operations review

Fixed Line Services

Dr. Idris Ibrahim
chief operating officer
TM TelCo

chief executive officers of subsidiaries

Yusof Ampuan Kechil
ceo
VADS Bhd.

Mohd Noordin Mohamad
ceo
Meganet Communications
Sdn. Bhd.

Haji Mohamed Padzil Md. Said
ceo
Fiberail Sdn. Bhd.

Ahmad Ismail
ceo
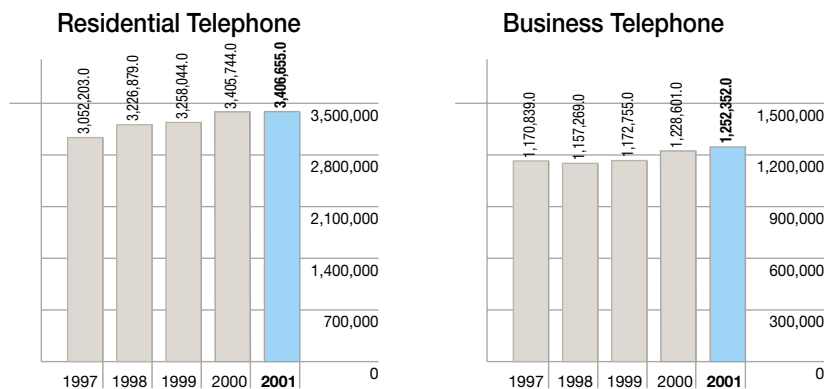Telekom Sales & Services Sdn. Bhd.

operations REVIEW

In Telekom Malaysia, fixed lines services are managed and operationalised by TM TelCo. However, telecommunications today is a highly complex industry, shaped by open and fierce competition, increased Internet phones, and expanding cellular needs. During the period under review, fixed line services also continued to be challenged by the far-reaching effects of the worldwide economic downturn.

Telekom Malaysia stands committed towards building more advanced infrastructure and strong support systems. To date, expenditure on assets for network development stood at RM1,272 million, with non-network related projects being allocated RM254 million. Local network, switching, transmission and international circuits account for the bulk of the capital expenditure. These major areas of development are necessary to improve the provision of access to new subscribers, clearing of waiters and enhancing maintenance support systems.

Through concerted efforts of the various divisions, fixed line services managed to sustain its performance favourably with a growth of 2.1% or a total revenue of RM8,145 million, compared to RM7,981 million the previous year.

Total operating expenditure, increased by 3.6% to RM1,425 million. This increase was attributable to activities for improving operational efficiency particularly in network quality, marketing tools and staff skills.

Direct Exchange Lines (DELs) had reached 4,598,564 connections, showing a net increase of 24,662 over the previous year. Of this, residential lines accounted for 73.2% and business 26.8%. Total gross installation recorded for the year was 617,573. However, growth in DELs was hampered by a large number of disconnections which totalled 589,497. The net installation performance was largely affected by a strong upward trend in demand for cellular telephony while the disconnections were largely due to non-payments.

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Residential Telephone

Year	Value
1997	3,052,203.0
1998	3,226,879.0
1999	3,258,044.0
2000	3,405,744.0
2001	3,406,655.0

(Scale: 0, 700,000, 1,400,000, 2,100,000, 2,800,000, 3,500,000)

Business Telephone

Year	Value
1997	1,170,839.0
1998	1,157,269.0
1999	1,172,755.0
2000	1,228,601.0
2001	1,252,352.0

(Scale: 0, 300,000, 600,000, 900,000, 1,200,000, 1,500,000)

In areas of limited coverage, the total number of waiters has been reduced by 7.1% from 98,000 in 2000 to 91,000 in 2001. A new radio technology, Code Division Multiple Access (CDMA) was deployed to expand network coverage throughout the country as part of our continued commitment to provide services in pockets of unserved areas in rural areas.

