行政院所屬各機關因公出國人員出國報告書
(出國類別　會議)

出席亞洲電子聯盟(AEU)第十七屆年會暨技術研討會報告書

出國人員

服務機關	職　稱	姓　名
交通部電信總局	科　長	瞿嘯文

出國地點　泰國曼谷

出國期間　九十年七月二十九日至八月三日

報告日期　九十年十月二十六日

目錄

出席亞洲電子聯盟（AEU）第十七屆年會
暨技術研討會報告書

壹、前言

亞洲電子聯盟創始於一九六八年，迄今已逾三十年，我國由本局代表為創始會員之一，目前仍保有(Taiwan, R O C)之會籍名稱。該會秘書處設在日本，由「日本 ITU 協會」負責，會員分類亦做 ITU，分正會員(Full Member)及副會員(Associate Member)兩大類【註 ITU 稱「國家會員」(Member State)與「業界會員」(Sector Member)】，政府機關皆以「正會員」身分加入，若無政府機關加入之國家，其首先申請加入的財團法人或公司得為正會員，目前正會員數僅剩八個，副會員數有七個，會務及規模明顯萎縮。該會活動大致有兩年一次的大會(General Assembly)、不定期的研究小組會議、及技術研討會等。

貳、會議及活動

一、 七月三十日研究小組會議及大會會前會

二、 七月三十一日大會

三、 八月一日技術研討會

四、 八月二日參觀泰國電信展

參、研究小組會議紀要

本次研究小組會議是為第五屆研究小組第二次會議（2nd

Study Group V Meeting)，由日本 KDDI 公司的代表 Mr Washida 主持，主要就已進行年餘之協議(Agreement，相當該會之會章)及附則(By-Laws)繼續修訂討論，約有十五人出席。由於在座並無法律專家等，用字遣語並不嚴謹，而會議的決議將作成建議，交由大會表決，條列大端如下

一、 會名

提交三個新名稱由大會表決

（一）亞洲電子暨資訊科技聯盟（Asia Electronics &Information Technology Union, AEITU）

（二）亞洲電子暨資訊通信聯盟（Asia Electronics & Info-communications Union, AEIU）

（三）亞洲電子暨資訊通信聯盟（Asia Electronics & Information Communication Union, AEICU）

二、 會員分類

廢除正、副會員制度，根據本屆研究小組第一次會議的初步決議，有意仿效太平洋電信協會，分營利會員、非營利會員、以及個人會員三類，但直至散會亦未作成最後建議，主席裁定會後再由秘書處協調，並於次日的大會上提交表決。

三、 會費

研究小組初步建議會費分兩級徵收，並較以往調高，因會員分類尚未定案，故小組對本項亦無法作成決定。研究小組有意調高會費以平衡該會的財務赤字。職在會上建議緩議，因目前全球正面臨經濟衰退的危機，調高會費無疑將增加會員的財務負擔，如今本會既已決定將秘書處移往印度，必能縮減經常門支出，宜以新的秘書處地點為基

本考量再做詳細的估算。研究小組同意以此向大會建議。

四、 活動項目

依據上次會議決議，在章程中新訂三項主要活動項目(Main domain of activities) 網際網路相關服務(Internet related services)、行動通信(Mobile Communications)、以及無線用戶迴路(Wireless Local Loop)。職於會上發言，鑑於科技進步一日千里，今日的焦點話題三、五年後也許風光不再，建議刪去有關活動項目的敘述，以免阱自我設限或常須修訂的困擾。本項建議獲得會上採納。

肆、大會會前會紀要

在大會的前一天援例舉行會前會，由大會主席，也就是會長(President)主持，各代表團團長參加，目的是要讓大會進行順利，免去爭議。由於本次大會議程並無爭議性議題，而研究小組會議在當天已佔去了大部分的時間，所以本會前會並未用去太多時間即告結束。其實，會前會已流於形式，並無舉行的必要，因為會前會的規模也差不多就是隔天大會的規模，參加的代表也差不多就是隔日要參加的代表。

伍、大會紀要

大會由現任會長斯里蘭卡籍的 Dr Perera 主持,大致可分會務報告、國情報告、研究小組報告、討論表決、新舊任會長交接等幾個大項。

該會秘書長在會務報告中，簡述了兩年來本會相關的活動，當然包括去年六月在台北由本局主辦的技術研討會，也報

告了會裡的財務收支以及新會計年度的預算。由於財物收支產生赤字，爰有秘書處做出調整會費之提案，並交由研究小組一併研究。

國情報告是由各國的正會員代表報告本國有關電信資訊概況，共有印度、印尼、南韓、日本、尼泊爾、泰國及我國等七個會員提交，惟尼泊爾並未派代表出席。我國部份由[職]代表本局在會上另以簡報版報告，過程順利。

研究小組報告則是針對章程的修訂對大會提出建議。在前一日的研究小組會議中，對幾項重要議題大多有了決議，唯獨在會員分類部份僅對廢除正、副會員制有決議，至於該採行怎樣的新會員分類卻直到散會仍無結果。在本日的大會上，研究小組提出了未經表決的建議，將會員分為二類，一是「團體會員」(Corporate Member)，另一則為「個人會員」(Individual Member)。[職]在會上發言，指出 Corporate 雖有團體 (Group) 的意思，然一般卻泛指法人組織，可以包括公司及研究機構 (Institution)，並不能包含政府部門，若以此分類將有不歡迎官方入會的疑慮。大會採納本項意見，經過討論，改用原來的 (Full Member) 來與個人會員區分。

本次大會重要決議事項臚列如下

一、 該會更名為亞洲電子暨資訊通信聯盟(Asia Electronics & Info-communications Union)。

二、 廢除正、副會員制度，改採全權會員(仍稱 Full Member)及個人會員(Individual Member)，全權會員享表決權，個人會員則無。

三、 秘書處由擔任會長的國家擔任的提議暫緩討論，因泰國尚未有接秘書處之準備，故秘書處仍由原有意承接之印

度資訊科技部接手，明年四月一日前完成交接。

四、 會費暫不調整，俟新秘書處正式運作後，再詳細估算成本開銷提交大會議決。

五、 下(十八)屆大會將於二ＯＯ三年於印度召開。

原會長斯里蘭卡籍的 Dr Perera 在會議將结束時卸任，由泰國交通部郵電廳廳長 Mr Sethaporn 接任會長，並為大會主席（惟渠將於九月退休，由該廳副廳長升任廳長後續任），印度 Mr Rajecva Ratna Shah 任副會長，將於兩年後升任會長。

陸、技術研討會

八月一日的技術研討會由泰國電信協會(ＴＣＴ)、泰國郵電廳及該聯盟聯合舉辦，以「邁向未來的資訊通訊科技」為題，共有來自日、韓、印、泰、印尼、及我國九位講者，我國則由中華電信研究所梁隆星所長講本國的 ATM/ADSL 佈建，工研院電通所劉俊麟經理講網路電話(VoIP)技術。另外，有印度代表也探討網路電話的技術與挑戰，一位日本代表講數位廣播，另一位日本代表講日本的 IMT-2000，一位泰国代表講 iPSTAR 寬頻衛星系统，另一位泰國代表講資訊安全，韓國電信代表講 ADSL，印尼代表講該國行動通信的展望等。一般聽眾收費一千五百泰銖，約合新台幣一千兩百元。與會共約七十位，至下午僅餘四十人，規模及場地設備皆遜於本局於去年六月所舉辦者。

柒、泰國電信展

八月二日為泰國国家通信日，每兩年擴大舉辦電信展，由該国交通部長主持開幕典禮，約有七十家廠商參展，規模狀況皆不及我国電信展活動熱络。

捌、感想與建議

一、該會雖非一官方組織，會員當中為政府單位的也僅剩印度、泰國、巴基斯坦和我國，然本局代表我國身為創始會員之一，宜持續參與支持，尤其近年來中共對我外交上的不斷打壓，意圖壓縮我在國際舞台的伸展空間，本局更應珍惜身為該會會員的權利和累積的人脈關係。為了響應本局的支持，除中華電信外，國內另有台灣電機電子同業公會以及工研院電通所於去年先後加入該會成為副會員，如今該會決議取消正、副會員制，那我國就至少已有四名全權會員，是全權會員數最多的國家，毫無疑問的將在該會扮演舉足輕重的地位。建議本局競逐次屆副會長，俾便四年後接任會長，積極參與會務，一方面不輸泰國、印度之後，同時更能激勵、輔導國內其他會員的參與，往後則可視情況漸漸交由國內工、協會或業者主導，本局則退居二線，以符合民間組織由民間主導之原則。

二、該會一直沿用類似國際電聯會（ITU）的正、副會員制，正會員享有較大之權利，然本身並非官方組織，正會員並非全由政府單位代表，故此分法並非適宜。該會自成立以來已歷三十餘年，會務不得推展，此亦為原因之一，如今決議更改會員分類，實為明智之舉，惟往後仍有許多問題等待解決，如全權會員是否要分級？會費應如何收？如何才能壯大組織、擴大規模？如何能造福會員、吸引會員？太平洋電信協會（PTC）的成功模式也許可供借鏡。會務得否拓展，秘書處的秘書長或執行長是靈魂人物，這個關鍵人物若是屢屢更換，或以副業兼之，皆不利會務發展。目前秘書處雖已由印度接手，然在本次大會上已有秘書處由擔任會長的會員國擔任的提議，秘書處採用輪轉制，有利有弊，後續發展值得注意。

三、目前國際組織流行所謂的「展越」(Outreach)，也就是活動不再局限於個別的組織之內，此活動觸角外探的結果，造成組織之間交流互跨，如 WTO 與 ITU 間，APEC 與 WTO 間，PTC、APT、INTUG 等與 APEC TEL 間等等。此等互跨包含資源分享、活動參與以及人員互訪等，而互為觀察員（Observer）更是極為普遍的做法。言及此，反觀我國近年在國際舞台的揮灑空間屢屢受制於中共，甚且因非聯合國會員故，有些組織（如 ITU）之活動更是無法參加，而「透過組織參加組織」似乎是極為可行的變通辦法，值得思考研究。

四、現今網際網路盛行，各個國際組織莫不擁有各自的網址網頁，然該會至今卻付之闕如，若要振衰起蔽，設立網址網頁恐是第一要務。如今秘書處已由印度接手，印度又以軟體設計著稱於世，期待新的秘書處能作好預算調度，在不久的將來，該會能跟上時代腳步，擁有自己的網頁。

玖、附　件

RECORD OF PROCEEDINGS

THE 17th GENERAL ASSEMBLY
OF
THE ASIA ELECTRONICS UNION

BANGKOK, 30 JULY – 2 AUGUST 2001

organized by

AEU

THE ASIA ELECTRONICS UNION

sponsored by

POST AND TELEGRAPH DEPARTMENT
THAILAND

Contents

A Organization of the 17th General Assembly of the Asia Electronics Union

1 Introduction

The 17th General Assembly of the Asia Electronics Union (AEU) was convened in Bangkok Thailand on Tuesday 31 July 2001

Six Full Members of the Union took part in the proceedings of the General Assembly A total of 31 delegates attended the meeting

In conjunction with the General Assembly, a Technical Seminar, jointly organized by the AEU, Post and Telegraph Department of Thailand and the Telecommunications Association of Thailand, with the theme of 'Moving toward Future Info communications Technology' was held on 1 August 2001, at the same venue, with about 80 local and overseas participants and notable speakers in the field of electronics telecommunications broadcasting and information technology

A technical visit was organized on 2 August 2001 to bring participants to attend the opening ceremony in commemoration of Thailand National Communications Day 2001 and visit the exhibition Telecom Thai 2001" at the Queen Sirikit National Convention Center

An excursion was also organized in the afternoon session of the same day to the Temple of the Emerald Buddha the Grand Palace and Temple of Reclining Buddha

All of the above mentioned events were hosted by the Post and Telegraph Department of Thailand

2 Office Bearers of the General Assembly

The General Assembly was presided over by Prof K.K Y W Perera President of the AEU

He was assisted by

Mr Sethaporn Cusripituck	Vice President of the AEU Director General Post and Telegraph Department Thailand
Mr Takayoshi Sakashita	Secretary General of the AEU Secretary General ITU Association of Japan
Mr Hiromitsu Tanaka	Deputy Secretary General of the AEU Deputy Director ITU Association of Japan

3 Preparatory Meetings

Prior to the General Assembly, two preparatory meetings were held

3 1 Second Meeting of Study Group V

Study Group V convened its second meeting on 30 July 2001 under the chairmanship of Mr Tsutomu Washida from Japan and Co-Chairmanship of Mr V B Taneja from India with participation of its members and observers to complete the Revised Agreement and the bylaws to be submitted to the General Assembly

3 2 Preliminary Meeting

A preliminary meeting with participation of the heads of delegations was convened on 30 July 2001, after the second meeting of Study Group V, under the chairmanship of Mr Tsutomu Washida, in order to discuss administrative matters that would need mutual consent of delegations in advance

B List of Participants attending the 17th AEU General Assembly

Notes +) head of delegation

India	
+)	
Mr V B Taneja	Senior Director and Head of Research & Development Ministry of Information Technology
Dr Ram Gopal Gupta	Director Ministry of Information Technology
Dr Surendra Pal	Director ERNET, India
Indonesia	
+)	
Mr Habimono Koesoebjono	EVP Finance and Administration PT INDOSAT APNATEL
Mr Hari Ara Hariandja	Technology Strategy Advisor PT INDOSAT APNATEL
Japan	
+)	
Mr Masato Shinagawa	President ITU Association of Japan
Mr Takayoshi Sakashita	Secretary General ITU Association of Japan

Mr Hiromitsu Tanaka	Deputy Director ITU Association of Japan
Mr Tsutomu Washida	Director KDDI Engineering and Consulting
Mr Takuya Shinozuka	Research and Development Dept NTT DoCoMo
Mr Takao Shimizu	Senior Vice President Tokyo Broadcasting System
Korea	
+) Mr Sang Kun Kim	Executive Vice Chairman & President Electronic Industries Association of Korea
Mr Young Hoon Choi	Director Electronic Industries Association of Korea
Mr Myung Jin Kang	Member of Technical Staff KT Access Network Laboratory
Sri Lanka	
+) Prof K K Y W Perera	Member of the Board of Governors of ACCIMT Director Ministry of Science and Technology
Mr Padmasiri de Alwis	Deputy Director Arthur C Clarke Institute for Modern Technology
Taiwan	
+) Mr Sean Chu	Section Chief Directorate General of Telecommunications
Dr Jun -Lin Liu	Manager Computer and Communications Research Laboratory Industrial Technology Research Institute
Dr Lung Sing Liang	President Chunghwa Telecom Laboratory
Thailand	
+) Mr Sethaporn Cusripituck	Director General Post and Telegraph Department
Ms Auraphin Suwanrat	Deputy Director General Post and Telegraph Department

Mr Pipope Chooncharoon	Acting Senior Executive Telecom Engineer Post and Telegraph Department
Ms Panuporn Patarachoke	International Affairs Expert International Services Division Post and Telegraph Department
Mr Pasu Srihirun	Communications Engineer 4 Civil Communications Operation Center Post and Telegraph Department
Mr Chaturon Choksawat	Communications Engineer 4 Frequency Management Division Post and Telegraph Department
Mr Soonthorn Vassana	Director Telecommunications Planning Department The Communications Authority of Thailand
Mr Veerawat Thepsoonthorn	Director Special Service Engineering Technic Division Telephone Organization of Thailand
Ms Somchit Chularat	Director The Telecommunications Association of Thailand
Ms Nisachon Tangsangiumvisai	Lecturer Department of Electrical Engineering Chulalongkorn University

AEU

President	Prof K K Y W Perera (Sri Lanka)
Vice President	Mr Sethaporn Cusripituck (Thailand)
	Mr Rajeeva Ratna Shah (India)
Secretary to the President	Mr Padmasiri de Alwis
Secretary General	Mr Takayoshi Sakashita
Deputy Secretary General	Mr Hiromitsu Tanaka

C List of the 17th AEU General Assembly Documents

GA No	Source	Title
1	AEU Secretariat	Document List of the 17th AEU General Assembly
2	AEU Secretariat	List of Participants attending the 17th AEU General Assembly
3	AEU Secretariat	Program of the 17th AEU General Assembly
4	AEU Secretariat	Opening Address by Prof K K Y W Perera the AEU President

5	AEU Secretariat	Welcome Address by Mr Sethaporn Cusripituck, Director General of Post and Telegraph Department
6	AEU Secretariat	Inaugural Address by Mr Sethaporn Cusripituck, Director General of Post and Telegraph Department, the AEU President elect
7	AEU President	Proposed agenda of the Preliminary meeting of the Chief delegates to the 17th AEU General Assembly
8	AEU President	Proposed agenda of the 17th AEU General Assembly Bangkok, 31 July 2001
9	AEU Secretariat	Report on the activities of the AEU during FY1999 and FY2000
10	SG-V Chairman	Report on AEU 1st Study Group Meeting
11	AEU Secretariat	Expenditure and Income (1988 – 1999)
12	AEU Secretariat	Financial Report for FY1999 & 2000
13	India	Country Report
14	Indonesia	Country Report
15	Japan	Country Report
16	Korea	Country Report
17	Nepal	Country Report
18	Taiwan	Country Report
19	Thailand	Country Report
20	AEU Secretariat	Application for new Member
21	AEU Secretariat	Candidate for Honorary Title
22	AEU Secretariat	Agreement Instituting
23	Sri Lanka	Country Report
8Rev 1	AEU President	Proposed agenda of the 17th AEU General Assembly, Bangkok, 31 July 2001
24	AEU Secretariat	Termination of Membership
25	AEU Secretariat	Agreement Instituting The Asia Electronics Union (Nov 1993)
22Rev 1	AEU Secretariat	Agreement Instituting
22Rev 2	AEU Secretariat	Agreement Instituting
22Rev 3	AEU Secretariat	Agreement Instituting The Asia & Info communications Union(AEIU)
1 Rev 1	AEU Secretariat	Document List of the 17th AEU General Assembly

D Minutes of the 17th General Assembly of the Asia Electronics Union

1 Opening of the 17th General Assembly of the AEU and Election of the Chairman and Vice Chairman

Mr Takayoshi Sakashita Secretary General announced the opening of the 17th General Assembly of the Asia Electronics Union (AEU) and according to the Agreement election of Chairman and Vice Chairman was held Prof K K Y W Perera the President of AEU from Sri Lanka as Chairman and Mr Sethaporn Cusripituck of the Vice

President of AEU from Thailand as Vice Chairman was proposed and unanimously agreed

Prof K K Y W Perera and Mr Sethaporn Cusripituck took their places as Chairman and Vice Chairman, respectively

Before the start of the proceedings the General Assembly observed a minute silent prayer to the late Dr Subuhash Chandra Mehta, who was a co chairman of Study Group V and who contributed very much to activities of the AEU

The Chairman requested the Secretary General to read out the position of the quorum It was reported that out of the fourteen AEU Full Members six were present on this day The Secretary General read out Article 5 2 of the Agreement Instituting the AEU, and mentioned that the 17th General Assembly was duly assembled The Chairman therefore confirmed that the General Assembly was effected

2 Opening Address by Prof K.K.Y W Perera, AEU President, Chairman of the General Assembly

Prof K K Y W Perera delivered the opening address (Doc GA No 4)

3 Welcome Address by Mr Sethaporn Cusripituck, Director General, Post and Telegraph Department of Thailand

Mr Sethaporn Cusripituck delivered the welcome address (Doc GA No 5)

4 Approval of the Agenda

The Agenda of the 17th General Assembly as proposed by the AEU President was approved with a minor modification (Doc GA No 8Rev 1), on the understanding that the time schedule might be altered according to the progress of the meeting

5 Report on the Activities of the AEU

Mr Hiromitsu Tanaka Deputy Secretary-General of the AEU, presented the report on the activities of the Union during FY1999 and FY2000 to the General Assembly (Doc GA No 9)

The report consisted of six sections

(1) Change of the Office Bearers of the Union and Address of Members
(2) Activities of the Union during FY1999 and FY2000
(3) Financial Report for FY1999
(4) Financial Report for FY2000
(5) Activities to be considered in FY2001 and beyond and
(6) Estimated Financial Status for FY2001 on the basis of the Revised Agreement

The Deputy Secretary General outlined the activities of the Union since the 16th General Assembly which included details on organizations of the Union such as

publication (AEI Journal), activities regarding Technical Seminars, enhancement of participation of members, and activities of Study Group V

He also outlined the activities to be considered in FY2001 and beyond, which included the organizing of Technical Seminars in 2002, publication of AEI Journal, and the hosting of AEU web site by the ITU Association of Japan He reminded the General Assembly that the newly industrialized economy (NIE) countries should provide more contribution or assistance to the less fortunate countries among the Members

He then proceeded to present the financial status of the Union breaking down into expenditure and income, and remarked that the financial deficit was absorbed by the ITU Association of Japan

The Chairman expressed his sincere appreciation, on behalf of the General Assembly, to the ITU Association of Japan for its generous contribution towards financing of the Union

The report on the activities of the AEU for FY1999 and FY2000 was approved

6 Presentation of Country Reports

Mrs Auraphan Suwanrat from Thailand on behalf of the Vice-Chairman, presided over the session

The delegates of participating members from India Indonesia, Japan, Korea, Sri Lanka, Taiwan R O C and Thailand presented comprehensive reports on the developments in the fields of electronics, telecommunications, broadcasting and information technology in their respective countries (Doc GA Nos 13, 14 15, 16, 23, 18 and 19, respectively) After each presentation of country reports, brief exchange of views and comments were made

The country report of Nepal (Doc GA No 17) was also circulated to delegates for their information

7 Report by Study Group V

Prof K K Y W Perera the Chairman presided over the session

Mr Tsutomu Washida Chairman of Study Group V introduced the report on the activities and results of their study during the period 1999 2001 (Doc GA No 10) Study Group V had been tasked at the 16th General Assembly, to review Agreement Instituting the AEU and suggest possible amendments with a view to increase AEU activities and memberships

Membership of Study Group V

Mr T Washida	Chairman	(Japan)
Mr V B Taneja	Co-chairman	(India) in place of the late Dr S C Mehta
Mr H Koesoebjono	Member	(Indonesia)
Mr Y H Choi	Member	(Korea)
Mr P De Alwis	Member	(Sri Lanka)
Dr C F Kuo	Member	(Taiwan R O C) afterwards replaced by Mr S Chu

Mr P Chooncharoen Member (Thailand)

Study Group V reviewed the Agreement Instituting the Asia Electronics Union (November 1993) and three AEU Bylaws on Financial Rules, Procedure for Application, Admission and Termination of Membership, and Operating Procedures of Study Group(s)

Points of discussion included new name and objectives for the AEU principal domains of the new AEU activities categories and fees of membership voting power, location of the seat of the Union transfer and rotation of Secretariat functions, possibility of having local chapters and interval between General Assemblies

The outcome of the discussion had been produced in the form of the draft revision to the Agreement Instituting (New Organization Name) and its Bylaws (Doc GA No 22Rev 2)

The General Assembly approved the report of Study Group V and decided to consider the revised Agreement in the next session

8 Revised Agreement

The General Assembly considered and discussed the outcome of Study Group V the proposed revision to the Agreement Instituting the Asia Electronics Union and its Bylaws

After lively and extensive discussion on several issues raised by the proposed revision, the General Assembly unanimously adopted the revised Agreement (Doc GA No 22Rev 3)

8 1 Notably among the amendments made to the Agreement was the change of the name of the Union from the "Asia Electronics Union" to the "Asia Electronics and Info communications Union' with the abbreviation of "AEIU', to be consistent with the new expanded objectives of the Union

8 2 The finally accepted Agreement stipulated two categories of membership Full Member, with voting power, and Individual Member, without voting power

8.3 The shifting of the Seat of the Secretariat of the AEU was discussed It was recalled that the shift of secretariat is desirable from the point of view equal partnership of members to the Union as well as the reduction of the total expenses of the AEU The General Assembly was briefed the suggestion from Japan about the co location of the secretariat in the same country from which President is elected

8 4 It was noted that the AEU is not financially self reliant at present and ITUAJ, Japan has been providing financial support to the AEU to the extent of financial deficit Full Member India requested ITUAJ to continue to provide support in the future Full Member Japan agreed to this and requested AEU to reduce the expenses wherever possible The General Assembly agreed that the seat of the Union may be shifted to India with effect from 1st April 2002 and the issue of co-location may be reviewed at the time of next General Assembly

8 5 For the purpose of smooth transfer of secretariat a team of officers from India will be invited to Japan with the expenses of the Union

9 General Discussion on the Activities of the Union

9 1 New Member

The application for new membership from Computer and Communications Research Laboratory (CCL), Industrial Technology Research Institute of Taiwan R O C was reported by the Secretariat to the 17th General Assembly

The application was unanimously approved by the General Assembly

9 2 Termination of Membership

The Secretariat requested the General Assembly to terminate following memberships (Doc GA No 24)

(1) BEMA, Full Member of Bangladesh, due to its dissolution,
(2) NEDA, Full Member of New Zealand, due to its dissolution,
(3) PETEF, Full Member of the Philippines, due to its intention to withdraw,
(4) AEIS, Full Member of Singapore, due to its intention to withdraw,
(5) Electronics Industries Co, S A , Full Member of Iraq due to non payment of subscription for more than ten years,
(6) National Engineering Research & Development Center Full Member of Sri Lanka, due to non payment of subscription for more than ten years

The General Assembly confirmed the termination of membership of the above-mentioned organizations

The delegation of Indonesia informed the General Assembly that Indonesia Telecommunications Association (APNATEL), Full Member of Indonesia, wished to put on hold their participation in the AEU for the moment due to economic situation The General Assembly therefore requested the Secretariat to look into the situation and cooperate with Indonesia and agreed that Indonesian membership will be decided by the new President

10 Election of New President and Vice President

The General Assembly elected the new office bearers as follows

President	Mr Sethaporn Cusripituck Director General Post and Telegraph Department Thailand
Vice President	Mr Rajeeva Ratna Shah Secretary to the Government Ministry of Information Technology, India

Mr Sethaporn Cusripituck elected President expressed that he is retiring from his office by 30th September 2001 and the AEU Presidency would be taken over by Ms Auraphan Suwanrat his successor from 1st October 2001 General Assembly agreed with this change of the Presidency

Mr V B Taneja delivered the address on behalf of Mr Rajeeva Ratna Shah, Vice-President-Elect

11 Date and Venue of the 18th General Assembly

The General Assembly agreed to hold the 18th General Assembly in 2003 at the kind invitation from India Date and venue will be confirmed to members in due course

12 Conferment of Honorary Titles

Mr Sethaporn Cusripituck, the new President of the AEIU, assumed the chairmanship of the General Assembly

The General Assembly conferred the honorary titles for the following persons in recognition of their prominent services and devotion to the Union (Doc GA No 21)

Honorary President	Prof K K Y W Perera Member of the Board of Governors of the Arthur C Clarke Institute for Modern Technologies Director Ministry of Science and Technology
Fellow	Mr Pipope Chooncharoen Acting Senior Executive Telecommunication Engineer Post and Telegraph Department, Thailand
Fellow	The late Dr S C Mehta Senior Director Ministry of Information Technology India

A Certificate of Commendation signed by Mr Sethaporn Cusripituck, President of the AEIU, was awarded to these honored persons with much acclamation

13 Closing of the 17th General Assembly

Mr Padmasiri de Alwis, speaking on behalf of the participants, thanked the AEU secretariat, Mr T Sakashita, the Secretary General and Mr H Tanaka, the Deputy Secretary General, for their devotion and active role in making the AEU function a reality in the last year and to Mr Washida for the effective chairmanship of the Study Group V and also extended a special thanks to Post and Telegraph Department under the Minister of Transport and Communications and the local secretarial for the excellent arrangement made for comfortable stay and the success of the 17th General Assembly

The former Chairman expressed his profuse thanks to the AEU Secretariat and to the host organization, the Post and Telegraph Department of Thailand, and to all participants who made the General Assembly a success

Further Mr Sethaporn Cusripituck, President of the AEIU expressed sincere thanks to the Government of Japan for their contribution to the Union from the beginning and then formally declared the closure of the 17th General Assembly

ANNEX 1

Opening Address

by

Prof K K Y W Perera - President of the AEU, 31 July 2001

Mr Sethaporn Cusripituck - President Elect of AEU

Mr Masato Shinagawa - President of ITU Association of Japan

Mr Takayoshi Sakashita - Secretary General

Mr Hiromitsu Tanaka - Deputy Secretary General of AEU

Distinguished representatives of the Government of Thailand including the representatives of the Ministry of Transport and Communication,

Distinguished members, participants, ladies and gentlemen,

I am very privileged and honoured to be elected Chairman of this 17th General Assembly of our Asia Electronics Union Thank you very much for the confidence placed in me

Let me first of all welcome each and every one of you on behalf of the Asia Electronics Union At the same time, I wish to thank the Royal Government of Thailand and the Ministry of Transport and Communications for the arduous work and excellent arduous work and excellent arrangements carried out in hosting this 17th General Assembly and in organizing the Technical Seminar which is to take place tomorrow

I also seek your cooperation in voicing your views to arrive at a consensus in order to reach fruitful decisions with the time allocated

Thank you

ANNEX 2

Welcome Address
by
Mr Sethaporn Cusripituck
Director General, Post and Telegraph Department
at the 17th General Assembly of
the Asia Electronics Union
at the Ambassador Bangkok Hotel
31 July 2001

Prof K K Y W Perera, Chairman of the AEU,
Mr Takayoshi Sakashita, Secretary General of the AEU,
Mr Hiromitsu Tanaka, Deputy Secretary General of the AEU,
Distinguished Delegates,
Ladies and Gentlemen,

It is my privilege and honor to be here at the 17th General Assembly of the Asia Electronics Union (AEU) First of all, on behalf of the Royal Thai Government and my own behalf, I would like to extend my warmest welcome to all delegates As you may realize that Post and Telegraph Department of Thailand has been a member of the AEU since 1978 This is the second time that Thailand is accorded the honour of hosting so distinguished General Assembly of the AEU, we are therefore most pleased to have this opportunity to play host to a group of representatives of the AEU once again in Thailand

As all of us are aware, with the rapid globalization of economic and social activities today, the telecommunications and electronics are of utmost importance It is my great satisfaction that the AEU takes an active part in and to the development of this invaluable electronics and telecommunications field The AEU's mission is to encourage international cooperation in mutual technology transfer, human resource development through the exchange of views and experiences on technology and management of electronics and telecommunications among member countries

I am confident that this meeting will provide another opportunity for all of us to share a vision and to demonstrate willingness toward strengthened our cooperation

I once again welcome you all and wish the meeting a great success with expected outcomes

Ladies and Gentlemen, permit me to hope that in spite of your tight schedule, you will have some time to enjoy your valuable stay in Bangkok

Thank you

ANNEX 3

Inaugural Address
of
the New AEU President
by
Mr Sethaporn Cusripituck
Director General of Post and Telegraph Department
the New AEU President

Prof K K Y W Perera, Chairman of the 17th General Assembly and President of AEU,
Mr Takayoshi Sakashita, Secretary General,
Mr Hiromitsu Tanaka, Deputy Secretary General,
Distinguished Delegates
Ladies and Gentlemen,

I deem it a great pleasure and honour to be appointed as President of the Asia Electronics Union It is also a great privilege for me to attend this distinguished forum and I would like to take this opportunity to express my heartfelt thanks and sincere appreciation for your valuable support extended to me In this regard, I would like to express my sincere thanks to Prof K K Y W Perera for his enormous contribution to the Union during his term Under his chairmanship, the activities of the AEU was conducted smoothly to achieve its objectives

Since the establishment of the AEU, I have recognized that the AEU has actively played an essential role in achieving regional cooperation in telecommunications and electronics development I am strongly convinced that the Union can enhance its efforts in the exchange of experiences, information among member countries and use its substantive resources and potential to its extreme

During my term as AEU President, I will do my best and support the activities of the AEU with the kind assistance of the AEU Secretariat I do very much appreciate support and cooperation extended to me by our member countries

Thank you

ANNEX 4

Agenda of the 17th AEU General Assembly

Time	Agenda Items
09 00-09 30	Registration
09 30-09 45	Opening of the General Assembly and Election of the Chairman & Vice-Chairman
09 45-09 50	Welcome Address by the Host Member <Offer a silent prayer to the late Dr S C Mehta>
09 55 10 00	Opening Address by the Chairman of the General Assembly (the AEU President)
10 00 10 30	Coffee Break
10 30-10 45	Approval of Agenda
10 45-1115	Report by the AEU Secretariat
1115-12 00	Presentation of the Country Reports
12 00-13 15	Lunch (hosted by Post and Telegraph Department of Thailand)
13 15-14 00	Presentation of the Country Reports (continued)
14 00-14 30	Report by the Study Group V
14 30-15 30	Revised Agreement
15 30-16 00	Coffee Break
16 00 17 00	General Discussion and Recommendation
17 00-17 30	Nomination of new President Vice Presidents and other office bearers • Address by the new President • Date and venue of the 18th AEU General Assembly • Conferment of honorary titles • Other items
17 30	Closure of the 17th General Assembly
18 00	Dinner (hosted by AEU at Hong Teh Chinese Restaurant)

ANNEX 5

Source Secretariat of the AEU

Title Report on the activities of the AEU during FY1999 and FY2000

Contents Page

I Activities of the Union during FY1999 and FY2000

1 Organization

1 1 Change of the Office Bearers of the Union

The Office Bearers of the Union were appointed at the 16th General Assembly in Colombo in February 1999 as follows

- Prof K K Y W Perera (Ministry of Science and Technology, Sri Lanka) was elected President replac ng Mr Sang Won Rhee (EIAK Korea) ,
- Mr Sethaporn Cusripituck (PTD Thailand) was elected Vice President
- Mr Ravindra Gupta (DOE India) was elected Vice-President ,
- Mr Padmasiri de Alwis (ACCIMT Sri Lanka) was appointed Secretary to the President

1 2 Change of the representatives of the Union Members

Full Member of India

In July 2001 it was informed that Mr Rajeeva Ratna Shah, Secretary Ministry of Information Technology was representing India at AEU

Full Member of Korea

Mr Sang Won Rhee was replaced by Mr Sang Kun Kim in March 2000

Full Member of Sri Lanka

Mr P A S Fernando was replaced by Mr J A J T de Saram in December 2000

Full Member of Pakistan

Mr Muhammad Ayub Iabal Rana was replaced by Mr Anwar Jamal Ansari in November 2000

Associate Member of Taiwan

Mr Steven Y Chen was replaced by Dr Mao Chi-Kuo in August 2000

1 3 Change of address

Full Member of Japan

ITU Association of Japan moved to the new office The address of the office is

Kanda KS Bldg 3rd Fl
1-8-6 Kaji-cho Chiyoda-ku Tokyo 101 0044 Japan
Tel +81 3 5207 5726 / Fax +81 3-5207-5731

Associate Member of Taiwan

Chunghwa Telecom Co Ltd moved to the new office The address of the office is

21-3 Hsinyi Road Sec 1
Taipei Taiwan 100 R O C
Tel +886-2-2344 3888 / Fax +886 2 2344 5435

1 4 Study Group V (SG-V)

The 16th General Assembly approved to adopt the report submitted by the Study Group IV The report suggested to organize a new Study Group which review the AEU Agreement and suggest amendments with a view to increase AEU activities and membership It was named as the Study Group V

The membership of the SG-V

Mr T Washida	Chairman	Japan
Dr S C Mehta	Co-Chairman	India
Mr H Koesoebjono	Member	Indonesia
Mr Y H Choi	Member	Korea
Mr H S P De Alwis	Member	Sri Lanka
Mr C H Kuo	Member	Taiwan
Mr P Chooncharoen	Member	Thailand

1 5 Current Union Members

The current AEU Members are indicated in the attached List of Members

2 Publication

AEI Journal is published monthly by Dempa Publications The journal covers current status and trend of telecommunications and electronics in AEU Member countries All the AEU Members are distributed at least one copy through AEU Secretariat Members are encouraged to report activities and trends in telecommunications and electronics more actively to the Journal

3 Activities

3 1 The 16th AEU General Assembly

The 16th General Assembly of the Union was held in Colombo Sri Lanka on 4 March 1999 19 delegates from five Full Members and 2 delegates from one Associate Member of the Union participated in the Assembly

The General Assembly was presided over by Mr Sang Won Rhee (Korea) the AEU President assisted by Prof K K Y W Perera (Sri Lanka)

The main discussion of the meeting focused on the following issues

Self support of the Union and ways and means for it

- More attractive activities and more membership
- Membership between Full and Associate members of the Union

The Assembly elected new office bearers and conferred honorary titles on Mr Sang Won Rhee (Korea) and Dr Toshio Takasugi (Japan) for their prominent service and devotion to the Union

3 2 Technical Seminar concurrent with the 16th AEU General Assembly

Precedent to the General Assembly, a technical seminar was held under the theme of Value Added Information Services on 3 March 1999 with more than 120 participants including local audience

3 3 AEU Technical Seminar

AEU Technical Seminar former called Joint Round Technical Seminar(JRTS) was held with the theme of Mobile Communications in round trip in two countries, one member country Taiwan and one non member country Nepal in June 2000

3 3 1 AEU Technical Seminar in Taiwan

180 participants attended the seminar held on 12-13 June 2000 in Taipei Taiwan with 12 themes, 3 speakers from Japan one speaker form Korea one speaker from India and 7 speakers from Taiwan Dr Chi-Kuo Mao Vice Minister Ministry of Transportation and Communications gave a keynote speech entitled Taiwan s Experience in Mobile Communications Liberalization In the opening Dr Jen Ter Chien as a host of the seminar gave a welcome speech

3 3 2 AEU Technical Seminar in Nepal

For canvassing Full Member the seminar was took place on 16 June 2000 in Kathmandu Nepal Around 40 participants from telecom sector attended the seminar H E S P Choudary Minister of Science and Technology gave an opening address And Mr C P Batarai General Manager of Nepal Telecom gave a keynote speech

To the Nepal Technical Seminar Full Member of India Ministry of Information Technology and Full Member of Taiwan Directorate General of Telecommunications sponsored 1 000 dollars and 3,000 dollars respectively Nepal Seminar was executed successfully by their contribution

3 4 Calling for new Member inactive Members and dissolution of Members

3 4 1 Calling for new Members

Associate Member of Taiwan

Computer and Communications Research Laboratories(CCL), Industrial Technology Research Intstitute applied to join AEU as Associate Member on 25 August 1999 by efforts of Full Member of Taiwan Directorate General of Communications

In conformity with the AEU Agreement the application was noticed to all Members of the Union for a three month and no objection was informed to the Secretariat Therefore Computer and Communications Research Laboratories was admitted the Associate Member from Taiwan subject to the approval of the 17th General Assembly

3 4 2 Persuasion to inactive Member

Dissolved Members

The Secretariat has confirmed BEMA, Full Member of Bangladesh and NEDA, Full Member of New Zealand have dissolved

Withdrawal

The Secretariat has persuaded PETEF, Full Member of Philippines and AEIS Full Member of Singapore to rejoin the AEU However the Secretariat received letters from them in which they do want to withdraw AEU membership

