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## Trends in telecommunication

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**Trends In Telecommunication**

**By**

**Derek Marsh**

Communication Convergence  
and Development

AMI C Annual Conference

Trends in Telecommunication

by

Derek Marsh

Telecom Holding

# Trends in Telecommunication

## 1. Introduction

The Asia-Pacific region now has the most rapidly growing regional economy in the world. The ability of the countries in the region to sustain growth and expansion will in no small part be dependent on their ability to develop their telecommunication infrastructure. Today 2.8 billion people in Asia's Low Income Countries have 25 million telephone lines, by the year 2000 this is expected to grow to 100 million lines with spending exceeding \$200 billion. It is the intention of this paper to review the practicalities of development in the telecommunication market sector.

## 2. Liberalisation and Private investment

It is becoming increasingly important for governments who wish to grow their telecommunications networks to attract private investment. Locally generated revenue and other government priorities seldom allow the telecommunications infrastructure to develop at the required rate to help sustain sound economic growth.

Private investment will come increasingly from concessions to independent telephone companies to provide for both the development of core networks and services and the development of value added services. These concessions will take the form of B.O.T. schemes from which the government will secure income from sharing the revenue of the concessionaire. This approach to liberalisation has been in place in Thailand for several years for value added services allowing both CAT (Communications Authority of Thailand) and TOT (Telephone Organisation of Thailand) to develop mobile, paging, data and other services through the sharing of revenue of private operators. Recently this has extended to the development of the core network with concessions for the development of the trunk network along the railways by the provision of fibre optic cable (Comlink) and the concessions for the Seventh Telecommunications development plan to TelecomAsia and TT&T (Thai Telephone & Telegraph) for the provision of 2 million and 1 million lines in the BMA (Bangkok Metropolitan Area) and Provinces respectively.

## 3. Technology

One of the key incentives for countries to allow private sector involvement in telecommunication is to encourage more operational efficiencies and to attract new and more cost effective technologies. The opportunity is therefore available to allow old networks to be supplemented quickly and effectively allowing the provision of more advanced services to the customer.

In Thailand telecomAsia achieved this by moving away from the historical local exchange concept of single exchanges serving small 10-20,000 line areas.

In the case of Bangkok this is some 75 exchange areas feeding the customer directly on copper wires. TelecomAsia has moved away from this concept and will provide several large switching units connected by fibre optic cable to small Remote Switching Units (RCU's) located in the many buildings around Bangkok. Each RCU has a modular size of 2,000 lines. This is a true representation of the fibre to the kerb concept which further allows the addition of other services onto the network thus maximising the use of the network infrastructure whilst maintaining competitive costs for services. TelecomAsia already has agreement to provide Cable Television and Videotext services within Bangkok.

One interesting change in technology which will have a major impact in the near future will be the introduction of the wireless local loop. This will not only encourage the fast and easy provision of fixed network services avoiding the need for major road works to lay cable etc but will also encourage the convergence of fixed and mobile services. Although prices for this system are currently in the \$1,500 per line range there is every indication from suppliers that prices will fall to \$700 per line within the next 2 to 3 years. The emergence of such technologies will make the issuing of licences and concessions even more difficult as conventioned mobile services may well include customers on fixed radio.

To support such development and provide the controlling functions each contry will need to have strong controls and regulation of the telecommunication community.

#### **4. Network Operations and Maintenance**

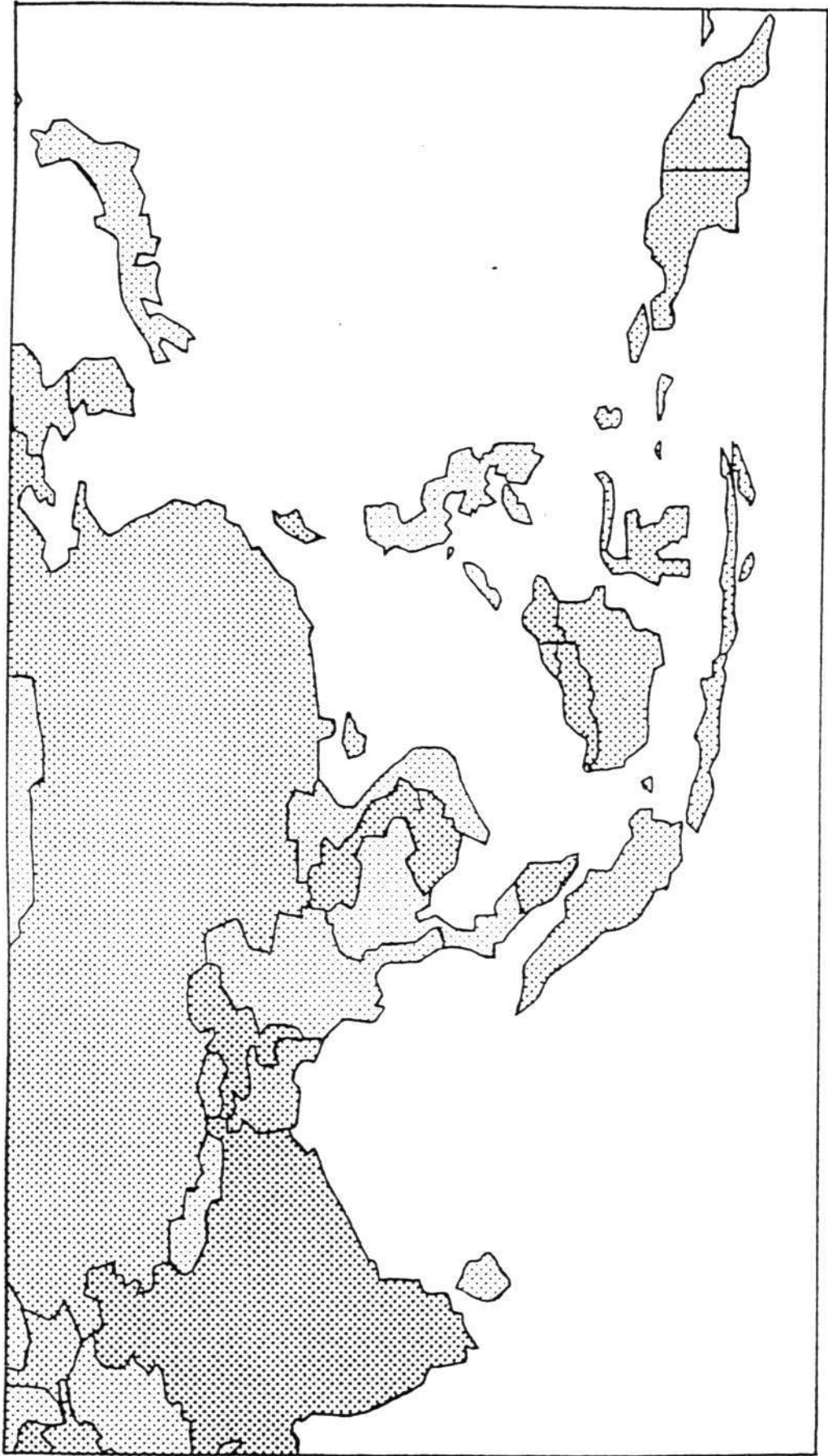
One of the major areas in which cost savings are possible is within the provision of the O&M function. Increasingly the importance of the customer is being recognised and more services will be driven by the requirement of the customer. TelecomAsia supports the provision of service to the customer network fault control billing and revenue collection from a single source its Computerised Customer Service System (CCSS). This system allows for the provision of in excess of 2000 customers per day onto the network in a very efficient manner allowing significant reduction staff over conventional methods TelecomAsia has an objective of maintaining its network with a workforce which represents 1 per 600 lines. Using such techniques it is felt that this objective will be met. One trend which will continue during the decade is the use of subcontracters to provide fuctions once the province of the operating companies.