As the number of customers requiring sophisticated business operations increased, Data Services witnessed greater migration of customers from analog to digital circuits. The number of subscribers using digital circuits increased to 2,422. In line with that development and to support the government's incentive for the k-economy, the leased circuits tariff was substantially reduced between 50% and 84% during the middle of the year. The analog circuits would be phased out in the near future. The corporate sector is now enjoying greater savings while the service has become more affordable to medium sized businesses.

The other digital service, Corporate Information SuperHighway or COINS, a network transport for data, saw an increase of 1,866 net lines or a growth of 110.2% over the previous year.
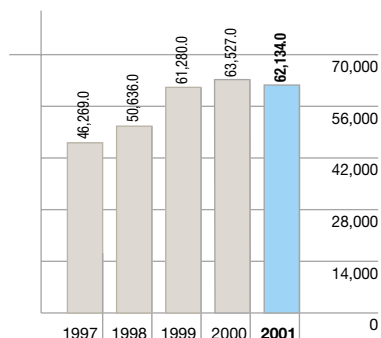
ISDN and ADSL had also become increasingly popular as data and voice can be integrated and transported on the same line. So far 58,228 channels have been installed using ISDN, while ADSL began to attract more customers. TMnet Streamyx is the main product using ADSL.

A national operations centre for exchanges incorporating CCS7 Signalling Network Management Systems was launched to provide centralised maintenance and diagnosis, thus maximising staff efficiency and reducing costs.
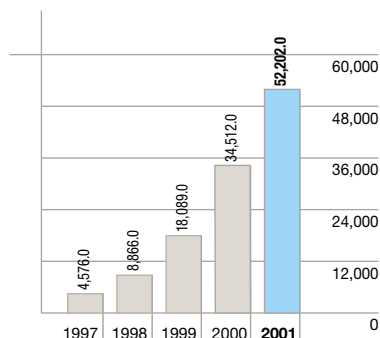
Non-network capital was aimed at enhancing support systems for mission critical internal processes. This was a key operational requirement as Telekom Malaysia could not tolerate customer service inefficiency and dissatisfaction.
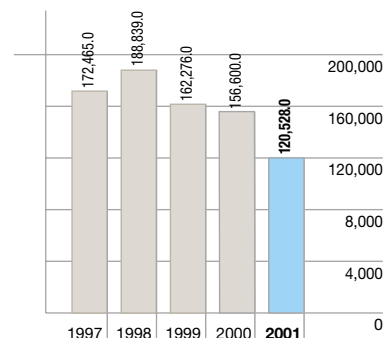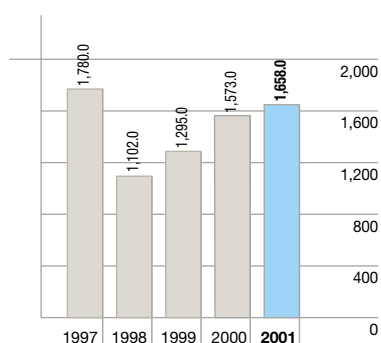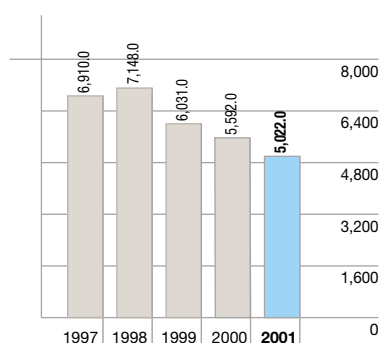
Leased Circuits Customers

Year	Value
1997	46,269.0
1998	50,636.0
1999	61,280.0
2000	63,527.0
2001	62,134.0

ISDN Customers

Year	Value
1997	4,576.0
1998	8,866.0
1999	18,089.0
2000	34,512.0
2001	52,202.0

Public Payphones

Year	Value
1997	172,465.0
1998	188,839.0
1999	162,276.0
2000	156,600.0
2001	120,528.0