Non-subscription

Full Member of Iraq Electronics Industries Co S A and Full Member of Sri Lanka National Engineering Research & Development Centre of Sri Lanka have not paid for long time, i e Member-Iraq for 14 years and Member- Sri Lanka for 9 years

3 5 Study Group V (SG-V)

3 5 1 1st SG-V Meeting

The SG-V held its 1st Meeting 19 – 20 June 2000 in Bangkok All the members attended this meeting and discussed the issues given at the 16th General Assembly with enthusiasm The outcome of this meeting is reported in Document GA No 5

II Financial Report for FY1999

(from 1 April 1999 to 31 March 2000)

(in US dollar)

1 Table 1 Expenditure & Income

EXPENDITURE		INCOME	
1 Personnel expenses	49 424	1 Subscription	55 018
2 Office rent	10 810	2 Miscellaneous	8
3 Consumable	5 577		
4 Postal expenses	2 523		
5 Travels	345		
6 Conference	994		
7 Publications	2 421		
8 Utilities	484		
9 Miscellaneous	921		
Total (A)	**73,499**	Total (B)	**55,026**

*Supplementary Explanation

An average exchange rate ¥113 59 for FY1999 has been applied in order to convert all the expenditure and the income which were dealt with yen

2 Balance of Expenditure & Income

1) Balance of expenditure and income **-18,473**

2) Shortage (US$18 473) has been settled by a subsidy from the New ITU Association of Japan

3 **Table 2 Break-down on Expenditure for FY1999**

(in US dollar)

ITEMS	DETAILS		AMOUNT
1 Personnel expenses	Secretariat staff salary & social insurance	49 424	49 424
2 Office rent	16 5m' per month x 12 months	10 810	10 810
3 Consumables	Computer	3 586	5 577
	Photo copy & Stationery	1 991	
4 Postal expenses	Postage	939	2 523
	Telephone charges	1 584	
5 Travels	Train bus and taxi fares	345	345
6 Conference	Meeting (SG V ACCIMT CEIC)	994	994
7 Publications	AEI Journal subscription	2 421	2 421
8 Utilities	Water supply heating and lighting expenses	484	484
9 Miscellaneous	Office cleaning expenses	678	921
	Bank charge and others	243	
		TOTAL	73,499

4 Table 3 Status of Member's Fee in FY 1999

as of 31 March 2000
(in US Dollar)

Member	Annual Members Fee	Overdue Years from to	Overdue Members Fee	Received Amount	Received date
Bangladesh Electronics Manufacturers Association (BEMA) BANGLADESH	200	1991 1998	1 600		
Ministry of Information Technology India	1 501			1 501	9 Nov 99
Indonesian Telecommunications Association (APNATEL) INDONESIA	1 000	1996 1998	3 000		
Telecommunication Company of Iran (TCI) IRAN	1 000			1 000	23 Jul 99
Electronic Industrises Co S A Iraq IRAQ	1 000	1984 1998	16 000		
*ITU Association of Japan, Inc (ITU AJ) JAPAN	44 017			44 017	31 Mar 00
Electronic Industries Association of Korea (EIAK) KOREA	2 000			2 000	8 Jun 99
National Electronics Development Association (NEDA) NEW ZEALAND	1 000	1989 1998	10 000		
National Institute of Electronics (NIE) PAKISTAN	1 000	1996 1998	3 000		
Philippine Electronics & Telecommunications Federation (PETEF) PHILIPPINES	500				
Association of Electronics Industries in Singapore (AEIS) SINGAPORE	500	1989 1998	5 000		
National Engineering Research & Development Centre SRI LANKA	200	1989 1998	2 000		
Directorate General of Telecommunications (DGT) TAIWAN	2 000			2 000	29 Jun 99
Post & Telegraph Department (PTD) THAILAND	1 000			1 000	22 Jul 99
Bangladesh Small & Cottage Industries Corporation (BSCIC) BANGLADESH	1 000	1998	1 000		
Computer & Electronics Information Center (CEIC) NEPAL	250			250	22 Sep 99
Telecom Equipment Manufacturers Association (TEMA) INDIA	250	1997 1998	500		
Arthur C Clarke Institute for Modern Technologies (ACCIMT) SRI LANKA	250			250	7 Sep 99
Taiwan Electrical & Electronic Manufacturer s Association (TEEMA) TAIWAN	1 000			1 000	10 Jun 99
Chunghwa Telecom Co Ltd TAIWAN	1 000			1 000	24 Jun 99
Computer & Communications Research Laboratories TAIWAN	1 000			1 000	19 Nov 99
Total	61 668		42 100	55 018	

* ITU AJ pays Member Fee in Japanese Yen The fee is calculated in US Dollar

II Financial Report for FY2000

(from 1 April 2000 to 31 March 2001)

(in US dollar)

1 Table 4 Expenditure & Income

EXPENDITURE		INCOME	
1 Personnel expenses	16 764	1 Subscription	26 500
2 Office rent	4 815	2 Miscellaneous	8
3 Consumable	893		
4 Postal expenses	2 120		
5 Travels	9 483		
6 Conference	5 157		
7 Publications	2 326		
8 Utilities	209		
9 Miscellaneous	649		
Total (A)	**42,416**	Total (B)	**26,508**

*Supplementary Explanation

An average exchange rate ¥105 04 for FY2000 has been applied in order to convert all the expenditure and the income which were dealt with yen

2 Balance of Expenditure & Income

1) Balance of expenditure and income -15,908

2) Shortage (US$15 908) has been settled with a debt to the ITU Association of Japan

3 **Table 5 Break-down on Expenditure for FY2000**

(in US dollar)

ITEMS	DETAILS		AMOUNT
1 Personnel expenses	Secretariat staff salary & social insurance	16 764	16 764
2 Office rent	6 6m^2 per month x 12 months	4 815	4 815
3 Consumables	Stationery	546	893
	Photo copy	347	
4 Postal expenses	Postage	407	2 120
	Telephone charges	1 713	
5 Travels	AEU Technical Seminar (3 persons)	8 875	9 483
	1st SG V Meeting (2 persons)	608	
6 Conference	AEU Technical Seminar	4 647	5 157
	1st SG V Meeting	510	
7 Publications	AEI Journal subscription	2 326	2 326
8 Utilities	Water supply heating and lighting expenses	209	209
9 Miscellaneous	Office cleaning expenses	293	649
	Bank charge and others	356	
		TOTAL	42,416

4 Table 6 Status of Member's Fee in FY2000

as of 31 March 2001
(in US Dollar)

Member	Annual Members Fee	Overdue Years from to	Overdue Members Fee	Recived Amount	Received date
Bangladesh Electronics Manufacturers Association (BEMA) BANGLADESH	200	1991 1999	1 800		
Ministry of Information Technology INDIA	1 501			1 000	5 Sep 2000 as Technica'
Indonesian Telecommunications Association (APNATEL) INDONESIA	1 000	1996 1999	4 000		
Telecommunication Company of Iran (TCI) IRAN	1 000			1 000	14 Aug 00
Electronic Industries Co S A Iraq IRAQ	1 000	1984 1999	17 000		
*ITU Association of Japan Inc (ITU AJ) JAPAN	13 250			13 250	30 Mar 01
Electronic Industries Association of Korea (EIAK) KOREA	2 000			2 000	8 Jun 00
National Electronics Development Association (NEDA) NEW ZEALAND	1 000	1989 1999	11 000		
National Institute of Electronics (NIE) PAKISTAN	1 000	1996 1999	4 000		
Philippine Electronics & Telecommunications Federation (PETEF) PHILIPPINES	500	1999	1 000		
Association of Electronics Industries in Singapore (AEIS) SINGAPORE	500	1989 1999	5 500		
National Engineering Research & Development Centre SRI LANKA	200	1989 1999	2 200		
Directorate General of Telecommunications (DGT) TAIWAN	2 000			5 000	2 000(5/6/00) 3 000 (19/6/00)
Post & Telegraph Department (PTD) THAILAND	1 000			1 000	28 Jul 00
Bangladesh Small & Cottage Industries Corporation (BSCIC) BANGLADESH	1 000	1998 1999	2 000		
Computer & Electronics Information Center (CEIC) NEPAL	250			250	23 Jun 00
Telecom Equipment Manufacturers Association (TEMA) INDIA	250	1997 1999	750		
Arthur C Clarke Institute for Modern Technologies (ACCIMT) SRI LANKA	250				
Taiwan Elctrical & Electronic Manufacturer s Association (TEEMA) TAIWAN	1 000			1 000	18 May 00
Chunghwa Telecom Co Ltd TAIWAN	1 000			1 000	30 May 00
Computer & Communications Research Laboratories TAIWAN	1 000			1 000	8 Jun 00
Total	30 901		49 250	26 500	

* ITU AJ pays Member Fee in Japanese Yen The fee is calculated in US Dollar

IV Activities to be considered in FY2001 and beyond

1 Basic policy

The basic policy of the Union's activities for Fiscal Year 2001 and beyond will not deviate from what the Union has taken so far It is the most important whether the Union's activities which are proposed by the Members bring benefits to the Members and the Union or not At the same time, results may strongly depend on how the Members positively participate in such activities and cooperate in the Secretariat

In this respect, the Secretariat would like to rouse the Member s attention that the countries called NIEs today should provide more contribution or assistance to the less fortunate countries among the Members

The Secretariat fully realized that we can only discharge our duties satisfactorily with sufficient resources from all the Members The Secretariat plans to carry on its work based on the above-mentioned principles and instructions from the 17th General Assembly

The Secretariat will also willingly cooperate in implementation on requests or needs from the Members if they are feasible

2 Technical Seminar

Based on the agreement of the 13th General Assembly in Taipei and the 16th General Assembly in Colombo AEU Technical Seminar will be held in 2002 the one seminar in Member country and the other seminar in non Member country i e Cambodia, Laos, Myanmar Nepal or Vietnam

3 Publication of the AEI Journal

With the assistance of the Dempa Publications Inc Tokyo AEU information will be disseminated through the AEI Journal in FY2001 and beyond

4 Web site of AEU

Based on the suggestion of the Study Group IV hosting AEU web site is under consideration

5 Other activities

Activities other than the above mentioned if agreed by the 17th General Assembly might be implemented taking the resource of the Union into consideration

V Estimated Financial Status for FY 2001

on the basis of the Revised Agreement

(from 1 April 2001 to 31 March 2002)

1 Table 7 Estimated Expenditure & Income

(in US dollar)

EXPENDITURE		INCOME	
1 Personnel expenses	16 800	1 Subscription	47 500
2 Office rent	4 820	2 Miscellaneous	
3 Consumable	560		
4 Postal expenses	2 540		
5 Conference	11 690		
6 Seminar	8 480		
7 Publications	1 750		
8 Utilities	210		
9 Miscellaneous	650		
10 Balance carried forward	0		
TOTAL (A)	47 500	TOTAL (B)	47 500

2 Table 8 Break-down on Expenditure for FY2001

(in US dollar)

ITEMS	DETAILS		AMOUNT
1 Personnel expenses	Secretariat staff salary & social insurance	16,800	16,800
2 Office rent	6 6m^2 per month x 12 months	4 820	4 820
3 Consumables	Stationery	160	560
	Photo copy	400	
4 Postal expenses	Postage	820	2 540
	Telephone charges	1 720	
	1st SG V Meeting (2 persons)	608	
5 Conference	Traveling for General Assembly (3 persons)	9 510	11 690
	Traveling for SG V (1 persons)	680	
	General Assembly reception	1 500	
6 Seminar	Seminar and Traveling expenses	8 480	8 480
7 Publications	AEI Journal subscription	1,750	1 750
8 Utilities	Water supply heating and lighting expenses	210	210
9 Miscellaneous	Office cleaning expenses	300	650
	Bank charge and others	350	
10 Balance carried forward		0	0
		TOTAL	47,500

9 Table 9 Estimated Member's Fee in FY2001

(in US Dollar)

NO	MEMBER	ANNUAL MEMBER FEE	REMARK
1	Ministry of Information Technology INDIA	3,000	
2	Indonesia Telecommunications Association (APNATEL) INDONESIA	3 000	
3	Telecommunications Company of Iran (TCI) IRA	3 000	
4	ITU Association of Japan Inc (ITU AJ) JAPAN	20 000	
5	Electronic Industries Association of Korea (EIAK) KOREA	3 000	
6	Directorate General of Telecommunications (DGT)	3 000	
7	Post and Telegraph Department (PTD) THAILAND	3 000	
8	Computer & Electronics Information Center (CEIC) NEPAL	250	
9	Arthur C Clarke Institute for Moder Technologies	250	
10	Taiwan Electrical & Electronic Manufacturers Association (TEEMA) TAIWAN	3 000	
11	Chunghwa Telecom Co Ltd TAIWAN	3 000	
12	Computer & Communications Research Laboratories TAIWAN	3 000	
	TOTAL	**47,500**	

Attachment

List of Members (Full & Associate)
of
The Asia Electronics Union
(as of 20 July 2001)

Full Members

Bangladesh

Bangladesh Electronics Manufacturers Association (BEMA)
120/A, Motijheel Commercial Area
Dhaka, Bangladesh
Tel +880-2-232076, 258013
Tlx 671046 EXCEL BJ

Mr Khurshid Ali Mollah
Chairman

India

Ministry of Information Technology
Electronics Niketan
6, C G O Complex
New Delhi 110 003 India
Tel +91-11-4363041
Fax +91-11-4363134

Mr Rajeeva Ratna Shah
Secretary

Indonesia

Indonesia Telecommunications Association (APNATEL)
c/o PT MultiSatel Eka Karma
Gedung Multi Eka Karma
Jl Kapten Tendean No 15
Mampang Prapatan
Jakarta 12790 Indonesia
Tel +62 21-79192787 79192821/23
Fax +62 21 79192822

Mr Rahardjo Tjakraningrat
Chairman

Iran

Telecommunication Company of Iran

Dr A Mirtaheri
Chairman of the Board and
Managing Director

<Contact point>
Mr Emamgholi Behdad
Director General of Telecommunications
Ministry of Posts, Telegraph and Telephone
P O Box 931 Tehran
Iran (Islamic Rep of)
Tel +98-21-864796
Fax +98 21 866023

Iraq

Electronics Industries Co , S A
Za'Afaraniyah Industrial District
P B Box 29042 Bagdad,
Iraq
Tel +964-7733551 - 4

Mr A R Al-Uraiby
Managing Director

Japan

The ITU Association of Japan Inc
Kanda KS Bldg 3rd Fl
1 8 6 Kaji-cho Chiyoda ku
Tokyo 101-0044 Japan
Tel +81-3-5207-5711
Fax +81-3-5207-5732

Mr Masato Shinagawa
President

Korea

Electronic Industries Association of Korea
(EIAK)
648, Yeogsam dong Kangnam-gu
Seoul Korea
Tel +82-2 5530941 5556187
Fax +82-2 5556195 5637371

Mr Sang Kun Kim
Executive Vice Chairman

New Zealand

National Electronics Development Association
P O Box 12-426, Thorndon
Wellington, New Zealand
Tel +64-4-499-5558
Fax +64-4-499-5557

Mr Graemme F Hale
Executive Director

Pakistan

National Institute of Electronics (NIE)
P O Box 1406, Plot No 17 Sector H-9
Islamabad Pakistan
Tel +92-51-448436-39
Fax +92-51-448451

Mr Anwer Jamal Ansari
Director General

Philippines

Philippine Electronics and Telecommunications Federation (PETEF)
Unit 7-11 PS Bank Tower
Gil Puyat Ave cor Tindalo St Makati
Metro Manila Philippines
Tel +63-2-8136398
Fax +63-2-8136397

Ms Ma Corazon Akol
President

Singapore

Association of Electronic Industries in Singapore (AEIS)
c/o 1003 Bukit Merah Central #02-10
Singapore 159836
Tel +65 2782538
Fax +65 2787518

Mr H S Tan
President

Sri Lanka

National Engineering Research & Development Centre of Sri Lanka
(NERD Centre of Sri Lanka)
Block 2P/17B I D B Industrial Estate
Ekala Ja-Ela Sri Lanka
Tel +94-1-236434
Fax +94-1-236434

Mr J A J T de Saram
Acting General Manager

Taiwan (ROC)

Directorate General of Telecommunications
Ministry of Transportation and Communications
16, Sec 2, Chin-Nan Road
Taipei 100, Taiwan (ROC)
Tel +886-2-23433959
Fax +886-2-23433772

Mr Jen-Ter Chien
Director General

Thailand

Post and Telegraph Department
87 Soi Sailom Phahol-Yothin Road
Bangkok 10400, Thailand
Tel 66-2-2710151 - 2710160
Fax 66-2-2713512

Mr Sethaporn Cusripituck
Director General

Associate Members

Bangladesh

Bangladesh Small and Cottage Industries Corp (BSCIC)
137-138 Motijheel Commercial Area,
Dhaka-1000 Bangladesh
Tel +880-2-9556191-2 9553293
Telegram BEESCIC

Mr A H M Rezaul Karim
Chairman

India

Telecom Equipment Manufacturers Association (TEMA)
4th Floor PHD House
Asian Games Village Road
New Delhi - 110016, India
Tel +91-11-6859621
Fax +91-11-6859620

Mr Arun Khanna
President

Nepal

Computer & Electronic Information Center
P O Box 21184
Chabahil Kathmandu
Nepal
Tel +977-1 492146
Fax +977-1 486461

Mr G P Kharel
Managing Director

Sri Lanka

Arthur C Clerk Institute for Modern Technologies
Katubedda Moratuwa Sri Lanka
Tel +94-1-446546 647461
Fax +94 1-647462

Mr C Kalupahanage
Executive Secretary

Taiwan, R O C

Taiwan Electrical and Electronic Manufacturer's Association (TEEMA)
Prince Financial Center 6F
No 109 Sec 6 Min Chuan F Road Taipei 114
Taiwan R O C
Tel +886-2 8792-6666
Fax +886 2 8792-6088

Mr Richard Wu
Chairman

Chunghwa Telecom Co Ltd
21 3 Hsinyi Road Sec 1
Taipei Taiwan 100 R O C
Tel +886 2 2344 3888 / Fax +886 2-2344 5435

Dr Mao Chi-Kuo
Chairman Board of Directors

Computer & Communications Research Laboratories
Industrial Technology Research Institute
No 000, 195-11 Sec -4, Chung Hsing Rd
Chuntung, Hsinchu Taiwan 310, R O C
Tel +886-3-5917581
Fax +886-3-5820081

Mr Tzung-Pao Lin
Director
Communications System Div

Report on 1st Meeting of Study Group V of AEU

1 TIME Monday 19 June & Tuesday 20 June 2000

2 PLACE TK. Palace Hotel Bangkok
54/7 Chaengwatthana Road Soi 15 Laksi Bangkok Thailand
Tel +66 2 574 1588 Fax +66 2 574 2622

3 PARTICIPANT

SG-V Member

Chairman	Mr Tsutomu Washida (Member Japan)
Co-chairman	Dr S C Mehta (Member India)
Member	Mr HabimonoKoesoebjono (Member Indonesia)
	Mr Young Hoon Choi (Member Korea)
	Mr Padmasiri de Alwis (Member Sri Lanka)
	Dr Ching Fu Kuo (Member Taiwan)
	Mr Pipope Chooncharoen (Member Thailand)
Invitee	Mr Nobuyoshi Sone (Japan)
Secretariat	
Secretary General	Mr Takayoshi Sakashita
Deputy Secretary General	Mr Hiromitsu Tanaka

4 SCHEDULE

Sunday 18 June	Participants arrive in Bangkok
Monday 19 June	Meeting 1st day
Tuesday 20 June	Meeting 2nd day
Wednesday 21 June	Participants leave Bangkok

5 ATTACHMENTS

(1) Program

(2) Agenda

6 Discussion Results for Revision of AEU Agreement and its Rules

Introduction

It is already more than 30 years since AEU was established and during the time, situations surrounding AEU have much changed and revision of its Agreement and Rules is accordingly required today Points raised hereafter are discussion basis for examination inside SG-V of AEU from now on through seventeenth General Assembly to be held in Thailand in 2001

Points of discussion

6 1 Name of the AEU

To better fit Multimedia and IT age of today name of the AEU might be preferably changed to the one representing best of its nature Taking into consideration business tendency at the most of today followings names would be listed as candidates for selection by GA

- The Asia Electronics & Information Technology Union (AEITU)
  The Asia Electronics & Info-Communications Union (AEIU)
  The Asia Electronics & Information Communication Union (AEICU)

6 2 Membership title

Viewed from nil opportunity for voting so far in the AEU and variety of organizations consisting of the AEU there may be no substantial difference between Membership and Associate Membership Considering importance of equal footing between member and associate member organizations followings were decided by SG-V

6-2 1 Membership only one nomenclature namely Member may be retained

6-2-2 Categories profit making non profit making and individuals were recommended as categories

6-2-3 Definitions of each category will be cited by information from Dr Kuo of Taiwan

6-2-4 The definitions by Dr Kuo were given after the meeting as follows

A profit making entity means an organization of a commercial nature A non profit making entity is defined as an organization of a non-commercial nature including government ministries and departments educational institutions foundations international organizations charities etc The individual category is open to any person If an organization is a member of AEU individuals within the organization may apply for individual membership in addition to the entity membership However an individual member may not present any entity or his/her own firm

6 3 Objectives of the AEU

Firstly SG V discussed its standpoint because this issue is the key for "raison d eire of the AEU Discussion results were as follows

6 3 1 Article 4 of the AEU Agreement as follows

1 Objectives

To find out the feasibility of and to promote and encourage cooperation in the field of electronics, informatics & communication and related science and technology

(a) Technical Seminar, exchange of information in above areas including basic research, applications and manufacturing techniques

(b) Assessment of needs for and availability of human resources in hardware and software

(c) Promotion of human resource and development for managers electronic engineers technicians and students

6-4 Principal domain of the AEU activities

SG-V examined principal domain of activities and following domain as described below 1) – 3) was identified as domains to be stressed on

1) Internet Related Services

2) Mobile Communications

3) Wireless Local Loop

At later examination SG V confirmed that only general idea of activities be cited and not referring to each particular domain items So no item may be described in the text

6 5 Quotas of Membership Fee

Quotas of membership fee for each organization would not be well reflected actual situation mainly because of the situation considered at the days of establishment of the AEU It is true that the current quota of the membership fee is heavy due to a certain organization and insufficient due to the other organizations Japan is contributing 75% - 85% of the budget It should be noted that this situation does not comply with the AEU Bylaw (No 1 Rule 3) stipulating that no Member country shall contribute more than 50% of the total budget Therefore SG-V reviewed quotas of membership fee in relation to AEU s actual situation of balancing between its revenues and expenditures SG V came to interim conclusions as follows

1) The principle of Membership-fee quota should be on an equal footing basis
2) Studies are required on measures to implement this principle
3) Reduction of expenditure however for the current fiscal year the activities have already being planned and expenditure cannot be curtailed
4) New initiatives for income generation maybe taken up
5) The seminars being organized may have participation fee for non members
6) Reduction of expenditure can be expected if the proposal of transfer the Secretariat to India goes through
7) At this stage increase in membership fee is not advised however members may contribute to raise subscription voluntarily to meet shortfall

Discussion followed further that in the case of shortage of revenues after possible

transition of Secretariat to India the amount of shortage will not be significant. However that amount will be compensated among member organizations on equal footing basis

6 6 Transfer of Secretariat Function

Japan has been acting main role of as holding AEU Secretariat from its establishment and it may be a good time to transfer AEU Secretariat to other country who will voluntarily assume this Secretariat Transfer of Secretariat function will be best at a starting point of a new AEU period Followings are main reasons of our proposal

1) Total cost saving of AEU activities seen from high personnel expenses in Japan
2) Equal opportunity of holding Secretariat function among member organizations

Japanese position as presented by Mr Sone was taken note of Korea stated inability to assume Secretariat function India indicated the possibility of assuming Secretariat function after examining the matter India will examine the matter and communicate its decision within six months for discussion in the GA

If India agrees a small team of Dr Mehta Mr Washida Mr Sakashita Mr Tanaka may work out modalities of transfer which will be considered by the GA

6 7 Identification of the AEU Activities in Relation to Other Regional or International Organizations

To identify AEU activities and to avoid duplication of the activities with other organizations SG V concluded as follows

6-7-1 AEU does not handle policy matters on Asian electronics industries

6-7-2 AEU does not make standards on devices nor on telecommunications services

6-7 3 In order to increase revenue and make AEU more known the activities may be open to non-members as well provided that members get first priority,

6 8 Enlisting of the Members Organizations

It was confirmed that dissolved member bodies together with ones not paying membership fee for more than two periods without fair reasons shall be automatically disqualified from membership However they may be readmitted on freshed application subject to the satisfaction of the Secretariat AEU may continue to encourage members by using website and Dempa Publications Secretariat will coordinate with Dempa Publications Small group consisting of Dr Mehta Mr Washida Mr Tanaka will take care of enforcement of AEU proper homepage The homepage will be reviewed by India for modification within six months

6 9 Possibility of having Local Chapters

Like other international organizations it might be preferable for the AEU to have several Local Chapters Discussion should be raised for the necessity of local chapters first and then to go farther

SG V came to a conclusion that it was felt premature to have local chapters at this moment

6 10 Interval between General Assemblies

In 16th GA, there was some discussion on the interval between two General Assemblies whether it should be 2 years as it is now or it should be extended to 3 years

SG V came to the conclusion that decision till 2003 the interval may remain two years At GA 2001 this matter may be discussed for the period beyond year 2003

6 11 Additional point

1) SG V came to the conclusion that drafting team consisting of Dr Mehta, Mr Washida Mr Sakashita Mr Tanaka was set up to prepare for a draft revised text for the AEU Agreement for the submission to coming GA This work will be done through e mail reflecting SG V members comments and opinions later on
2) A proposal was made by a delegate that an international conference on IT Technologies be held by the AEU for the purpose of its public relations and for the increase of its revenue At least it won t be held until 2002 The details including its possibility of holding this kind of conference as AEU s proper activities will be discussed and examined at coming GA

6 12 Draft working Schedule for revision of the AEU Agreement

Following draft working schedule for revision of Agreement was confirmed as described as follows

Duration	Working contents
Mid Jun 2000	1st SG V Meeting (discussion for draft revisionning of the AEU Agreement)
Jul 2000 To Feb 2001	Drafting for revision of the AEU Agreement (trough e-mail) (Final comment from SG V Members will be made at the latest the end of Jan 2001)
Mar 2001 To Mid May 2001	Preparation for a final version of the AEU Agreement (Final version will be made at the latest Mid Mar 2001)
Late May 2001	2nd SG V Meeting (Submission of a final version of the AEU Agreement to GA) 17th AEU General Assembly

7 Other issues

Representative from Member Thailand Mr Pipope Chooncharoen has mentioned a proposal of holding the AEU 17th General Assembly in conjunction with the NEPCON Thailand 2001 Exhibition to be held from 31 May to 2 June 2001 in Bangkok Thailand All SG V

Members agreed to his proposal

The secretariat has received later on Mr Pipope s more concrete proposal saying due to rescheduling of the NEPCON Thailand 2001 Exhibition, holding the 17th AEU General Assembly was to be rescheduled from 30 May to 1 August 2001 in conjunction with the National Communications Day Exhibition to be held in the beginning of August, the AEU Technical Seminar on July 31st 2001 with a topic example of "Moving Toward the Near Future Info-Communications The whole schedule of the 17th AEU GA is to be as follows

1st day	July 30th 2001	Courtesy visit to the hosting administration concerned preparatory meeting among chief representative of AEU Member countries and SG-V 2nd Meeting
2nd day	July 31st 2001	Technical Seminar as mentioned above
3rd day	August 1st 2001	17th AEU General Assembly
4th Day	August 2nd 2001	Technical visit (actually visit to National Communications Day Exhibition)

Attachment 1

Program

Sunday 18 June, 2000		
		All participants arrive in Bangkok by evening
Monday 19 June 2000		
	0830 hours	Welcome address by SG V Member Thailand
		Opening remarks by AEU Secretary General
		Remarks by SG V Chairman
	0900 hours	Adoption of draft agenda
		Discussion starts
	1000 hours	Coffee break
	1030 hours	Discussion continues
	1200 hours	Luncheon
	1300 hours	Discussion continues
	1500 hours	Coffee break
	1530 hours	Discussion continues
	1700 hours	Close of 1st day meeting
	1800 hours	Dinner hosted by AEU Secretary General
Tuesday 20 June 2000		
	0900 hours	Opening of 2nd day meeting
		Summary of 1st day discussion
		Discussion starts
	1000 hours	Coffee break
	1030 hours	Discussion continues
		Summing up of discussion results
	1200 hours	Close of 1st SG V Meeting
		Luncheon
	1830 hours	Dinner hosted by Post and Telegraph Department Thailand
Wednesday 21 June, 2000		
		All participants leave Bangkok

Attachment 2

Agenda

(1st day, June 19)

1 Welcome address by SG V Member-Thailand

Opening remarks by AEU Secretary General

Remarks by SG V Chairman

2 Explanation of discussion materials prepared by Chairman and Co-chairman

Working papers Points of Discussion Basis for Revision of AEU Agreement
Its Rules and SG V Members comments Dec 7 1999

3 Discussion and Examination on Important Issues

(2nd day June 20)

4 Summing up of Discussion Results

5 Nomination of Drafting Team for the Revision of Existing AEU Agreement

6 Confirmation of Schedule through Next General Assembly

Expenditure and Income (1988 – 2000)

(US $)

FISCAL YEAR	1,988	1,989	1,990	1,991	1,992	1,993	1,994	1,995	1,996	1,997	1,998	1,999	2,000	2,001
EXANDITURE (A)	**119,993**	**105,060**	**97,747**	**106,303**	**104,209**	**100,641**	**108,306**	**127,044**	**92,411**	**95,933**	**77,258**	**73,499**	**42,416**	
Personnel Expenses	80 695	67 872	64 892	70 578	52 888	62 219	62 199	80 699	66 478	58 821	42 180	49,424	16 764	
Office rent	10 202	8 728	7 534	8 156	15 761	18 758	18 732	14 074	11 624	10 429	9 172	10 810	4 815	
Consumables	1 633	1 624	751	655	286	41	48	1 709	702	634	891	5 577	893	
Postal expenses	6 960	7 648	4 291	6 109	2 097	3 265	3 781	2 691	3 011	3 206	2 911	2 523	2 120	
Travels	1 362	4 946	3 746	5 009	18 161	0	7 374	7 345	5 270	15 691	17 615	345	9 483	
Conference	115		0	0	0	0	0	4 426	866	5 546	3 163	994	5 157	
Publications	15 037	11 523	14 049	12 917	12 818	14 616	14 614	14 549	3 168	327	153	2 421	2,326	
Utilities	2 720	2 342	2 340	2 451	384	457	452	544	520	540	475	484	209	
Miscellaneous	1 269	377	144	428	1 814	1 285	1 106	1 007	772	739	698	921	649	
INCOME (B)	**51,385**	**44,226**	**53,202**	**46,323**	**48,233**	**67,492**	**55,856**	**68,848**	**61,239**	**67,660**	**47,348**	**55,026**	**26,508**	
Subscription	51 385	44 226	53 202	46 323	48 233	57 106	55 856	68 807	61 239	54 715	47 348	55 018	26,500	
Commissions from advertisements			0	0	0	10 306	0	0	0	12 920	0	0	0	
Miscellaneous			0	0	0	80	0	41	0	25	0	8	8	
BALANCE (B-A)	**-68,608**	**-60,834**	**-44,545**	**-59,980**	**-55,976**	**-33,149**	**-52450**	**58,196**	**-31,172**	**-28,273**	**-29,910**	**-18,473**	**-15,908**	

ANNEX 7

FINANCIAL REPORT FOR FY1999 & 2000

(in US dollar)

1 EXPENDITURE & INCOME

EXPENDITURE			INCOME		
	FY1999	FY2000		FY1999	FY2000
1 Personnel expenses	49 424	16 764	1 Subscription	55,018	26 500
2 Office rent	10 810	4 815	2 Miscellaneous	8	8
3 Consumable	5 577	893			
4 Postal expenses	2 523	2 120			
5 Travels	345	9 483			
6 Conference	994	5 157			
7 Publications	2 421	2 326			
8 Utilities	484	209			
9 Miscellaneous	921	649			
Total (A)	**73,499**	**42,416**	Total (B)	**55,026**	**26,508**

Balance in 1999 **-18,473**

2000 **11,908**

Electronics, Information Technology and Telecommunications - An Indian Perspective

A COUNTRY REPORT

Ministry of Information Technology
Government of India
Electronics Niketan
6, CGO Complex
New Delhi-110 003
INDIA

JULY 2001

Electronics & Information Technology - An Indian Perspective

A COUNTRY REPORT

1 Organizational Structure in the Electronics and IT

The advancement in Electronics Information and Communication Technology has had a profound impact on the quality of life of the masses Countries are aware of the opportunity that it offers to improve the overall prosperity of the country This revolution has opened up new possibilities of economic and social progress especially for the developing countries

Over the last decade the IT industry in India has grown by more than ten fold The world has recognized India s capability in software and is looking towards India for development of IT based applications

In order to give a concerted and focused approach to developing this sector the Government of India set up the Ministry of Information Technology in October 1999 as the nodal Ministry for all initiatives in this area The Ministry has targeted to implement a comprehensive action plan to make India an IT Power and achieve a target of US $ 50 billion in software exports by 2008 The Ministry will facilitate to achieve the objective of creation of wealth employment generation and IT led economic growth The role of Ministry would be to become a pro-active facilitator motivator and promoter The challenge will be in spreading the benefits of IT to the masses and to ensure speedy IT led development

2 Capacities, Capabilities and Trends in the Electronic and IT manufacturing industry by products sectors

The Indian IT industry production is estimated at Rs 68 700/- crores (US $ 15 13 billion) during the year 2000-01 (April 2000 - March 2001) registering a growth of 31% from the previous year

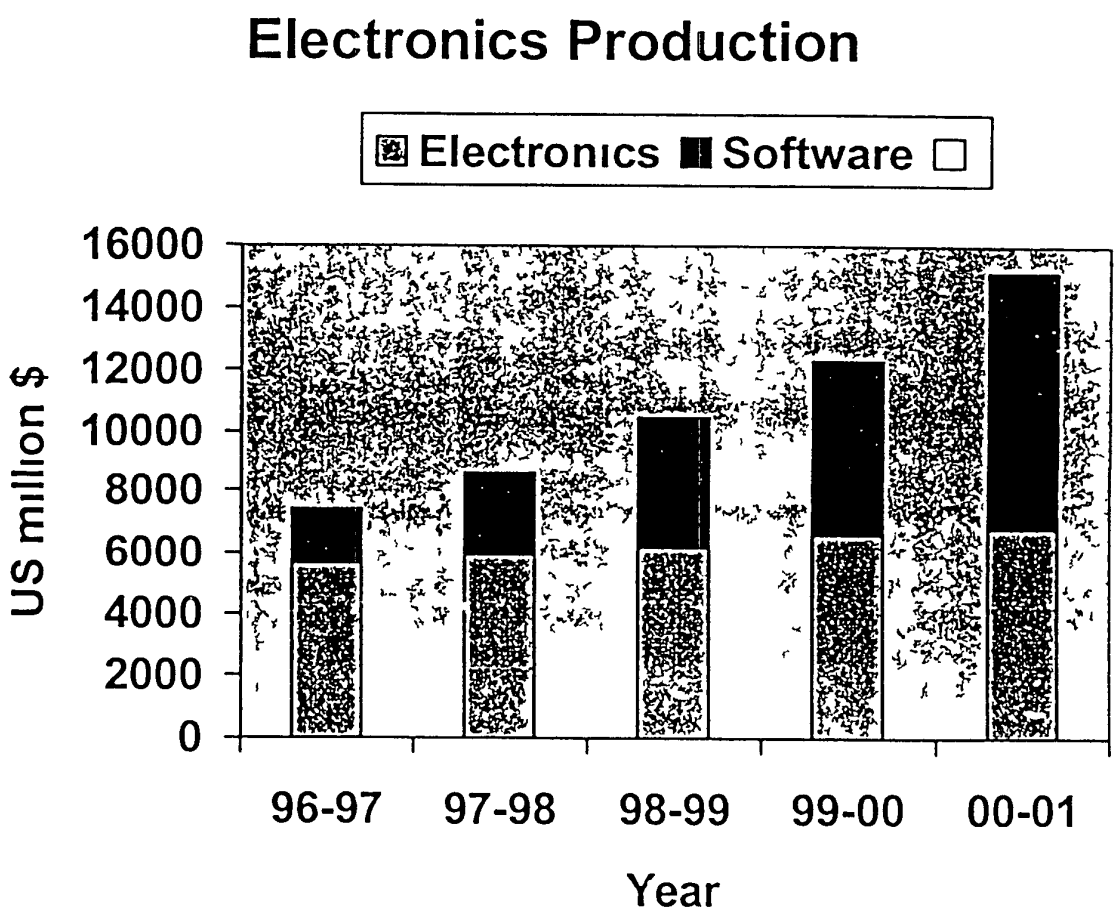
In export as well as domestic sector computer software remains the fastest growing sector achieving 66% growth as compared to the last year The total software export during 2000-01 is estimated at about Rs 28 500 crores Domestic software has gone up to Rs 9 500 crores during 2000-01 The total

number of Software Export units increased from 5582 in 1999-2000 to 6567 during 2000-2001

The Government is supplementing the efforts of the industry by providing critical inputs and removing bottlenecks in the path of software development in order to achieve software export targets of US $ 50 billions by 2008

The production figures for the major sectors of the IT industry are as follows -

	Production (Rs in Crores)
Consumer	11700
Industrial	4000
Computers	2700
Communication	4400
Strategic	1750
Components	5500



3 Noteworthy Developments in Policies and Activities in the Electronics and IT Field

3 1 Policy Initiatives

To accelerate exports in Electronics and Information Technology sector, a number of policy measures were taken and procedures further simplified Approvals for all foreign direct investment proposals relating to the Information Technology sector with the exception of Business-to-consumer (B2C) e-commerce are under the automatic route

3 1 1 Export Processing Zones and 100 % Export Oriented Units

The Government has established Free Trade Zones or Export Processing Zones These zones provide internationally competitive infrastructure facilities duty free import of capital goods, raw materials components and other inputs tax holiday against export and access to domestic market 100 % Export Oriented Units (EOUs) can be set up under any of the schemes, viz Electronic Hardware Technology Park (EHTP) Software Technology Park (STP) Export Processing Zones (EPZ) and 100% Export Oriented Units (EOU) schemes All the incentives available to units in EPZs are applicable to units under these schemes There is no minimum value addition required for electronic hardware DTA access unto 50 % of the FOB value of export has been permitted for electronic hardware units under EOU/EPZ/EHTP schemes and the software units under EOU/EPZ/STP Schemes Broad banding has been permitted in the DTA sales of hardware manufactured by the EHTP units for items covered by the Letter of Permission