#### **5. Future Opportunities**

The moves made by Thailand to introduce private sector investment into many project areas are now becoming common place. This trend will continue for some time throughout ASIA will the high interest to invest being shown by operating compares whose own conventional networks for telecommunication are becoming more and more satuated

leaving them with a keen interest in expanding their activities. The development of technology to support rapid network implementation at the same time supporting more advanced services will continue too with the ability to reduce operating cost by computerising many of the more labour intensive customer related activities common within an operating telephone company.

# MAP ASIA PACIFIC REGION



# ASIA 1993

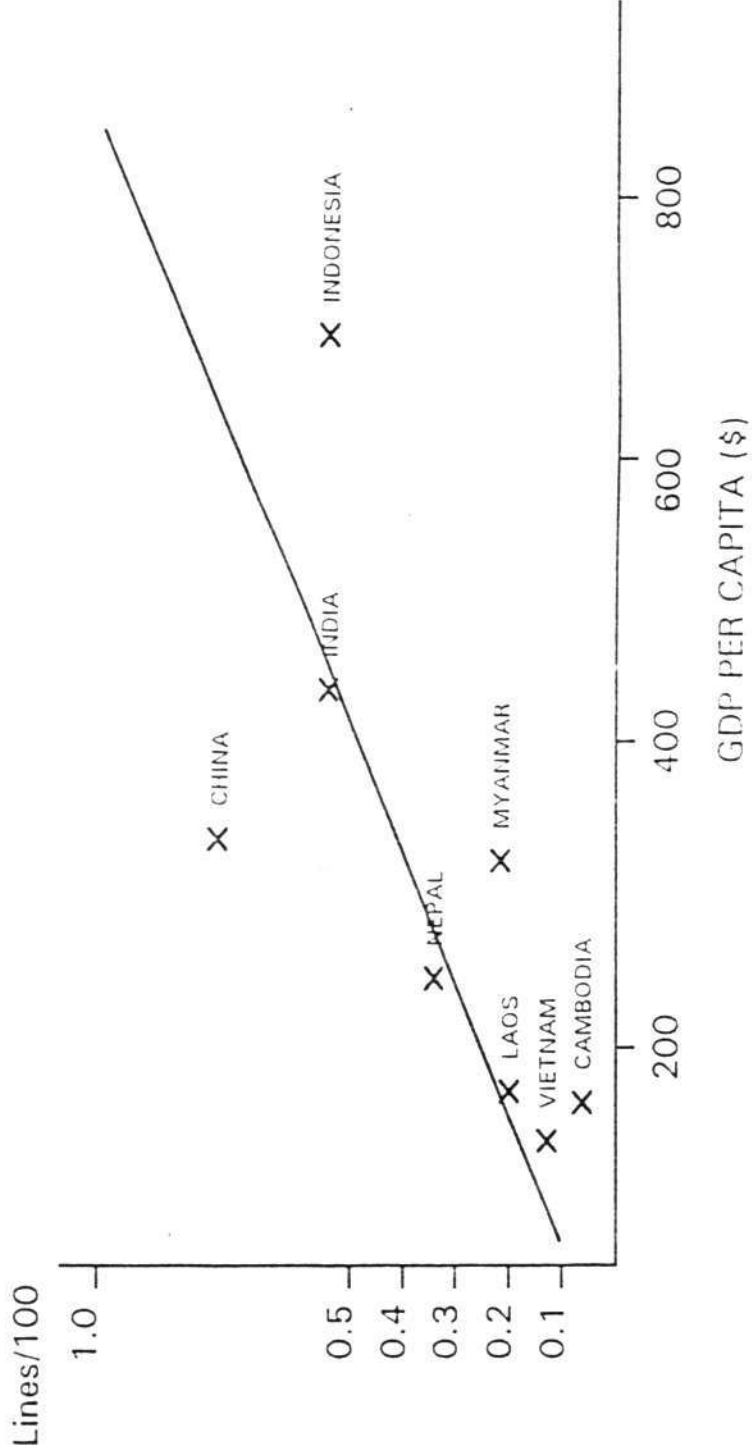
2.8 BILLION PEOPLE

25 MILLION TELEPHONE LINES



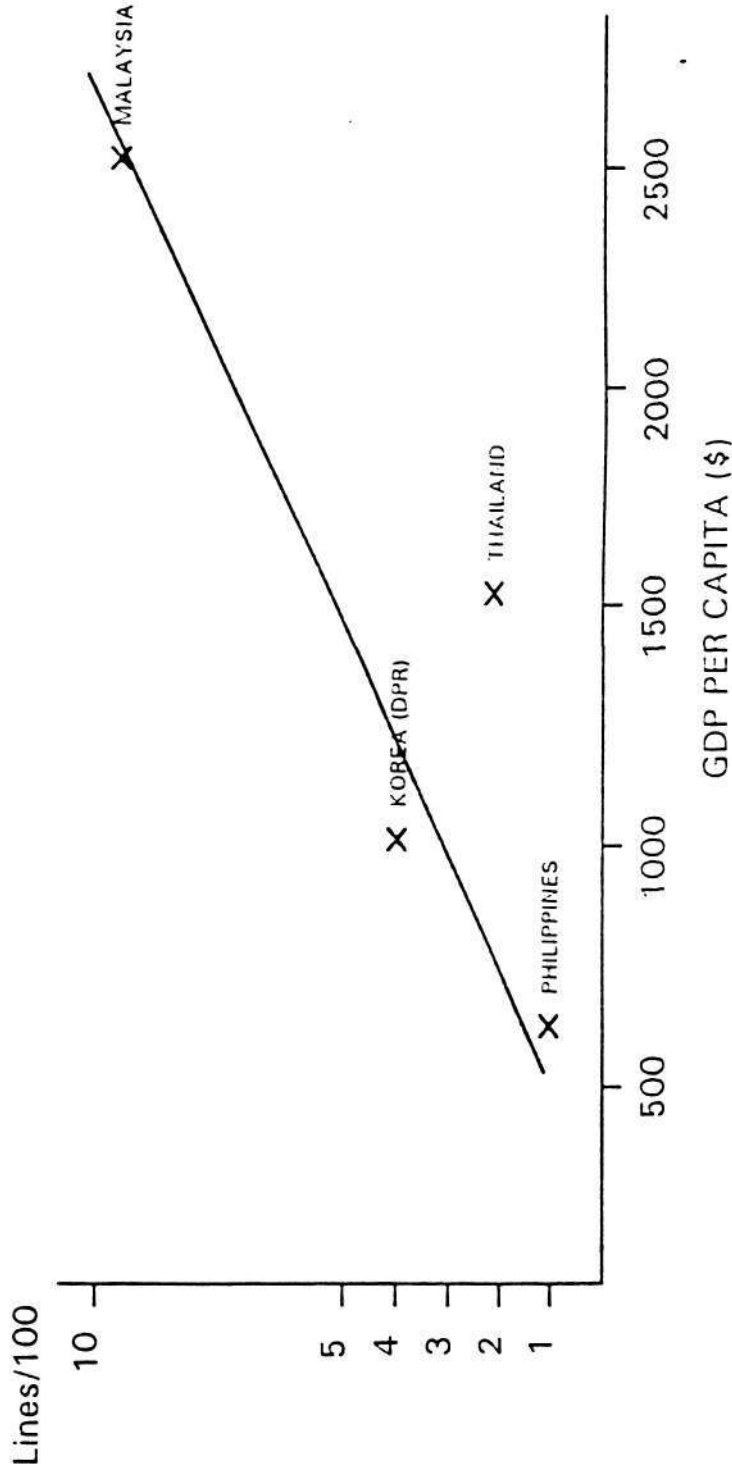
**DENSITY OF TELEPHONES  
VS  
GDP PER CAPITA  
IN  
LOW DENSITY COUNTRIES  
&  
MEDIUM DENSITY COUNTRIES**