Toll Free Customers

Year	Value
1997	1,780.0
1998	1,102.0
1999	1,295.0
2000	1,573.0
2001	1,658.0

Other Services

Year	Value
1997	6,910.0
1998	7,148.0
1999	6,031.0
2000	5,592.0
2001	5,022.0

Total Access Lines Per 100 Population

Year	Value
1997	20.1
1998	20.4
1999	20.1
2000	20.9
2001	20.0
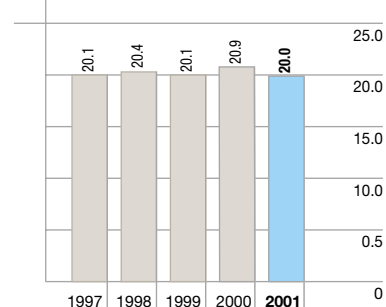
While towns and the urban environs enjoy the best telecommunication facilities, the rural areas were not neglected. RM32 million was spent as part as the Company's universal service obligation (USO) to increase connectivity for the rural community.

Telekom Malaysia stands committed to the vision of transforming Malaysia into a regional telecommunications hub by 2005. It has now opened overseas offices (TMOO) in the USA, UK, Hong Kong and Singapore.

Support function were used to improve and ensure the accuracy of bills and timely resolution of billing disputes. This was made possible by effective and efficient operations to reduce billing errors, increase cash collection, and automate processes for billing complaints.

To support the e-Government and e-Payment system, Telekom Malaysia launched EBPP (Electronic Bill Presentment & Payment) in year 2001. The project was another initiative to provide additional payment outlets and inquiry channels for customers. With the EBPP solution, customers are now able to make telephone bill payments at kiosks or on Internet Personal Computers (IPC) via a web page hosted by service providers.

Through the joint efforts of Telekom Malaysia's EBPP team and the Electronic Government Consortium to support the Electronic Government project, the Company had successfully launched its e-Khidmat services in December 2001.

The payment kiosks, named Eazyway are now in operation at selected locations and Kedai Telekoms.

The SMART (Sistem Maklumat Aduan dan Resolusi Telekom) solution was used to provide an automated end-to-end customer complaints resolution system. It is a solution expandable to cover fixed line, multimedia and cellular services for the management and restoration of lines and other general complaints. As a result of the deployment of the SMART solution, there was a marked reduction in the complaint resolution cycle time from one month to seven days.

Telekom Malaysia had also successfully commissioned a system for fraud detection and prevention known as IFPS (Integrated Fraud Prevention System) in 2001. This state-of-the-art system is capable of detecting fraudulent calls on the IDD, STD, calling card and premium services. With its continued commitment to quality, 16 of Telekom Malaysia's key business divisions have attained ISO 9001/9002 certification while other major divisions are actively pursuing the same objective. These initiatives would serve to further improve the level of quality and delivery of services to customers.

It is believed that as a direct result of the quality initiatives, complaints per 1000 lines has reduced from 8.28 to 6. Telephone restoration within 24 hours had also increased from 51.7% to more than 84.5%.

In terms of network performance, the availability of lines had been very encouraging and had achieved world class levels, registering an average of 99.9987%, and 99.9984% for the switching and the transmission system respectively.

Major Business & Government (MBG) | MBG as Telekom Malaysia's core marketing arm classifies its customers into corporate, major businesses, government, domestic operators, resellers and ISP segments. It offers a choice of services and products ranging from basic to more advanced multimedia products.

In 2001, strategic marketing undertaken by MBG served to achieve its four main objectives i.e. retention of corporate, government and major customers; capture new market/business opportunities; increase revenue; and continue to introduce new products and services to the market.