3 1 2 Export Promotion Schemes

3 1.2 1 Export Promotion Capital Goods (EPCG) Scheme

To encourage export of goods and services Capital Goods are allowed to be imported at 5% customs duty subject to an export obligation equivalent to 5 times of CIF value of Capital Goods on FOB basis or 4 times of the CIF value of Capital Goods on NFE basis to be fulfilled over 8 years reckoned from the date of issue of License This scheme was extended uniformly to all the sectors and to all Capital Goods without any threshold limit

3 1 2 2 Duty Drawback Scheme

Exporters are eligible for reimbursement of all custom duty paid on imported inputs of an export product In a few cases adhoc quantum of duty drawback is fixed to facilitate quick reimbursement So far duty drawback rates for 78 electronic items have been fixed

3 1 2 3 Duty Exemption Scheme

Duty Free License Duty free licenses cover Advance License Advance Intermediate License and Advance License for Deemed Exports Import of raw materials intermediates component consumables parts accessories mandatory spares and packing material are permitted against a Duty Free License Standard Input/output norms for 248 Electronic items have been notified to facilitate the exporters Under this scheme value addition should be positive A provision for annual Advance License has also been made to reduce the avoidable interface between the exporter and the Directorate General of Foreign Trade (DGFT) This facility provides the necessary flexibility in the import of duty free inputs The exporter would now be able to import any prescribed input as per input/output norms right through the year without approaching DGFT In such cases where standard input/output norms are not fixed licenses can be obtained from all the port offices on the basis of self-declaration The items and quantities permitted against such licenses would be subject to subsequent fixation of norms by the Headquarter Special Advance Licensing Committee (SALC)

3 1 2 4 Duty Entitlement Pass Book

Under this scheme an exporter is eligible to claim custom duty credit as a specified percentage of FOB value of exports made in freely convertible currency Any item except those appearing in the negative list of import shall be allowed for import without payment of basic customs duty special duty of customs as well as additional duty of customs against the credit under Duty Entitlement Pass Book (DEPB) The DEPB which may be issued with one-year validity either on Post-Export Basis or on Pre-Export Basis aims to provide the facility to eligible exporters to import inputs required for production So far DEPB rates for 93 electronic items have been notified

3 1 3 Fiscal Policy

- Export Oriented units are exempted from payment of Income Tax on export profits unto 2010 in terms of Section 10A and 10B of the Income Tax Act On site development of computer software and software services will also be eligible for tax exemption

- To give thrust to Venture Capital finance SEBI has been made the single point nodal agency for registration and regulation of both domestic and overseas venture capital funds
- There will be no tax on distributed or undistributed income of Venture Capital Funds The income distributed by the VCFs will only be taxed in the hands of the investors at the rates applicable to the nature of the income VCFs will continue to be eligible for exemption even if the shares of the VC undertaking in which the VCFs have made the initial investment are subsequently listed in a recognised stock exchange in India
- Under policy on portfolio investment, Foreign Institutional Investors (FIIs) are permitted to invest in a company unto an aggregate of 40% of equity shares extendable unto 49% subject to approvals
- Under the Employee Stock Option Scheme income tax payable on income from GDRs purchased in foreign currency by a resident employee of IT software and service companies, shall be at a confessional rate of 10% at the time of their sale only The capital gains tax would be applicable on the difference between the sale price and the issue price
- Tax holiday under provisions of Section 80-IA (Infrastructure Status) has been extended to Internet Service Providers (ISPs) and Broadband Network providers

Two-way fungibility has been permitted for ADRs/GDRs Local shares can now be reconverted into ADRs/GDRs, subject to sectoral caps

3 1 4 EXIM Policy

Special Economic Zones are being set up to enable hassle free manufacturing and trading for exports

Import of second hand capital goods which are not more than 10 years old has been allowed without obtaining any licence on surrender of SIL (freely transferable Special Import Licence)

Quantitative Restrictions (QRs) have been removed on 714 Tariff lines All items which are under SIL are importable on surrender of SIL equivalent to 5 times the CIF value of imported goods Prominent electronic items which can be imported freely are CD players colour picture tubes populated PCBs microwave ovens pocket sized radio cassette players projection TVs loudspeakers and push button telephones etc

Powers of Designated Officers for approval of units under STP/EHTP schemes enhanced to projects involving US$ 20 million worth of imported capital goods

Accelerated depreciation norms for computers and computer peripherals for electronic units under Export Oriented schemes (EOU/EPZ/STP/EHTP) enhanced These shall stand depreciated to 90% over a period of 3 years

- Post-export duty free replenishment licence scheme for enabling import of inputs on the basis of input-output norms introduced The Scheme would be available for such items where input output norms exist and on the basis of uniform value addition of 33%
- The post-export Duty Entitlement Pass Book (DEPB) would continue till 31 3 2002, thereafter it would be subsumed into the Drawback Scheme

3 1 5 Duty/Tariff Structure

In the Budget 2001-02 the peak rate of customs duty continues @ 35% Customs duty surcharge @ 10% has been abolished on all imports in general but Special Additional Duty (SAD) @ 4% continues on all imports except specific exemptions

- In the Budget 2001-02 customs duty on Computers and Peripherals continues @ 15% The Customs duty on all storage devices integrated circuits microprocessors data display tubes and deflection components of colour monitors also continues at 0% In the 2001-02 Budget Customs duty on Information Technology Agreement (ITA-1) items of WTO (IT and Telecom products) has been reduced to 15%

  The concessional rate of customs duty for specified raw materials for the electronics industry continues As per the amendments made 121 items are allowed @ 5% 7 items @ 15% and 4 items @ 25%
- Customs duty on pagers was reduced to 5% and on parts of pagers to 5% Customs duty on cellular phones and their parts was reduced to 5% Customs duty on battery packs for cellular phones was reduced from 40% to 15% Customs duty on parts of capacitors resistors/potentiometers semiconductor devices and integrated circuits was reduced to 0% Customs duty on optical fibres was reduced to 15% Customs duty on performs and FRP rods was reduced to 5% Customs duty was also reduced on radio trunking terminals parts thereof ethernet switch/card and DWDM equipment to 5% Customs duty on specified items of capital goods for manufacture of LSI/VLSI was reduced to 5% The reduced duties on these items continue in the Budget 2001-02 In the Budget 2001-02 customs duty on UPS Systems and Set Top Box has been reduced to 15%

  In the Budget 2001-02 the Central Excise duty structure has been rationalised from multiple rates to single rate of 16% and single rate of Special Excise under STP/EHTP schemes enhanced to projects involving US$ 20 million worth of imported capital goods

  MRP Scheme was extended to typewriters calculating machines electronic diaries telephone sets videophones fax machines pagers cellular phones with abatement of 40% In the Budget 2001-02 abatement on central excise duty on Colour TVs has been enhanced to 35% and Excise duty on Black and White TVs and Clocks and Watches (unto MRP Rs 500/-) levied @ 4% with the option of 16% excise duty with CENVAT

3 2 Major Initiatives

3 2 1 Information Technology Act'2000

In order to facilitate growth of e-commerce, electronic communication through internet and accelerate introduction of IT in critical sectors of the economy, the "Information Technology (IT) Act, 2000" has been approved by the Government It provides legal framework to facilitate electronics commerce and electronic transactions and aims to recognize electronic contracts prevention of computer crimes electronic filing/documentation digital signature etc Rules for implementing the Act have been notified and the Act brought into force on 17th October 2000 The Controller of Certifying Authority has been appointed

3 2 2 The Semiconductor Integrated Circuits Layout-Design Act, 2000

The Semiconductor Integrated Circuits Layout-Design Act 2000 has been enforced to provide for protection of Semiconductor Integrated Circuits Layout-Design

3 2 3 Telecommunication

Internet Service Providers (ISP) have been permitted to set up international gateways and Submarine Landing Stations in the country ISPs have also been allowed to hire bandwidth on foreign satellites This will enable increased availability of Internet bandwidth and facilitate Internet expansion in the country Other significant decisions in the area of telecommunication are

* Opening of National Long Distance and ISD Telecommunication Service
* VSNL monopoly on international technology to end in March 2002 Participation of private industry allowed
* As a result of the same significant investments have been made by the private sector in laying the Fibre Optic Cable throughout the country

3 2 4 Community Information Centres (CICs)

The Ministry of Information Technology has taken up a project to set-up Community Information Centres (CICs) in 486 blocks in the North-East and Sikkim as a part of the Prime Minister's Agenda for the socio-economic development of the region at an estimated cost of Rs 20 crores to provide connectivity at the block level within 2 years VSATs are being used to provide Internet connectivity under the scheme The centres will be managed with the assistance of Central Government for five years and after which they will be handed over to the State Government A pilot project in 30 blocks has been completed

Through this scheme, the Government plans to reach out to 95 per cent of the people who are outside the digital world These CICs can help in combating escalating crises in healthcare education e-governance disaster management as well as poverty alleviation

This scheme will be further enhanced to other areas of the country

3 2 5 Media Lab Asia

Media Lab Asia is a joint effort by Ministry of Information Technology and Massachusetts Institute of Technology (MIT) Media Lab to further research in state-of-the-art technologies in the area of Information and Communication Technologies (ICT) and deploy them to the benefit of common man Areas that will be addressed include education health occupation and entrepreneurship Academic professors and students will be used extensively to do research, build prototype and undertake extension programmes at the field level to demonstrate working products gadgets solutions and services which in turn can be introduced in the market place through entrepreneurship and industry The whole approach is to address the issue of digital divide by addressing technology aspects robust products and usability issues

3 2 6 E-Governance

Information Technology (IT) is highly effective in catalyzing economic activity in efficient governance and in developing human resource As part of the increased thrust on e-governance MIT has set up a Centre E-Governance (CEG) to demonstrate emerging applications in this area and to facilitate in implementing e-governance applications in all the State Governments

3 2 7 Technology Development for Indian Languages

Ministry has taken a number of initiatives for the Technology Development for Indian Languages processing tools human machine interface system translation support system corpora and lexical resources etc To promote information processing in Indian languages a project has been taken up at thirteen Educational and R&D Institutions spread across the country The objective is to increase IT penetration in the society improve the quality of life of people of India by enabling use of IT through Indian Languages development of new products and services in Indian Languages promote content creation (on web sites) efforts in Indian Languages for better dissemination of information among the Indian masses apart from facilitating research in technology intensive area of Language Engineering

3 2 8 Information Technology for Masses

The Ministry of Information Technology has set an ambitious target of 100 million Internet connections by the year 2008 and one million Internet enabled IT Kiosks/Cyber Cafes to be established covering the entire country These will facilitate implementation of citizen based e-governance applications and will also provide easy access to information

4 Researches and Development in the Electronics and Telecommunications Sphere

India has established a strong R&D base in electronics through the various laboratories under Ministry of Information Technology Department of Space Department of Atomic Energy Department of Defense R&D Department of Scientific and Industrial Research (DSIR) Ministry of Communication and other user ministries IITs and academic institutions Besides these, a number of production agencies have strong in-house R&D groups

R&D activities are also carried out in major units in public and private sector as a part of in-house development Government has been providing various incentives to the industry in this direction Besides these both public and private sectors also get financial support from various agencies for specific technology development projects These have resulted in significant equipment/system development capabilities in these organizations In recent years private sector industries have taken interest to carry out in-house R&D At present in-house R&D activities of more than 200 units in electronics have been recognized by the Department of Scientific and Industrial Research (DSIR)

Ministry of Information Technology has also taken initiatives to promote R&D Some of the areas of technology and application development are listed below -

- Technology Development for Indian Languages (TDIL) Programme
  Multimedia Promotion Programme
- Information Security Management (ISM)
  Soft QC/QM Project
  Technologies for 21st Century
- Industrial Electronics Promotion Programme (IEPP)
- Telemedicine
  Education Training Employment and Rehabilitation for the Visually Handicapped
  Agriculture Applications
- National HVDC Project - Stage II
  Capital Goods Development Programme
  Professional and Strategic Electronics

- Electronic Components & Materials Development Programme
- Environmental Management in Indian Electronics Industry
- Microelectronics
- Photonics

The following societies under the Ministry focus on R&D in their respective areas of specialization -

- Centre for Development of Advanced Computing
- Society for Applied Microwave Electronics Engineering and Research
  National Centre for Software Technology
  Electronics Research & Development Centre of India
  Centre for Materials for Electronics Technology

5 Educations and Training in the Electronics and IT

5 1 Human Resource Development (HRD)

With the penetration of Information Technology in all the spheres of life it has become important element in education Hence Human Resource Development focuses on all aspects relating to IT education and electronics in the country at the primary and secondary level including the higher education It also focuses on vocational training which is required for creating the skilled manpower for operation and maintenance of the capital equipment The government has set an export target of US $ 50 billion of IT software and services by the year 2008 A work force of over two million IT professionals shall be required to achieve this target In collaboration with the Ministry of Human Resource Development various initiatives has been taken, such as doubling the intake in IT disciplines in IITs IISc and the Regional Engineering Colleges Simultaneously the institutes of Information Technology are being established in the various States through funding of Central as well as the State Governments Ministry of Human Resource Development has established Indian Institute of Information Technology and Management at Gwalior and Allahabad National Centre for Software Development and Training under Ministry of Information Technology is being upgraded for creating two campuses at Bangalore and Mumbai for imparting training in the area of networking and information technology

The impetus is also being laid on IT enabled distance education and a number of projects have been sponsored in collaboration with leading academic institutions like IITs IISc IGNOU NCST BITS Pilani etc

The long-term objective is to promote both IT education as well as use IT for general education A number of programmes initiated by MIT provide financial support for education/training the weaker sections of the society in the area of

information technology resulting in employment generation and entrepreneurship development

Some of the HRD Programmes are -

- Introduction to IT at Industrial Training Institutes
- Special Manpower Development Programme for VLSI Design
- IT Enabled Distance Education
- Web-Based Learning Material
- Support to Higher End Training Programmes
- Project Impact - Sustainability Support Scheme

For developing the Human Resource particularly to meet the requirements of the industry the Ministry has set up "Centres for Electronics Design and Technology" The Ministry has also set up DOEACC Society to accredit the computer training institutes in non-formal sector for conducting specified level of courses on computer concepts and higher level courses (O , A B and C) These courses have been recognised by the Ministry of HRD as equivalent to foundation course advanced diploma and MCA for the purpose of employment

5 2 Infrastructure

Ministry of IT created major infrastructure in terms of its own test and calibration laboratories, research and development centres and data communication infrastructure

Standardization Testing and Quality Certification (STQC) laboratories have been set up to facilitate industry for achieving necessary international quality certification These laboratories have been authorised to test and certify as per international standards in the respective fields
Education & Research Networking India (ERNET India) has been set up by the Ministry to provide network services to academic and research community This is the largest network in the Educational Sector The above network will also be used as a vehicle for the distance education
Software Technology Parks of India (STPI) has been established to facilitate software exports from India At present STPI has 19 centres at different location These centres provide single window interface for implementing the STP schemes and provide HSDC services to the software exporters It has state-of -the-art high speed data communication facilities through its own earth stations which also act as international gateways
National Informatics Centre (NIC) provides computerization support to Central Government Departments State Government Departments and District Administrations NIC has set up a satellite based computer communication network for providing EMAIL Internet File Transfer access to National and International data-bases (including Bio-Medical

Land records etc) Electronic Data Interchange (EDI) Video-conferencing facility, etc NIC has been training the government employees on a regular basis to enable them use computerised MIS and databases NIC has computerised Supreme Court 18 High Courts and 430 lower Courts in the country to streamline functioning and providing transparency to the litigants and legal databases To enable the students easy and faster access of various examination results National Informatics Centre has published on its web sites results of more than 30 examination

The Ministry also has its public sectors in the field of computer and semi-conductor areas namely

CMC Ltd
Semiconductor Complex Ltd

5 3 Electronics & Information Technology Exposition (ELITEX)

To disseminate information and showcase the indigenous technologies/services/products among the potential users and the industry Ministry organizes an Electronics and IT Exposition (ELITEX) Seminars are organized on state-of-the-art topics during the event The event also provides interaction between industry users and R&D institutions During 2001 the SAARC and Asian Countries also participated in this event Official participation from Australia Nepal Philippines Srilanka was there besides the participation from USA UK and Germany

It is proposed to enlarge the scope of official participation in ELITEX 2002 to Central and West Asia and Latin American Countries besides SAARC

ELITEX 2002 will be held during February 4-5, 2002 at India Habitat Centre New Delhi

A copy of the publication **"ADVANTAGE INDIA - Investment Opportunities in Electronics and IT 2000-2001"** is enclosed for further information and reference

TELECOMMUNICATION

1 Organizational Structure in Telecommunication

Telecommunications is now accepted as a basic infrastructure along with power and transportation for growth of national economy Telecommunications is also recognized as the means for accelerating the distribution of the fruits of economic growth to all the regions including remote and inaccessible areas in the country Telecom in the modern world is expected to usher a concept of global economy and single world market place The Indian Telecom network has therefore to become part of modern global network providing access to anyone in the country for transporting information in the form of voice data or video to anywhere in the world

India s 28 million line telephone network is among the top 9 largest networks in the world and second largest among the emerging economies after China with a growth rate of an average 20 per cent for the last 4 years The total number of lines added to the network over the last 5 years is 1 ½ times the total number of lines added over the preceding 5 decades

Department of Telecom (DoT) and Bharat Sanchar Nigam Limited (BSNL) are Government of India Departments under the aegis of Ministry of Communications

Department of Telecom (DoT) has its role in policy making licensing and coordination matters relating to telegraphs telephones wireless data facsimile and telematic services and other like forms of communications In addition DoT is responsible for frequency management in the field of radio communication in close coordination with international bodies It also enforces wireless regulatory measures for wireless transmission by users in the country

Bharat Sanchar Nigam Limited (BSNL) is the premier telecom service provider of India BSNL has presence throughout the length and breadth of India The main functions of BSNL include planning engineering installation maintenance management and operation of voice and non-voice telecommunications services all over the country

2 Capacities, Capabilities and Trends in the Telecommunications sector

2 1 Telecom Equipment Manufacturing Sector

Indian telecom equipment manufacturing industry manufactures complete range of telecom equipment using state-of-the-art technologies designed specially to match the diverse terrain and climatic conditions The production of telecom equipment in the country increased from Rs 58 billion in 1993-94 to about Rs 163 billion in 1998-99 The requirement of telecom equipment by various users during five year period from 1997-2002 is estimated to be of the order of Rs 1103 billion

2 2 Switching

Digital Switching System Technologies of foreign companies viz Alcatel Siemens Fujitsu AT&T GPT Ericsson and NEC have been validated and approved by DoT for introduction in Indian Network Manufacturing facilities based on these technologies except GPT have been set up and a capacity of about 10 million lines based on foreign and indigenous technologies now exists in the country

2 3 Transmission

With the introduction of value added services demand for Radio Transmission system has undergone a major change A large number of public and private sector manufacturers in collaboration with Telecom giants such as Lucent Fujitsu and Siemens have set up manufacturing facilities in India for digital transmission equipment Digital Microwave Radio Equipment has potential for large investments and high returns since most of the radio equipment frequency spectrum in microwave is still available for deployment

2 4 Terminal Equipment

With rapid growth in basic and Value added Services requirements of a wide variety of terminal equipment including telephone instruments ranging from normal push button to multi-line feature phones is bound to grow Production of telephone answering machines key telephone systems cordless telephones pagers cellular phones and hand sets for radio trunk services pay phones fax machines ISDN terminals line jack units data terminals and modems etc provide excellent opportunities to the intending investors

2 5 Telecom Network in India

2 5 1 *Current status*

1	Direct Exchange Lines	367 12 lakh
2	No of Telephone exchanges	31952
3	Switching capacity	402 60 Lakhs
4	Village Public Telephones	409919
5	Optical fibre	228795 RKms
6	Microwave	190592 RKms
7	TAX capacity	24 72 lakhs

2 5 2 Basic services

- Private operators started in 6 circles
- LOIs issued for further licensees

2 5 3 Cellular Mobile

- Services in 18 telecom circles and 4 metros
- 2 operators in each circle/metro
- Third operator (MTNL/BSNL) started providing services
- Subscriber base of 3 45 million
- Fourth operator – bidding in progress

2 5 4 ISP (Internet Service Provider)

- Over 460 licenses issued
- About 120 started services
- 3 million subscribers
- 240 clearances for International Data Gateways

2 5 5 National Long Distance

At present BSNL/MTNL is operating the service Private operators are expected to start service

2 5 6 Telecom Equipment

2 5 6 1 Production

In Rs Crores

Year	Amount
1996-97	8 300
1997-98	9,960
1998-99	10 000
1999-2000	10,800
2000-2001	11 000

Telecom Equipment
Production Break-up 2000-2001

In Rs Crores

Type of Telecom Equipment	Amount
Switching	2 500
Transmission	2 500
CPE	500
PIJF	3 500
OFC	500
Others (Access towers Power plants etc)	1 500

Telecom Equipment Exports

In Rs Crores

Year	Amount
1996-97	240
1997-98	296
1998-99	250
1999-00	180
2000-2001	390

Tele-density Projection

Year	Teledensity
2002-03	5 34
2003-04	6 6
2004-05	8 07
2005-06	9 69
2006-07	11 5

Physical Targets 2002-2007

Category	Target
Fixed/ Mobile Phones by BSNL/MTNL	434 lakh
Fixed/ Mobile Phones by Private Operators	400 lakh
Optical Fibre	302000 Rkms
Microwave	17000 Rkms
TAX lines	30 5 lakh
IN	104 lakh
ISDN	11 75 lakh
Satellite - Projection of Transponder requirement for sustaining existing services and their further growth Normal C-band - 61 Transponders Extended C-band –53 Transponders Ku - band - 89 Transponders Ka - band - 6 Transponders and MSS-(1+1) Transponder	

Fixed and Mobile Phones Projections

Year	Fixed Phones - Lakh Lines	Mobile Phones - Lakh Lines	Total - Lakh Lines
2002-03	44 8	67 2	112
2003-04	56 8	85 2	142
2004-05	68	102	170
2005-06	76	114	190
2006-07	88	132	220

Lines & Switching Capacity (Fixed Phones) Projections

Year	Fixed Phones - Lakh Lines	Switching Capacity - Lakh Lines
2002-03	44 8	56
2003-04	56 8	71
2004-05	68	85
2005-06	76	95
2006-07	88	100

Lines & Switching Capacity (Mobile) Projections

Year	Mobile Phones - Lakh Lines	Switching Capacity - Lakh Lines
2002-03	67 2	84
2003-04	85 2	106 5
2004-05	102	127 5
2005-06	114	142
2006-07	132	165

DEL Projection

In Lakhs

Year	No of telephone lines
2002-03	558
2003-04	700
2004-05	870
2005-06	1060
2006-07	1280

Fund Requirements Projection

In Rs Crores

Year	Amount
2002-03	22 400
2003-04	28 400
2004-05	34 000
2005-06	38,000
2006-07	44 000
Total	1 66 800

2 6 Research & Development

Research & Development activities are being carried out at various manufacturing units of India-based MNC s and a notable R&D is also being carried out at C-DoT whose Rural Exchanges are very successful in the world Market apart from IIT Chennai who have developed COREDECT Technology Application oriented R&D is also being carried out at ITI Bangalore IIT Chennai BEL Bangalore Shyam and HFCL at New Delhi

Department of Telecom at present is having a number of Training Centers all over India apart from IIT s and other Technical Institutes all over India Apart from this Indian companies engaged in Telecom sector are also venturing into Telecommunication training to fulfill the ever growing needs of expert professionals in this sector

2 7 Future Scenario Telecom Equipment Manufacturing Sector

The main objective of the 10th Five year plan is to make available reliable telecom services on demand even in rural areas at reasonable prices and to improve the tele-density in tune with NTP-99 NTP-99 emphasises the importance of convergence and the desirability of encouraging all technologies to achieve these objectives A substantial part of the telecom equipment deployed in the network is still imported Post liberalization scenario posed many challenges to the telecom R&D and manufacturing sector

3 Noteworthy Developments in Policies and Activities in the Electronics and Telecommunications Field

3 1 New Telecom Policy, 1999

The New Telecom Policy (NTP) 1999 was introduced to (i) create a modern and efficient telecommunication infrastructure by bringing about greater competitive environment (ii) protect defence and security interests of the country (iii) strengthen R&D efforts in the telecom sector and enable the Indian companies to become global players (iv) achieve efficiency and transparency in spectrum management (v) convert PCOs into Public teleinfo centers and (vi) encourage development of telecommunication in rural areas by making it more affordable

The new policy framework is meant to put a special emphasis on creating an environment which enables continued attraction of investment in the sector to create the required infrastructure by leveraging on technological development Specific physical targets have also been laid down in the policy to make the telephone available on demand by the year 2002 achieve a teledensity of 7 by the year 2005 and 15 by the year 2010 cover all the villages in the country by 2002 and provide reliable media to all the exchanges provide internet access to all district headquarters by the year 2000 and develop high speed data multimedia capability in all towns with a population of more than two lakh by the year 2002

Other significant developments in the area of Telecom are as under

- The Telecom Regulatory Authority of India (TRAI) was set up as per the TRAI Act 1997 as an independent and autonomous regulator of telecom services in the country and matters connected thereto

- There has been a rapid progress in telecom services particularly in the area of value added services through private participation

- In addition to promote the penetration of internet services in the country a dual role for DTS has been planned both as a National Internet Backbone (NIB) provider and as an Internet Service Provider (ISP) The NIB will provide easy internet accessibility to private ISPs besides enabling DTS to open Point of Presence (PoPs) all over the country The DTS MTNL and VSNL taken together operate about 75 Internet Nodes all over the country with about 4 00 lakh subscribers The customer base of the private ISPs is about 2 7 lakh The smaller ISPs would avail the desired connectivity to the internet at remote locations without seeking leased lines once the NIB is put into position As per the NTP-1999 the national long distance service is also being opened up

which will provide various options to the subscribers to make long distance calls through any operator

Further the entry of private operators in the Very Small Aperture Terminal (VSAT) arena in 1994 has encouraged corporate users to start relying on this technology This has emerged as a potent weapon for diverse applications such as data access voice and multimedia connectivity even in remote locations There are about 10 000 VSATs in the country The Ku-band has been opened up for the existing VSAT licensees In this area higher bandwidth support will be a crucial development

During the period August 1991 –October 1999 1106 proposals of domestic private investment of Rs 27 339 crores were approved for Telecom Sector During the same period 561 proposals of Foreign Direct Investments (FDI) of Rs 36 108 crores were also approved In terms of approval of FDI telecom sector is the second largest after energy sector

A package for migration from fixed licence fee to revenue sharing under the new Telecom Policy was offered to the existing cellular and basic service providers which has been accepted by most of them

The telecom network of the DTS and MTNL continued to grow during the current year Equipped capacity was increased to 29 4 million DELs touched a level of 24 3 million as on January 31 2000 There has been rapid growth of transmission network especially optical fibre systems which is used to connect telephone exchanges all over the country by reliable media As on January 31 2000 3 53 lakh Village Public Telephones (VPTs) were provided covering 58% of the total 6 07 lakh villages The total number of DELs in rural areas which were 3 6 million at the end of March 1999 are expected to touch a level of 4 5 million by the end of the current year

There has been a sharp expansion in the telecom network in the country in terms of volume contributed by newer technologies during the last decade In spite of the rapid growth and increase of tele-density from 1 per cent to 2 5 per cent during the last 5 years it is still low as compared to the world average of about 14 3 % Therefore it is a serious challenge for the country to achieve the required pace of telecom development to be at par with rest of the world This needs increased investments and upgradation of technology on a continuous basis to keep up with the trend the world over The policies and strategies adopted are expected to help the sector to overcome these challenges

Country Report

Indonesia

for

General Assembly of Asia Electronic Union

Bangkok 2001

by

O Siregar

Indonesia's Telecommunication Industry Restructuring and Reform

1 Introduction

As we look to the future in term of its technical possibilities and market opportunities, we can not ignore the magnitute of changes that will forthcoming We were faced with new challenges, new decisions and new vision Across the globe, former monopolies and state owned Telco's are scrambling to survive as market deregulate and competition heats up Traditional player must learn new rules while new entrants struggle to make powerful inroads in key markets A dizzying array of alliances and partnerships appear almost daily Company that master the delivery of innovative, high quality, cost effective service will prosper Those that can't will become victims of the shakeout

In Indonesia, telecommunication sectors are facing radical changes to their once-stable and protected domain The effect of deregulation, privatization and consequent unbridled competition are causing service provider or Telecom operator have to fundamentally rethink the way they do business
Already, the provision of telecommunication services in many countries has evolved from a moribund state bureaucracy to high competitive and fast changing market place This industry is undergoing a revolution in the way it is shaped, organized and operated

In September 1999, the Government of Indonesia (GoI) had recognized of what is going on around the world and had prepared the ground work of the sector

reform by issuing the new Telecommunication Act no 36/1999 and the Blueprint Policy, which become effective in September 2000

In the sector reform, the optimal structure for the service industry is to develop TELKOM and Indosat as two full-service providers competing against each other in all services nation wide, Duopoly solution

This report will not cover manufacturing, construction and consulting issues, since in the last 3 (three) years there is no significant development of Telecommunication infrastructure in Indonesia

2 Regulatory Changes

Telecommunication is vital and considered as agent of development of Indonesian economy Entering the 21st century, the new era of global markets where information is becoming an important part to the economy, as others, new material, labor and capital, telecommunication emerges as infrastructure paramount importance High quality, easy access of telecommunication services, represent a crucial toll for the development, a tool that spurs growth, promotes equity, exchange quality of life and integrate the vast archipelago nation At the end of Pelita V (1994), Indonesia teledensity (number of telephone line per 100 inhabitants) is only 1,3, the lowest among ASEAN countries, where teledensity of others are

- Malaysia 10,0
- Singapore 24,6
- Thailand 2,8

- Philippine 2,0

Considering those above situation, the government of Indonesia (GOI), plan to accelerate the development of Telecommunication sector and it had been made possible by adopting of the right set of policies, such as

- Giving a high priority to telecommunication development for the 2nd Twenty-five years plan (1994-2019), including financing, technology and human resources development, started in Repelita VI (1994-1999)
- Implementing a dynamic "leap frog" application of technology for network and services improvement
- Exploring creative financing mechanism through local, bilateral and multilateral sources
- Caring out deregulation and private participation in provision of telecommunication services
- Promoting local industries such as telephone exchanges (switching equipment), cables, transmission equipment and terminal equipment (CPE – Customer Premises Equipment)

In September 1999, the Indonesian government issued The New Telecommunication Law and Blueprint Policy on Telecommunications The policies in the Blueprint are intended to introduce competition into the sector investment, establish an independent regulator and ensure the accessibility of quality telecommunication services to all users We believe this has improved the regulatory framework

The government initiated these enlightened policies for a number of reasons First, the devaluation of the rupiah against the US dollar brought investment in telecommunication sector to a screeching halt in 1998, 1999 and 2000 This is because 80% of capital expenditure for the sector is in US dollars while all revenue is mostly local currency

Second, emergency financing from international agencies such as the IMF, the World Bank and the ADB were conditional to economic and structural reform of the whole economy This included telecommunications Besides, Indonesia signed the World Trade Agreement on Basic Telecommunication Services in 1998 and was bound to introduce a plan deregulating the sector The greatest factor that will ensure that these policies are initiated in the future is the growth of the Internet and the convergence of communication technologies The government realizes that unless there is radical and urgent reform in the sector, Indonesian telecommunication infrastructure will not be competitive and the economy will suffer as a result

The big flaw with the Blueprint is that it schedules the opening of the international and domestic long distance markets in 2005 and the opening of the local market in 2010 This preserves the exclusivity rights of TELKOM and Indosat to provide domestic and international services This is time frame is unrealistic given the rapid pace of technological development, the accelerated pace of deregulation in other regional markets and the fact that the WTO on telecommunications calls for the opening of telecommunications markets well

before 2010 The wording of the Blueprint is such that the opening of the market can be accelerated at the minister's discretion

The new Telecommunications Law is the legal documentation that validates the government's long-term reform and restructuring policies for the telecommunications sector Key differences between the new law and the old law include

- State owned companies are no longer the main providers of telecommunications services
- Private sector companies do not have to co-operate with state owned organizing bodies (TELKOM and Indosat) in the provision of fixed, international, mobile and other telecommunications services
- Telecommunications services are redefined into network provider and service provider, compared with basic and non-basic telephone services previously

The most positive feature of the new law is that it eliminates the Organizing Body (Badan Penyelenggara) concept This command economy concept formed the backbone of the old law and required that every private company providing a basic telecommunications service (fixed, IDD or mobile) co-ordinate with the two "organizing bodies", i e state owned TELKOM and Indosat, through a joint venture, revenue sharing or management agreement The concept has resulted in a myriad of cross-shareholdings and conflicts of interest

Under the new law, private companies, state-owned enterprises and co-operatives will be able to invest in the telecommunications sector without having to tie up with a government entity Investors will also be able to sue whatever business model they deem optimal Meanwhile, the definition of a telecommunication provider is broadened to network and service provider from basic and non-basic providers Foreign ownership is permissible at effectively 95%, from 35% previously All these measures are clearly intended to attract domestic and foreign private sector investment in the sector

A big positive change will be to reduce role of the government in setting tariffs Tariffs will be cost-based where an operator still dominates the market, using a price cap mechanism Tariffs will be set by the market in cases where operators have equal market power Allowing operators to set their own tariffs will eliminate uncertainty over government interference This also implies that deregulation of the cellular sector is within the framework of the new law

A less visible but equally progressive change to the law is that it recognizes that liberalization is the key to growth in the sector The old law reasoned that because supply of telecommunications services was limited, the demand was great by default It did not recognize the role that technology and innovation play in expanding telecommunications services This change in policy philosophy is positive for the sector

3 Industry Restructuring and Reform

a A Messy Structure

Indonesia's telecommunication sector suffers from a lack of economies of scale, rampant conflicts of interest, a weak regulatory body and an economically unattractive tariff structure The chaotic structure of the sector is largely a result of protectionism, anti-competitive legislation that required every domestic telecommunication service provider to co-operate in some way with the domestic incumbent Telkom and international service providers with international incumbent Indosat Consequently, operators are divided according to service and cannot derive any economies of scale

On a macro level, there is a massive conflict of interest between the government as shareholder and regulator of Telkom and Indosat This hampers the formation and implementation of fair and credible policy On a micro level, there are numerous operators that are owned by both Telkom and Indosat These operators struggle to implement sensible strategies because shareholders are biased towards protecting the existing or future interest of the incumbents

The other essential ingredient is the establishment of an independent regulator that is legally and morally empowered to objectively and fairly implement and enforce pro-competition policies This will be a major challenge There is a serious shortage of qualified labor to staff such an organization and there is a very weak tradition of independent institutions in Indonesia The fact that foreign investment will play a critical role in restructuring the sector into the two full-service models (through strategic investments in Telkom and Indosat) highlights

the importance of a strong regulator If the world continues to perceive that Indonesia's telecommunications regulator is weak and incapable of making unbiased decisions, then foreign investment will stay away and the sector will suffer The first task of an independent regulator will be to implement a tariff policy that encourages investment and eliminates uncertainty over future tariff increases The map of the existing Indonesian telecommunications services Industry is shown in Attachment 1

b Duopoly-the Optimal Solution for Reform

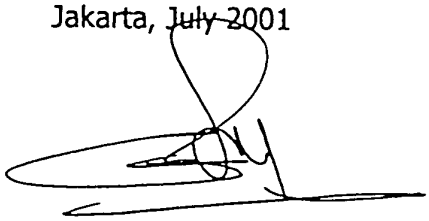
The optimal structure for the industry reform is to develop TELKOM & Indosat as full-service providers competing against each other in all services nation wide

The recently issued Telecommunications Blueprint recommends competition in international and domestic long distance in 2005 and competition in the local loop in 2010 Waiting this long will encourage bypassing and will destroy the value of telecommunications asset In August 2000, GoI decided to accelerate the termination of exclusivity right (monopoly), by issued new licenses to Telkom and Indosat, become two Full Service Providers, comply with the new Law and followed by unwinding of Telkom's and Indosat's cross-shareholdings recently Although these measures will generate positive results for shareholders, investors and consumers, anti-reform elements in Telkom and within the government oppose the measures because they represent a threat to the incumbents dominant market position Failure to implement these measures will destroy value of the sector assets and seriously set back the development of the sector and recovery of the economy Delaying the restructuring of the sector will restrict

accessibility and slow the expansion of the Internet in Indonesia This means that Indonesia is at risk of falling behind the rest of the world in developing an Internet and information-driven economy This will have negative consequences for the country's economic recovery and competitiveness Meanwhile, the weak regulatory framework allows private companies to bypass the incumbent This simply destroys value for existing operators and will lead to an increasingly fragmented market Although the numbers of Internet users and subscribers are expected to increase sharply over the next few years, this growth will remain far below its potential unless accessibility can be improved There are currently around 30 active ISPs in Indonesia and around 1m Internet users

In addition the enhancing the value of Telkom and Indosat, restructuring of the sector become two Full service provider, will promote efficiency and innovation, and enhance valuations All of those will improve investor confidence and ultimately benefit the Indonesian consumer

Jakarta, July 2001



D Siregar

ELECTRONICS AND TELECOMMUNICATIONS IN JAPAN

July 31, 2001

THE ITU ASSOCIATION OF JAPAN, INC

CONTENTS

ELECTRONICS

TELECOMMUNICATIONS

ELECTRONICS

General Overview of Japan's Electronics Industry

Production Situation

Production in the electronics industry for 2000 (in the calender year) was the highest yet achieved and exceeded ¥26 trillion for the first time The actual amount was ¥26 199 6 billion which was 111 3% of the amount for the previous year This growth can be attributed to the increasing global demand for IT (Information Communications Technology) The products which showed the most remarkable increases in production terms were in the IT equipment category such as mobile phones and personal computers Relative to these trends the production of electronic parts and electronic devices also showed remarkable increases Capital investment by all the major semiconductor manufacturers was the highest yet recorded

The total machinery industry production for 2000 was ¥75 382 8 billion This figure was 107 7% of that of the previous year which showed an increase for the first time in three years As has been mentioned above the electronics component which showed a growth of more than 10% led the increase this was the highest percentage of all the machinery industry categories and accounted for 34 8% This figure is 1 5% higher than that of the previous year and the growth rates were higher than were those for transportation machinery over the two consecutive previous years

Consumer electronics production for 2000

The Component Ratio of the Electronics Industry Production against that of the Machinery Industry Production

Unit billion yen ratio %

Year	Total production of the machinery industry	Ratio to the previous year	Electronics industry	Ratio to the previous year	component ratio	Transportation machinery	Ratio to the previous year	component ratio
1994	69 598	98 6	21 575	102 7	31 0	22 771	94 5	32 7
1995	71 883	103 3	22 738	105 4	31 6	22 814	100 2	31 7
1996	74 640	103 8	24 351	107 1	32 6	23 410	102 6	31 4
1997	80 134	107 4	25 871	106 2	32 3	25 553	109 2	31 9
1998	72 523	90 5	23 449	90 6	32 3	23 465	91 8	32 4
1999	69 984	96 5	23 532	100 4	33 6	22 524	96 0	32 2
2000	75 383	107 7	26 200	111 3	34 8	23 800	105 7	31 6