# LOW DENSITY OF TELEPHONES ASIA REGION



SOURCE: ITU 1993

# MEDIUM DENSITY OF TELEPHONES ASIA REGION

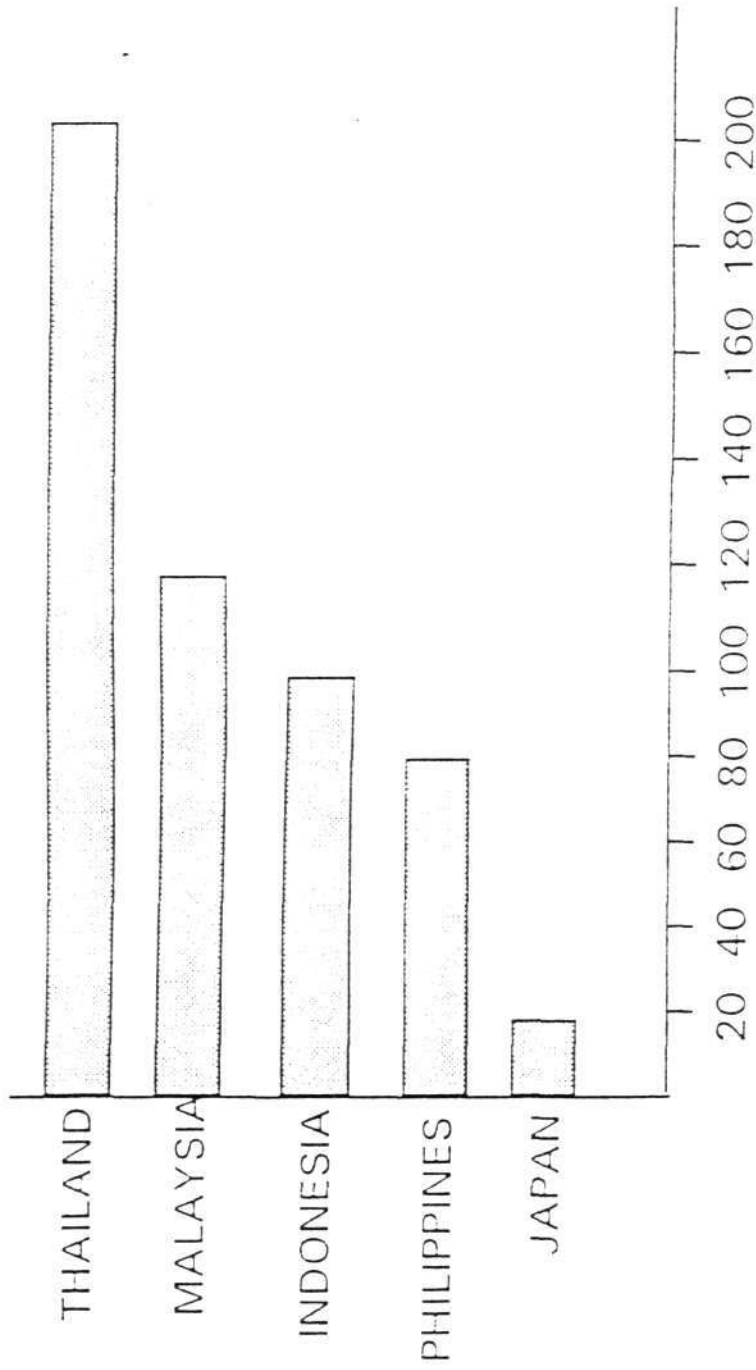


SOURCE : ITU 1993



**CELLULAR RADIO AND PAGER  
PENETRATION  
IN SELECTED COUNTRIES IN  
ASIA**

PAGERS



SOURCE: ITU 1993

## THAILAND

### MARKET TRENDS

#### \* LIBERALISATION OF VALUE ADDED SERVICES

- PROVISION BY PRIVATE SECTOR.
- FIXED NETWORK OPERATIONS.
- MOBILE OPERATIONS.
- PAGING OPERATIONS.
- TRUNK NETWORK.
- PAYPHONES.
- ETC.

#### \* CONTINUED LIBERALISATION AND EXPANSION INVOLVING PRIVATE SECTOR. ( CELLULAR AND FIXED )

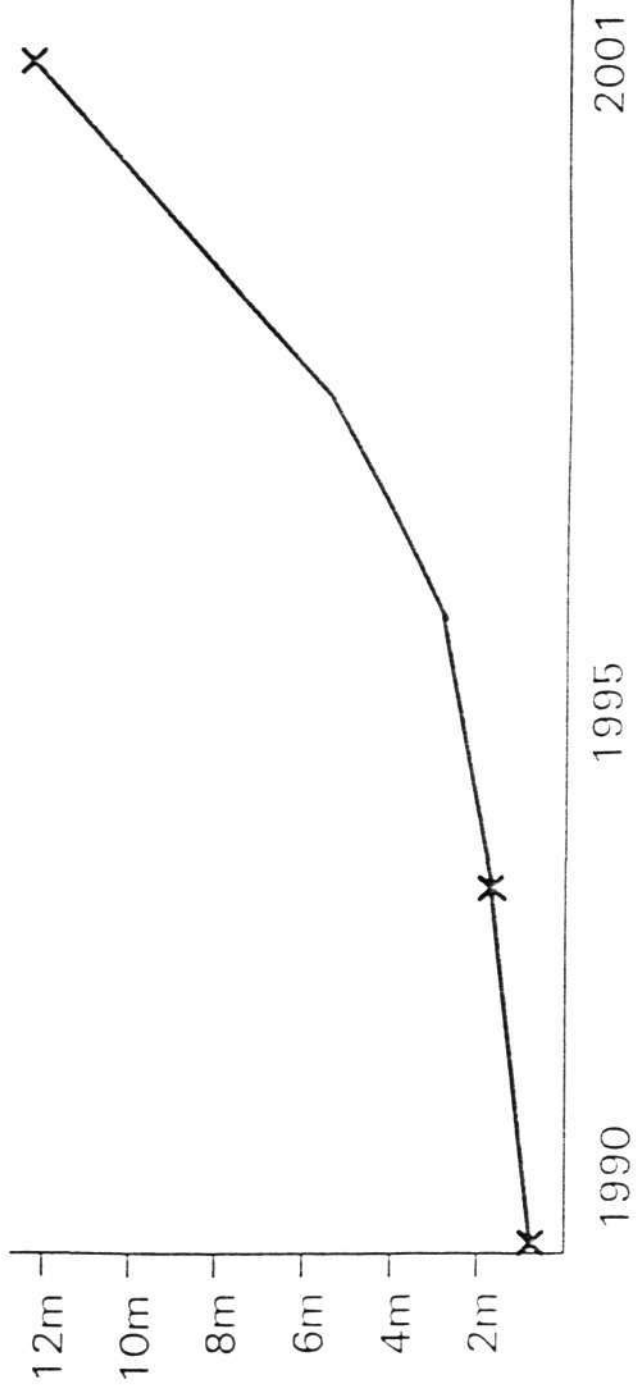
#### \* MOVE TOWARDS PRIVATIZATION TOT & CAT

TABLE 2

TOT

Services	Providers
Telephone	<ul style="list-style-type: none"> <li>- TOT ( Nationwide )</li> <li>- TelecomAsia ( Bangkok ) ( 25 years 2 million line concession )</li> <li>- Loxley Consortium ( 25 years 1 million lines )</li> </ul>