Despite the adverse global economic situation faced by all commercial organisations, MBG recorded an improvement in its Gross Sales performance by RM33.6 million or 0.9% to RM3,661.2 million against RM3,627.6 million recorded last year. MBG contributed 45% of TM TelCo's Gross Sales of RM8,145 million for 2001. Customer retention saw an increase from 39,227 in 2000 to 39,557 customers in 2001. This was attributable to effective customer loyalty strategies conducted throughout the year.

Marketing Activities and Product Performance | Throughout 2001, a 'Customer Relationship Program' which included customer visits, face-to-face selling, and fast response to customers' problems as well as Equal Access awareness briefings were successfully conducted to gain customers' loyalty with Telekom Malaysia. In addition to offering excellent service quality, a series of seminars were conducted. These included nationwide business solutions and 'Partnering TM For Your Communication Edge' seminars. These seminars were aimed at enlightening customers on the benefits of Telekom Malaysia's existing and new products.

To propel the data business, new products called COINS iOffice, Myloca and BIZsecure were launched during the year. An initial offering of Wholesale COINS VPN and Wholesale DSL services was made to further capture new data business opportunities. The data network was expanded to accommodate the growing needs of data networking. A total of 130 new nodes in the Managed Leased Circuit Network (MLCN) were commissioned in 2001 bringing a nationwide coverage of 811 nodes for Managed Digital Leased Services.

Satellite and submarine cables
– Malaysia's gateway to the world

In terms of DDN, installation, a new broadband Digital Leased Services network capable of supporting bandwidth speeds of up to 155 Mbps was implemented with the first phase in the Central Region completed during the year. In line with Telekom Malaysia's vision to be a major hub for international communications in voice and data services, new Global OSS arrangements with international telecommunications companies were signed. MBG had also revised the pricing for Very Small Aperture Terminals (VSAT), Domestic and International Digital Leased lines and services under the MSC tariff effective 1 May 2001 in order to stay competitive as well as to counter threats from competitors.

Telephony Services | As at December 2001, MBG DELs grew to 673,488 lines comprising 641,507 business and 31,981 residential lines respectively. This accounted for a 14.6% contribution to the total 4.599 million Telekom Malaysia DELs. The number of waiters was reduced to 1,381 against the same period last year of 1,636 as a result of new network investment and the introduction of Code Division Multiple Access (CDMA) services.

The total installation of 87,225 DELs in 2001 was more then the 83,227 DELs installed in 2000. However, the impact of the global economic downturn had resulted in many business closures in the electronics and manufacturing sectors and dotcom companies. The mergers in the banking and security industries had also brought substantial change. The unfavourable impact had caused an increase in the direct disconnection rate from 62,160 DELs in 2000 to 74,968 DELs in 2001.

Telephones remained the main revenue generator contributing RM1,850.1 million or 50.5% of MBG's gross sales. Telephone revenue increased by 4.1% in 2001 compared to year 2000.

ISDN | Total ISDN customers increased by 9,040 or 45% bringing the total customer base to 29,020 as at the end of December 2001. The increase was the result of aggressive promotional campaigns undertaken throughout the year, particularly the 'go digital go TMISDN', 'I Save & Surf' and 'Eze N3' package promotions. International service coverage of up to 40 countries (inclusive of 2 new connections to Germany (Deutsche Telecom) and Japan (NTT) also contributed to the excellent customer growth performance.

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Leased Services | The Leased Services customer base stood at 50,711 in 2001, with a negative net growth of 1,093 due to customers switching from analog to high speed digital leased circuits. Corporate customers in particular, were encouraged to migrate from analog to better digital services. As at December 2001, there were 13,984 digital leased circuits compared to 11,735 in 2000. It accounted for 81.6% of Telekom Malaysia's 62,133 total leased circuits. A variety of packages such as the 'leased circuit migration package' and 'leased circuit broadband package' were introduced to compete against attractive service offerings by competitors. Telekom Malaysia succeeded in retaining its leased circuit customers by being competitive through the strategic move in reducing the leased circuit tariff particularly for the crucial MSC area.