Source Ministry of Economy Trade and Industry Statistics
Note Based on the statistics system of the Liaison Council of Five (Liaison Council of Electronics Information and Communication Related Industry Groups)
All figures related to production in the following pages are based on this statistics system

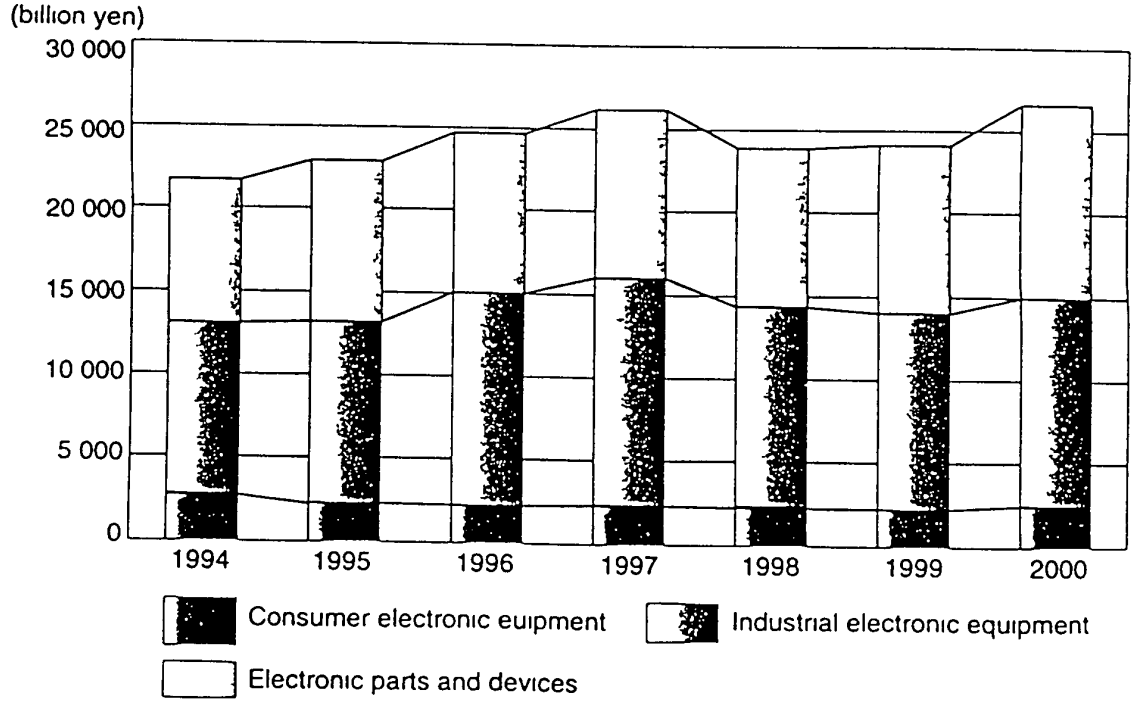
was ¥2 196 6 billion This figure is 109 1% of that of the previous year and showed an increase for the first time in three years This growth was led by digital AV (Audio Visual) equipment such as digital video cameras DVD (Digital Versatile Disc) video players digital still cameras and car navigation systems Above all digital still camera figures which were included in the statistics for the first time in 2000 showed remarkable results The yen based production figures for digital still cameras were higher than those for color TVs and came second to those for video cameras On the other hand the figures of conventional products such as color TVs VCRs (Video Cassette Recorder) and audio equipment which were manufactured principally outside Japan showed successive decreases

This category percentage continues to show decreases over the entire manufacturing output due to a shift to overseas production since the Plaza Agreement was made in 1985 and the figure in 2000 was 8 4% which is the lowest ever

Domestic shipments of consumer electronic equipment was ¥2 255 billion 102 9% of the previous year and the percentage showed an increase over two consecutive years The equipment showed sound growth included AV equipment such as DVD video players and color TVs (these can receive the BS digital broadcasting service that started in 2000) and the car AVC (Audio Visual Communication) equipment such as car navigation systems However the yen-based figure for audio equip ment showed decreases due to the reduction in prices

The production of industrial electronic

Fig 1 Transition of Electronics Industry Production (in yen)



Source Japan Electronics & Information Technology Industries Association

equipment for 2000 was ¥12 244 3 billion This figure was 106 4% of that of the previous year and showed an increase for the first time in three years This increase can be attributed to the remarkable growth in the sales of IT equipment such as mobile phones and personal computers as well as the significant growth in measuring devices such as those used in semiconductor and IC manufacture These trends were a result of the increased capital investment in the manufacturing facilities for semiconductors On the other hand the production of office equipment continued to decrease due to the shift to overseas manufacturing as well as to a slump in the export of copiers which are the principal item in this category

With regard to the production figures for the last seven years the figure for this category for 2000 is ranked third after those of 1997 which is ranked first and 1996 which is ranked second However the percentage of industrial electronic equipment over all the machinery industry categories decreased to 46 7% and the production figures have now been at less than 50% for two consecutive years

Production of industrial electronic parts and devices in 2000 was ¥11 758 7 billion which was a higher figure than had been previously achieved This figure is 117 5% that for the previous year and the percentage has shown an increase for two consecutive years This was due to an increased demand for IT equipment and digital AV equipment as well as to the increases in exports to Asian countries etc The production of both electronic parts and devices were the highest so far achieved The figure for electronic parts was ¥4 024 2 billion and 111 0% that of the previous year and for electronic devices was ¥7 734 5 billion 121 1% that of the previous year Above all semiconductor devices ICs and passive components showed significant growths of as much as 20% over the previous year which contributed to the increase in the percentages of electronic parts and devices in all the electronics industry categories of 44 9%

TELECOMMUNICATIONS

The Info-communications Industry

Gross Domestic Output

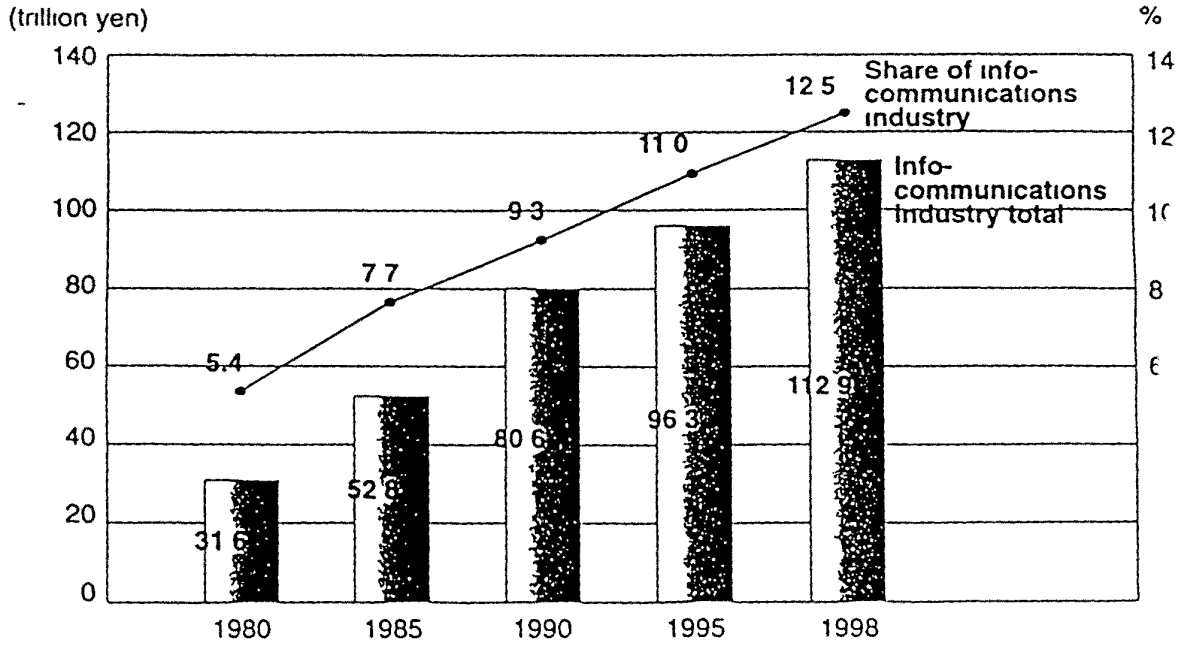
The 1998 real gross domestic output of the info communications industry amounted to ¥112 9 trillion accounting for 12 5% of total real gross domestic output a trend that indicates the relative strength of the industry amid several years of a sluggish domestic economy (Fig 2) A comparison of real gross domestic output statistic across various industries indicates that info-communications moved ahead of the wholesale sector in 1985 and exceeded the construction sector in 1995

The Telecommunications Industry

1 Number of Carriers

During fiscal 1999 1 218 new carriers began operations in the Japanese telecommunications sector there were 903 new carriers in fiscal 1998 The newcomers included cable TV operators acting as Type I carriers as well as Internet service providers (ISPs) which are Type II carriers The number of such cable TV operators and ISPs have been increasing from year to year 94 companies were granted licenses as Type I carriers during fiscal 1999 giving a total of 249 such carriers at fiscal year end

Fig 2 Trends in Real Gross Domestic Output of the Info-communications Industry



Source MPT *Input Output Tables* Management and Coordination Agency *Input Output Tables (linked tables)* Ministry of International Trade and Industry

2 Revenues

Total fiscal 1998 operating revenues of Type I telecommunications carriers (excluding revenues from non-telecommunications operations) amounted to ¥11,571 billion, up 1 7% year over year This breaks down as ¥11 186 6 billion (up 2 6%) for domestic carriers and ¥384 4 billion (down 18 9%) for international carriers

Advancing Info-communications Technology

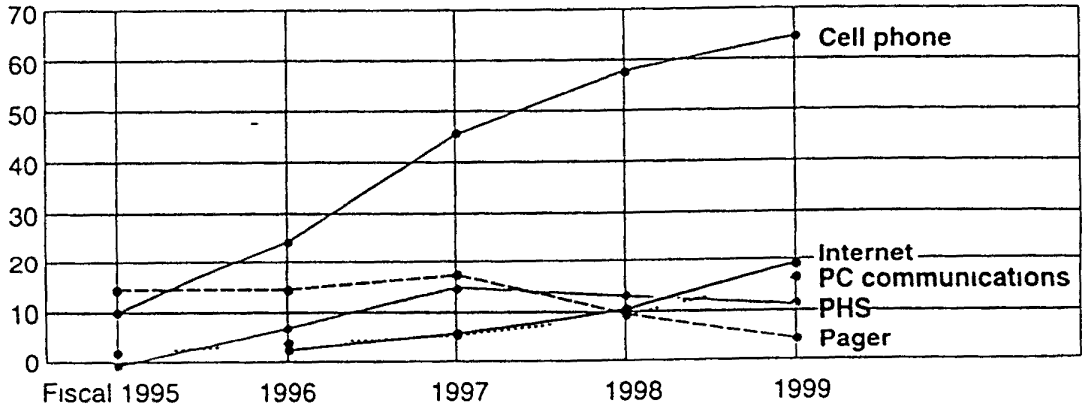
1 IT in Business

The use of information equipment and services is steadily increasing in the business world where the Internet usage rate stood at 88 6% in fiscal 1999 the e mail usage rate at 86 0% and the LAN usage rate at 90 3% the first time this value has exceeded 90%

2 IT in the Home

The same is true of ordinary households where the cell phone penetration rate is 64 2% and the Internet penetration rate is 19 1% (Fig 3) Average household spending on telecommunications and broadcasting increased between fiscal 1998 and fiscal 1999 In particular average monthly spending per household on mobile telecommunications fees exceeded ¥10 000 for the first time Overall household spending has been essentially flat since 1990 but spending on info-communications products and services has been rising consistently since 1995 (Fig 4)

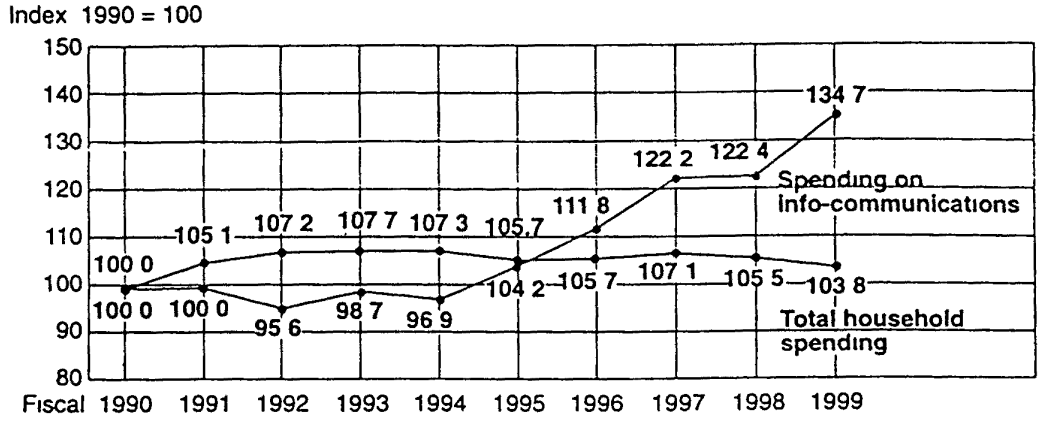
Fig 3 Percentage of Japanese Households Subscribing to Communications Services



	Fiscal 1995	1996	1997	1998	1999
Cell phone	10 6	24 9	46 0	57 7	64 2
PHS	0 3	7 8	15 3	13 1	11 5
Pager	15 0	15 0	17 4	10 1	4 8
PC communications	2 6	4 6	5 7	10 2	16 3
Internet	—	3 3	6 4	11 0	19 1

Source *Communications Usage Trend Survey (Household Section)* MPT

Fig 4 Trends in Household Spending on Info-communications and Total Living Expenses



Source *Family Income and Expenditure Annual Report*, Management and Coordination Agency
Family Income and Expenditure Survey Management and Coordination Agency

3 IT in the Public Sector

3 1 IT in the Government Ministries and Agencies

The fiscal 1999 edition of Basic Survey on Administrative Informatization compiled by the Management and Coordination Agency found that each employee of internal bureaus and departments of the ministries and agencies had access to almost one computer on average (to be exact 0 98 computer) and that the LAN connection rate was 93 2% Additionally in March 2000 an electronic document inter change system between ministries/ agencies was put into operation within the Kasumigase ki WAN

3 2 IT in Local Government

Survey on the Use of IT by Administrative Workers compiled by the Ministry of Home Affairs reports that the number of PCs set up in local government offices amounted to 507 504 as of April 1999 up 36 8% year over year and that about half of these PCs are con nected to networks

3 3 IT in Education

IT is being used more and more in a variety of educational settings Waseda University for example is implementing a Network Classes in which lectures are distributed over the Inter net 28 universities (as of January 2000) are participating in el Net Open College in which their public lectures are distributed over a spe cial communications network of the Ministry of Education el Net to regional social educa tion institutions at no charge

3 4 IT in Medicine Public Health and Social Services

The development and diffusion of IT has brought to reality telemedicine a system in which medical personnel can send video

images of patient symptoms to physicians at remote locations and obtain diagnoses and other guidance Asahikawa Medical College Hospital, in Hokkaido has set up a telemedicine center which makes info-communications equipment available to all medical departments at the hospital

Info-communications in the 21st Century

1 The IT Revolution

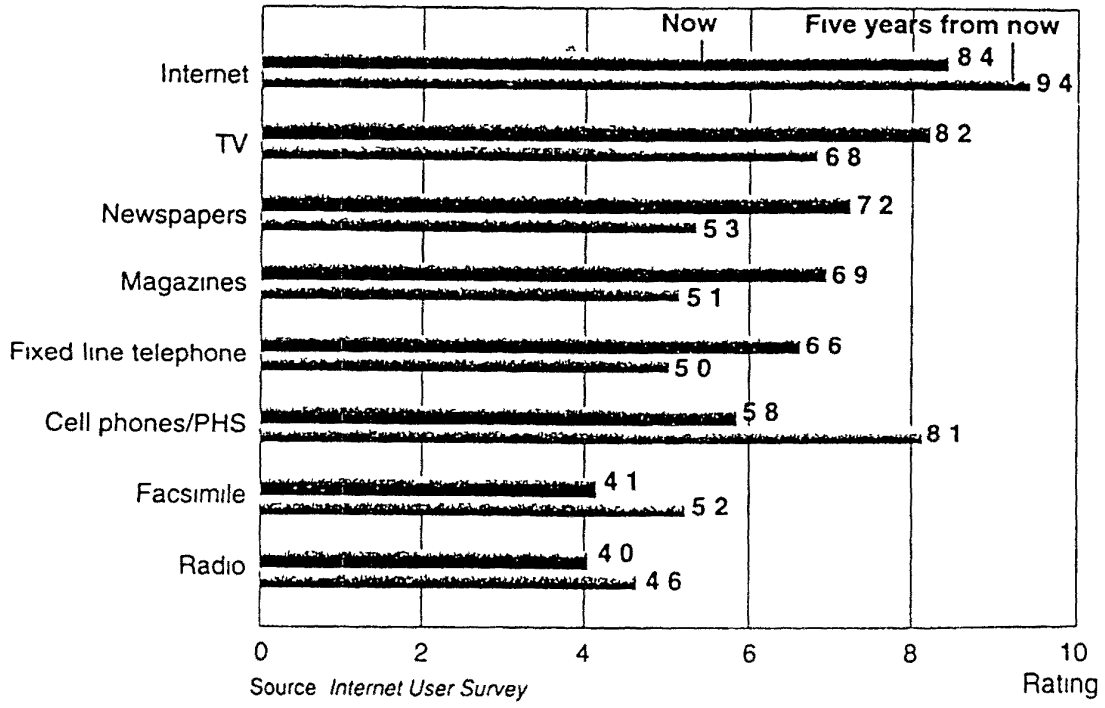
The world is facing a big change in industrial civilization the info-communications technology (IT) revolution The IT wave most recently exemplified by surging popularity of the Internet and mobile telecommunications is hastening the paradigm shift already in progress from an industrial society to an information society

At the moment however economic revitalization is a major concern in Japan, as are the aging of society globalization diversifying lifestyles and the environment All of these are problems that need to be dealt with over the medium and long terms, and many believe that IT will play a crucial role in solving them

2 Expectations for New Info-communications Services

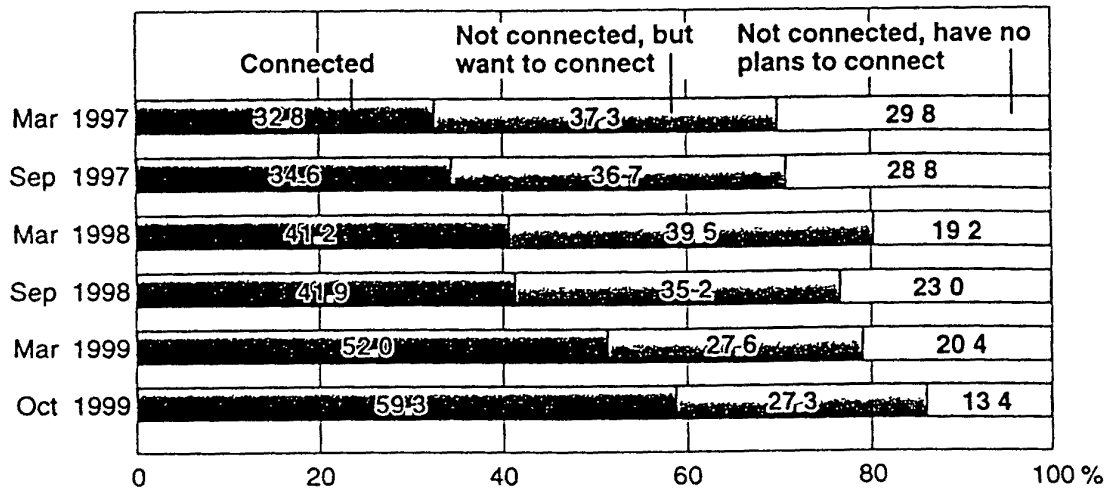
Internet User Survey indicates that the Internet is the most important info-communications medium in present daily life (more than even TV) as indicated by a score of 8 4 on a scale of 1 to 10 The score rises to 9 4 when survey respondents consider their daily lives five years

Fig 5 Importance of Info-communications Media in Daily Life



Source *Internet User Survey*

Fig 6 Home PC Connection Rates



Source *Study on the use of information & telecommunications equipment and services* Nomura Research Institute Ltd

from now while cell phones/PHS scored 8 1 (Fig 5) Furthermore Study on the use of information & telecommunications equipment and services reports that about 60% of people with PCs in their homes are connected to net works and that only very few people will have stand alone terminals in the future (Fig 6)

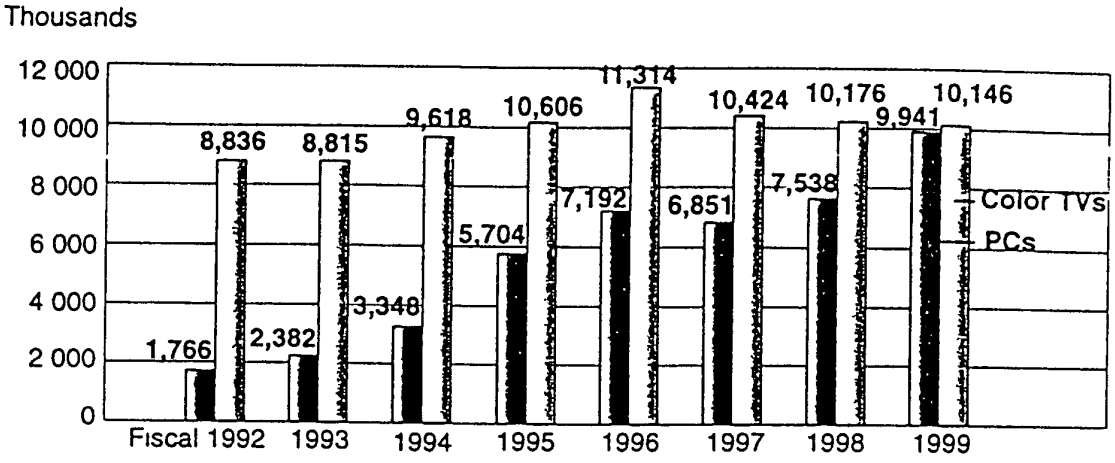
3 Info-communications Trends

The Internet and mobile telecommunications are rapidly gaining in importance in Japan s info communications sector PC shipment volume in Japan grew 31 9% year over year in fiscal 1999 reaching 9 941 000 while shipments of color TVs slipped 0 3% to 10 146 000 units (Fig 7) The total fixed line phones of NTT East and West amounted to 55 45 million subscription while figures indicate a total of 56 85 million mobile telecommunications handsets (portable cell phones automobile cell phones and PHS handsets) in use at that time meaning that the formers were overtaken by the latters (Fig 8) Moreover roughly a year after NTT DoCoMo launched its i mode service (which allows users to access the Internet via cell phone) in 1999 some 4 47 million subscribers had signed on (as of the end of February 2000) making the company Japan s leading Internet service provider (ISP) in terms of number of contracts (Fig 9)

4 The Internet

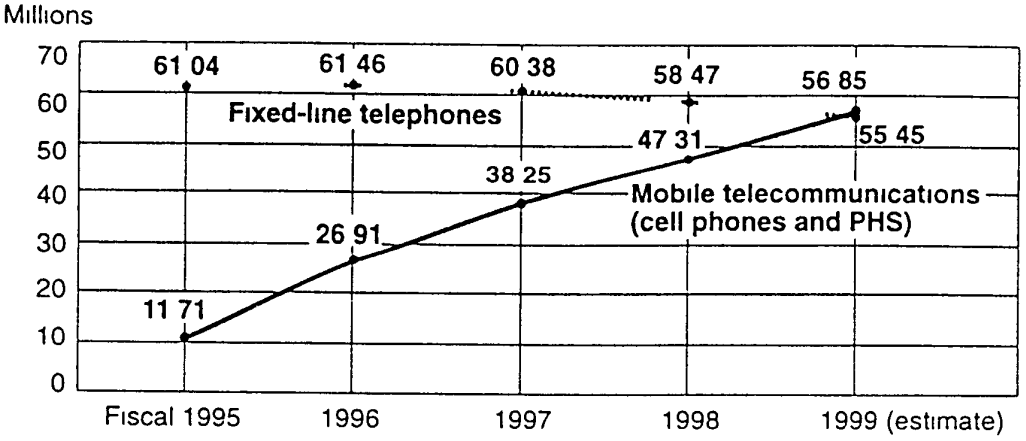
As of the end of 1999 there were estimated some 27 06 million Internet users in Japan in the 15 69 age range an increase of 59 7% year over year The outlook for 2005 is for 76 7 million users The Internet reaches 19 1% of Japanese households 31 8% of establishments and 88 6% of enterprises and these penetration rates are expanding (Fig 10)

Fig 7 Domestic Shipment Rates of PCs and Color TVs



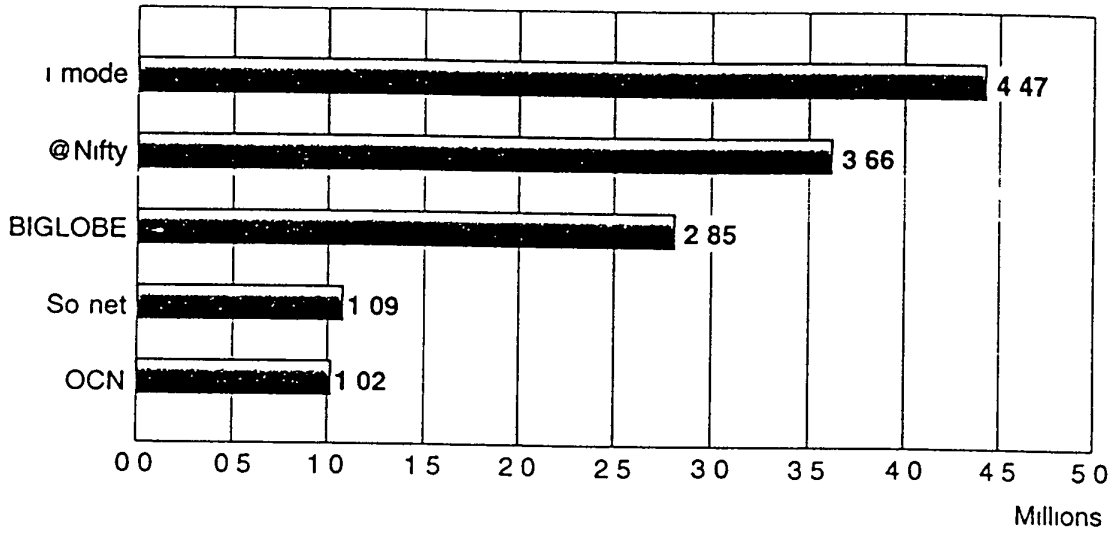
Note Figures for color TVs include Hi Vision and liquid crystal TVs
Sources Electronic Industries Association of Japan Japan Electronic Industry Development Association

Fig 8 Number of Contracts for Mobile Telecommunications and Fixed-Line Telephones



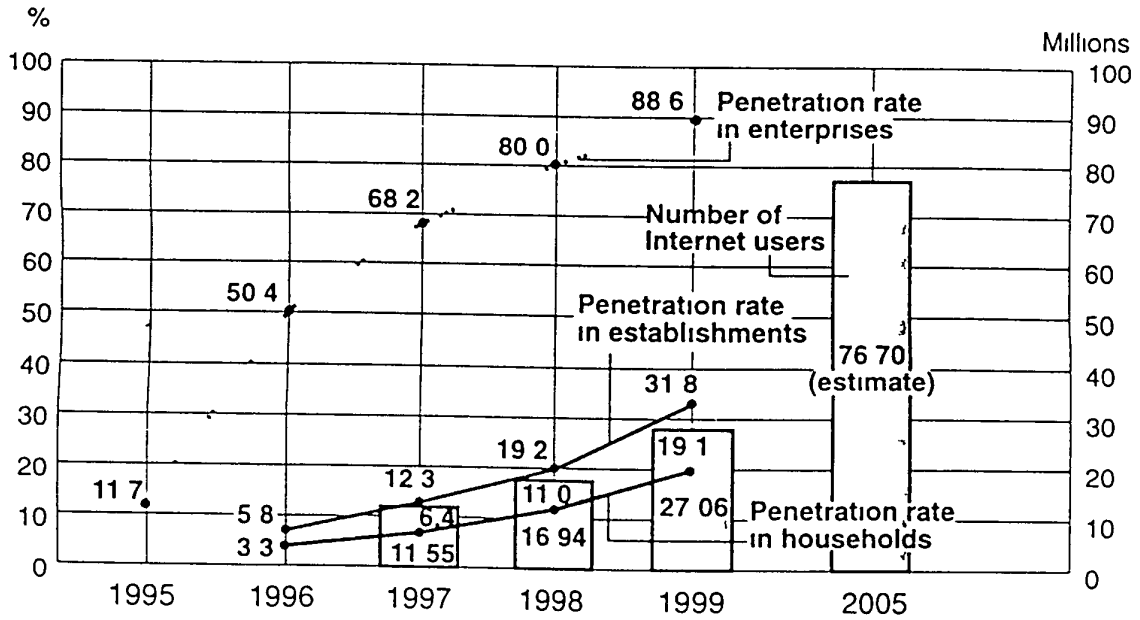
Note The number of fixed line telephone contracts is the total amount of NTT East and West
Source MPT

Fig 9 Number of i-mode Contracts and Contracts with Major ISPs



Note BIGLOBE as of 1999 end So net as of the end of January 2000 others as of the end of February 2000
Source Compiled from data of the respective carriers

Fig 10 Trends in Internet Penetration

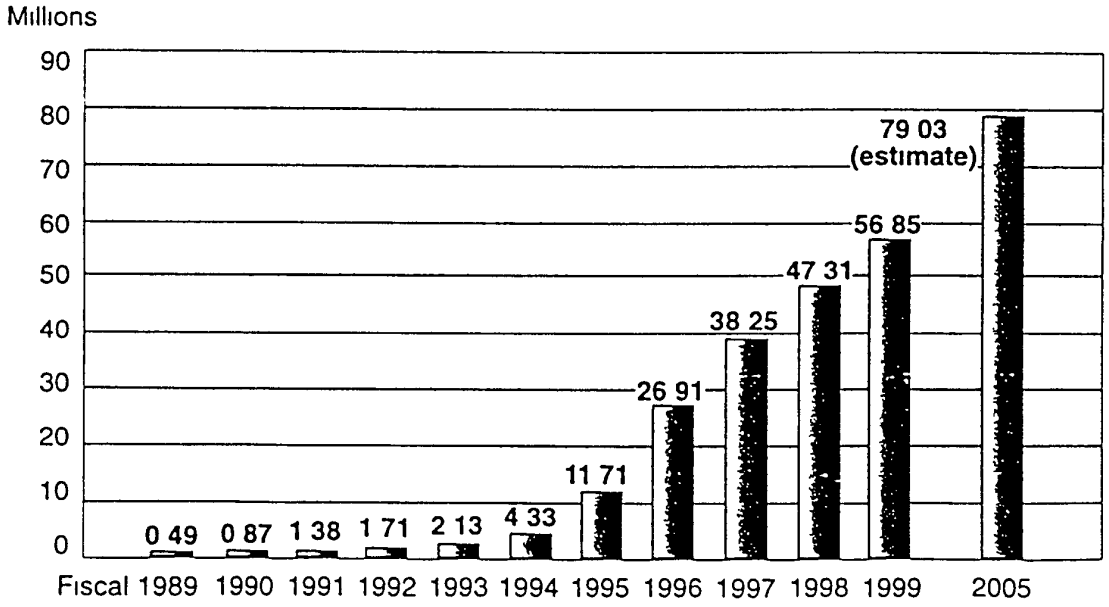


Notes 1 Establishment is defined as a single physical location (excluding postal services and communications business) with five employees or more where the economic activity is conducted That is usually called a store a factory an office or the like
2 Enterprise refers to business (excluding agriculture forestry fisheries and mining industries) with 300 employees or more
Sources *Survey of Info communications Usage in Daily Life Communications Usage Trend Survey* MPT

5 Mobile Telecommunications

In its September 1999 report the Next-Generation Mobile Telecommunications System Committee of the MPT's Telecommunications Technology Council projects that the total number of future public land mobile telecommunication service subscriptions in Japan including cell phones (portable and automobile) and PHS but not limited to subscriptions for IMT-2000 service, will number 64 5 million at the end of fiscal 2000 and 81 million at the end of fiscal 2010 Interpolating from these figures gives an estimate of about 79 03 million at the end of fiscal 2005 (Fig 11)

Fig 11 Mobile Telecommunications Service Contracts Past Trends and Future Outlook



Note Figures include cell phones (portable and automobile) and PHS and are as of fiscal end The projection for fiscal 2005 includes IMT 2000
Source MPT

COUNTRY REPORT

FOR

THE 17TH GENERAL ASSEMBLY OF AEU

SUBJECT ,

ECONOMIC COOPERATION BETWEEN SOUTH AND NORTH KOREA ON IT SECTOR

AUGUST, 2001

ELECTRONIC INDUSTRIES ASSOCIATION OF KOREA

CONTENTS

Economic cooperation between South and North Korea on IT sector

1 Inter Korean trade for electric and electronic goods

In the year of 2000 amid thawing relationship more electric and electronic goods have been traded between two Koreas

According to a survey conducted by the Korean Customs Offices the total inter Korean trade volume increased by 28 percent to 425 million dollar last year

In particular the trade of electric and electronic appliances more than tripled from the previous year recording 36 3 million dollars

Among items from the North color TVs ,radios and other electric and electronic products almost doubled to 8 25 million dollars from 2 83 million dollars previous year while mineral and iron & metal products decreased by 79 percent and 27 percent respectively

Among items sent into the North electric and electronic goods significantly increased by more than 3 8 times to 28 million dollars last year from 7 3 million dollars in 1999

2 OEM Trade

Trade with North Korea in the form of processing on commission is growing significantly around electronic goods

According to report titled the "OEM Trade with North Korea Trend and Prospects by Korea Trade Association published in last February it is analyzed that OEM trade with North Korea once dropped to 10 2 % in 1998 over the previous year, has grown at the rate of 40 3%(worth 99 million dollar) and 29 7%(worth 129 million dollar) respectively in 1999 and 2000

As for the growth rate in OEM goods brought back into South Korea it showed a high growth rate of 29 9% and 33 9% in 1999 and 2000 respectively, also the rate of electric and electronic goods to the whole OEM goods brought in was 5 3%in 1999 but doubled to 11 4% in 2000

As for the number of OEM items it increased from 144 in 1998 to 185 in 1999 and 257 in 2000 diversifying from textile goods to electronic/electric components and finished goods software and processed food

The number of OEM firms has also been increased from 72 in 1998 to 151 in 2000 taking up 23 2% of total number of trading firms

3 Trade mission

A civil trade mission comprising 8 IT experts visited North Korea last February for the first time in the history of South and North Korean economic cooperation to discuss issues including opening of IT training center in Sinuiku/Dandoong area South and North Korea joint software development and opening of virtual meeting places for scattered families in both countries

By invitation of Chosun Asia Pacific Peace Committee the civil trade mission comprising 8 IT experts from Korea Network Information Center and 6 IT companies visited various places including Association of National Economy Cooperation

Chosun Science Center, Socio Science Center, Chosun Computer Center Kim Il Sung University and Pyongyang Informatics Center in North Korea

During the 5 day visit the mission discussed comprehensive IT related matters such as exchanges via internet and location of South Korean IT firms in N Korea

Wrapping up the itinerary, the two Koreas has agreed to undertake following activities opening of IT training center at Sinuihu/Dandoong area campaign to send IT related books to N Korea, joint S/W development merchandizing and distribution of N Korea S/W in S Korea N Korea s participation to Unified IT forums

4 Exchange of books on IT

For the first time since the end of Korean war North Korea has asked South Korea for books on IT

Pyonyang Information Center(PIC) the North s major IT research institute has made an official request for books on IT such as computers network programming, multimedia fonts and codes through the Information Technology Forum for unification (ITFU)

The first batch of the books will be sent to the North in the foreseeable future

The exchange of books between the two Koreas for the first time is expected to improve the inter Korean cooperation of the IT sector now underway in many parts by providing practical information to the North

Besides the list of the books the North Korea asked for reveals the current situation and the level of the North s IT industry

Furthermore the South could make the North know about its IT industry trend laying foundation for an improved exchange in the IT sector

From the long term point of view in particular the book donation is also expected to make North Korean experts exposed to the South Korean culture and grammar, which is the biggest obstacle to the standardization of IT between two Koreas

It would also help integrate the two different grammatical systems of hangul of South and Chosungul of North Korea

The books North Korean demands encompass about 200 kinds and divided into three categories computer including network, programming, computer graphic artificial intelligence, multimedia and code and font

They cover hardware and software books that are drawing attention in South Korea

Most of the books have been published recently though some of them were published in the 80s and the early 90s

What is noteworthy is that the North has similar interest in the IT to the South and it does not lag far behind other countries in the global IT trend

5 Civic inter Korean IT cooperation council

The Ministry of Information and Communication is pushing ahead with forming South North Civic IT Collaboration Conference in order to drive inter Korean IT exchange and cooperation in civic information and communications field systematically

As an inter Korean IT cooperation communication channel South North Korea Civic IT Collaboration Conference comprises non governmental organizations is expected to play a major role in consulting North Korean entry measures for IT related industry or organizations and asking the government for necessary support

MOIC plans to offer various financial and systematic support for those who seek and push ahead with joint projects through South North Korea Civic IT Collaboration Conference

6 Software

It is expected that South and North Korea will produce tangible results in the software fields since last year

According to the authorities in the field, domestic software companies which are promoting business projects in North Korea such as Samsung Elecronics Elcyber and Joongwon plan to increase exchanges in the field of software which began full scale last year

Areas of cooperation include, joint development service development in North Korea and importation of items produced in North Korea

Since March 2000 Samsung Electronics is operating a joint development center in Bejing with the North Korean Korea Computer Center (KCC)

This year Samsung began importing 7 contents including baduk (Korean checkers) janggi(chess) cusine cheonhajeil(peerless in the world) and kangsan (rivers and hills)

These items are sold by online shopping mall

The company is also working on five joint development projects including document summary program and mobile solution

In addition Samsung is trying to expand cooperative ventures in the fields of embedded linux multimedia software for home use

It has already requested application development projects for cyber pet and PDA applications

7 Computer network in North Korea

Recently in North Korea, Kwang myung Science Technology Computer Network, which covers the entire country is expanding rapidly

The number of terminal computer users that joined this network increased by 1 7% compared with last year and the size of the network grew up to 4 6% during the last 2 years

According to the Pyongyang Broadcast System 'Kwang myung contains not only the major networks of the Central Science and Technology Company which specializes in the services of science and technology data but also those of Kim Il sung University, People s Great Learning Community Science Invention Center Central Facility of Commission of Ministers and each province s local communities