Public Phone	<ul style="list-style-type: none"> <li>- TOT</li> <li>- AIS (Card Phone) ( 10 year concession )</li> </ul>
Data Comm.	<ul style="list-style-type: none"> <li>- Acuman Co., Ltd. ( 15 year concession )</li> <li>- Shinawatra Data Comm Co., Ltd. ( 10 year concession )</li> </ul>
Long Distance Network	<ul style="list-style-type: none"> <li>- TOT</li> <li>- TOT</li> <li>- Com-Link (Railways ) ( 20 year concession )</li> <li>- Jasmine &amp; STC (underwater fibre) ( 20 year concession )</li> <li>- Acuman Co., Ltd. ( Satellite) ( 15 year concession )</li> </ul>
Mobile Phone	<ul style="list-style-type: none"> <li>- TOT</li> <li>- Advanced Info Services ( 20 year concession )</li> </ul>
Pager	<ul style="list-style-type: none"> <li>- Shinawatra ( 15 year concession )</li> <li>- Hutchison ( 15 year concession )</li> </ul>
Phone Point	<ul style="list-style-type: none"> <li>- Fonepoint ( 10 year concession )</li> </ul>
Videotex	<ul style="list-style-type: none"> <li>- Line Technology ( 15 year concession )</li> </ul>