Corporate Information Superhighway (COINS) | COINS revenue increased by 57.4% from RM67 million in 2000 to RM105.5 million in 2001 following the increased demand for data networking especially from corporate customers. This increase was attributable to the addition of 134 customers (installation of 2,889 circuits) compared to only 116 customers as at the end of 2000. Various COINS products and services were provided to accommodate the growing needs and expectations in data network by corporate customers. These included COINS VPN & DVPN, COINS ATM, COINS Global and COINS iOffice. COINS iOffice which was introduced on 18 January 2001 allowed users access to various communication facilities including PC telephony, unified messaging, directory etc. This product had won subscriptions from 45 customers. There was a significant increase in the number of COINS Resellers further improving its service offerings to valued customers.

Myloca (Hosting Services) | In its move to tap into the fast growing e-business, Telekom Malaysia has created business opportunities providing expertise and consultation services in data management through Myloca, a hosting service for SMEs. Telekom Malaysia offered SME customers a choice of services and products from the management of complex data, equipment requirement and building advice access to IT expertise. Four types of Myloca services were available for customers including Telehousing Services, Managed Services, Customized Services and BIZsecure.

Video Conferencing | Heightened concern for the safety of air travel in the latter half of 2001, witnessed a substantial drop in airline travel particularly in the corporate sector. In this regard, Telekom Malaysia helped customers avoid business shortfalls by offering video conferencing services particularly to the educational and medical services sector. Management meetings could be conducted concurrently in up to 200 different locations via TM Live Audio Conferencing. Besides being easy to manage, companies using this service could save time and operational costs. The service contributed RM1 million in revenue in 2001.

Increase in Data for Outgoing and Incoming Traffic | Telekom Malaysia had successfully increased the use of its network infrastructure by maintaining its position as a service provider of first choice for customers. As at December 2001, the Company had recorded 178.4 million in outgoing international traffic minutes compared with 174.7 million for the same period last year. The increasing trend was also reflected in incoming international traffic minutes of 229.5 million in 2001 against 209.1 million last year.

Consumer & Business (C&B) | Telekom Malaysia's consumer and business marketing arm had introduced several new products during the year to stimulate sales and usage of DELs in order to achieve higher sales in 2001. With the rapid expansion of the cellular market and the change in mindset of young users, maintaining the existing customer base posed the greatest challenge.

C&B placed great emphasis on satisfying customer needs and reducing customer complaints and dissatisfaction. To this end, it has embarked on several customer management initiatives which include ISO Quality Standard Compliance Programs at call centres.

To face the challenges of a highly competitive environment and to increase the customer base as well as stimulate greater usage of the rapidly growing services, several innovative programmes offering attractive discounts and bundling with competitive products were introduced during the year. 'TM Golden' offers had six packages comprising Pakej Mesra Cyber 2, Pakej Peniaga Jaya, Pakej 'Business 3 in 1', Pakej Keluarga Ria, Pakej Rakan Niaga and Pakej Istimewa Hari Perayaan. To ensure that Internet users did not miss out on incoming calls, a second DEL was offered at a bargain price. Apart from giving incentives to encourage recruitment of new customers by staff under the 'Staff Cari Pelanggan' programme, the Company also engaged a third party to sell DELs and other services at selected Klang Valley locations. These combined activities had resulted in 508,675 new installations for the year.

Apart from the programme to increase DELs, programmes to strengthen bonds with existing customers were also implemented. In 2001, Telekom Malaysia continued its annual contribution for pilgrims by giving gifts worth RM615,000 to some 50,000 Pilgrims through the Lembaga Tabung Haji. This programme had helped to strengthen the existing excellent rapport between Telekom Malaysia and the Lembaga Tabung Haji as well as its very large member base. Telekom Malaysia also introduced the 'Malaysia Direct' service for the convenience of pilgrims. This service would enable pilgrims to call home and the call charges would be borne by the number dialled in Malaysia. The 'Glorify DEL Campaign' reminded and educated customers to look at the fixed phone in a new perpective, hence stimulating usage at home and offices.