This broadcast also reported that This Kwang Myung' Computer Programme Network is composed of Science and Technology Data searching system Computer Posting system Computer Information system Homepage Searching system and Data sending system

The network members can search in the database of Central Science and Technology Company and look for data in many of each bureau s networks by accessing remotely at any time and can also correspond various kinds of documents data for solving urgent problems like the mutual decisions by government party

8 Special industrial zone

Shinuiju is very likely to be designated as another site for export centered special industrial zone by North Korea after Chairman Kim Jon il visited Sinuiju last January in the wake of his five day visit to China

When the North Korean leader visited China, he spent nearly all of his time touring companies and discussing economic issues in Shanghai, China s commercial hub
Specifically, Kim toured joint venture enterprises and stock exchange in Shangai as well as the new Pudong commercial development zone

After his visit to China Chairman Kim gave strong signals that he hopes to begin opening his country s isolated controlled economy to outside investment and market forces
Kim is quoted to have stressed that the big changes that have taken place in China, and Shangai in particular since China began its reform and opening up have proved the policies pursued by China are correct
Through his visit to Shangai and Pudong commercial zone Chairman Kim might have chosen Sinuiju a light industry zone as the most probable site for a special economic zone
In Novemver 1999 Kim strongly suggested that the Hyundai Group of South Korea as a potential developer of Sinuiju as a site for special commercial zone

An industry expert said that Pyong/nampo, Haeju/Kaesong and Sinuiju are the most favored regions by foreign enterprises for investments and Sinuiju is most likely to be designated as another special economic zone by the North

Country Report

On

Electronics & Telecommunication Activities & Development in Nepal

Prepared by

Computer & Electronics Information Center

(CEIC)

Kathmandu, Nepal

Wednesday, June 20 2001

1 Geographical status of Nepal

Nepal is a landlocked country It is situated in the northern hemisphere between 80 4 East and 88 12 East longitude, and 26 22 North to 30 27 North latitude Its area is 147,181 Sq Km It is surrounded by India in East, west and south and by China in the North 70% of the total area is covered by hills and mountains and remaining is plain area It is divided into 5 development regions, 14 Zones and 75 districts 58 municipalities and 3914 VDCS for the administration The population of Nepal is 25 millions (Estimation of Central Bureau of static)

2 Historical background of Telecommunication in Nepal

At first telecommunication was called Mohan Aakashbani by the name of Rana Prime minister Mohan Shamsher Jung Bahadur Rana Then after it developed it's area and it had got the form of public corporation in 1975 to 2000 It had celebrated its silver jubilee During this period the Nepal Telecommunication Corporation (NTC, which has monopoly in Nepal for Telecommunication) has achieved some main milestones

Milestones	*1975*	*2000*
No of Telephone (Capacity)	10 700	2,82,575
No of Telephone(Distributed)	7000	252 791
Density of Telephone	0 076	1 12
Telecommunication	0	75
Village Development Communities (With Telephone facilities)	0	1530
Total Revenue (N C)	3100000	5 30,17 00,000
Return on investment	8 05,00,000	21,31,20,00,000
Tax paid	0	66 43,00,000

The above data is the comparison study between when the telecommunication establishment with the form of public enterprises and during it s 2 ½ decades programs Except this the following data shows the process of development

Telecommunication distributed to the General public	1995
Establishment of automatic Telephone exchange	1962
Establishment of Internal Microwave Telephone Link	1974
Establishment of satellite	1982
Establishment of Digital telephone exchange	1983
Revised Transmission Link completely to Digital System	1996
Fully establishment of Digital exchanging system all over the country	1998
Establishment of Cellular Mobile	1999
Establishment or introduce of E-mail and Internet	1999
Establishment of Regional Satellite network	1999
Establishment of SD4 Optic fibre network	1999
Establishment of GSM cellular Mobile with International roaming System	1999

3 Rules and Regulations

The following are the steps on policy

1	Telecommunication dept charged into Nepal Telecommunication Community	1969
2	Nepal Telecommunication Community Changed into public enterprise	1975
3	Announce of Communication policies	1992
4	Telecommunication Act 1996	1997
5	Establishment of Telecommunication authority	1997
6	Decision of govt to change NTC in to company	1998
7	Announce of Special Village Tele programs	1999
8	Targets of NTC at the end of 9th plan & 6th Tele comm projects	

- ✓ The capacity will increase to 600 thousands
- ✓ To provide Mobile facility to the main Utilities & the area (nearby) of east-west highway
- ✓ To establish 2nd satellite
- ✓ To provide at least 2 lives for a VDC etc

4 Manpower in Electronics and Telecommunication

Especially there is lack of efficiency manpower in electronics and communication but people are skilled from foreign country and they are serving the country next of the Universities of Nepal

Tribhuvan University, Kathmandu University, Purbanchel University and Pokhara University are providing good education in electronics and communications

These there are so many institutions, which have great role to develop and growing the manpower skills

5 National policy for Electronics and Telecommunication in Nepal

The government of Nepal has the following policies for Electronics and Telecommunications in Nepal

1. The Radio Nepal is under the control of government
2. ' The Nepal Television ' is also under the control of government
3. The NTC is also under the control of government
4. Frequency Modulation (F M) stations are allowed in private sector
5. Any person from private sector can run TV Transmission after the required permission and procedure from the government
6. Any person or organization can run industries and other business organization Based on Electronics and Computer communication on behalf of government permission

6 Organization related to the National level for Communication

Organizations	*Services*	*Category*
NTC	Telephone / ISP	Govt
Radio Nepal	Radio Broadcasting	Govt
NTV	Telecasting	Govt
Nepal Channel	Telecasting	Non- Govt
Kathmandu FM	FM Broadcasting	Non- Govt
Kantipur FM	FM Broadcasting	Non- Govt
Sagarmatha FM	FM Broadcasting	Non- Govt
Classic FM	FM Broadcasting	Non- Govt
Metro FM	FM Broadcasting	Non- Govt
Manakamana F M	FM Broadcasting	Non- Govt
Hits FM	FM Broadcasting	Non- Govt
Koshi F M	FM Broadcasting	Non- Govt
Annapurna FM	FM Broadcasting	Non -Govt
HBC RADIO	FM Broadcasting	Non Govt
Mercantile Communication	Internet Service Provider	Non- Govt
World Link Communication	Internet Service Provider	Non- Govt
CCSL	Internet Service Provider	Non- Govt
Capital On Line	Internet Service Provider	Non- Govt
Everest Net	Internet Service Provider	Non- Govt
Unlimited	Internet Service Provider	Non- Govt
Hons	Internet Service Provider	Non- Govt
Etc		

7 Licenses allowed to the private sector for Communication service

Mobile service	02
E-mail and Internet	13
VSAT providers	05
VSAT users	16
Paging service	05
Fax mail	03
Video Conferencing	01
Total	44

8. Present Telecommunication Scenario

Total Telephone capacity	273,000
E mail and Internet user	150,000
Radio paging user	20 000

Country Report Telecommunications in Taiwan, R O C

Directorate General of Telecommunications

I Foreword

In view of the facts that the overwhelming power of Internet is growing around the world, and that the extensive deployment of telecom infrastructure is a key indicator of national modernization and competitiveness, most countries push for telecom liberalization to accelerate national telecom infrastructure with high priority While the technology and application development in info-communication became a priority work for all countries around the world, our country also developed a four-year project on national info-communication infrastructure application to encourage citizens to use information network, to stimulate the buildout of telecom network, and to promote application on information technology and development of service content

In July 1996, the Directorate General of Telecommunications was restructured, responsible for telecom policy development and regulation Meanwhile, the Chunghwa Telecom company was set up to take over telecom business and to release its government shares towards privatization Since then, the new DGT has devoted to opening telecom market, and promoting fair competition among telecom operators so as to enhance the operating efficiency and service quality of domestic telecom businesses

Since 1997, DGT has opened mobile communications, satellite communications, local and domestic long-distance land cable leased-circuit, integrated fixed network, digital low-powered cordless telephone, and international submarine cable leased-circuit services Though Taiwan's telecom liberalization move starts relatively late, our current deregulation progress has catched up with that of advanced countries

II Development Strategies of Taiwan Telecom Businesses

The objective of the telecom network deployment for our future information society is to integrate wire-line/wireless and fixed-

line/mobile networks into a broadband, high-speed digital telecom network in order to link with international networks through it (Fig 1)

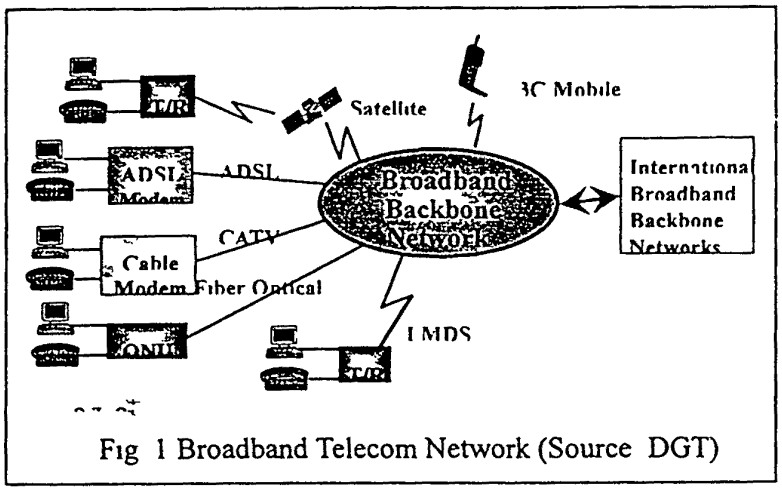


Fig 1 Broadband Telecom Network (Source DGT)

To this end, our government drafted its telecom development policies on virtual and physical networks (Fig 2) to accommodate to the convergence trend in telecom, information, and broadcasting sectors The policies focus on building bandwidth

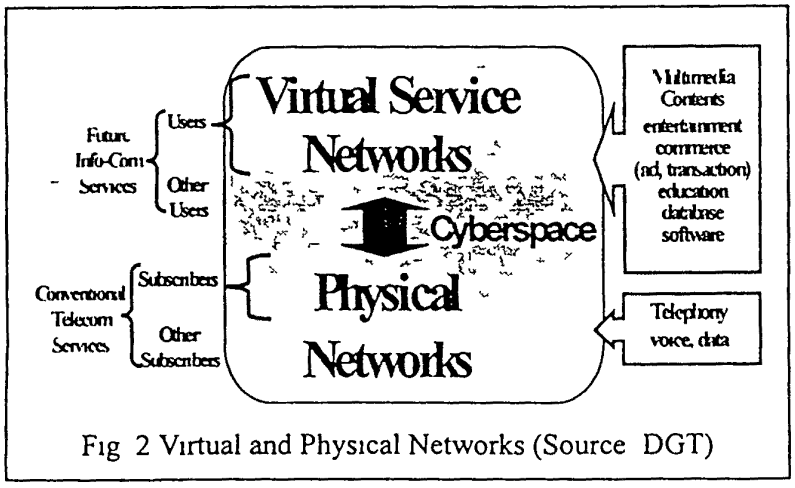


Fig 2 Virtual and Physical Networks (Source DGT)

extensively in physical networks, and on effective utilization of bandwidth in virtual network Under the policies, we adopt a free and open policy to develop our virtual network, encouraging innovation and value-added services by market mechanism to provide diversified services As for the physical network, except for scarce resources which are still under regulation, we have accelerated

the overall liberalization of telecommunications and will eliminate unnecessary restrictions as soon as possible to encourage operators to build out broadband high-speed telecom networks

1 Development strategies of virtual networks

In line with development demands for industry, society, economy, and culture, the development strategies of virtual networks include

- Exertion of policy development and regulatory power to introduce new technology and services Such a strategy is aimed to level up domestic relevant technology, provide consumers more diversified choices and better service quality, push for the establishment of e-commerce environment, and hence realize our goal of developing Taiwan into a global logistics center
- In response to the convergence trend, we will not issue licenses by service type so that operators may provide diverse services which combine voice, text, data, image, video and multi-media services according to consumer's demands to speed up fair competition in telecom market
- Taking the experiences of advanced countries for reference, we should accommodate our telecom policy and pace to the global trend accordingly

2 Development strategies of physical networks

For promoting the deployment of broadband network and realizing the objective of information society, we made the following development strategies of physical networks

- Continuing deployment of fiber-optic network to satisfy the diversified multimedia demands for information society
- Introduction of private capital through telecom liberalization to improve our public telecom networks and to raise their QoS
- Maintenance of market order and formation of consistent regulatory policy to attract more private capital to invest in telecom infrastructure and R&D of multi-media services to provide consumers quality service at an affordable price and trigger the realization and flourishing development of e-

commerce

- For encouraging the deployment of broadband network, at the initial stage after the fixed-line market is opened up, we plan to introduce facilities-based competition subject to the buildout of certain amount of local loops and allow the fixed-line carriers to provide the quick payback services, i e international and domestic long-distance network services For the next stage, we will take a balanced strategy, focusing both on "facilities-based competition" and "service-based competition" In addition to issuing integrated fixed network licenses continually, we will also grant individual licenses for international and domestic long-distance services respectively
- Opening public utilities to provide local and domestic long-distance land cable leased-circuit service It is intended to make full use of existing bandwidth of fiber-optic networks and avoid duplicate investment in telecom infrastructure
- Introduction of wireless broadband local loop technology to reduce the construction cost of wire-line network for remote areas
- Opening international cable landing service to accelerate international bandwidth building, increasing substantially the international bandwidth, and hence lowering the international bandwidth price to a reasonable level

III Status of Telecom Business in Taiwan

In view of fact that Taiwan's annual turnover for wire-line and wireless communications is estimated over NT$250 billion, fixed-line operators and terminal equipment manufacturers both compete heavily to grab the market

1 Telecom Services

The fixed-line service coverage in Taiwan has reached 100% before the new comers entered the market By the end of February 2001, the penetration rate and subscribers of our local telephone topped 56 75% and 12,659,000 respectively (see Figure 3) Moreover, due to the active deployment of modern and broadband network over these years, all of our backbone networks have been based on optical fiber

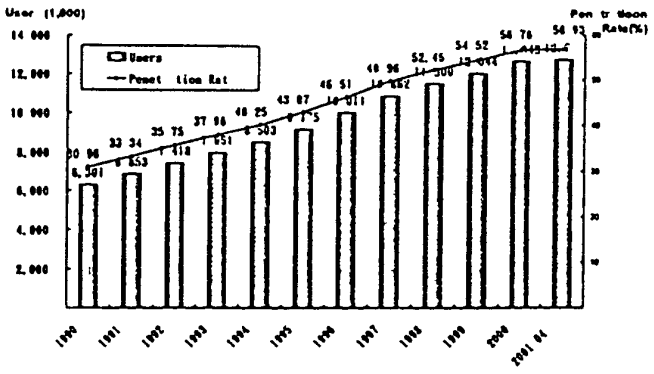


Fig 3 Local Telephone Users (Source DGT)

It is forecasted that the startup of three new entrants will gear up the extensive buildout of our broadband infrastructure and improvement of telecom QoS The broadband access subscribers are also expected to soar sharply By March 2001 the ADSL users were around 220,000 As estimated, it will top 508,000 by the end of 2001, 1 247 million by the end of 2002, and 1 902 million by the end of 2003 (Fig 4) By then ADSL will become our major approach to broadband access

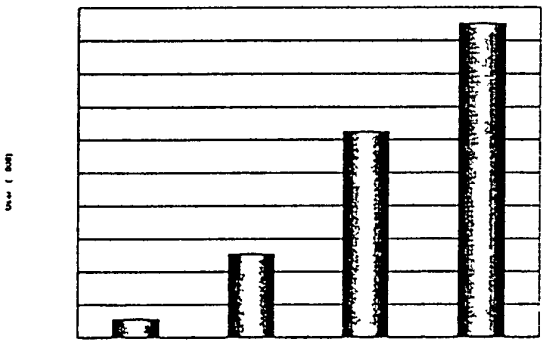


Fig 4 ADSL Users (Source MIC,III)

In March 2001, our cable modem subscribers reached 140,000 (Fig 5) At the same time, our Internet users also hit 6 70 million with penetration rate of 30% (Fig 6)

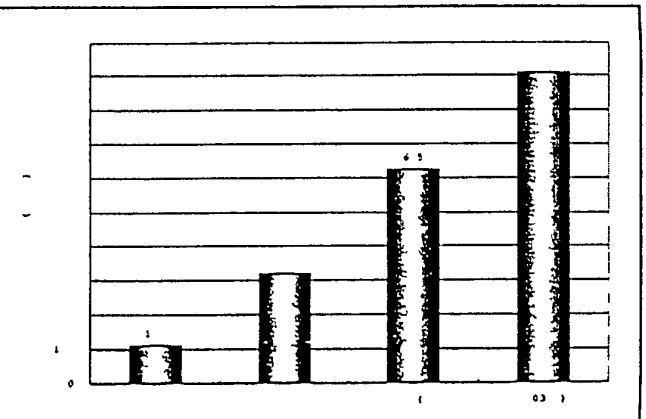


Fig 5 Cable Modem Users (Source MIC III)

Currently, our government is

aggressively pushing for broadband access, and the deployment of high-quality broadband networks is hoping to achieve 15% of broadband access ratio by the end of 2001 and 50% by the end of 2005

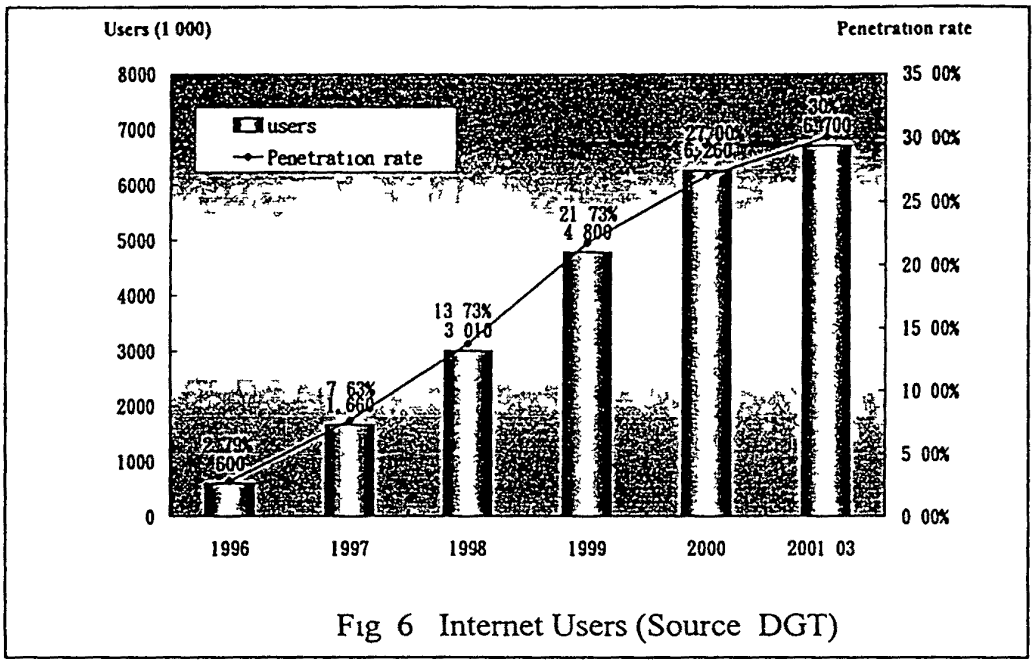


Fig 6 Internet Users (Source DGT)

In mobile phone market, since the private cellular telephony operators entered the market at the end of 1997, the subscribers and service coverage have grown substantially By now, there are a total of six operators, including four island-wide operators and two regional operators In April 2001, the penetration rate and subscribers of the mobile phone service reached 87 69% and 19 572 million respectively (Fig 7), far beyond local phone's 12 659 million subscribers Its penetration rate has also been ranked first in Asia

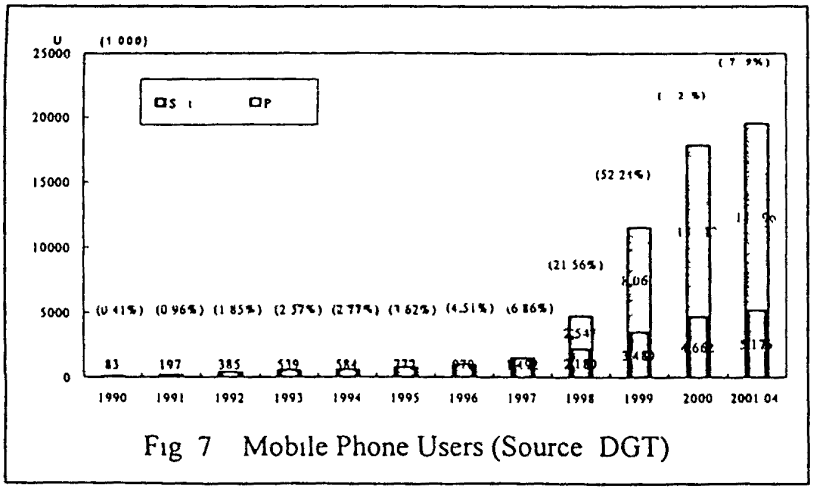


Fig 7 Mobile Phone Users (Source DGT)

In other mobile communications market, there were 2 97 million radio paging subscribers, 23,000 mobile data subscribers, 3,000 trunked radio subscribers and 45,000 CT-2 subscribers in April 2001

From the view of consumers, telecom liberalization stimulates the market competition, lowers down the telecom tariffs and hence benefits consumers by saving costs on connection fee, monthly charges, communication fee, and the handset purchase According to the conservative estimation, consumers saved 4 815 billion on connection fee, 16 372 billion on monthly charge, and 252 96 billion on handset purchase during 1998-1999 The monthly charge and airtime fee of mobile phone dropped to NT$600 and NT$6 respectively from NT$1,400 and NT$12 in 1995 By the end of 2000, the charges were further down to NT$66 and NT$3 6 with a decrease rate of 95 28% and 70% (Fig 8) As for the average revenue per user, it was reduced to NT$857 at the end of 2000 from NT$1,473 in 1998, which dropped over 40%

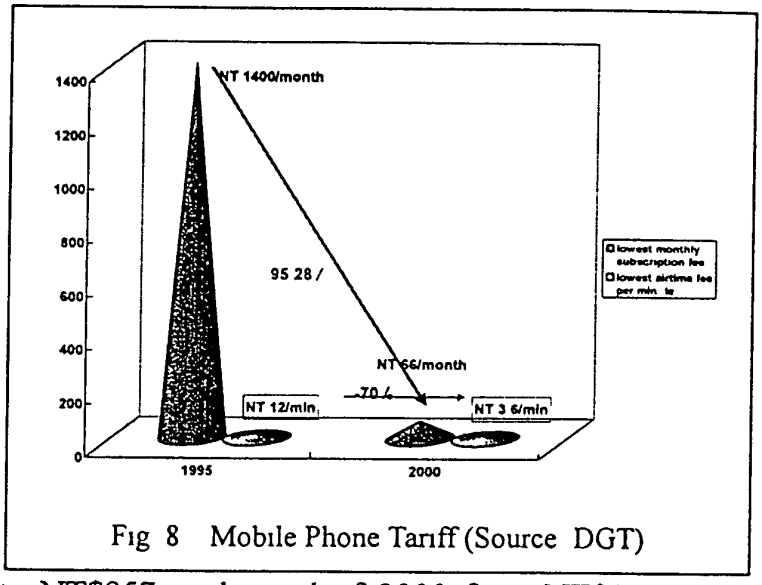


Fig 8 Mobile Phone Tariff (Source DGT)

During 1997-2000, our telecom market has already opened up though the fixed-line service has not yet been liberalized In the four years, the international tariffs were decreasing annually in 20%, 8%, 15%, and 35% respectively It is clear that the telecom liberalization does benefit consumers especially in international communication

From this January, the licenses for international submarine cable leased-circuit service have been issued successively The operators are building their networks actively now It is expected that our international bandwidth will hence increase sharply By the end of this year, the bandwidth of our international submarine backbone network

will reach 200Gbps In addition, the 2G operators have also launched the GPRS service Plus the 3G service to be issued this year, a well-knitted wire-line and wireless broadband high-speed network will be formed gradually

After our telecom market is liberalized wholly this year, we not only can provide the globalized and integrated broadband high-speed intelligent network which is necessary for developing knowledge-based economy, but also will become a modern information country with diversified, high-quality, and convenient multi-media services

2 Telecommunication Manufacturing Industry

Taiwan's economic productivity comes primarily from high-tech manufacturing Over these years, telecom liberalization and broadband race among operators have boomed the manufacturing industry of broadband transmission equipment and customer premises equipment, especially mobile handsets

According to statistics, the production value of Taiwan mobile industry in the year of 2000 is around US$2 85 billion with a growth of 44 5% compared to that of 1999 In which, wireless terminal equipment takes the largest share, followed by wire-line terminal equipment, wireline transmission equipment, office switch, and wireless transmission equipment in order If analyzed by the growth rate of product, wireless terminal equipment is the highest one at 165 9%, followed by wireline transmission equipment at 61%, and wireless transmission equipment at 38 7%

- Wireless Communication Equipment

  At the beginning of telecom liberalization, foreign telecom corporations were the major beneficiaries But coupled with the opening of telecom market, our business opportunities are also increased After the issuance of mobile communication licenses, big niches for domestic manufacturers are created in telecom system and terminal equipment, large telecom information management system, large telecom software system, advertisement, and marketing channel

In 2000, the production amount of mobile handsets in Taiwan is approximately 12 5 million The production value is around NT$21 635 billion (including overseas production value) In addition, the trend for wireless access by WAP, GPRS and 3G technology will also bring a new service opportunity for domestic manufacturers It is expected that the sales of handsets will reach 5 78 million this year with NT$34 5 billion sales value (Fig 9)

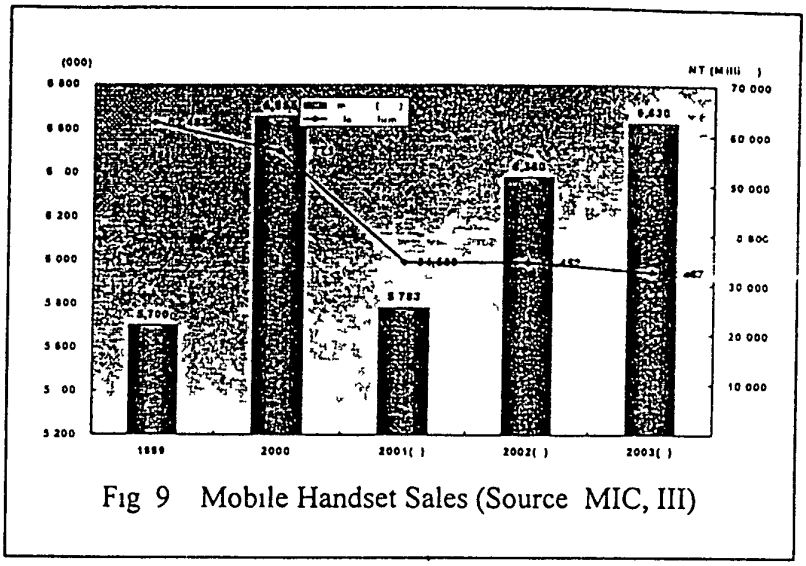


Fig 9 Mobile Handset Sales (Source MIC, III)

Due to telecom liberalization, the subscribers for most telecom services grow sharply It further stimulates the flourishing development of telecom manufacturing industry In 2000, our domestic production value in wireless communications reached NT$32 billion According to the forecast of Industry Bureau, it will top NT$300 billion by 2005 and make Taiwan one of the major supply countries of 3G services around the world

- Wire-line Communications Equipment

Because the wireless network still relies on the high-speed broadband backbone network, it also triggers the growth of broadband transmission equipment and broadband access equipment at customer premises

It is estimated that the sales of ADSL modems will achieve 1 837 million in 2001, up 560% compared to that of 2000, and the sales value will reach NT$12 billion with a growth of 4 4 times compared to that of 2000 (Fig 10)

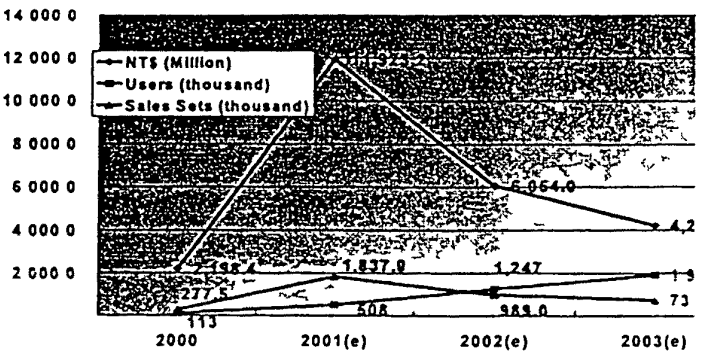


Fig 10 ADSL Modem Sales (Source MIC, III)

Under the stimulation of broadband network, the domestic market scale of computer network equipment will top NT$16 4 billion with a growth rate of 171% The LAN card sales volume is expected to achieve NT$4 26 billion this year (Fig 11) The cable modem sales volume is also to reach NT$0 107 billion, up 65% than that of 2000 (Fig 12)

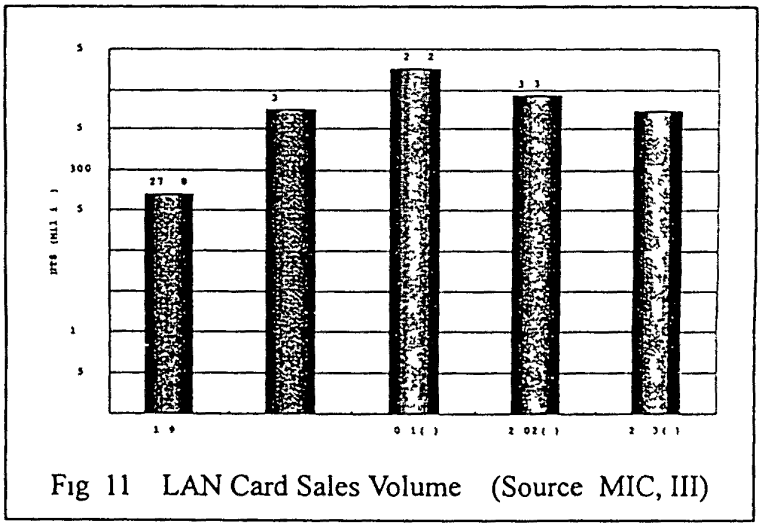


Fig 11 LAN Card Sales Volume (Source MIC, III)

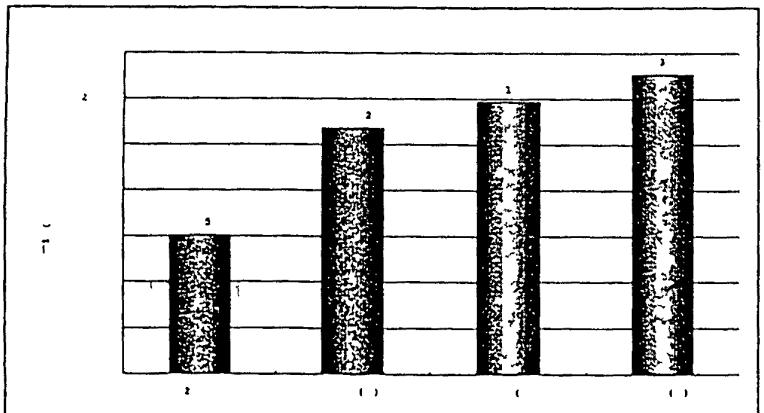


Fig 12 Cable Modem Sales Volume (Source MIC III)

IV Benefits of Telecom liberalization in Taiwan

Our telecom liberalization is close related to overall economy and relevant industry development While NT$1 is invested in telecommunication sector, it will increase NT$0 53 in GDP or NT$2 89 in domestic production value From 1997 that the mobile communication services were open to competition to the year of 2000, the average annual fixed investment by telecom operators is NT$102 98 billion Meanwhile, it creates NT$54 76 billion GDP/NT$297 85 billion production value and 66,996 jobs annually

After telecom market is fully liberalized, it is estimated that average annual fixed investment by telecom operators will be NT$118 32 billion during 2001-2005, and will hence create NT$63 1 billion GDP or NT$341 79 billion production value and 77,316 jobs annually

V Integration of Administration over Telecommunication, Information, and Broadcasting

The swift development of technology gradually blurs the boundary between telecommunication and broadcasting, overcomes the technological difficulty for cross operation between cable TV and telecom network, and makes Internet a media for telephony and broadcasting services But in our country, by now telecommunications, information, and broadcasting are still regulated by different authorities without a unified regulatory body In response to the development of information society, a *Telecommunications Information and*

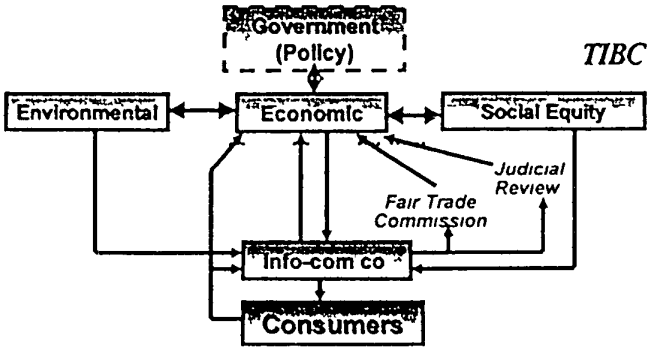


Fig 13 (Source DGT)

Broadcasting Commission (Fig 13) is going to be set up to govern relevant policy development and regulatory issues, to ensure the fair competition among business entities, and to foster the industry so as to keep Taiwan's leading competitiveness in the world

VI Conclusion

Our country has just achieved the goal for overall telecom liberalization in July, and is accelerating to push for the deployment of broadband infrastructure, building an integrated high-speed broadband network to provide a favorable environment for industry development and to enhance national competitiveness and knowledge-based economy development

To cater for the advent of Internet and knowledge-based economy era, our country will actively integrate communication technology industries and multi-media services After the services which combine wireless broadband network with mobile web content are provided, our goal for the information society will be attainable as scheduled

Country Report

on

Policies, Activities and Trends in the field of
Electronics and Telecommunications in Thailand

presented by

Pipope Chooncharoen
Post and Telegraph Department
Ministry of Transport and Communications, Thailand

in

**The 17th General Assembly of
the Asia Electronics Union (AEU)**

July 30 - August 2, 2001
Bangkok, Thailand

Contents

COUNTRY REPORT

on

Policies, Activities and Trends in the field of Electronics and Telecommunications in Thailand

1 Organizational Structure in the Electronics and Telecommunications Field in Thailand at present

There are numbers of organizations involve in the Electronics and Telecommunications field in Thailand Many of them are the government bodies and state enterprises the remaining are those of the private sectors

1 1 Ministries involved

Various ministries engaged in the electronics and telecommunications field ranging in functions from trade industry communications research and development to education The relevant ministries together with their responsibilities are briefly described below

1 1 1 The Office of the Prime Minister. The Office through its Board of Investment (BOI) has the function of promoting investment in the country Measures for investment promotion include exemption of duties on imported machinery and raw material in a specified period of time All special privileges given to investors under this scheme are designed to lower the cost of production

1 1 2 The Ministry of Finance This ministry plays a role relating to electronic and telecommunication field by fixing export and import duties and other kinds of tax such that the domestic electronic and telecommunication industry to be in the most favourable conditions to compete with foreign competitors

1 1 3 The Ministry of Industry This ministry controls the construction of factories their sites and structure It lays down equipment and goods standards Anechoic Chamber has been installed by the Industry Standard Institute (TISI) under this ministry and is now operated by its Electrical and Electronics Institute since last few years to support the EMC testing for local use and for manufacturing and exporting of radio electrical and electronic equipment of the country Master plan on Industry Development concerning Electrical Home Appliance Electronic and Information Technology which has just being used in the country was drafted by this Ministry

1 1 4 The Ministry of Commerce This ministry is responsible for seeking the market for electronic and telecommunications products It over-sees import and export aspects of the industry and ensures that more products will be sold abroad The step by step procedures of preparations to cope with the Ministerial declaration about Trade on Information Technology concerning the international target of having zero percent tariff rate on electronics items in coming future is also undertaken by this Ministry along with some others concerning

1 1 5 The Ministry of Transport and Communications This ministry controls all kinds of telecommunication activities and services through the provisions of the Radio Communication Act and the Telegraph and Telephone Act It seems that the relevant standards and regulation of the telecommunication equipment basically electronic & radio equipment are under controlled of this ministry (see more details concerning organizations of PTD CAT & TOT)

1 1 6 The Ministry of Science, Technology and Environment This ministry also undertakes research and development in the field of electronic It is the information center regarding electronic technology computer training e commerce supporting etc (see more details concerning organization of NSTDA NECTEC)

1 1 7 The Ministry of Education This ministry produces low and middle levels manpower in electronics and telecommunications as well as in other disciplines for the industry

1 1 8 The Ministry of University Affairs This ministry provides the electronic and telecommunication industry with high level personnels

1 1 9 The Ministry of Labour and Social Welfare This ministry provides job placement service to the public Training of skilled labour is also done by the ministry for in service personnels of the industry

1 2 Government entities getting involved directly in the field of public telecommunications and/or electronics

1 2 1 PTD CAT & TOT

Public telecommunication services in Thailand at present are responsible by three entities under the Ministry of Transport and Communications namely the Post and Telegraph

Department (PTD) the Communications Authority of Thailand (CAT) and Telephone Organization of Thailand (TOT) CAT and TOT are wholely state-owned enterprises each is managed by its own Board of Directors appointed by the Government while PTD is purely the governmental department

PTD regulates manages and monitors radio frequencies issues licenses for public and private radiocommunication equipment and stations and also functions as the government body in coordination with foreign countries and international organizations concerning post and telecommunication activities Establish and regulates radio equipment standard and perform radio equipment type approval test

CAT operates postal service international telecommunication services and also the domestic data telex telegraph leased circuits and all radio services

