85.45	89.96	93.81
<b>NORTH WEST EUROPE</b>	<b>14.95</b>	<b>11.36</b>	<b>0.03</b>	<b>2.76</b>	<b>6.99</b>	<b>4.49</b>	<b>5.22</b>
France	15.44	0.77	0.00	23.22	35.02	34.75	25.94
United Kingdom	15.18	14.94	0.05	27.67	18.29	22.39	34.61
<b>SOUTHERN EUROPE</b>	<b>0.83</b>	<b>0.18</b>	<b>0.00</b>	<b>0.34</b>	<b>0.95</b>	<b>1.33</b>	<b>2.69</b>
Italy	98.91	100.00	1.00	65.51	37.26	29.54	29.29
<b>EASTERN EUROPE</b>	<b>2.70</b>	<b>1.00</b>	<b>0.00</b>	<b>0.74</b>	<b>0.25</b>	<b>0.88</b>	<b>0.46</b>
<b>AFRICA</b>	<b>0.09</b>	<b>0.10</b>	<b>0.02</b>	<b>0.64</b>	<b>0.73</b>	<b>0.03</b>	<b>0.15</b>
<b>OCEANIA</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.62</b>	<b>0.59</b>	<b>0.67</b>	<b>0.64</b>
Australia	0.00	0.00	0.00	0.40	0.56	0.63	0.62
<b>OTHERS</b>	<b>0.03</b>	<b>0.01</b>	<b>0.00</b>	<b>5.49</b>	<b>4.04</b>	<b>25.09</b>	<b>15.81</b>
<b>GRAND TOTAL</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

**Table 5.14 Trends in Terms of Trade**

Year	Export	Import	Terms of Trade
1980-81	125.1	92.6	135.1
1985-86	100	100	100
1990-91	97.7	131.1	74.5
1994-95	91.3	163.2	55.9
1995-96	107.9	168.4	64.1
1996-97	101.5	208	48.8
1997-98	91.5	245.3	37.3
1998-99	84.3	247	34.1
1999-2000(p)	78.1	240	32.5

2000-2001(p)	71.7	241.5	29.7
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**Table 5.15. Changing Structure of Interest Rates(%)**

	1988	1990	1995	2000
<b>1 Central Bank Rate</b>	4.00	11.00	12.50	10.00
<b>2 Treasury Bills and Bonds</b>				
3-month	1.00	4.00	4.00	4.00
3-year	2.50	10.00	10.00	8.50
5-year	3.00	10.50	10.50	9.00
<b>3 Deposit Rates</b>				
a Demand Deposits	0.25	3.00	3.00	5.00
b Fixed Deposits				
3 months	1.00	8.50	9.50	9.25
6 months	1.50	9.00	10.00	9.50
9 months	2.00	9.50	10.50	9.75
c Savings Account	8.00	8.00	10.00	9.00
d Savings Certificates	10.90	10.90	12.00	10.00
<b>4 Lending Rates</b>				
a State Economic Enterprises				
1. Working Capital Loan	8.00	—	—	—
2. Financial Capital	8.00	—	—	—
b Cooperatives				
1. Working Capital Loan	8.00	15.00	16.50	15.00
2. Financial Capital	9.00	12.00	14.50	n.a.
c Private Sector				
1. Agriculture				
(1) Village Bank	8.00	13.00	13.00	n.a.
(2) Farmers	12.00	18.00	18.00	15.00
d Trade				
(1) Working Capital Loans	—	15.00	16.50	15.00
(2) Term Loans	—	12.00	14.50	14.00
Source:CSO,Statistical Year Book, 2001				

**Table 5.16: Share of countries in IT goods exports to Myanmar**

Classification. No	Value ( \$ millions)	% Share	Country
8470	1823	56	China
8471	6415	46	Singapore
8471 (sub-parts)	5477	69	Singapore
8517	22241	74	China
		10	Japan
852520	3201	71	Germany
<b>Total</b>	<b>39157</b>	<b>68</b>	
<b>Grand Total</b>	<b>56976</b>	<b>100</b>	

**Table 5.17 Impact of Zero Tariff on IT Goods Imports**

Exporter	Imports		Imports		Change in Imports (\$ '000)
	Before (\$ '000)	Share	After (\$ '000)	Share	
Argentina	0.52	0.00	0.53	0.00	0.01
Australia	122.50	0.22	127.11	0.21	4.61
Austria	5.91	0.01	6.17	0.01	0.26
Canada	1.43	0.00	1.49	0.00	0.06
Sri Lanka	0.04	0.00	0.04	0.00	0.00
China	20098.75	35.30	20706.88	34.79	608.13
Taiwan Province of China	359.35	0.63	383.62	0.64	24.27
Czech Republic	10.51	0.02	10.79	0.02	0.28
Denmark	22.32	0.04	23.60	0.04	1.28
Finland	24.13	0.04	26.95	0.05	2.82
France	248.02	0.44	258.10	0.43	10.08
Germany	3488.20	6.13	3862.21	6.49	374.01
Greece	1.78	0.00	1.88	0.00	0.10
Hong Kong, China	421.74	0.74	436.82	0.73	15.08
Indonesia	12.63	0.02	13.22	0.02	0.59
Italy	71.20	0.13	73.88	0.12	2.69
Japan	3997.94	7.02	4129.13	6.94	131.19
Korea, Rep.	1603.33	2.82	1658.04	2.79	54.71
Malaysia	1507.50	2.65	1596.20	2.68	88.70
Netherlands	13.44	0.02	14.09	0.02	0.66
New Zealand	7.57	0.01	7.78	0.01	0.21
Philippines	226.04	0.40	237.80	0.40	11.75
Russian Federation	1.30	0.00	1.35	0.00	0.05
Saudi Arabia	0.50	0.00	0.52	0.00	0.03
Singapore	22243.59	39.06	23400.43	39.32	1156.85
Slovenia	9.40	0.02	9.94	0.02	0.54
Sweden	183.33	0.32	186.67	0.31	3.34
Switzerland	61.81	0.11	63.63	0.11	1.82
Thailand	1020.24	1.79	1058.36	1.78	38.12
United Kingdom	561.04	0.99	577.18	0.97	16.14
United States	618.63	1.09	644.83	1.08	26.20
	56944.67	100.00	59519.21	100.00	2574.54
Change in Stock		2574.55			

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