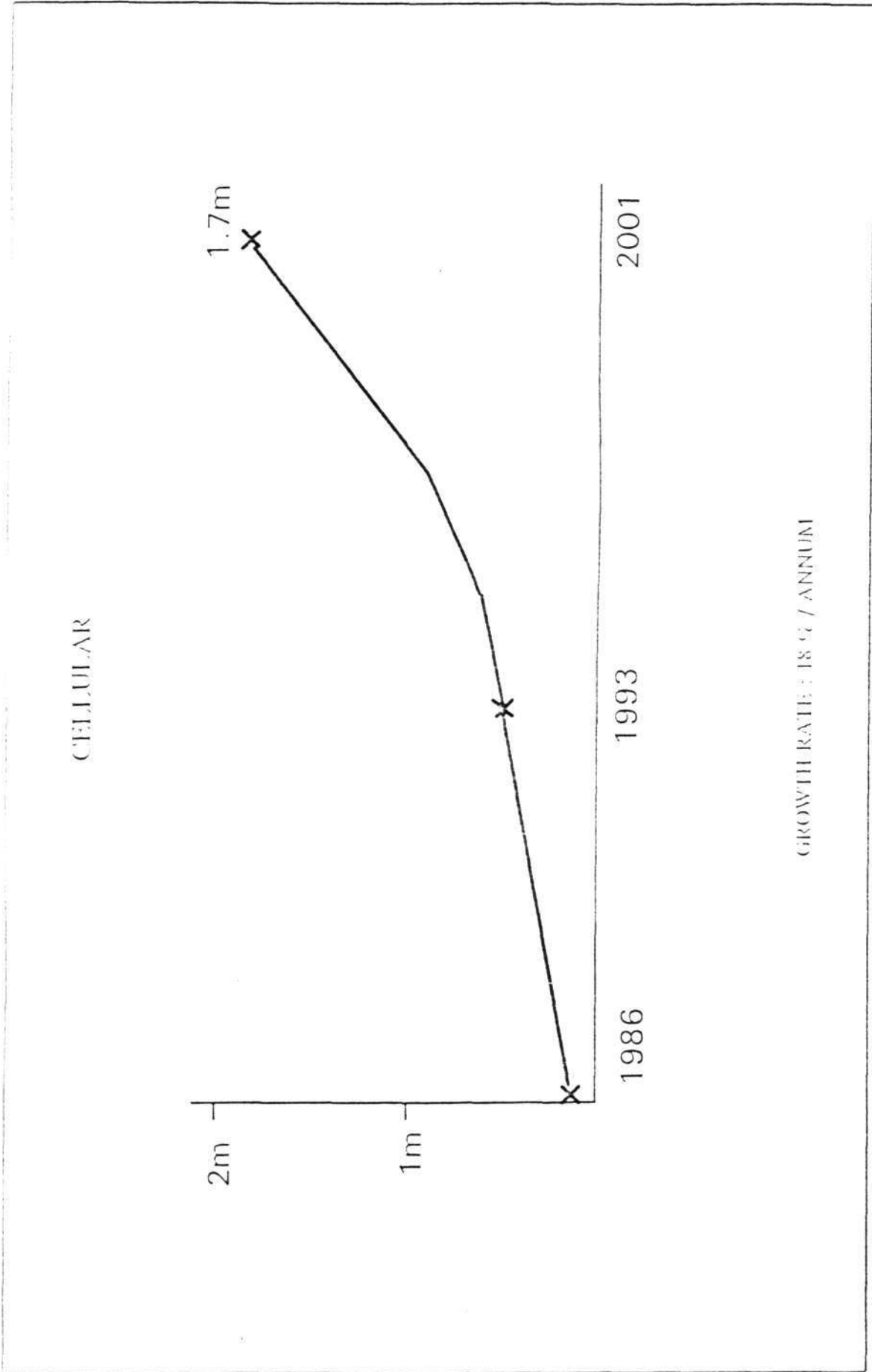
TELEPHONE CONNECTIONS

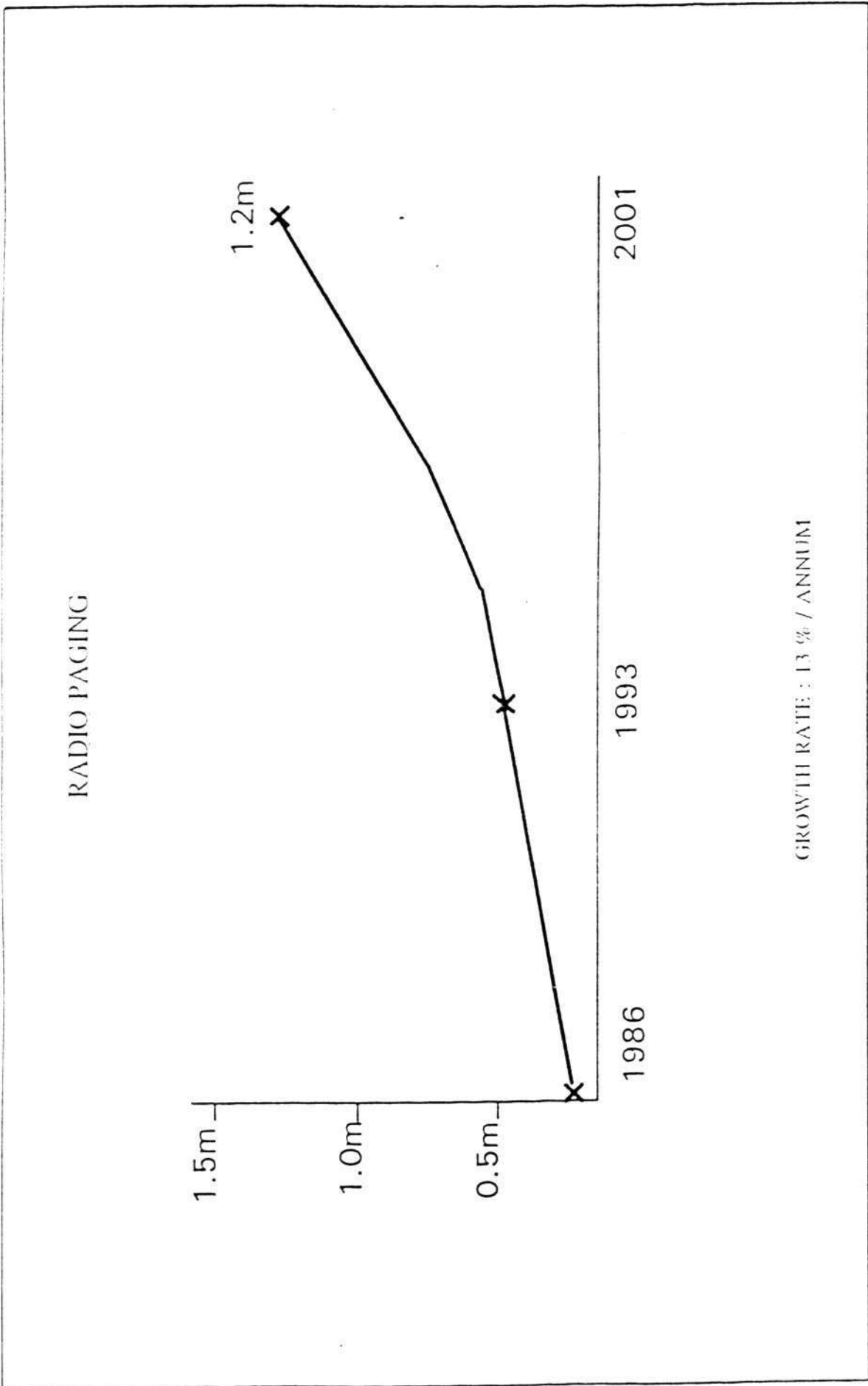


ANNUAL GROWTH RATE: 24 % / ANNUM





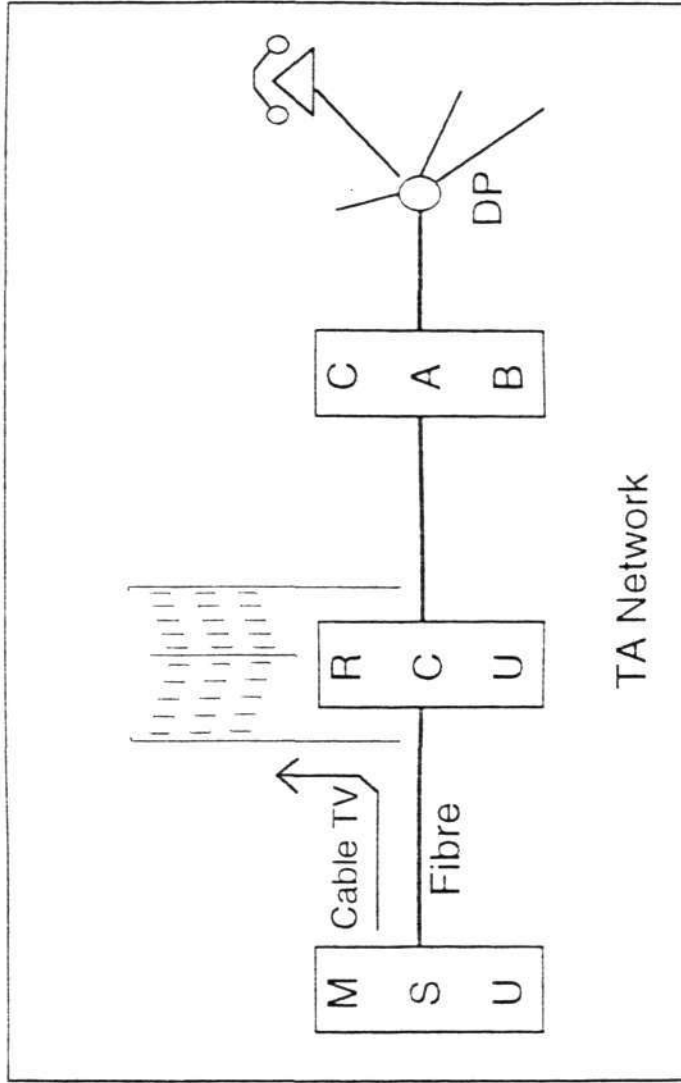




# TELECOMASIA

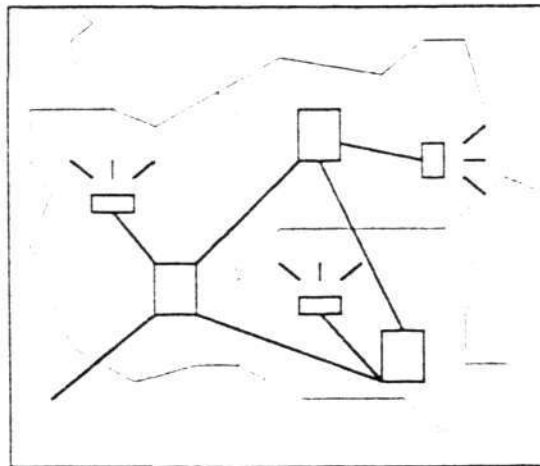
- \* CONNESSION FOR 2 MILLION LINES IN BANGKOK.
- \* PROVISION OVER 5 YEARS.
- \* B.T.O. ( FIRST OF ITS KIND )
- \* STRATEGIC PARTNER. ( NYNEX )
- \* MAIN SUPPLIERS.
  - AT&T
  - SIEMENS.
  - NEC.