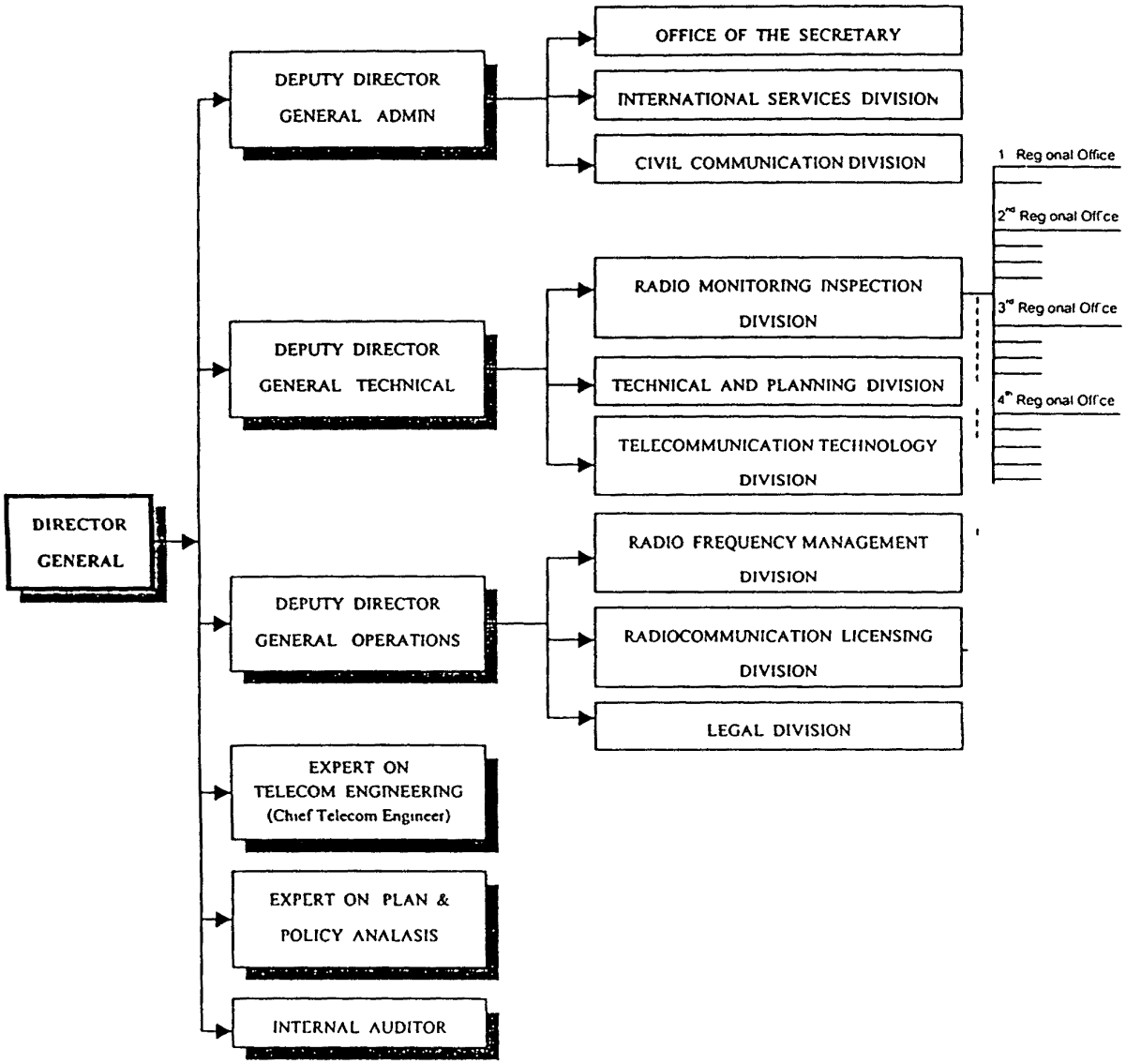
TOT operates the domestic public and long distance telephone services provides leased circuits for domestic point to point transmission and some new radio services eg cellular mobile telephone etc and provide telecommunication services between Thailand and the countries having common border to Thailand eg Lao Malasia etc

Anyhow due to the coming up of the Master Plan on Telecommunication Development and also the Article 40 of the National Constitution 1997 the organization of PTD CAT and TOT are going to get transformed within next year as follows

PTD will become the Secretariat Office of an National Telecommunication Commission which is going to be established as one of the government independent body to supervise and regulate the running of all kind of telecommunications in the country except those of Broadcasting CAT and TOT will be gradually transformed to be the public companies being started from changing to be the private companies of 100% government share holding the share will then be reduced steppingly to be that of 30% at the last step alongwith the changing of their status to become the Public Companies taking competition equally with the others at the end

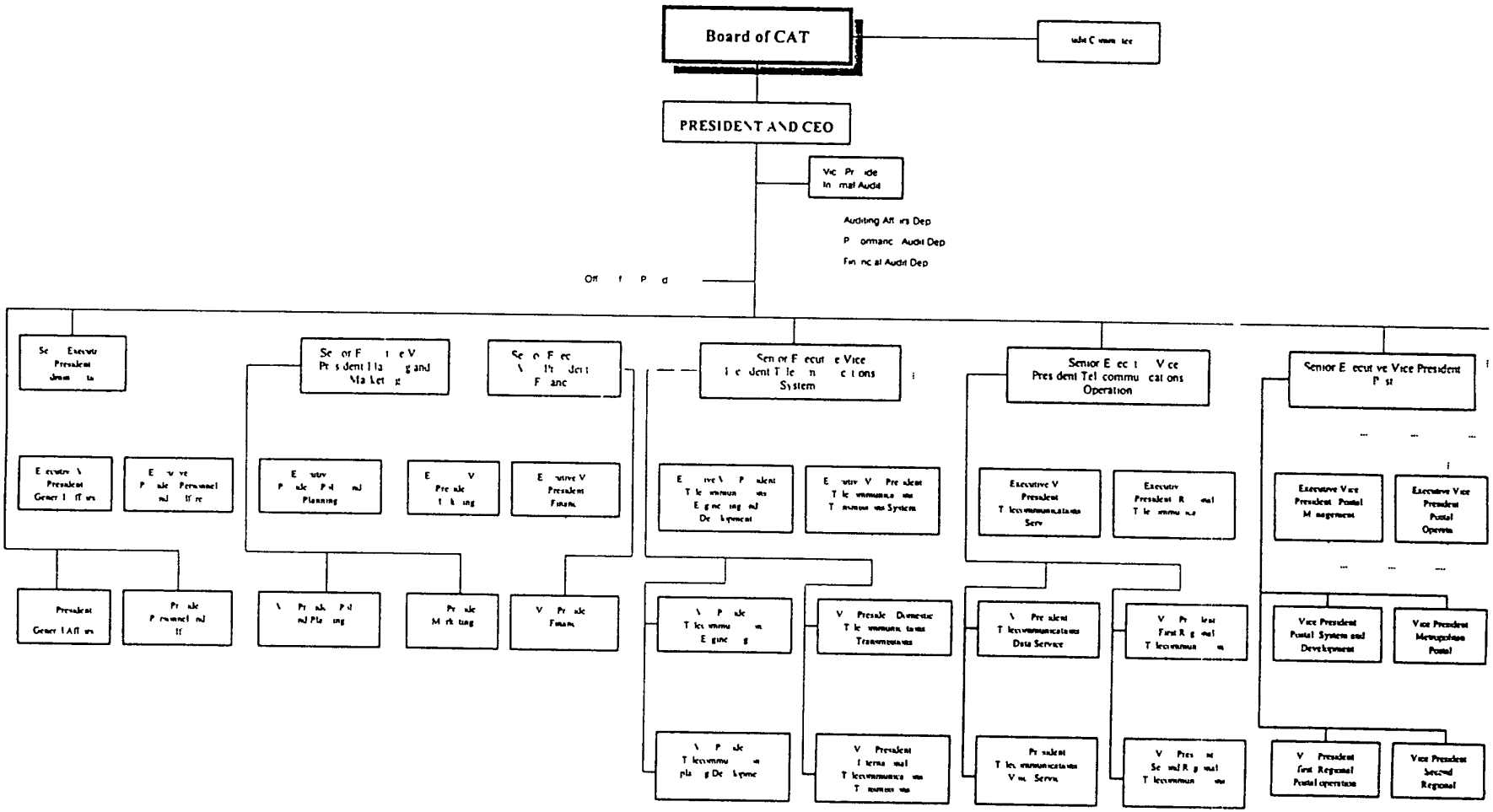
The present structural organization of the above three mentioned entities with the emphasis on the sector involving research and development on telecommunications are shown in the following charts

1 2 1 1 **PTD (Post & Telegraph Department)**

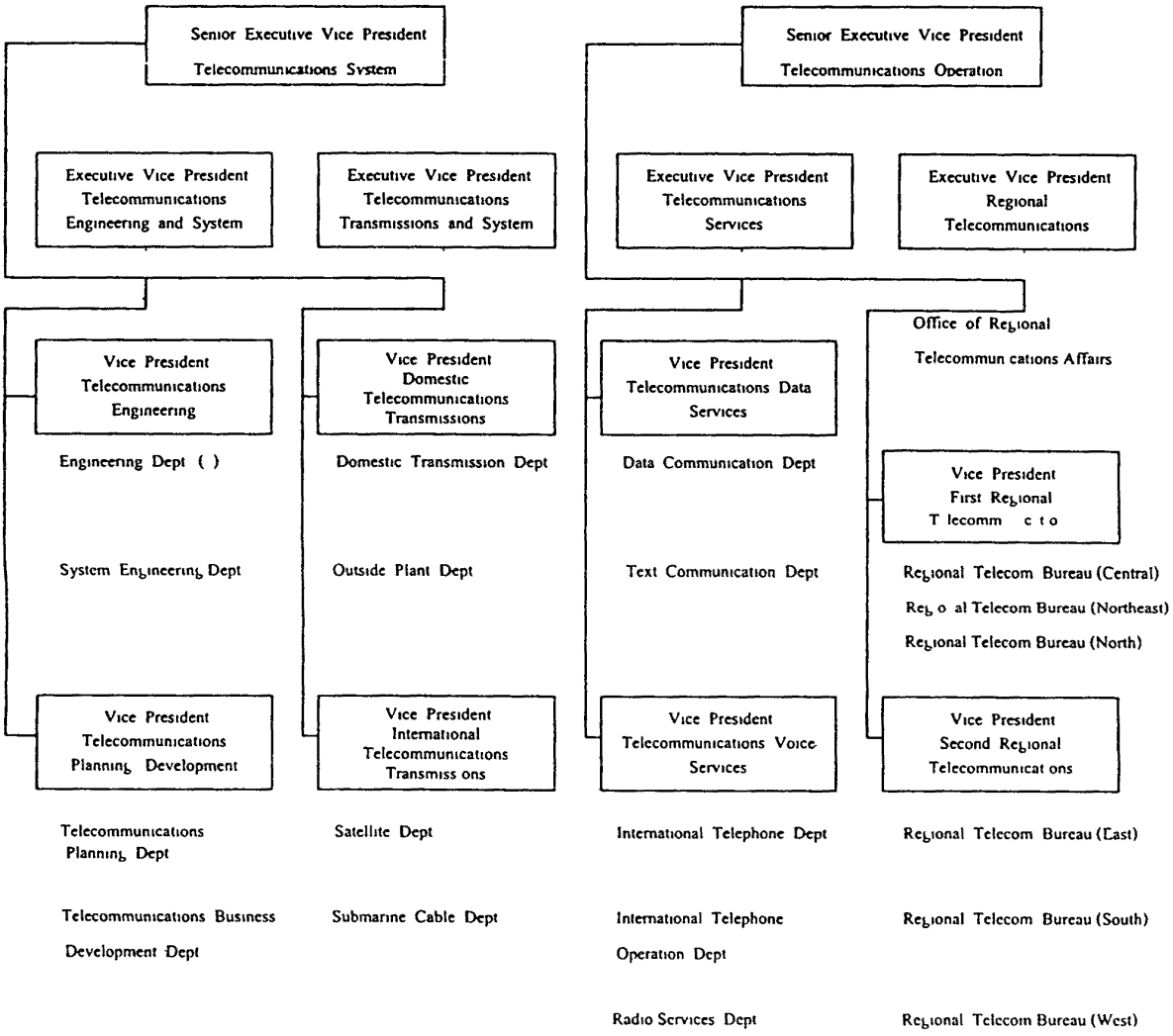


There are at least two out of five sections in the Telecommunication Technology Division are getting involved with the Telecommunication research and development Section and the Standardization Section One out of the remaining sections of the said Division is the Electronic Processing Section (Computer center)

Organization Structure of CAT

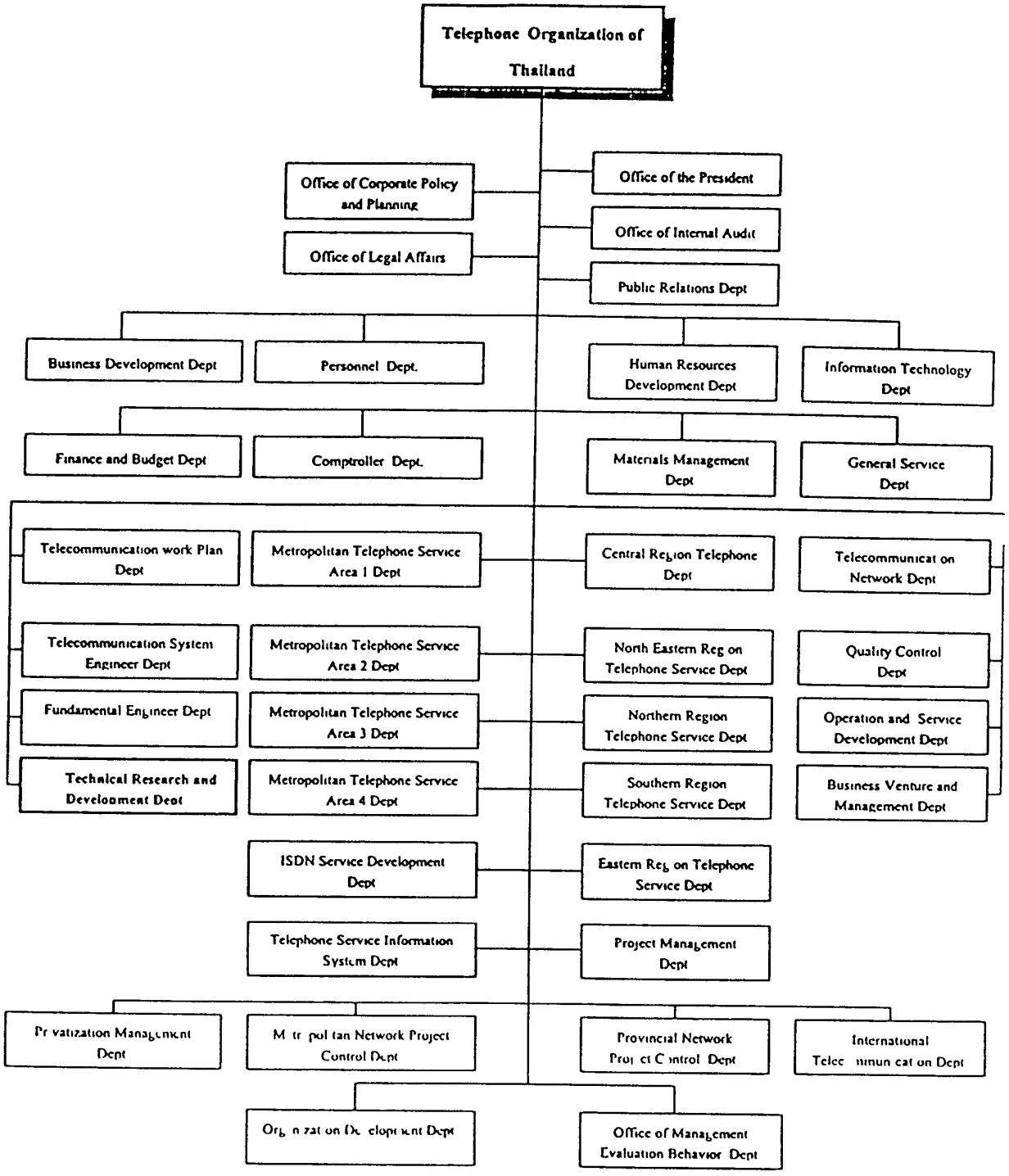


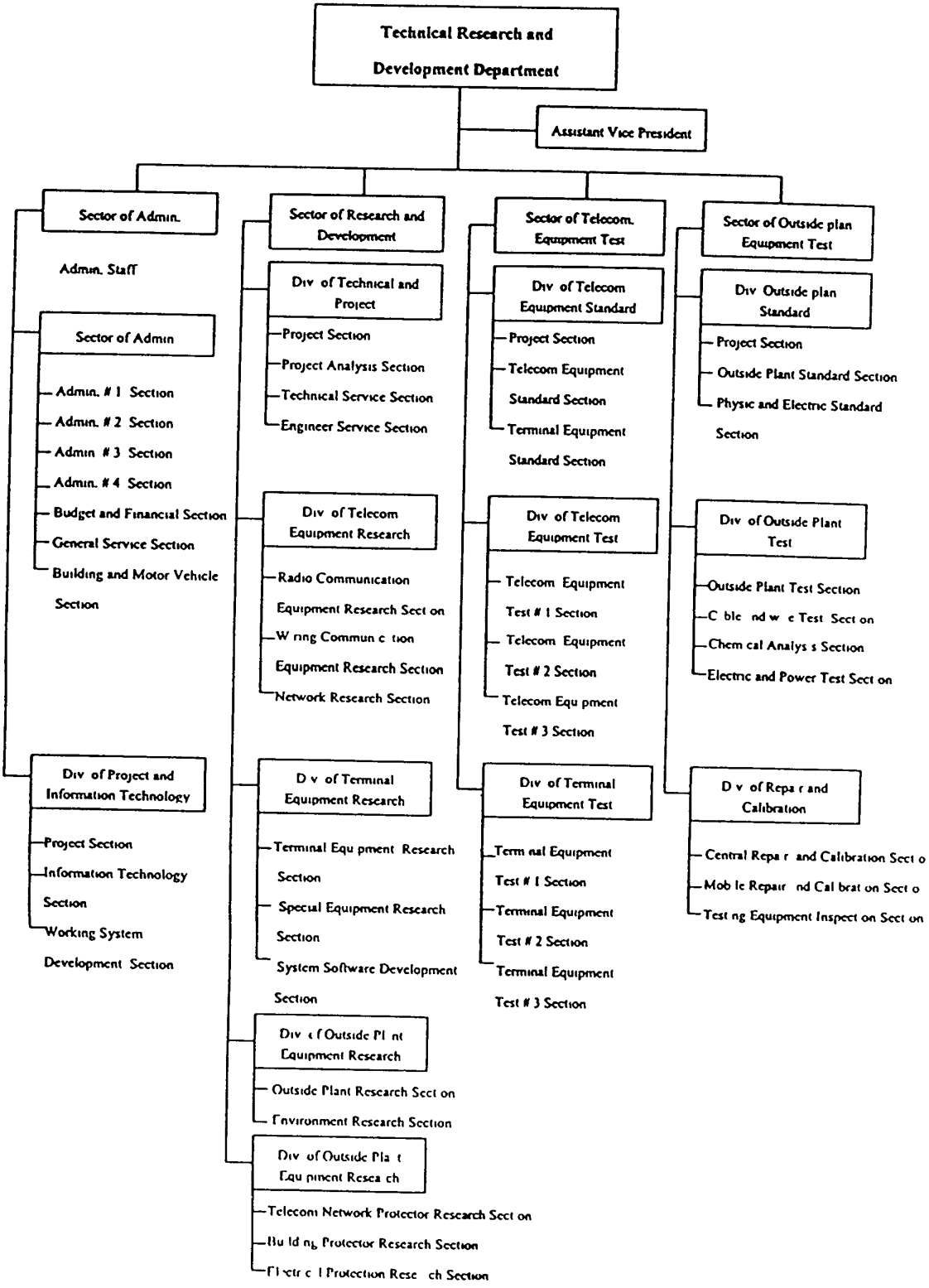
The following chart shows more details of organization under the CAT telecom sector



Among various Departments shown above the Engineering Dept (*) is the one getting involved with the Research and Development in telecommunication and electronic field for CAT

1213 TOT


Telephone Organization of Thailand
Office of Corporate Policy and Planning
Office of Legal Affairs
Office of the President
Office of Internal Audit
Public Relations Dept
Business Development Dept
Personnel Dept.
Human Resources Development Dept
Information Technology Dept
Finance and Budget Dept
Comptroller Dept.
Materials Management Dept
General Service Dept
Telecommunication work Plan Dept
Metropolitan Telephone Service Area 1 Dept
Central Region Telephone Dept
Telecommunicat on Network Dept
Telecommunication System Engineer Dept
Metropolitan Telephone Service Area 2 Dept
North Eastern Reg on Telephone Service Dept
Quality Control Dept
Fundamental Engineer Dept
Metropolitan Telephone Service Area 3 Dept
Northern Region Telephone Service Dept
Operation and Service Development Dept
Technical Research and Development Dept
Metropolitan Telephone Service Area 4 Dept
Southern Region Telephone Service Dept
Business Venture and Management Dept
ISDN Service Development Dept
Eastern Reg on Telephone Service Dept
Telephone Service Information System Dept
Project Management Dept
Pr vatization Management Dept
M tr pol tan Network Project Control Dept
Provincial Network Proj ct C ntrol Dept
International Telec mmun cat on Dept
Org n zat on Dc elopi ent Dept
Office of Management Evaluation Behavior Dept


Technical Research and Development Department
Assistant Vice President
Sector of Admin.
Admin. Staff
Sector of Admin
Admin. # 1 Section
Admin. # 2 Section
Admin # 3 Section
Admin. # 4 Section
Budget and Financial Section
General Service Section
Building and Motor Vehicle Section
Div of Project and Information Technology
Project Section
Information Technology Section
Working System Development Section
Sector of Research and Development
Div of Technical and Project
Project Section
Project Analysis Section
Technical Service Section
Engineer Service Section
Div of Telecom Equipment Research
Radio Communication Equipment Research Section
Wiring Communication Equipment Research Section
Network Research Section
Div of Terminal Equipment Research
Terminal Equipment Research Section
Special Equipment Research Section
System Software Development Section
Div of Outside Plant Equipment Research
Outside Plant Research Section
Environment Research Section
Div of Outside Plant Equipment Research
Telecom Network Protector Research Section
Building Protector Research Section
Electrical Protection Research Section
Sector of Telecom. Equipment Test
Div of Telecom Equipment Standard
Project Section
Telecom Equipment Standard Section
Terminal Equipment Standard Section
Div of Telecom Equipment Test
Telecom Equipment Test # 1 Section
Telecom Equipment Test # 2 Section
Telecom Equipment Test # 3 Section
Div of Terminal Equipment Test
Terminal Equipment Test # 1 Section
Terminal Equipment Test # 2 Section
Terminal Equipment Test # 3 Section
Sector of Outside plan Equipment Test
Div Outside plan Standard
Project Section
Outside Plant Standard Section
Physic and Electric Standard Section
Div of Outside Plant Test
Outside Plant Test Section
Cable and Wire Test Section
Chemical Analysis Section
Electric and Power Test Section
Div of Repair and Calibration
Central Repair and Calibration Section
Mobile Repair and Calibration Section
Testing Equipment Inspection Section

1 2 2 NSTDA including NECTEC

1 2 2 1 NSTDA is a special organization outside the normal framework of the state enterprise and civil service This organization namely the National Science and Technology Development agency or NSTDA is a public-funded semi-autonomous agency established in 1991, operating under the policy guidance of its own Board chaired by the Minister of Science Technology and Environment and composed of equal number of representatives from both government and private sectors Its main objectives are

- To support for research development and engineering (RD&E) in universities government and the private sector

  To undertake in-house RD&E activities and then

  To provide technical service and support to the private sector in production development

  To invest for the purpose of the development and acquisition of technology and also to disseminate the information and create the public awareness in electronic and computer technologies and related matter

This agency NSTDA comprises of three specialized national centres

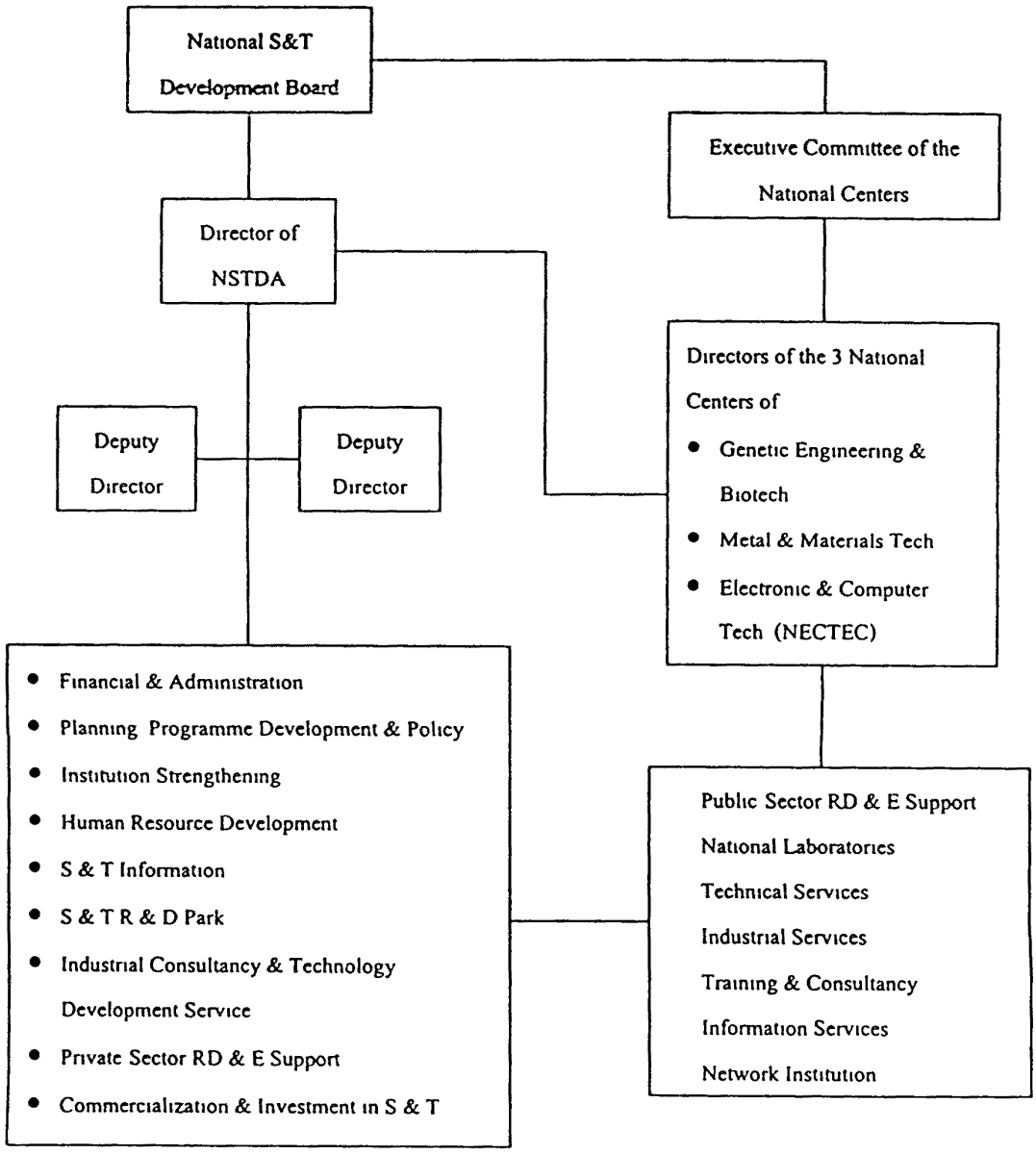
1 Genetic Engineering & Biotechnology Centre

2 Metal & Materials Technology Centre

3 Electronics & Computers Technology Centre (NECTEC)

For the time being NSTDA (with her NECTEC) seem to be the most concerned and active organization relating to many important fields of science and technology development including those of electronics in Thailand Therefore more details concerning the structural organization chart and descriptions in brief of NSTDA including some details about NECTEC are given as follows

Structural Organization of NSTDA



At present the main office of NSTDA is located in the compound of the Ministry of Science Technology and Environment

1222 NECTEC Actually NECTEC, National Electronics and Computer Technology Center, herself was early founded in September 16 1986 as a project under the Ministry of Science Technology and Environment. On December 30th 1991 NECTEC underwent a transition from being a non statutory agency to become a specialized national center under a new statutory body, NSTDA following enactment of the BE 2534 (1991) Science and Technology Development Act along with the other two centers and the project on Science and Technology Development (under the Science and Technology Board)

Other than the main function as one of the three Centres under NSTDA NECTEC herself also functions as the secretariat office of the National Information Technology Committee which is recognized as an essential ingredient for future national economic growth and social being

According to the latest revision in her activities NECTEC at present composes of 10 Bureaux as follows

Resource Management Bureau

Office Management Bureau

Hardware & System Research and Development Bureau

Computer System Technology Laboratory

Telecommunication Technology Laboratory

Laser Technology Laboratory

Electronic Optics Technology Laboratory

4 Software and Network Research and Development Bureau

Computer Network Technology Laboratory

Language and Software Engineering Laboratory

High Performance Computer Laboratory

5 Tripartite Bureau

6 Information Technology Study

7 Industry Development

8 Special Projects

Micro Electronic Research Centre Project

- Printed Circuit Board Laboratory Project
- EMC Measurement Laboratory Project
- Software Park Project
- Information Highway for Society Project
- Information Technology Service for Government Sector Project
- Multimedia Industry Development Project

Training on Information System for the Government official Project

9 Joint Venture Company Bureau

10 National Information Technology Secretariat Office

1 3 Private sectors concerned

Concerning the private sector Besides those of private manufacturers a number of organizations exist for mutual assistance among their members the more important establishments are

1 3 1 The Thai Industry Association This is the information centre for industrial know how and the contact point for international relations of the industrial private sector

1 3 2 The Telecommunications Association of Thailand The objectives of this association is to promote telecommunications and related activities by carrying out the following activities

Promotion of education and research in telecommunications

Promotion of public understanding and application of the significance of telecommunications

Monitoring the progress of the telecommunications technology

Collection of textbooks documents and information on telecommunications

Publication of textbooks journals and printed materials on telecommunication

Arrangement of training on telecommunication and related fields for the members

Locally the Association plays very active role in the field of telecommunications at present

Internationally this association also represent partly the Thai private sector in some of international telecommunications activities eg AEU (Asia Electronics Union) etc An example on this is the activities in our 17th GA of AEU (30th July – 2nd August 2001) this Association has actively joined us

as one out of three organizations hosting the technical seminar on "Moving Toward the Future Info-communications Technology on the 1st August 2001

1 3 3 The Electronics Association of Thailand This association focuses its activities mainly on electronic technology It traces about the development in electronics being taken place in the country as well as abroad Some of seminars on development and new technology of electronics and telecommunications used to be arranged for public in the country by this association It also used to represent the Thai electronic private sector in some international activities eg AEU

Anyhow the activities of this association in Thailand is nowadays gradually reduced

2 Capacities, Capabilities and Trends on the Electronic manufacturing industry by product sectors

2 1 General

While the industry etc in Thailand during this period of time is now in the state of getting recovered slowly from the economic crisis occurred during last few years the industry on electrical appliances and electronic is exceptionally recovering very fast in all aspects ie in manufacturing exporting investment and employment due to the increasing of the demand concerning information technology and also due to the shifting of the electrical appliances and electronic manufacturing bases from other countries to Thailand

The Board of Investment of Thailand (BOI) has approved for the electronics industry investment promotion of altogether 200 projects during the first 11 months of the year 2000 with the investment amount of about 1892 million US dollars resulting in the employment of 85 463 persons which increased very much in comparison to those in the same period of last year (1999) of which the projects approved were 128 in numbers with the investment of about 1224 million US$ and the employment of 63 099 persons

Concerning the export of electrical appliances and electronics industrial goods it was found in the year 2000 that their value had been increasing in all groups except only those of the calculator group and the lift/escalator group Relating to the telephone and its accessories group the value had been increased very much by 80 9% (comparing between the value in the first 10 months of the year 1999 and in the same period of the year 2000) the seconds were the radio and television group which had been increased by 61% the telephone by 57 3% IC (Integrated Circuit) by 60 6% PCB (Printed Circuit Boards) by 47 6% Diode Transistor and Semi conductors by 43 5% and CRT (Cathode Ray Tube) by 38%

The Values of Exporting of the Goods classified under the Electrical Appliances and Electronics Group

Goods	1998	1999	2000 (Jan – Oct)	Increasing (taking Comparison between the value of the first 10 months period of the years 1999 and 2000)
Video Recorder/Player	274	208	204	20 4%
Radio and Television	1 451	1 1181	1 1511	61 0%
Cathode Ray Tubes	144	244	266	38 0%
Microwave Oven	189	167	136	32 8%
Electric Wires & Cable	115	105	121	36 9%
Electric Lamps	69	68	64	15 4%
Washing Machines	68	93	100	34 4%
Integrated Circuits	2 346	2 794	3 547	60 6%
Printed Circuit Board	797	800	904	47 5%
Motor and Generator of small size	527	707	656	13 3%
Teleprinter and Facsimile	192	268	331	57 3%
Telephone Set Sits accessories	301	216	253	62 2%
Diode Transistor & Semi-Conductors	723	719	850	43 5%
Copying Machine	286	230	257	29 3%
Lift Escalator and Transporting Machine	58	55	43	3 7%

Source Dept of Business Economics Ministry of Commerce

2 2 Tracing about Manufacturing of some Electronic Products (during the years 1999 and 2000)

2 2 1 Hard Disk Drive (HDD)

There have been two HDD manufacturers in Thailand at present they are the Fujitsu (Thailand) Co Ltd and the IBM Storage Products (Thailand) Co Ltd They manufacture only for the purpose of exporting The quantity of their manufacturing in the year 1999 was 22 8 million pieces with the value of 2 970 million US$

Regarding to the first 9 months of the year 2000 the manufacturing quantity became 20 4 million pieces which is a little bit increased in comparison to those of 18 3 million pieces in the same period of the year 1999

However the exporting value was decreased by a small amount from 2 275 million US$ in the first 9 months of the year 1999 to 2 056 million US$ of the same period of the year 2000 due to the decreasing very much in the price of the Hard Disk Drive

2 2 2 Hard Disk Drive Parts

The manufacturing quantity and the exporting of HDD parts were constant There were 23 companies who manufactured the said kind of product In addition to the indirect export which the manufacturing were performed for the purpose of distributing to the HDD manufactures in the country there were also the direct export of which its value has been decreased by a little from the amount of 1 606 million US$ during the period of the first 9 months of the year 1999 to that of 1 463 million US$ in the same period of the year 2000 while the indirect export to the HDD domestic manufacturers has been increased from the amount of 2 716 million US$ in the first 9 months of the year 1999 to that of 3 347 million US$ in the same period of the year 2000

From the above mentioned and also from more details to be given after this it can be said that many investors are still taking interest at present to invest in manufacturing the HDD parts in Thailand for example the Seagate Company has increased the manufacturing of the said product in Thailand from 22 28 % in the year 1999 to 30% in the year 2000

BOI (the Board of Investment) in Thailand has approved many of projects in the year 2000 to promote the activities in manufacturing HDD parts in the country eg the projects for investment in manufacturing of the followings

- HDD Cover by the NHK Spring Co Ltd (Thailand)

  Base Plate and Actuator Arm Assembly of the Engtee Precision Co Ltd

  Actuator Arm of the Polymicro Precision Technology Co Ltd (Thailand)

  Hub and Sleeve for HDD by the Global Thaison Pricision Industry Co Ltd

- Flex Suspension Assembly by the Pemstar Co Ltd (Thailand)

Anyhow it is observed that the Seagate Technology Co Ltd (Thailand) the biggest manufacturer of HDD parts in Thailand has now followed the policy of her mother

company in manufacturing only those products which they are skilled and try to reduce the manufacturing the ones they are not. Moreover, they turn to buy the products from the other manufacturers in the form of reselling and increase the efficiency of their manufacturing by utilizing the importing modern machine and new technology instead of those earlier available The said policy results in a lot of decreasing of employment in this country, at present

2 2 3 Floppy Disk Drive (FDD)

The quantity of manufacturing FDD in Thailand was decreased from 13 3 million pieces during the first 9 months of the year 1999 to be 10 1 million pieces during the same period of time in the year 2000 while the value of exporting was also decreased from 221 million US$ to 120 million US$ The said exporting still shows the tendency of its further decreasing which happened due to the increasing of competition taken by other countries having lower wage and also due to the cessation of the Melco manufacturing Co Ltd in manufacturing their FDD product since May 2000 because of their running in loss

2 2 4 Keyboard

The manufacturing quantity of keyboards a kind of computer peripheral was increased not so much in numbers when taking into consideration the comparison between those of the first 9 months period of the year 1999 and those of 2000 ie it increased from 19 1 million pieces to 20 6 million pieces Accordingly its value had also increased from that of 11 4 million US$ to 14 9 million US$ Although the manufacturing quantity and the value of keyboard have been increased as said but the tendency of its exporting in total in the future is not in satisfaction since some manufacturers had moved their manufacturing bases from Thailand to some other countries in which the lower wage being existed

2 2 5 Printer

There were four in numbers of the printer manufacturers in Thailand during last two years Their manufacturing are all for the exporting purpose The quantity of printer manufacturing had been increased very little from 10 9 million terminals in the first 9 months of this year 1999 to 11 million terminals in the same period of the year 2000 Its value of exporting was increased from 571 million US$ in the year 1999 to that of 689 million US$ at the same period of the year 2000

There is the tendency in increasing of the manufacturing and the exporting of printers at present due to more investment of many computer peripheral manufacturing companies in the country some of them just have got the promotion from BOI to expand their capacities of printer manufacturing some have started their new projects on printer manufacturing and some have got more regularity the order to manufacture the printers to be sent to the mother companies located in the other countries

2 2 6 Computer Terminal

The trend of computer terminal in Thailand was decreasing very much in the year 2000 due to the cessation of Prier Company while the other two related companies are now decreasing their quantity of manufacturing The said change resulted in the decreasing of the quantity of the computer terminal manufacturing from 6 2 million terminals in the first 9 months of the year 1999 to 4 7 million terminals in the same period of time within the year 2000

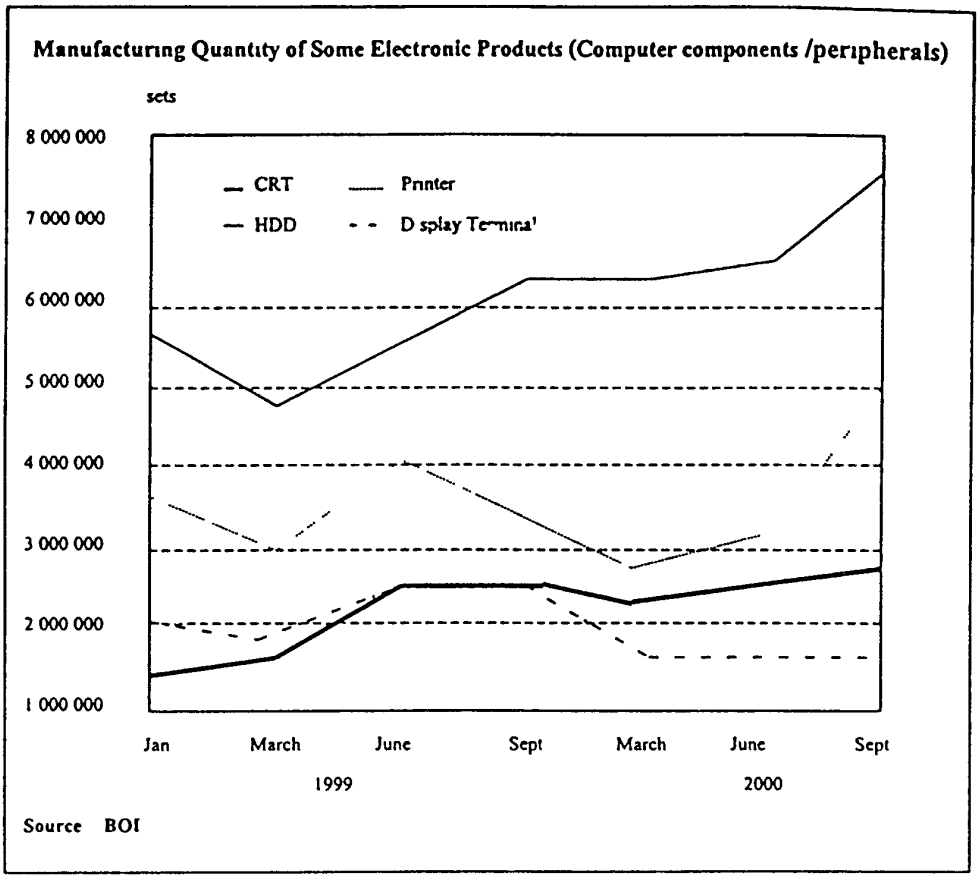
Anyhow taking in to consideration the computer terminal world market it is expected that the numbers of the computer terminal in the world will be increasing from 116 2 million terminals to 128 6 million terminals in the whole year 2001 Out of those the rate of increasing of the terminals of LCD type will be increased by 103% ie from 6 million terminals in this year 2000 to 12 3 million terminals in the year 2001 while the terminals of CRT type will be increasing by the rate of only 5 5%

2 2 7 CRT (Cathode Ray Tube)

At present, there are 3 companies who manufacturing CRT The production or quantity of manufacturing has been increased from 5 8 million tubes in the first 9 months of the year 1999 to be 7 4 million tubes in same period of the year 2000 The proportion of the said production is 40% for the factory in the country and 60% for the exporting

Concerning exporting the CRT exporting was 5 1 million tubes in the first 10 months of the year 2000 with its value of 266 million US$ which are of 53 8% and 38% increasing respectively

Anyhow the popularity on the flat screen (eg LCD Plasma) is nowadays increasing even the price is still higher than the CRT tube type by 40% at present It is expected that the market share of the flat screen will be increase from 15% in the year 2000 to 64% in the year 2004 by which the CRT manufacturers are now starting in adapting themselves to manufacture also the flat screen



2 2 8 IC (Integrated Circuit)

The world market of testing and assembling of IC was expanding very much during the year 1999 and 2000 including Thailand

There were 18 companies relating to IC assembling and testing in the year 2000 It was found that in the first 10 months of the year 2000 Thailand exported IC by the amount of about 3547 million US$ which increased by 60 6% in comparison to the same period of the year 1999

There were at least four related companies having got the promotion from BOI in the year 2000 to expand their IC manufacturing capacities of amount of approximately 380 US$ in Thailand Moreover there were some more companies who manufacture the raw material to be used for assembling the IC chip with the capacity of altogether more than 1500 million pieces a year by which the number of employment in the country was accordingly increased

2 2 9 PCB (Printed Circuit Board)

In the year 2000 the trend in PCB exporting was very good The exporting value during the first 10 months of the year was about 904 million US$ which increased by 47 5% in comparison to the year 1999 since many projects for increasing the manufacturing capacity in both of PCB and PCBA had been earlier set up during the time in the past The said projects of more than three companies had invested in the said industry with the amount of more than 74 million US$

Not only that the approval for promotion the manufacturing of raw materials for PCB assembling by an other company also resulted in the investment of more than 12 million US$ per year including with more increasing of employment

2 2 10 Small Size Motor and Generator

The exporting value of motors and generator using in the electronic and electrical appliances for the first 10 months of the year 2000 was about 656 million US$ which increased by 13 3% from that of the year 1999 due to a lot of investment through many projects of 3 main concerning companies The said investment amounting altogether 38 million US$ results in the manufacturing expanding of 51 million pieces a year

2 2 11 Facsimile

The exporting proportion of Facsimile manufacturing in Thailand is very high it was of 98 99% in the year 2000 The production had increased from 2 3 million terminals in the first 9 months of the year 1999 to be 2 8 million terminals in same period of the year 2000 while the exporting value in the first 10 months of the year 2000 was 331 million US$ which increases by 57 3% in comparison to that in the same period of the year 1999 The manufacturing and the exporting of the facsimile are in the tendency of increasing at present due to the start functioning of facsimile manufacturing by Cannon Company

2 2 12 Television

About 80 90% of the production or manufacturing of Television set in Thailand are for the exporting purpose The manufacturing quantity had been increased by some amount ie from 7 4 million sets in the year 1999 to 8 5 million sets in the year 2000 since the Thomson Company had ceased the factory in Poland and the purchasing orders have been transferred to the factory in Thailand instead

Meanwhile the investor still have the intention to invest continuously on the television manufacturing industry in Thailand, for example, the LG company had the plan to invest for expanding the flat screen type television manufacturing in Thailand with the investing amount of 2 US$, JVC Company had move parts of manufacturing bases from Japan to Thailand, Distar Electric Corporation Ltd. (Public) had got the Investing Promotion from BOI to invest in project amounting about 5 million US$ for increasing the capacity of television set manufacturing in Thailand by the amount of 15 million set/year

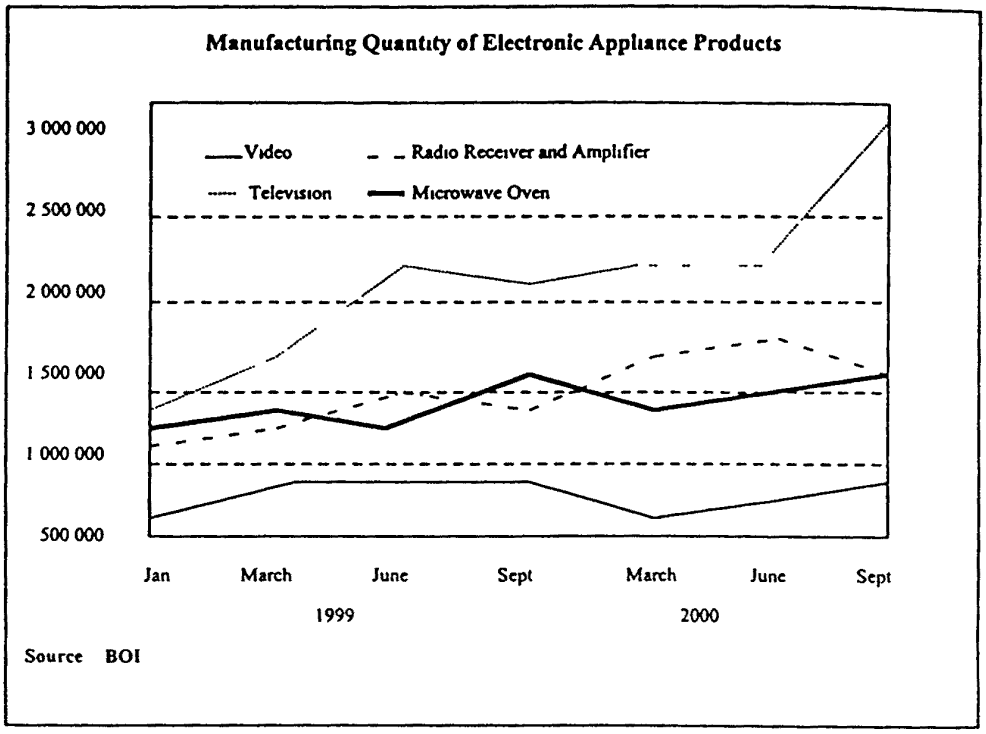
Anyhow the market share of Thailand in television set importing market in Japan has been now reducing (from 22% in the year 1999 to 14% in the year 2000)

2 2 13 Video Recorder/Player

The proportion of Video Recorder/Player exporting was rather high it was about 90% of the said product manufactured in Thailand The product quantity had been a little bit increased from 2 1 million sets in the first 9 months of the year 1999 to be 2 4 million sets in the same period of the year 2000 due to the obtaining of more purchasing orders from the European countries by the manufacturers concerned In the context of exporting the amount of the said product exported in the first 10 months of the year 2000 was 204 million US$ which increased by 24 4% in comparison with those in the same period of the year 1999

2 2 14 Microwave Oven

According to the data obtained from three Microwave Oven manufacturers in the country with the total manufacturing capacity of 5 3 million sets it was found that there was the manufacturing of Microwave Oven of 4 2 million sets which increased by 24 4% from those of the year 1999 The selling or distributing in the country is of 83 985 million sets which increased by 20 4% from those of last year 1999 Anyhow the increasing rate of distribution was less than that of the year 1999 due to the announcement to the public of the Ministry of Health concerning the danger which may be obtained from the improper method of using the Microwave Oven at the end of the year 2000



2.3 Some Statistics concerning Electrical Appliances and Electronics Product

2 3 1 Project obtaining the Investment License in Thailand (Source BOI)

	2000 (whole year)	2000 (Jan Feb)	2000 (Apr May)	2001 (Jan Feb)	2001 (Apr May)
Project numbers	185	20	48	36	65
Investing Amount (million US$)	1 577	89	257	305	470
Employment (persons)	73 646	5 246	15 754	8 327	15755

2 3 2 The projects approved by BOI concerning the Investment Promotion in Thailand (Source BOI)

	Feb 2001	April 2001
Investing Amount (million US$)	116 44	166
Employment (persons)	2930	5949

2 3 3 Electrical Appliances and Electronics Exporting and Importing Values of Thailand

(Source Commercial Statistics Center, Department of Business Economics)

	1998	1999	2000	2001 (Jan Mar)
Exporting Value				
Electrical Appliances	5 638 8 (8 1)	6 089 8 (8 0)	7,957 8 (30 7)	2 021 5 (1 7)
Electronic	13 585 4 (2 3)	15 003 3 (10 4)	18 078 8 (20 5)	4 256 0 (1 6)
- Both of Electrical Appliance and Electronic	19 224 2 (1 0)	21 093 1 (9 7)	26 036 6 (23 4)	6 277 5 (1 6)
Importing Value				
- Electrical Appliances	799 8 (39 6)	807 8 (1 0)	902 8 (11 8)	210 8 (1 0)
Electronics	12 447 1 (-19 8)	13 531 9 (8 7)	18 626 5 (37 6)	5 007 9 (28 5)
- Both of Electrical Appliance and Electronics	13 246 9 (21 4)	14 339 7 (8 2)	19 529 3 (36 2)	5 218 7 (27 1)

2 4 Trend on Electronic Industry in the year 2001 and beyond

It was expected earlier that the status of the electronic industry and its international trade will still be as good as it was in the year 2000 eg the investment and production will be much increased etc but unfortunately due to the economic crisis of the United State of America happened this year The personal Computer market of USA is now starting saturated since many companies have already in last 2 year (1999 and 2000) purchased the computers and developed their technology In addition due to the continuation of economic recession in Japan and the starting of the same in some European countries nowadays therefore the rate of increasing of the investment manufacturing exporting and employment in Thailand in this year (2001) can not be as well as it was expected earlier

It is expected now that this kind of recession will continue for one or two more years after this and it will occur not only in Thailand but in other countries as well since USA Japan etc are the ones of the main markets of the world

3 Noteworthy Development in Policies and Activities in Electronics and Telecommunications Field

3 1 Noteworthy Policies concerning Electronic

Many of Policies and Plans have been issued to help/support the development of Electronic and Telecommunication in Thailand the main ones of those are concluded here as follows

3 1 1 Strategic Master Plan on Electronic Computer Telecommunication and Information Technology (ECTI) 2000 2009

It has been observed that during these few years the capability in taking competition in many aspects of Thailand in comparison with some other countries of the same level in the same situation has been gradually reduced According to this it is found from the analysis concerned that one of the main factors which can raise the level of the capability in taking competition in all aspects of the country is the concrete research and development performing

Therefore NECTEC as the main institution having the responsibility and experiences concerning the research & development and engineering realizing of the said problem has studied thoroughly and then set up the Strategic Master Plan to enable them to perform efficiently and particularly the research and development in the field of electronic technology computer technology telecommunication technology and information technology to support the industry of the said categories so that the mentioned plan so called The Strategic Master Plan on Electronic Computer Telecommunication and Information Technology (ECTI) 2000 – 2009 can become the important mechanism to enable Thailand to develop her country up to the level which can take the competition properly with other countries during next 5 – 10 years

The said Master Plan is rather different from the others in the way that it has included in which the methodology of implementation which generally will enable the plan to reach the success as required

It is expected that the said Plan which has already been announced to the public and started functioning since last June this year (2001) will create so many changes that it can make many parts of the country to move forward simultaneously and continuously for a period of time which is long enough to enable Thailand to stand firmly on her legs and then reach the sustainable development in the near future

3 1 2 Master Plan on Industry Development concerning Electrical home appliances, Electronics and Information Technology

The Ministry of Industry has drafted the Master Plan on Industry Development concerning Electrical Home Appliance, Electronics and Information Technology in May 1998

After submitting to get considered by some relevant committees in the country and also the public hearing the said Master Plan has got the approval from the Cabinet on January 5 1999

According to the strategy specified in the said Master Plan the implementation under the plan on the modification of the industrial structure in the country has been divided into 2 phases as follows

Ph 1 There are 2 projects which have started their implementation in May 1999 They are of the following

- Project on modifying the manufacturing process in Electrical and Electronics
- Project on developing the electrical and electronic parts manufacturers

Ph 2 There are 3 projects which have started their implementation in October 2000 They are of the followings

Project on developing the electrical and electronic parts manufacturers

- Project on utilizing the business system and service system to acquire the data for the purpose of purchasing selling exchanging and exporting the component of the electrical and electronic products

Project on studying the appropriateness of the installation of the factory utilizing for electronic waste elimination

3 1 3 Special Sub Committee on e Thailand Development

In continuation to the Cabinet Decision on July 2000 in preparing Thailand to join e Asean in the efficient way with the obtaining of maximum utilization to the country the National Information Technology Committee MOSTE has set up on September 11 2000 the special Sub-committee on e Thailand having the Minister of science Technology and Environment as the Chairman and the Director of NECTEC as its Secretary

The functions of the said Special Sub committee are as follows

1 Setting up and Proposing the guidelines for the implementation of the country in the way to reach a goal of becoming e Thailand

2 Studying and collecting all concerned policies and agreement to be used as the data for developing the guideline for the country

3 Coordinating with other concerned organizations to develop e-Thailand to be able to go along with the regional and global development direction

4 Performing other functions as given by the National Information Technology Committee

5 Setting up any working groups to implement any functions being considered necessary and appropriate

3 1 4 Legislating of Electronic Related Laws

The cabinet has given the consent to the proposal of the Ministry of Science Technology and Environment (MOSTE) to perform the project on issuing the electronic Laws by having the National Information Technology Committee as the center in performing and coordinating with all other related organizations in the country

According to the above various Sub-committee composing of many delegates from various related government departments and private companies/institutions by having the personnel from NECTEC as its secretary in each of them have been accordingly set up to draft the related Acts

Six electronic related Acts have been initially drafted They are on the following topics

1 Electronic Signature

2 Electronic Transaction

3 Computer Crime

4 Data Protection

5 Electronic Transfer

6 National Information Infrastructure

Out of those Two have been drafted (No 1 & No 2) firstly After getting submitted to the Council of State through the Cabinet it has been advised that the said two should be combined into one under the name of Electronic Transaction Act The said advise has been agreed upon by the Cabinet who then submit the said combined draft to get considered by the Parliament to be enacted as the Act The said drafted Act has passed the consideration of three session meetings of the Lower House of the Parliament in the

beginning this year and is now under the procedure of the Upper House of the Parliament to proceed further till the said draft get enacted and promulgated as the Electronic Transaction Act as proposed

One out of the six (No 6), after being drafted by the Sub-committee concerned is now under the consideration of the Council of State

The remaining three of them are still now under the drafting procedure of the relevant Sub committees appointed as said earlier

3 1 5 The National Economic and Social Development Plan

Since the Seventh National Economic and Social Development Plan (1992 1996) has given a lot about the policies on Electronics and Telecommunications which became as one of a main tool to develop a lot of Electronics and Telecommunications in the country during its period with the continuation up to the time being therefore in case of the Eight Plan (1997 2001) there are no need to emphasize directly again about those policies but anyhow parts of the Eight Plan has said about some policies/guidelines which can indirectly support the development of Electronic and Telecommunication as a whole at present the heading of those policies/guidelines mentioned in the said Plan are as follows

- Increasing of the National capacity in research and development by the following guidelines

  Encourage greater competence in the basic sciences through development of centre of excellence

  Foster the planning conduct and analysis of research in both the social sciences and technological sciences emphasizing research relating to industrial enterprises

  Encourage the establishment of cross institute research teams and the formation of networks with international linkages

  - Consider the revision of laws and regulations regarding the immigration and employment of alien workers so as to facilitate technology transfer and to help relieve manpower shortages in certain sectors

- Development of the production base in preparation for changes in global markets

  Strengthening of the production base in preparation for changes in world markets

- Developing of science technology in order to create a foundation for sustainable development.
- Developing the infrastructure in order to improve quality of life and efficiency in production
- Increasing the efficiency of the administrative system in order create strong foundations for production and to increase competitiveness

  Developing state enterprises to make their operations more efficient and reduce public ownership

Anyhow due to the coming near of the ending of the 8th plan this year the government is now preparing for the 9th Plan (2002 – 2006) At present the vision and the direction of the said Plan have already been drafted The strategies on the development of science and technology strengthening are also included in the said Plan as well They can be briefed as follows

To develop the fundamental thinking and the increasing in quality and quantity of personnel in the field of science and technology

- To increase the efficiency of the research and the development in the field of technology by emphasizing on the research in the field which the efficiency in applying the technology is required to be increased promoting the development to obtain the output of innovative kinds and also promoting the research in the field of energy

3 2 Noteworthy activities concerning Electronic

Many activities concerning electronics have been performed by NECTEC the organization under the Ministry of Science Technology and Environment Most of them are in accordance with their IT 2000 policy established in 1995 (before announcing of the NECTEC ECTI Strategic Master Plan mentioned in 3 1 1) some out of which are in the continuation of the ones reported in the last AEU General Assembly 1999 Some of those noteworthy activities are hereby pointed out in brief as follows

3 2 1 Thailand Software Park

Background

Software Park project is a program initiated by NECTEC as part of Thai government s Information Technology policy This project aims at promoting software

industry growth in Thailand. Software Park will have both physical facilities and facilities in cyberspace to help with training and technology transfer as well as being a market place for software producers and customers

Building and Location

Software Park building is located on Chaengwattana Road. It has one of the most appropriate environment for software personnel Here is the list of the basic infrastructure for software industry that it provides

- Advanced high speed telecommunication network with fiber optic backbone
- Energy efficient environment control system
- Conference facilities/training facilities/exhibition areas and exercise areas within the building
- Modular office space designed to be flexible and easy to charge

Thailand Software Park has started functioning since 1999 and its responsibility has now been transferred from that of NECTEC to be directly under that of NSTDA

3 2 2 **Thai Microelectronics Center (TMEC)**

Background

During the fiscal year 1996 1998 the Thai government has allocated 600 million baht for the Thai Microelectronics Center Project Starting form1997 The building equipped with necessary facilities for IC fabrication is located in the alpha Technopolis Industrial Park in Chachoengsao province About 30 trained engineers and scientists are actively involving in the Project Equipment necessary for the IC fabrication has been in the process of purchasing

Lab facilities (by the year 2000)

- IC Design
- Fabrication Management
- Photolithography
- Etch
- Clean Process
- Thin Film and Ion Implantation
- Device Test and Simulation
- Facilities

The finishing of the project which was scheduled to be on October 1999 has been now changed to be at the end of 2002

3 2 3 Network Technology Laboratory (NTL)

The Network Technology Laboratory (NTL) was among the first in-house laboratories that NECTEC set up in late 1991 Its main objectives were to carry out research on networking technologies and to set up a computer network infrastructure for Thailand the example of this Laboratory is the Government Information Technology Services (GITS)

GITS is viewed as the important key towards meeting the urgent need for electronic government in order to achieve good governance and economic competitiveness

3 2 4 **High Performance Computing Center (HPCC)**

Background

The high Performance Computing center (HPCC) was found as one of NECTEC s laboratories in September 1994 Its main objectives are to promote the use of high performance computing application for country development to serve the needs of high performance computing resources in industry academic and in house research and to support education and human resource development in high performance computing area Our philosophy has always been to strengthen the local knowledge to be more self sufficient and to be less dependent on fully imported technological products

HPCC s 8-year plan is divided into two parts The first 4 year phase (1995 1998) is to demonstrate the usage and need of supercomputer systems in various applications such as Geographical Information system (GIS) Computational Science and Engineering (CSE) education and services to academic research The second 4 year (1999 2002) is to increase activities in high performance computing research such as cluster computing parallel and distributed computing including setting up high performance computing resources for common use among academic government and private sectors

Lab Facilities

- Supercomputer server 1 unit of SGI Power Challenge XL server consists of 8 MIPS R10000 processors 1 GB main memory 50+GB total disk capacity peak performance 600 Mflops/processor

- Cluster Computing Server 1 unit of Linux cluster system consists of 2 x Dual Pentium Pro@200MHz and 1 x Pentium II @400 MHz, 256 MB main memory on each node, and 12 + GB total disk storage
- Graphics Workstations 4 units of SGI Indy graphics workstation 1 unit of SGI Indigo2 1 unit of SGI Indigo2 Impact

3 2 5 Information System Service and support Division (ISD)

Background

The Information System service and support Division (ISD) was established in October 1994 to provide information technology services and support to both the public and private sector The division was established under a Cabinet resolution on April 19 1994 to promote information technology development in the public sector in which the Cabinet assigned NECTEC with the responsibility of planning and implementing the procedures for developing and promoting information technology transfer to government agencies and state enterprises as well as the private sector

ISD provides a variety of IT services which included constancy feasibility study master plan networking research and development software selection specification design strategic planning survey system design system development and system selection To date ISD has undertaken more than fifty projects covering various aspects of the IT development cycle

3 2 6 **Electro-Optics Lab (EOL)**

Background

Realizing of the important and the necessity for the development of the optical technology and industry in the country NECTEC has established in the year 1993 the Laboratory for R&D on Electro Optic

Objectives

- To promote and stimulate the optical technology industry in the country by performing the research and development with the emphasis on building the prototypes for commercial purpose
- To build and develop the optical technology foundation by developing the personnel and the foundation on researching
- To disseminate the optical technology in the country by means of training and technology transfer

Activities

Four projects concerned have been established under EOL many items of activities under each project have been completely performed while some of them are still on the way Those of the four projects are of the followings

1 Holography Project

2 Optoelectronics Project

3 Photonics Project

4 Optomechanics Project

3 2 7 **Electrical, Electronics and Computer Product Research and Test Center (PTEC)**

Background

The center was founded in 1998 under the National Science and Technology Development Agency (NSTDA) Ministry of Science Technology and environment The objectives are to provide EMC testing services and conduct research and development in the field of EMC The aim is to serve small and medium manufacturers in Thailand so that their products can meet the international standard competition in the world market

Test Facilities

- Shielded Enclosure 3 5 m x 3 5 m x 2 3 m
- Semi anechoic Chamber for testing at the standard distance of 3 m
- Open Area Test Site OATS for testing at the standard distance of 3 m and 10 m

Services availability

- Radiated and conducted emission
- Harmonics emission
- Voltage fluctuations and flicker
- Radiated and conducted immunity
- Power frequency and pulse magnetic field immunity
- Voltage dips short interruption and Voltage variations immunity
- Electromagnetic discharge immunity
- Electromagnetic fast transient/burst immunity
- Surge immunity
- Oscillatory waves immunity

3.3 Noteworthy Activities concerning Telecommunications

Many activities concerning Telecommunications have been performed in Thailand some of them are continued from the activities reported last time (in 1999, 16th AEU assembly at Sri Lanka) some are just occurred during this two year period (April 1999 – July 2001, before this 17th GA) and some are going to be started soon Some of the said noteworthy activities can be grouped and mentioned about as follows

3 3 1 In the context of rule and regulations

3 3 1 1 The Law on the Establishment of the Independent National Committee

The Article 40 of the new National Constitution 1997 has stipulated about the necessity of establishing the independent government body to assign the radio frequencies to the public in the way to benefit them at the most and to supervise and regulate the broadcasting and telecommunications services in the country Pursuant to the said provisions the Cabinet has decided on June 23 1998 to establish two separate independent regulatory bodies in the country namely the National Telecommunications Commission (NTC) and the National Broadcasting Commission (NBC)

The law concerning establishment of the said two National Commissions namely The Act on the Organization Assigning Radio Frequency and Regulating Broadcasting and Telecommunications Services B E 2543 (2000) has been later on legislated and promulgated on March 8 2000

Following the main content stipulated in the said Act the selection procedure for getting the members of both the commissions are now going on separately but due to the occurring of several problems in the selecting procedures the final selected members of both the commissions have not been obtained till now Anyhow it is expected that the said matter will be finalized ie both the commissions are officially set up within next year (2002)

According to the said Act the Post and Telegraph Department will have to change her status from being the governmental department under the Ministry of Transport and Communications to become the Secretariat Office of the National Commission The Ministry of Transport and Communications then will in charge mainly on transport sector leaving the telecommunications sector

activities to be under the responsibility of the National Telecommunications Commission except only those concerning with the high level governmental policies related matter

3 3 1 2 The preparation of the related Laws to be used in the near future by NTC

Having realized of the importance in having the proper function of the coming NTC the following related laws have been drafted and revised in order to be used in the near future

1 Drafting the new Act namely the Telecommunication Act BE 25 _ _ which has to be used in the coming future in place of the present similar Act the Telegraph and Telephone Act BE 2477 which will have to be later on abolished The said drafted law is now under the consideration of the Senior Members of Parliament Council (Upper House)

2 Revising the present Radio Communication Act BE 2498 The said drafted revision law will be taken into consideration in the next MP s Council meeting session to be held at the end of this year 2001

3.3 2 In the context of various noteworthy telecommunication engineering projects

3 3 2 1 IP based Satellite

Shin Satellite Public Co Ltd the new name of Shinawatra Satellite Co Ltd the company which have got the concession to launch the satellite and provide the satellite services in Thailand even her business protected period of 8 years obtained in 1991 has been expired in the year 1999 but due to the reason that her 30 year contracted period is still existed has now signed with the satellite launching company to launch her forth satellite namely IP Star the integrated IP platform broadband multimedia purpose satellite in the beginning of the year 2003

3 3 2 2 IP Telephone Service

TOT Long Distance Telephone Service By giving the bidding to the private companies to install the IP network (gateways and servers etc) throughout the country with the condition to allow TOT to lease networks installed to provide the IP or some other related services to the people in public The first bidding of IP network installation was given in the middle of 1999 and TOT has

officially opened her IP telephone service to the public since October 12 2000

To meet the huge increasing demand of the IP telephone service foresees by her observation TOT is now in the third phase of giving the bidding for expanding of more 100 000 portals of IP networks in addition to those of the same quantity available at present. The said expansion is expected to be started and being able to be utilized publicly within this year 2001

Phone NET CAT has also launched to the public her International Telephone Service over the IP Protocol (Voice over IP) under the name Phone NET' service since the beginning of December of last two years 1999 Up to now the said CAT Phone NET service having 30 40% of normal international telephone collection rate has now linked to 75 countries throughout the world In addition to the providing of the Phone NET service done by herself as said CAT has also authorized a private company to provide the said service on the joint venture basis

3 3 2 3 Public Internet Service Both TOT and CAT are now in the procedure of preparing to provide individually the Public Internet Service with the aim to enable the people in the country wherever they are to have equal right and chance to utilize the Internet network and service

- *In the context of TOT* her activities are categorized into two as follows

  The first activity is to install 600 computer terminals together with its necessary facilities at 300 different locations two terminals at each location in her Telephone Service Offices or other important public places in various districts of each provinces in the country to provide the internet service to the public so called Public Internet Service by utilizing her own IP network installed earlier for the IP Long Distance Telephone Service has been given to the public since December last year 2000 with the first phase installation of 300 computer terminals at the said 300 specified locations the second phase installation of the remaining 300 terminals is expected to be completed and being ready for additional service on the very same 300 locations to that of the first phase mentioned within this year 2001 as earlier planned

- The second activity of TOT is called *Internet Tumbol Project* According to the government policy, TOT, in collaboration with Civil Registration Division Department of Local Administration Ministry of Interior in performing the project on providing the internet facilitaties to enable the people in every Tumbol (sub-district) of the country (about 7000 and more in numbers) to use their own Indentity Cards (of electronic type) in accessing the computer terminal to be installed in all the administration office of each Tumbol for the purpose of utilizing the Public Internet Service The function of TOT in this respect is to install the computer terminals and all the necessary links According to this TOT has planned to install and provide the said service in 1000 Tumbols within this year 2001 more 3000 Tumbols in the year 2002 and the remaining 3000 Tumbols in the year 2003

- *Concerning CAT* The public internet project is also implemented by CAT but at earlier time According to the said project the installation of 756 computer terminals in all different districts throughout the country has been divided into two phases The first phase with the installation of 133 computer terminals along with its internet related accessing networks in various districts of the country The installation of the first phase has been now completed and the said Public Internet Service in those areas has already been given to the public at the end of last October 2000 Transmitting of data to and from Bangkok in the service are now done through the available existing Frame Relay network of CAT throughout the country The second phase with the installation of 623 terminals in the remaining 623 districts has now just finished It is expected that the public internet service in the last district together with all other preceding districts completed and opened one after the other into service earlier will be able to be given to the public in this August 2001 at the latest

3 3 2 4 Rural Area Public Telephone Following the policy of the government concerning the triumph to provide the telephone service to the people in all remote areas throughout the country TOT has been implementing her Long Distance Area Public Telephone Project since 1996 by utilizing many means of

accessing technology eg TDMA, UHF, Cable, Satellite CDMA and WLL for providing the public telephone to the people in the remote areas Up to now TOT has been able to provide the public telephone facilities to the people in remote areas of approximately 29,000 villages Therefore, after taking into account the other villages of about 20,000 and more in which the public telephone service has already been given earlier by other TOT projects and her concessionaires projects, the number of villages provided with public telephone facilities at this time have now become approximately 50 000 out of the total numbers of 70 000 villages and some more throughout the whole country It is expected that according to the activities mentioned at least 70 000 villages in numbers as previously planned by the project can meet the public telephone service at the end of this year 2001 The remaining villages emerged after the planning of the project since last 4-5 years are to be covered later on but soon

The bidding for the procurement of the public telephone sets to be installed in the remaining villages to cover those of 70 000 planned as said above has now been done by this Long Distance Public Telephone Project

3 3 2 5 Increasing of Telephone Numbers

Foreseeing on her shortage of telephone number to be given to the new cellular mobile telephone customers in the near coming time TOT has decided to modify her telephone numbering system to be that of eight digit system According to the said system the telephone customers throughout the country have to dial nine numbers of digit including 0 digit in front instead of 7 numbers in Bangkok Metropolitan area and 6 numbers in provincial area The said system has started its function since the beginning of this month (July 2001) By the said eight digit numbering system (but 9 digit dialing including 0 digit in front as said) TOT is now being able to have the capacity of 90 million telephone numbers which is ten times more than the earlier one

3 3 2 6 TOT Broad band Network & Services

Other than the current availability of the Narrow band ISDN Thailand by TOT is now ready to provide the broad band ISDN service etc to the public firstly in Bangkok area by next month and then in all the provincial areas

throughout the country by the end of this year 2001 In preparation for the said services, 6 ATM core switches and 45 ATM edge switches have already been installed throughout the country since 1999, while the optical fiber with the SDH transmission technology of many rings have also been completely installed throughout the country this year A new single ring of 9800 km with SDH system for the whole country including WDM applicable technique in its back-bone routes is also now being installed, starting from this year, by which it is expected that much more efficient broad band network and services will then be given by TOT within the year 2003

3 3 2 7 ADSL-ATM TOT has currently completed the installation of ADSL modems in the vicinity of Bangkok Metropolitan area The operational test on the said ADSL modem in conjunction with TOT-ATM switches already installed earlier has already been performed on June of this year Therefore with the complete availability of the said sophisticated ADSL modem and ATM switches as said TOT will be able to provide any of high speed transmission services to her customers who install or going to install ADSL modem at their sites by utilizing the copper telephone wire lines previously installed everywhere including those along the path between TOT sites and her ADSL customers without the need to install any special leased line or the high cost optical fiber within next many years The examples of the said high speed transmission services are those of the distinct high speed internet any of high speed data transmission or data processing Video On Demand Telemedicine Distance Learning and other kinds of high speed multimedia services

3 3 2 8 ATM CAT After the completeness of the first project in installing and testing of 5 nodes ATM switches in Bangkok CAT has now signed the contract with company who won the bidding to procure and install more ATM switches of about 80 nodes in various provinces throughout the country CAT has planned to start utilizing all of the said ATM switches for providing the high speed multimedia communication services throughout the country in the middle of next year 2002

3 3 2 9 New Digital Cellular Mobile Telephone System

- Telecom Asia Public Co Ltd (TA) one of the distinct private company providing basic telephone service and PCT (Personal Communication Telephone) service in Bangkok is now also planning to install and provide the

other one of digital cellular mobile telephone system service utilizing the available 25 MHz bandwidth of the 1800 MHz band in next year, 2002

- Relating to another digital cellular mobile telephone system of 1900 MHz in which the frequency has been given to TOT & CAT due to the legal and economic problems the project is now automatically postponed

3 3 2 10 800 Band A CDMA In addition to the introduction of her digital cellular mobile telephone service utilizing the state of the art technology Narrow Band CDMA or CDMA 1 to the public in Bangkok and its close surrounded areas CAT has later on got the approval from the government to install the network of digital cellular mobile telephone of the same technology in various provinces throughout the country other than Bangkok and its surrounded vicinity It is expected that the installation of the whole network of this CDMA 1 provincial area project will be completed and being ready for the services providing in next year 2002 Therefore at that time in conjunction with the existing network of the same system in Bangkok and its surrounded areas which is also now under the period of increasing in the installation of some more stations CAT will be able to get much more customers than that in the previous time Moreover realizing the importance of wide band technology CAT has now planned to develop this one of her system narrow band CDMA (CDMA 1) directly to that of the wide band CDMA (CDMA 2000 W CDMA etc) of the IMT 2000 generation and beyond in order to provide high speed data transmission to her customers the mobile internet service may also be provided by the said developed system as well

3 3 2 11 PCT (new Personnel Cordless Telephone)

TOT and its concessionaire TA are taking a joint operation to provide PCT service basing on PHS technology in Bangkok The said service has started its function officially at the end of 1999 By the said service the user can utilize the same telephone number both at home and outside The other concessionaire TT&T has planned to join TOT to provide the said service to the populated areas in the other provinces throughout country soon as well

3 3 2 12 E Commerce

ECRC under NECTEC

Realizing the important role of E Commerce in the competition world at present the Cabinet has given the consent on December 29 1999 with the

establishment of the Electronic Commerce Resource Center' (ECRC) as a special project under NECTEC MOSTE

Up to now ECRC has performed lots of activities concerning e Commerce in Thailand eg

Setting up the National Framework of e-Commerce in Thailand

Providing the course "Training the trainer on e-Commerce to all branches of Rachapad Institute (Education Institute for the teaching the general/social subjects) throughout the country

- Having cooperation with the Ministry of Agriculture in utilizing the internet to develop Thai Agriculture eg the project on providing the agricultural data through internet

Advising the travelling Authority of Thailand (TAT) to develop initially the Web site on e Commerce for the purpose of supporting the travelling in/into Thailand

Providing the training courses to the private sector including the international organization/institution concerning the exporting by utilizing of e Commerce system

- **Internet Shopping Mall**

CAT has now planed to open her Internet Shopping Mall Service her purposes on this are of the followings

to support the e commerce using in the country by creating Web portals to be leased by the customers for their commercial purpose

to enable the general customer of B to C type to design their web page by themselves or through the template provided by the mall

to provide the product selling service thorough the Mall

to enable the billing payment of CAT services to customers through the Mall Web

to provide the Gift shop service especially to the foreigner this will not be only to give more conveniences to the foreigners but also to increase more income for the country

to provide the registration of Domain Name System (DNS)

- to provide e-mail service on the web base application eg Free mail service, etc
- to provide the adverting service through the Mall web or mail

3 3 2 13 EDI (Electronic Data Interchange)

There are 2 providers of EDI services in Thailand at present, they are

- the Trade Siam Company, the joint venture of public agencies (eg NECTEC etc) and private agencies its service has been given since the end of 1998
- CAT EDI This EDI service has been given by CAT since the middle of 1999

By the said services the agencies involving the international trade in Thailand can have a lot of convenience and time saving in running their business importing exporting etc by sending the said data through EDI the standardized protocol network service The main users of the said EDI service are the Custom Department Thai Airways International Public Co Ltd and the Port Authority of Thailand etc

3 3 2 14 IDC (Internet Data Center)

CAT has at present, arranged the space at the 32nd floor of the new building at her Bang rak compound in Bangkok to provide IDC service to the customers By the said service the customers are capable to rent the space available on the said floor to install their own server or event to lease the disk space in CAT server for their own use By the said services the customers do not have to find the building or the place to install their server or to procure the new server and no need to maintain the data security by themselves because it will be taken care by CAT authority In addition due to the using of the said CAT floor space or CAT server the site of customers will not be only near to CAT transmission system but also can connect automatically to IIG (International Internet Gateway) and NIX (National Internet Exchange) through CAT LAN link by tnese the proper path of connection are obtained resulting in the economy of the said CAT customers

3 3 2 15 SchoolNet Project

NECTEC had created her pilot project for providing some schools to be able to utilize the internet for their educational purposes in 1995 Initially, the project can provide only those schools in Bangkok and in some nearby area its problem was due to the unavailability of funding to be utilized for the long distance connection required. etc Fortunately after combining the said project with the Golden Jubilee Network Project created on the occasion of celebrating His Majesty the King s Fiftieth Anniversary of Accession to the Throne in 1998 the nationwide *Schoolnet@1509* was developed with collaboration of the Ministry of Transport and Communications by which the new SchoolNet Project is now created and expanded rapidly covering the schools throughout the country with the activities of both the Web browsing and the Web developing Up to now (July 20 2001) 2582 schools have already joined the project out of which 729 have already developed the Web page of their own schools By this SchoolNet project many lectures of the project participating schools have been properly trained which accordingly results the students of those schools in being able to utilize the internet system to gain much more knowledge from the various web sites both domestically and internationally and also to get the experiences in developing their schools web page etc

This project is now still going on actively it aims to serve 5000 schools within June of next year 2002

4 Research and Development in the Electronic and Telecommunication sphere

Many universities government civil departments including related enterprise military a semi government autonomous organization and some of private companies and organizations in Thailand perform the research and development in Electronics and Telecommunications some of them can be referred to as follows

4 1 Post and Telegraph Department (PTD)

The Office of Telecommunications Technology PTD to which the Research and Development Section belonged has been established since 1992 so that PTD herself can have more capability and facilities in performing proper research & development on the telecommunication engineering system under its responsibility

Example of some research and development projects from which their results have been extended and utilized later on by PTD, are referred as follow

1 The project on measuring the fieldstrength of broadcasting signal throughout the country which later on, its result in the form of analytical data had been, utilized in the establishment of various National Broadcasting Frequency Plans ie those of FM VHF-TV and UHF TV Plans

2 The project on performing the survey, analysis and research on man made noise interference occurring upon the electrical radio and electronic apparatus The result of the said project had been later on utilized in setting up the proper specifications of some radio equipment to be procured and in making the project proposal to install in the near future the Anechoic Chamber in PTD itself etc for EMC measurement purpose MRA (Mutual Recognition Agreement) etc

3 The study on the possibility of applying GIS system to obtain perfectly the terrain data throughout the country to be utilized soon for the efficient frequency management system under the responsibility of the department

4 2 The Communications Authority of Thailand (CAT).