# TECHNOLOGY

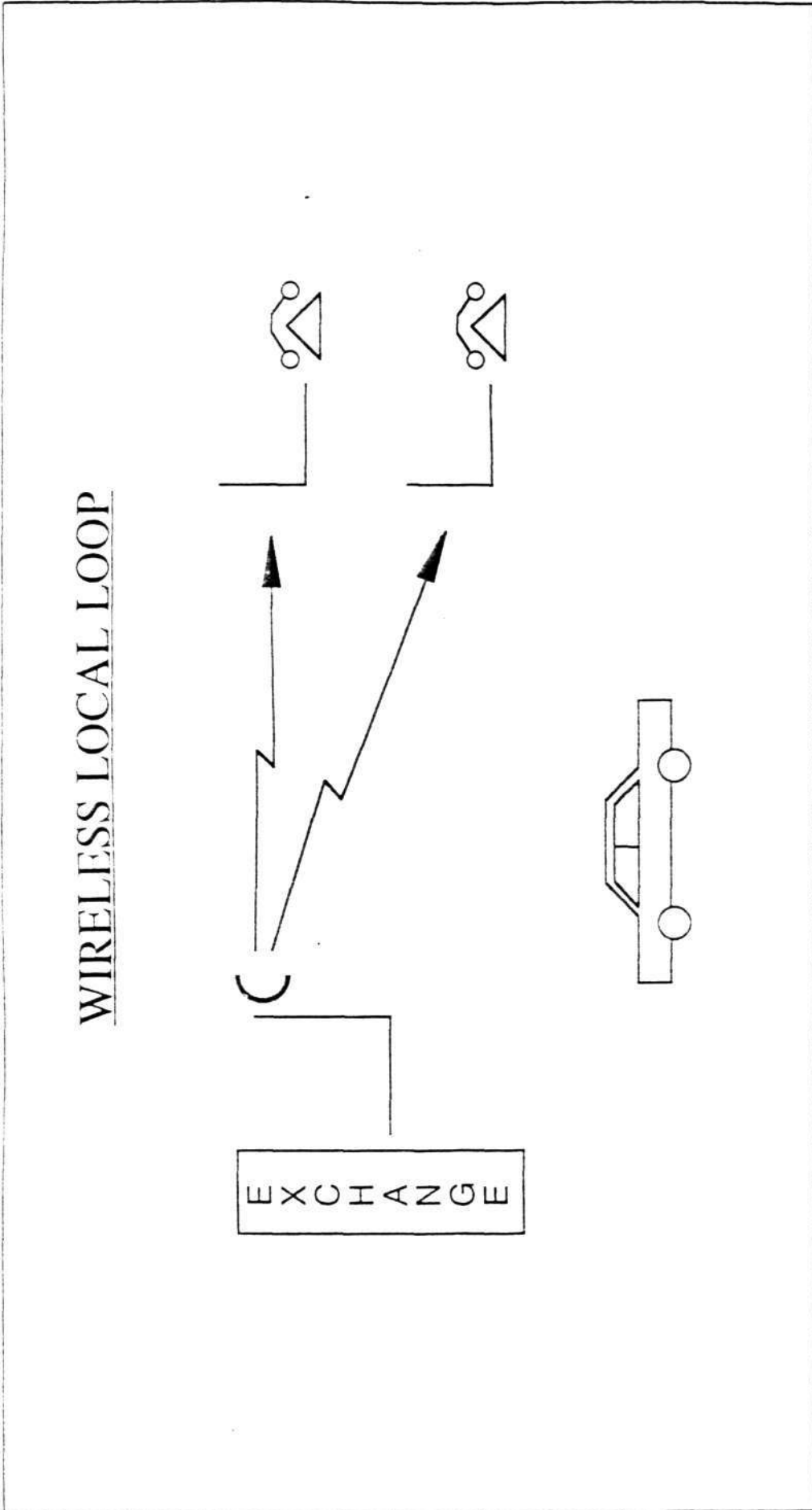


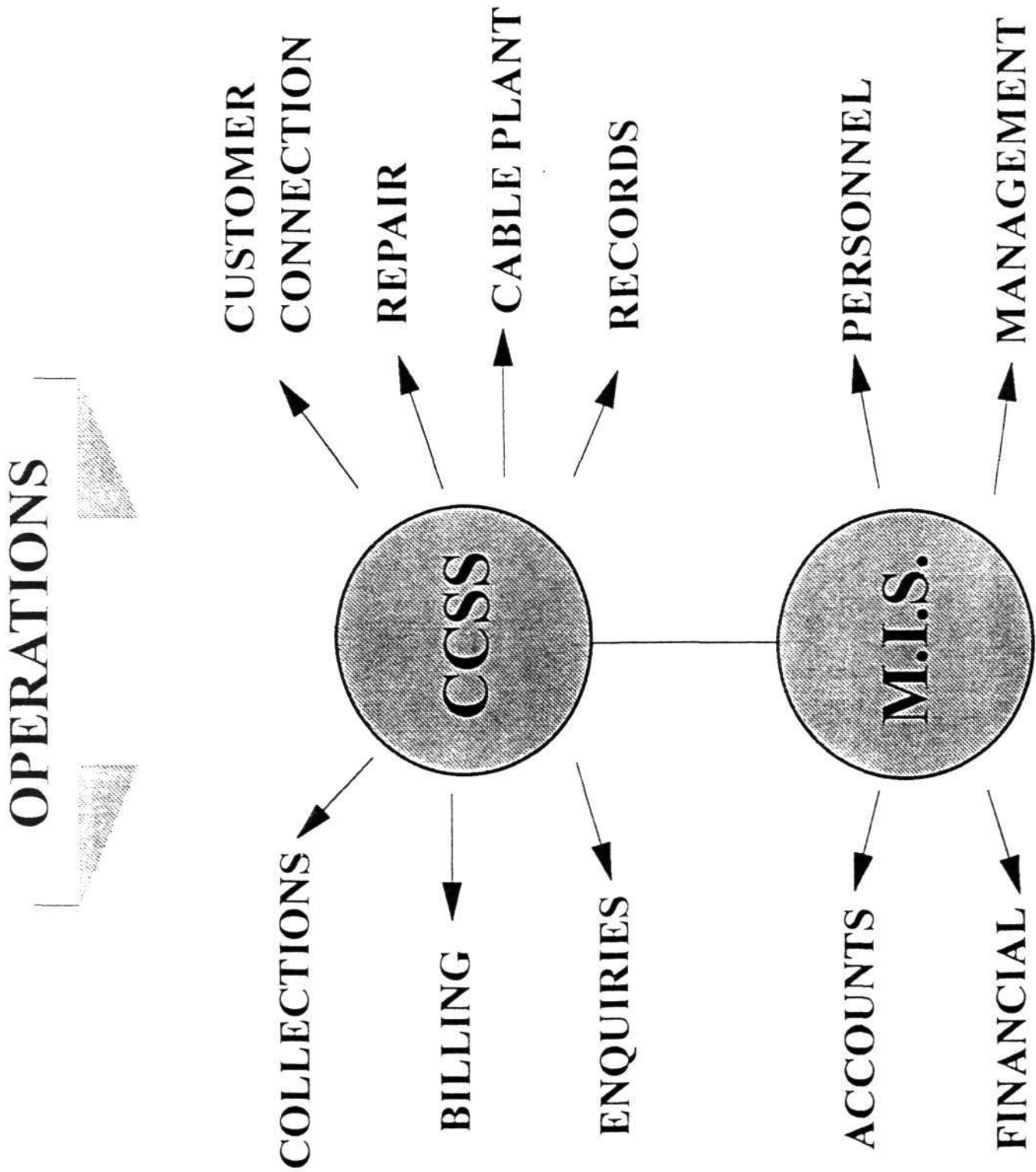
TA Network

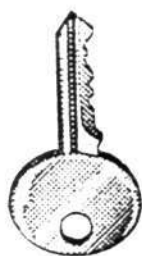
TelecomAsia



Conventional







## Interaction TOT (KEY Areas)

Establishment of the fundamental Network

### Master Plan

- ▶ telecommunication Network Plan
- ▶ Implementation
- ▶ Implementation acceptance

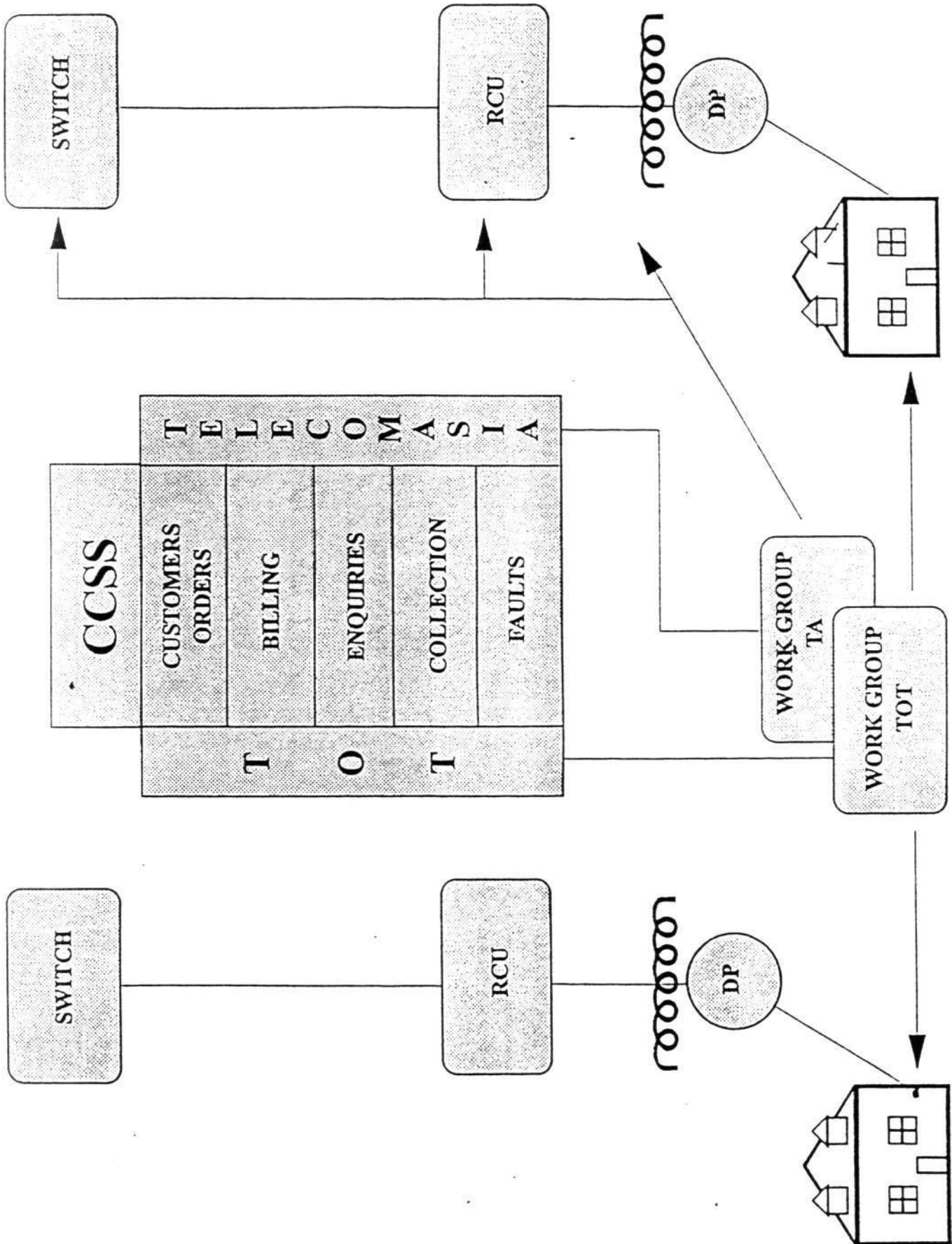
### Connection of subscribers line

- ▶ Receiving application for service
- ▶ Installation of customer line
- ▶ Testing of subscribers line

### Daily Operation

- ▶ Receiving Complaints from subscribers
- ▶ Bill collection
- ▶ Subscribers Line Test
- ▶ Repair DP to protector
- ▶ All other repair SW + TX + OSP

Responsibility	
TOT	TelecomAsia
x	x
x	x
x	
x	x
x	
x	
x	
x	x





## FUTURE

INVESTMENT IN TELECOMMUNICATION UPTO  
2001 ESTIMATED AT ( US\$ 12.5 bn ) IN THAILAND.

INVESTMENT IN TELECOMMUNICATION UPTO  
2001 ESTIMATED AT ( US\$ 200 bn ) IN ASIA.