CAT has made many times of modifications to its organization during last few years the latest main time was happened in 1994 in the way that much more importance have been given to the telecommunication engineering aspect. Some more telecommunication related divisions have been established at that time by rearranging the existing works taking in to account of giving the better work performances in the whole scene The new established division to which the attention should be paid is the Engineering Division which is now playing the important role in the field of telecommunication research and development of CAT (see also the organization chart of CAT in 1 2 1 2)

In accordance with the policy of the government issued in July 1992 specifying that all the government enterprises earning profit should utilize 3% of their profit in the research & development activities CAT has issued in 1994 the new regulation relating to its funding and awarding the scholarships to the personnel who take interest in performing the research/development project concerning CAT (both of Telecommunication and Postal projects) By the said regulation CAT, itself can have the good amount of each year budget by extracting it from her profit and utilize it in awarding as the fund to anybody (both CAT personnel and

outsiders) to perform any related CAT R&D projects which has been proposed and get approved by the concerned CAT Committee in which the personnel from the said Engineering Division is the secretary Up to now 8 project have been completed under the said program, 4 out of which are given here only by their names as for examples

1 Measurement and Analysis of Received Signal Mobile System Amp800 MHz.

2 Inmarsat Message from Internet

3 Modem Presentation on Internet

4 The Analysis of Broadband Services over ATM Via Satellite

Some more projects have been proposed and approved 3 of them are now being performed They are as follows

1 Design of Optical Fiber Feeder System for Microcell Cellular 800 MHz CDMA System

2 Network Flow Analysis in Thailand

3 Development of a very low bit rate coding for multimedia data

4 3 Telephone Organization of Thailand (TOT).

The research and development activities of TOT is partly originated from the establishing of ITU Test and Development Center in Thailand since last nearly thirty years After getting established for some years the said institution had been transferred to be under the responsibility of TOT with its main activities on the equipment test and calibration Later on in 1981 the said center was upgraded to be as one sector under the Engineering Department TOT comprising of three divisions including the one of research and development Anyhow by the latest reorganization of TOT in 1995 the said sector has been again leveled up to be one of the departments belonging directly to the TOT Managing Director Executive Staff namely the Department of Technical Research and Development The said department composes of four sectors one of which is the sector of Research and Development which is now playing the important role concerning R&D activities of TOT (see also the organization chart of TOT in 1 2 1 3) Few of prototypes resulting from these R&D activities have been announced and manufactured commercially by the private companies both locally and internationally Regarding to the policy of the government the regulation concerning the awarding of scholarship to any person having got approved from TOT to perform research & development involving TOT activities by funding from 3% of TOT profit has been set up by TOT since 1995 Up to now numbers of relevant projects have been proposed and got approved by the concerned Committee

of TOT through the initial consideration of the involved Sub-committee chaired by the Head of Department of Technical Research and Development (so called Vice President of TOT for Technical Research and Development)

The projects which have been approved are in both of social and engineering ones There are 5 engineering projects which have got approved and subjected to the implementation at present they are as follows

1 Studying the technology and build up the prototype on the public telephone of Chip Card type
2 Building up the water or Liquid Sensor Prototype (for being utilized in checking the undergrounded cable)
3 Developing the Tool for facilitating in climbing up the Electric Pole
4 Building up the prototype of AC Line Surge Protector
5 Developing the technology and Service Plan on W CDMA System

4 4 National Research Council of Thailand (NRCT)

This Council which was previously under the Ministry of Science Technology and Environment has been now transferred to be directly under the Priminister Its present status is to be as the central government body in setting up the policies and guidelines concerning the research and development in the country

NRCT just have now finished her drafting of 6th R & D Plan (2002 – 2006) of the country which is now under subjecting to get approved from the Deputy Priminister in charge In the said drafted Plan the research and development referred to has been divided into 4 main branches ie agriculture science, health and Social Each Branch has been sub divided into many different groups All together there are 34 groups 6 out of which are the groups belong to Science branch

The 6 R & D groups under the Science branch are of the following

1 Food industry for exporting
2 Technology supporting manufacturing industry
3 Alternating energy and the efficient use of enery
4 Cleaning technology and waste management
5 Computer development on both hardware and software
6 Thai Industry

4 5 Thailand Institute of Scientific and Technological Research (TISTR)

TISTR, a state enterprise under the Ministry of Science Technology and environment perform, generally all fields of scientific and technological researches but mainly on those of agriculture related

Some interesting researches relating to ultra wave and electromagnetic wave during these 2 3 years are as follows

1 Building the prototype of the Ultrasonic cleaning Machine

2 Study on the electromagnetic wave protection material

4 6 National Electronics and Computer Technology Center (NECTEC).

In the context of research and development in Electronic sphere NECTEC seem to be the most active one among others in the country for the time being Lots of cooperation on research and development have been provided by NECTEC for the public at present

Those cooperation can be grouped as follows

1 Licensing Cooperation with private sector in the form of selling the license to the private entity who take interest in the prototype After getting license made by NECTEC the said private entity can then utilize the said prototype for manufacturing the product for the commercial purpose The examples of the said licenses are of the followings

- Driving System for the Small Size Electric Car

  Software for Translating and Sending/Receiving medical images

  Solar Cell Battery Charging Controller

  High Performance Inverter for Electric Train

2 Contracted Research

The contracted research is a form of cooperation made by NECTEC to provide services to the private sector who require to improve their technology product or to develop their new goods with the purpose to be the owner of the whole technology used

The example of this kind of research are of the followings

Battery Charger for Hand-held Telephone using in the Car

Public Telephone Card

ICCS (Integrated Communication Control System)

Automatic Electric Meter Reading System

3 Joint Research

Joint Research is the method being used by NECTEC to promote the companies or entities having high enough knowledge, skill and ability concerning technology and require to use the technology already available to improve their product or to develop their new goods on commercial purpose The said private sector can propose their research projects to be considered by NECTEC in the form of joint research The said joining can be in the form of funding personnel and/or technology to be used

The examples of the said kind of projects are of the followings

- Computer Program for Translating Thai Document to Text File Project

  Developing Software to perform data collection and Database Management on the Environmental Laws

4 Joint Ventures

Joint ventures is an important idea adopted by NECTEC to promote both of government sector and private sector requiring to run the business which has the high possibility in getting succeeded in the market but there still be some risks or the high amount of funding involved in implementing the project in this case the interesting entity can propose the said project to be considered by NECTEC for being the joint venture in the project

The examples of the said joint venture are of the followings

Interact Thailand Co Ltd

Trade Siam Co Ltd

5 Technical Testing Services

NECTEC also provide the technical consultant to the private sector who require the consultant or adviser in analyzing and solving the technical problems happened in their work performing NECTEC confirm the scope of service in the field of electronic and computer telecommunication and Information technology

The examples of the said service are as follows

- Consulting on the Development of Battery Charger Prototype
- Consulting on the Improvement of Electromagnetic Wave Product
- Consulting on the development of Eye glass Lens

In the context of foreign researchers The foreign researcher who takes interest in performing the research in Thailand can join the Thai researchers who has applied and obtained the sponsoring fund from some research and development organizations in Thailand The said organization at present is the National Research Council of Thailand while the CAT and the TOT also become the other two organizations who can sponsor similar kind of fund at present

5 Education and Training in the Electronics and Telecommunication Sphere

Electronics Telecommunications education in Thailand is for the time being provided for the local population Although facilities for foreign students have been in existence for quite some time they are comparatively limited The following descriptions of electronics and Telecommunications education available in the country are

5 1 Education at College Level

Polytechnicial colleges provide among others electronic and/or telecommunication programs for their students Two levels of education here can be distinguished education for vocational certificate and for higher vocational certificate

Vocational certificate requires 3 years of education following the secondary school while the higher requires 2 more years of study

5 2 Education at University Level

This provides higher education for students working for degree electronics and telecommunications are taught in faculties of engineering of both state run and private universities Currently more than ten institutes and universities which are state run they give courses with some subjects in Electronics and/or Telecommunications for master s degrees and doctorate degrees in Electrical Engineering respectively

5 3 Informal electronics and Telecommunications Education

In addition to electronics and telecommunications education in colleges or universities there are also the informal education in electronics and telecommunications which are organized by government as well as by private schools but mainly by the latter The programs last for 2-3 months giving basic knowledge and practical experience on simple equipment to the students

Training Programs for in service personnel are also organized mostly by government agencies to meet their own requirements Many of government organizations besides serving their own needs some provide the job training to serve the educational system of the country Some give the training to the people in public for some particular purposes

Training on Computer and its related subjects on a short Course of few days are now given by some private or semi government institute, NECTEC for example is now very famous in giving a lot of short courses regular training to the public

For occupational purposes some government organizations issue the training courses on electronics and telecommunication to the outsiders for serving the standard of some occupations eg the Post and Telegraph Department, one of the government body which a part of her functions is to issue the Radio Operator s and Technical Certificates to the people also give various training courses to the outsiders before issuing the certificates concerned etc

5 4 Electronic and Telecommunication Education for Foreign Students

Three official establishments in Thailand at present are known to provide electronic education for overseas students They are the King Mongkut s Institute of Technology Lad krabang (KMITL), the Asian Institute of Technology (AIT) and the Civil Aviation Training Center of Thailand The AIT which is an international institution has programs for master s and doctorate degrees Admission is open to all nationals The Civil Aviation Training Center which is supported financially by ICAO and UNDP provides training in the field of navigational aids and mobile aeronautical telecommunication KMITL with financial support form JICA has been organizing for many years a training course on telecommunication technology for Asian participants

Concerning private sector at least two international private universities in which electrical/electronic engineering subjects are also covered have been in existence for the time being

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BIO-DATA of Mr PIPOPE CHOONCHAROEN
(Presenter of the country report)

He graduated from Post & Telegraph Dept Occupational School in radio technical branch After the said graduation he has been automatically and immediately recruited in the service of Post & Telegraph Dept in 1960

Five years later, he obtained Colombo Plan scholarship, under the requirement of Post and Telegraph Department of Thailand, to study in AM university, India, by taking on leave from the Department belonged for 5 1/2 year He has graduated in 1971 with Bsc Engg in Electrical and came back to join the service as the engineer in the same Department

After quite some years he joined NIDA institution in Thailand and obtained the Master Degree in Public Administration on Public Policy and Project Management branch in 1992

Many of his activities in the past were most of the national frequency planning for the country eg FM,AM,VHF-TV,UHF-TV mobile radio plans especially maritime mobile There are many activities in other fields as well eg the activities in establishing computer center of the dept developing and implementing some technical project on Telecommunication Interference (EMC), GIS Application in Frequency Assignment etc

In addition he used to get involved as the national coordinator in many of ITU cooperation projects concerning the development of various aspects in telecommunications in the Asia-Pacific region, and also as the representative of the government in many other international telecommunication related meetings eg APT AIC AEU URSI etc

He is well known in the telecommunication field due to a lot of his papers concerning telecommunication aspect which have been frequently published in some books journals etc of both local and international

At present, he act as the Acting Chief Executive Telecom Engineer of the Department (PTD) being responsible for many technical projects of the Dept, mainly the ones in the research surveying and development in telecommunications, being the senior regular lecturer in many training courses of the department established mainly for the outsiders being the chairman of various telecoms related Ad hoc groups of the Department and also being the representative of the government in many international activities

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17th Asia Electronics Union
General Assembly Bangkok, Thailand (31st July 2001)

Electronics & Telecommunications Industry in Sri Lanka

Country Report

Sri Lanka has been a democratic country since her independence is 1948 and enjoyed parliamentary based political system which was subsequently converted into a Presidential system in 1978 Sri Lanka liberalized its economic policies in 1977 to cater to a wider export oriented industrial sector Country has a agricultural based economy and only in the last two decades that there was a significant economic growth through industrialization

Electronic & Telecommunications Industry

Department of Telecommunications had been providing telecommunications services since 1858 The first telegraph circuit was installed between Colombo & Galle in 1865

Telecommunications services began in 1880 through a company named Oriental Telephone Company and it was subsequently turned into a State Owned Enterprise in 1896 under the Department of Post and Telecommunications In 1931 the first automatic telephone exchange was installed and the international telephone services were commenced in 1935

In 1941 Cable & Wireless Ltd commenced the international telecommunications services and continued for 10 years until the services taken over by the Department of Post & Telecommunications In order to cater to the community living in Colombo city limits Subscriber Trunk Dialing (STD) was introduced in late 1960's, International circuits were further expanded through the first satellite earth station built at Padukka in 1976 This station was handling 65% of the International Traffic at initial stages In 1980 Department of Telecommunications was established to administer the telecommunications services in the country as the first phase of restructuring the telecommunications sector In the first decade after restructuring of the telecom services the number of telephone connection requested was increased from 30,000 to 500,000

As there was a need to further improve the quality of services and institutional efficiency to provide more autonomy and flexibility further steps were taken to restructure the telecommunications sector by creating a regulatory body and services providers

As a results of this Sri Lanka telecom was made a Government Cooperation in 1991 to provide services and Telecommunication Regulatory Body was established to administer the operational aspects of telecom services

In 1996 Sri Lanka Telecom was converted to a limited liability company to provide more autonomy to the institution. In 1992 the Nippon Telephone and Telephone and Telegraph (NTT) a Japanese, Telecommunication Company took over the management of the Sri Lanka Telecom Ltd.

The Regulatory Authority undertakes the responsibility of granting multiple licenses to operators who were willing to provide value added services

Eventhough the Telecommunications Act provided the basic framework for competition, actual implementation took place when the first license was issued to Celltel Lanka Ltd. a company owned by two foreign companies (Millicom International Inc, of the US and Comwick Inc of Sweden) with several local business partners Celltel was established in 1987 under the license issued by the government.

In a few years several mobile cellular services providers were issued with licenses to create competition which eventually brought down the charges for mobile services considerably

Electronic Industry

Growth of Electronics industry in Sri Lanka in the last two decades could be considered very low in comparison with other industrial sectors in the country A few local companies with the foreign collaborations commenced electronics related industry in the Free Trade Zone at Katunayake Electronics industry established in the country could be grouped into three types

a) Industries with BOI status in which total production or value addition was for 100% export purposes
b) Industries assembling consumer products for the local market
c) Industries manufactured specialized electronics products for local & export markets

Industries with BOI status are considerably large operations, (Type a) which provides employment to 1000-1500 persons The second Type (b) of the industry were mainly concentrating on audio video equipment without automatic assembly process

Type © of the industries were based on enterprenurship through their specialization in the field. Their industries are 100% local which provide employment levels of 30 to 400

Contributions of Arthur C Clarke Institute for Modern Technologies towards Electronics & Telecommunications Industry in Sri Lanka

Arthur C Clarke Centre for Modern Technologies was established in 1984 by an Act of parliament with a view to promote electronics, communications, space technology, robotics and energy through research & development, training, consultancy, etc

The Centre commenced operations in 1985 with a small staff recruited on contract basics The Technical activities were commenced in 1987 in collaboration with Faculty of Engineering at University of Moratuwa, which is situated in the land opposite to Arthur C Clarke Centre

The activities of ACCMT were further expanded in early 1990's with the construction of the new four storyed building that was completed with larger laboratory and library facilities

Industrial Research in Electronics and Telecommunications

In early 1990's Centre understook several research & development project related to electronics/communications to support the private and public sector establishment in Sri Lanka. The projects led to the development of inhouse capability of different fields of activities which eventually formed a high calibre consultancy group within the Centre to support the industrial needs

In early 90's the Centre launched a youth training programme to support the schools leavers for self employment related to Electronics This programme was specially commenced to help the governments effort to solve the unemployment problem at the of the country

The training facilities were further expanded to the industry by offering training courses based on electronics and communications

Apart from that Centre launched services oriented training programs for low income group school leavers under the funds provided through the de-centralized budgets of Member of Parliament and Ministers

Future -Expansion Programs

With the introduction of new Science & Technology Act of 1994 the name of the Arthur C Clarke Centre for Modern Technologies was changed to " Arthur C Clarcke Institute for Modern Technologies" with an addition of new fields namely Photonics and New Maleuals in addition to the initial fields listed The Institute is currently concentrating on limited fields for which a limited trained staff and resources available

Science & Technology Personnel Development Project under Ministry of Science & Technology

In order to make the local industries competitive with inflow of foreign goods in the future, the Ministry of Science & Technology embarked on a Science & Technology Personnel Development Project funded by Asian Development Bank in 1997 Professor K K Y W Perera the past President of Asia Electronics Union has been the Director of the Project since its inception in 1997

The project objective is to develop manpower capabilities and infrastructure facilities which requires for future industry needs on pre identified trust areas

Apart from that there is a program launched by the Project to build the Institute Industry Partnership (IIP) to service the industry needs on pre-identified trust areas A permanent committee on Institute-Industry Partnership co-chaired by the Public sector and Private sector representatives was set up in 1999 to develop strategies and long term plan, for a sustainability of the Institute-Industry Partnership This is called a National Level Committee (NLC) of IIP

The NLC identified key points as sub-components of Institute-Industry Partnership Electronics, Communications and Information Technology were identified as some of the key areas needed to be considered under Institute-Industry Partnership

The proposed methodology is as follows

- University Lecturers to be released to industry to work for limited periods
- Similarly Scientists and Technologists to be released to Universities from Industry
- Emerging Scientific/Technical problems of the industry to be referred to Universities and R & D Centres for solutions
- Universities and R & D Centres to engage in collaborative activities with industry for contract and combine research programs
- University curricula to be based on Industry needs
- Promote Technology Transfer
- To keep a track on emerging technologies

The Science & Technology Personnel Development Project has allocated a large sum of funds to develop the electronics/communications industry through Sri Lanka Electronics Manufacturers Association for the development of II Partnership

Reference

1 AEU proceeding General Assembly March 1999- Colombo -Sri Lanka

2 Report for Mid Term Review by Manager Benefit Monitoring & Evaluation ADB Science & Technology Personnel Development Project –August 2001

Telecom operators and their service as at August 1997

Operator	Date of License	Duration	Services
Sri Lanka Telecom Ltd	Aug 1991	20 years	Basic domestic & intl telephony telegraph & telex, data transmission, maritime mobile facsimile intl TV transmission. Voice cast transmission, IDS INMARSAT
Lanka Communication Services (Pvt) Ltd.	July 1991	20 years	Switched & non switched date comms Store & forward fax, e mail video enhanced voice
Electroteks (Pvt) Ltd.	Nov 1991	20 years	Switched & non switched date comms telex, directory info store & forward fax, e mail video text enhanced voice EDI database facilities
SITA	Aug 1992	5 years	Switched & non switched date comms telex, data processing within airline industry SITAFAX.
Infocom Lanka Ltd.	Sept. 1992	10 years	radio paging
Bell communication Lanka (Pvt.) Ltd	Dec 1992	10 years	radio paging
Telstra	Feb 1993	7 years	cellular mobile
Fentons Ltd	Feb 1993	10 years	radio paging
Dynacom Engineering (Pvt.) Ltd	Feb 1993	5 years	Trunk mobile radio
Intercity Paging Services (Pvt.0 Ltd	Apr 1993	10 years	radio paging
Equipment Trades Ltd	Sept. 1993	10 years	radio paging
MTN Networks (Pvt.0 Ltd.	Sept. 1993	20 years	cellular mobile
Air Lanka Ltd	Dec 1994	5 years	Voice and data communications for Air Lanka s internal use only
Lanka Internet Service Ltd	Dec 1994	20 years	E mail, internet, store & forward fax, e mail to fax to e mail, telex, X 25 data transmission, videoconferencing enhanced voice services
The Payphone Co (Pvt.) Ltd.	Dec 1994	10 years	Public Payphone
MTT Network (Pvt) Ltd.	May 1995	20 years	Lease circuits
Celltel Lanka Ltd	Sept. 1995	13 years	Cellular mobile voice mail, fax, lease excess WM capacity to payphone operators
Ceycom Global Communications Ltd	Sept. 1995	20 years	Switched & non switched data communications
Telia Lanka (Pvt.) Ltd	Feb 1996	20 years	Fixed basic telephony data transmission, public phone voice mail, facsimile
Lanka Bell (Pvt) ltd	Feb 1996	20 years	Fixed basic telephony data transmission, public phone, voice mail facsimile
Itmin Ltd	June 1996	20 years	Switched & non switched data co
Eureka online (Pvt.) Ltd.	Aug 1996	10 years	Switched & non switched data co
Pan Lanka Networking (Pvt.) Ltd	Apr 1997	10 years	Internet
Millenium Technologies	Aug 1997	N A	Premium services

Electrical or Electronic industry projects with BOI status and their progress

Company	Collaboration with	Employment Capacity	Products or Type of value addition	Export in Million of Rupees (approximate figures only)			
				1995	1996	1997	1998
Abans Jungpoon	Korea	543	Electrical/electronic Components	65	30	n/a	n/a
Aselco	Switzerland	181	Printed Circuit Board	121	79	36	n/a
Asia 400	UK	51	Repair of used computers	1 6	1.5	1.9	4 4
Asia Prepress	UK	38	Audio Products, Computer software	0 4	3 8	0.3	
Bartleet Micro-devices Lanka		1200+at time of suspension	---	325	37	Operation suspended	
Cortech Systems Lanka			---	59	62	1 2	0 1
Cruickshank & Partners Ceylon	UK	79	Voltage control panels	97	318	389	447
Elsuma	Switzerland	406	Electronics products(compact fluorescents)	190	122	57	773
FDK Lanka	Japan	1105	Manetic heads ferrite cores etc	2025	4386	5469	5435
Flintec Transducers	Sweden	132	Electric weighing systems	127	129	238	305
Frostaire Lanka	Sri Lanka	20	Air conditioners	12 6	12 2	1.3	--
IE International	Sri Lanka	105	Electric & Electronic Goods	--	0 19	0 8	--
KIK Lanka	Sri Lanka	6	Switchgear Assemblies	--		6	8
Kabool Magnetics	Korea	1098	Magnetic Heads	26 2	87 7	407	135
Kookje Colombo	Korea	486	Crystal Units	204	220	220	195
Lanka Higu	Germany	384	Magnetic Heads	28 7	22 8	22 9	28
Nippon Maruchi Lanka Ele	Sri Lanka	420	Microwave products	96	216	303	317
Shin Kwang Lanka	Korea	123	Fluorescent Bulbs	51	101	118	28
Suntec electronics (Pvt.) Ltd	Japan	237	Electronic Transformers	--	--	1 5	3 4
Susung Lanka Ind Co	Korea	382	Lamps & Home Appliances	79	95	131	110
Swindo electronic	Switzerland	127	Fiber Optics, Printed Circuit Boards	--	--	--	3 5
Tandon Associates Lanka	USA	765	Hard Disk Drives/clocks/watches Assem	--		703	992
Toroid	Luxembourg	221	Coil transformers	241	274	380	407
International	Sweden, UK						
TOS Lanka Co	Japan	588	Printed circuit boards	--	--	--	0 005
Trisonar	Hong Kong	112	Electronic devices	0 7	1 2	0 2	--
Uchuhashi Lanka	Japan	2137	Safety devices/thermal cutoffs	--		18	94 7
Yamashuro Lanka	Japan	37	Electrical items	42 5	64	60	41 5

THE ASIA ELECTRONICS UNION

The 17th General Assembly
30 July – 2 August 2001, Bangkok

Document GA No 20
Date 27 July 2001

Source Secretariat of the AEU

Title Application for New Member

1 Application from Taiwan

The AEU Secretariat received an application from the Computer and Communications Research Laboratories (CCL) of Industrial Technology Research Institute with full documents on 14 October 1999 In conformity with AEU Agreement with three month notice on their application with AEU Circular letter there was no objection from the AEU Members

2 Request for approval

The Secretariat requests the 17th General Assembly to approve the admission of the Computer and Communications Research Laboratories (CCL) of Industrial Technology Research Institute Taiwan as Associate Member of the Asia Electronics Union

THE ASIA ELECTRONICS UNION

The 17th General Assembly
30 July – 2 August 2001 Bangkok

Document GA No 21
Date 27 July 2001

Source Secretariat of the AEU

Title Candidate for Honorary Title

The Preliminary Meeting was held in the afternoon of 30 July 2001 Candidate for honorary title was discussed in this meeting The fellow mentioned three persons were recommended

Prof K K Y W Perera	Honorary President
Mr Pipope Chooncharoen	Fellow
The late Dr S C Mehta	Fellow

The AEU Secretariat would like to request the 17th General Assembly to accept the recommendation on conferring title of Honorary President on Prof K K Y W Perera title of Fellow on Mr Pipope Chooncharoen and the late Dr S C Mehta

Agreement
Instituting
The Asia Electronics & Info-communications Union (AEIU)

Preamble

Fully realizing the importance of the part that can be played by electronics in the cultural and economic development of the countries in Asia and Oceania and of its contribution toward their prosperity and welfare eventually leading to world peace and

recognizing the advantage of organising an international cooperative body drawn from countries in the region on a permanent basis for keeping up with the rapid progress of electronics and

according to the joint declaration unanimously adopted at the close of the Asia Electronics Conference 1965

the Asia Electronics Conference 1967 agreed to establish a permanent organization for international cooperation in the field of electronics under provisions agreed at that time and this body the Asia Electronics Union was established on April 1 1968

Having regard to changes in circumstances that have occurred since then the Asia Electronics Union at its sixth (1979) thirteenth (1993) and seventeenth (2001) General Assembly has revised its Agreement and associated Bylaws and adopted the provisions given hereunder

Article 1 Name

The organization shall be called The Asia Electronics & Info communications Union (AEIU) (hereinafter called Union in this Agreement)

Article 2 Seat

The seat of the Union shall be shifted to India with effect from 1st April 2002

The location of the seat will be reviewed at every General Assembly

Article 3 Full Membership

1 The Union shall be composed of Full Members with voting right and Individual Membe s without voting right

2 Definition of category is as follows

A Full Members i) a Member that pays Full Membership or

ii) a Member that pays Subsidized fee but contribute significantly to the growth of the Union

B Individual Members i) Individuals that pay subsidized fee

ii) Persons of international repute in the areas of the Union

Article 4 Objectives and Activities

1 Objectives

To find out the feasibility of and to promote and encourage bilateral and/or multilateral Cooperation in the field of electronics information and communication and related science and technology by such measures as

(a) exchange of information in above areas including basic research applications and manufacturing techniques

(b) assessment of needs for and availability of human resources

(c) promotion of education and training of electronic engineers, technicians and students

3 Activities

Member organizations and The Secretariat of the Union will use their best endeavors to achieve these objectives by

(a) Technical Seminar

(b) Training

(c) Information exchange by Internet website

(d) Other activities to meet the objectives of the Union

Article 5 General Assembly

1 The General Assembly shall be the supreme body of the Union and shall have all the powers necessary to achieve the objectives of the Union

2 The General Assembly shall comprise all the Full Members and at least one third of Full Members shall be present to constitute a quorum

3 All the Full Members shall have the right to vote in the General Assembly, the right being limited to one vote each

4 The General Assembly will be convened by the President and shall meet regularly once every other year

5 Upon request of at least one-third of the Full Members the President shall convene an extraordinary session

6 Notices for convening the General Assembly shall reach Full Members at least five months prior to the date fixed for the session

7 Any Full Member shall have the right to submit proposals for attaining the objectives of the Union Such proposals shall reach the Secretariat in time for preparation of the agenda

8 The agenda for every session of the General Assembly shall be prepared by the President with the assistance of the Secretariat and distributed to Full Members three months before the General Assembly together with copies of proposals received and of a draft budget for the next two years

9 The agenda of the General Assembly shall include

(a) election of the Chairman and Vice Chairmen for the General Assembly

(b) proposals submitted by Full Members under the provisions of Clause 7 above

(c) the report of the Secretary General on the activities and finance of the Union since the last reported, in particular, the measures taken to implement the decisions of the General Assembly

(d) examination and approval of the accounts for the past years

(e) approval of the program of activities and budget

(f) status of payment for Membership fee

(g) the date and venue of the next session of the General Assembly

(h) election of the President and Vice Presidents of the Union for the next term

(i) other matters authorized by the General Assembly

Article 6 President and Vice Presidents

1 The General Assembly shall elect from among the Full Members a President and two Vice Presidents

2 The term of office for the President and the Vice Presidents shall continue till the close of the next ordinary session of the General Assembly They are however eligible for re-election to the office

3 The President shall represent the Union

4 The Vice Presidents shall assist the President and in the event of the latter s temporary absence or inability the senior of the two Vice Presidents shall perform the function of the President In the event of permanent non availability of the President new President shall be appointed from the same country till the end of the term

Article 7 Secretariat

1 The Union shall have a Secretariat at its seat

2 The President shall appoint and dismiss the Secretary General as head of the Secretariat subject to the confirmation of the General Assembly

3 The Secretary General as chief executive officer of the Union shall be responsible for the administration and supervision of the Secretariat and shall carry out such secretarial function as is necessary to

(a) manage and run the General Assembly

(b) implement the decisions of the General Assembly

(c) prepare the draft budget

(d) advise on the organization of any conference or other activity associated with the General Assembly

(e) collect and keep up to date materials and information

(f) issue publications

(g) assist Members in obtaining information

(h) administer and control the property and the funds of the Union

(i) perform such other duties as directed by the President

4 If needed President can appoint a Secretary in his country to help him discharge functions of the President

Article 8 Finance

1 The financial resources of the Union shall comprise

(a) the Membership fee from the Members

(b) payment form the Members for special work or service rendered at their request

(c) receipts from sale of publications and other services

(d) subsidies donations and contributions

(e) other means

2 The respective amounts of Membership fee to be paid by Members shall be determined according to the bylaws

Article 9 Honorary Titles

The General Assembly may recognise the work of individuals who have been prominent in the affairs of the Union by conferring the title of Fellow or of Honorary President of the Asia Electronics Union Such individuals will have the right to attend all the meeting of the Union

Article 10 Final Provisions

1 These articles may be revised by the decision of the General Assembly

2 The Union may be dissolved on the resolution of the General Assembly of the Union carried by a two third majority of all the Full Members of the Union

3 The provisions of this Agreement are to be supplemented by the bylaws which are approved by

the General Assembly

4 This Agreement shall come into force when approved by the General Assembly

The Asia Electronics & Info-communications Union (AEIU)

Financial Rules

Rule 1 The expenses of the Union shall include the salaries and traveling expenses of the staff and other expenses of the Secretariat including all the expenses pertaining to the conduct of the General Assembly

Rule 2 The General Assembly shall review budgetary trends at each meeting and recommend a minimum contribution to be paid by the Member countries Any such recommendation shall not be binding on the Members but inability to comply with the recommendation will be regarded as exceptional

Rule 3 After consideration of the draft budget each Full Member shall advise the Secretary General of the amount of his annual Membership fee expressed in US dollars for the next two years The amount shall be communicated to other Full Members and shall remain unchanged until the next General Assembly No Member shall contribute more than 50% of the total budget

Rule 4 For the purposes of apportioning expenses the Full Members shall be divided into two groups

Group A $1,000 - $5,000

Group B over $5,000

Any recommendation on contribution made at the General Assembly shall not be binding on the Full Members but inability to comply with the recommendation will be regarded as exceptional In this case, the amount of Full Membership fee shall be decided by the President with the advice by the Secretariat

For Members (other than Full), the membership fee will be decided by the President with the advice by the Secretariat

Rule 5 The Membership fee for each fiscal year should be paid at the beginning of the fiscal year

Rule 6 The fiscal year shall begin on 1st of April and end on 31st March of the following year

Rule 7 The financial responsibility of the Full Members shall be limited to the amount of their Full Membership fee

Rule 8 The budget and financial reports of the Union shall be drawn up in the US currency

The Asia Electronics & Info communications Union (AEIU)

Procedure for Application, Admission and Termination of Membership

Rule 1 Organizations as defined in Article 3 of the Agreement instituting The Asia Electronics & Info communications Union (AEIU)(hereinafter referred to as the Agreement) are invited to send applications for Full Membership to the President of The Asia Electronics & Info communications Union (AEIU) (hereinafter referred to as the Union')

Rule 2 For application for Full Membership the following procedure shall be followed

(a) The application shall be circulated among all the Full Members

(c) If there is no objection from the Full Members within 3 months the applicant shall be admitted to be a Full Member of the Union

(d) If there is any objection the application shall be put before the next General Assembly and if approved by a two-third majority of those Full Members attending the General Assembly, the applicant is admitted to be a Full Member of the Union

(e) Members (other than Full) can be admitted by the Union Secretariat

Rule 3 Any Full Member may resign from the Union by giving written notice to the President in advance

Rule 4 Members who do not pay Membership fee for more than two periods without fair reasons should be automatically disqualified from Membership However they may be readmitted on fresh application subject to the satisfaction of the Union

Rule 5 The application for Full Membership shall contain among other things

(a) the full name and address of the organization applying for Full Membership

(b) description of the organization stating its objectives executives principal business etc

(c) the amount of Full Membership fee per year and group selected under Rule 4 of Bylaw No 1,

(d) signature of the representative executive

Report on 2nd Meeting of Study Group V of AEU

1 TIME 10 00 hours – 16 hours Monday, 30 July 2001

2 PLACE The Ambassador Bangkok Hotel
171 Sukhumvit Road Prakanong Bangkok 10110 Thailand
Tel +66 2 254 0444/255 0444 Fax +66 2 253 4123

3 PARTICIPANT

SG V Member

Chairman	Mr Tsutomu Washida (Member Japan)
Co-chairman	Mr V B Taneja (Member India)
Member	Mr HabimonoKoesoebjono (Member-Indonesia)
	Mr Young Hoon Choi (Member Korea)
	Mr Padmasiri de Alwis (Member Sri Lanka)
	Mr Sean Chu (Member Taiwan)
	Mr Pipope Chooncharoen (Member Thailand)

Secretariat

Secretary General	Mr Takayoshi Sakashita
Deputy Secretary General	Mr Hiromitsu Tanaka

4 AGENDA

The agenda as attached (Attachment No 1) was agreed and discussion was made on this agenda

5 OUTCOME OF THE MEETING

Discussion Results

Most of the works of this Study Group V Meeting was dedicated to the examination of the revised text of AEU Agreement and its Rules which was prepared for the meeting

Major discussion points and its results

5 1 Name of the AEU

The meeting confirmed to submit to the GA following candidates of new names of the AEU

The Asia Electronics & Information Technology Union (AEITU)

The Asia Electronics & Info-Communications Union (AEIU)

The Asia Electronics & Information Communication Union (AEICU)

5 2 Membership title

After tremendous discussion SG V submitted following membership titles to the GA asking for its decision They are

Corporate Member with right of voting contribute much

Member without right of voting less contribution

5 3 Objectives of the AEU

Firstly SG V discussed its standpoint because this issue is the key for raison d etre of the AEU Discussion results were as follows

As objectives of the AEU the followings were confirmed with the slight modification of the results of SG V 1st Meeting

To find out the feasibility of and to promote and encourage cooperation in the field of electronics informatics & communication and related science and technology

(a) Technical Seminar exchange of information in above areas including basic research applications and manufacturing techniques

(b) Assessment of needs for and availability of human resources in hardware and software ;

(c) Promotion of human resource and development for managers electronic engineers technicians and students

5-4 Principal domain of the AEU activities

SG V examined principal domain of activities and following domains as described below

1) 2) were identified

1) Internet Related Services

2) Wireless Technologies including Mobile Communications

5 5 Quotas of Membership Fee

From the point of view amelioration of the AEU financial balancing measures for the matter were discussed As one solution raising up of the annual membership fee was proposed In view of the economic slow down many countries expressed reservation about enhancement of membership fee at this stage It was acknowledged that for the Fiscal Year 2001 present Membership fee is applied

Followings were results at the SG V and submitted to the GA for its examination and

decision From existing of five categories of annual Membership fee two categories were proposed as

1) US$1 000 – 5 000

2) more than US$5 000

5 6 Transfer of Secretariat Function

In order to improve the financial problem of the AEU the ITU Association of Japan proposed that the Secretariat of the Union is preferably attached to the President and that the permanent allocation of the Secretariat should be scrapped i e the Secretariat will be rotated along with the President Member Thailand expressed his inability to have the secretariat in Thailand from the current year This proposal of the transfer of the existing Secretariat function to other member country was discussed

Member India agreed to assume Secretariat function on the condition that as in the past the financial deficit will continue to be met by the ITU Association of Japan

Transfer of the Secretariat function was proposed from 1st April 2002 For smooth transfer of secretariat it was decided to invite a team of officers from India to Japan at the expenses of AEU It was decided to review the location of secretariat after two years at the time of next General Assembly meeting

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Attachment 1

Agenda of the Second SG-V Meeting (Draft)

Chairman of SG V
30 July 2001

1 Introduction of each member

2 Outline of the SG V activities

3 Brief explanation of the outcome of the first SG V meeting (19 – 20 June 2000)

4 Major Discussion points

4 1 The name of the AEU

4 2 AEU activities

4 3 Transfer of the AEU Secretariat function

4 4 AEU financial aspects (membership fees etc)

4 5 Others

4 6 Output of the 17th GA of the AEU

5 Other works

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THE ASIA ELECTRONICS UNION

The 17th General Assembly
30 July – 2 August 2001, Bangkok

Document GA No 24
Date 29 July 2001

Source The Secretariat of the AEU

Title Termination of Membership

1 Dissolved Members

The Secretariat has confirmed BEMA, Full Member of Bangladesh and NEDA Full Member of New Zealand have dissolved

2 Withdrawal

The Secretariat has persuaded PETEF Full Member of Philippines and AEIS Full Member of Singapore to rejoin the AEU However the Secretariat received letters from them in which they do want to withdraw AEU membership

3 Non subscription for long time (more than 10 years)

Electronics Industries Co S A Full Member of Iraq and National Engineering Research & Development Centre Full Member of Sri Lanka have not paid for long time i e Member Iraq for 14 years and Member Sri Lanka for 12 years According to the AEU Agreement, they have already lost their membership

4 By the above mentioned reasons the Secretariat requests termination of the following Membership to the 17th General Assembly

BEMA, Full Member of Bangladesh
Electronics Industries Co S A. Full Member of Iraq
NEDA, Full Member of New Zealand
PETEF Full Member of Philippines
AEIS Full Member of Singapore
National Engineering Research & Development Centre Full Member of Sri Lanka