Customer Assistance Service (CAS) | The key focus for Customer Services. CAS includes Call Centre businesses and Operator Assisted services.

More than 90% of incoming calls were responded to within 10 seconds for most services thus achieving the predetermined targets as indicated in the table below. The Customer Service Index (CSI) for 2001 had shown a slight improvement to 74 points compared with 71 points in 2000.

Response time within 10 seconds

Services	108	101	104	999	Telesiswa	1050	103
Achievement 2001	95.8%	95.3%	96.0%	98.0%	83.0%	89.1%	88.2%
Achievement 2000	92.4%	90.3%	96.2%	96.4%	—	86.6%	83.3%

Call Centre Business | To enhance total customer satisfaction and customer trust in Telekom Malaysia, CAS particularly TM1050, is set to play a pivotal role as Telekom Malaysia's One Stop Customer Service Centre, focusing on inbound calls such as general inquiries, billing disputes, complaints, applications, order processing and equal access processing. The Telemarketing Centre, on the other hand, played a significant role as a phone-based marketing service to support internal and external customers in line with present business demands.

Operator Assisted Services | The International and Domestic Assistance and Directory Information Services under CAS remained as the main revenue contributor, where call connections were packaged to fit the need of the customer. Other than normal call connection assistance, services such as Malaysia Direct for those abroad, Conference Calls for corporations, Telesiswa for students, and the 999 National Emergency Services were also provided. The demand for Telesiswa in particular had increased tremendously and to cater for this need Telekom Malaysia will be installing 25,000 units of Telesiswa in year 2002.

Telegraph | Telegraph services, although conventional, remained a reliable and economical marketing and correspondence tool for customers. It continued to be an essential service to specific sectors such as government, banking and finance. In recent years, Telegraph services had been enhanced from being only an emergency text service, to that of a festive greetings provider through the 'Dial 104' Telegreeting Card Services.

Operator Assistance Automation | As competition intensified and to meet coming challenges, CAS as Telekom Malaysia's frontline service, placed greater emphasis on human resource development. This would ensure that it continued to be the key element in enhancing quality of service and total customer satisfaction, hence improving Telekom Malaysia's corporate image while being a viable and profitable business. With this in mind, several programmes were introduced to improve staff morale and deliverables. Year 2001 featured 'Kempen Mesra Pelanggan' under the quick-fix programme which ran from January 2001 to July 2001. The exceptional ISO Quality Standards Compliance programme held in May 2001 saw seven more new sites under CAS being awarded the ISO Compliance Certificate.

Over the years, CAS human resources had been significantly reduced due to the VSS exercise and retirement. Thus, besides human resource development, system enhancements and automation were planned as the next precursor to meet incoming challenges to address staff reduction and to reduce dependency.

Product Marketing | Throughout the year, several packages had been put in place, focusing on the retention of existing customers, attracting new customers and increasing usage. This was made possible through product positioning, cross product bundling and usage growth programmes. Among others, a new product launched was the RealReward scheme. This scheme is a form of loyalty programme which awards points based on amounts indicated in the bill which will then be exchanged for specific gift items. The scheme was designed to stimulate more calls. The 'Hello and Menang' and the 'Good2Talk' programmes were also well received by customers. The tremendous growth in ISDN due to increased demand from IT related customers, and the success of Telesiswa (reverse charged) calls to residential students, presented greater market potential to tap in the future. New products which will successfully put on trial, included the Ezee Phone and CDMA, which will provide a positive impact in attracting new DELs to meet customer requirements in the near future.

Payphones | With the increasing shift towards cellular phone usage, payphone usage had experienced a down trend. To balance revenue and maintenance cost, some 21,097 payphones were dismantled last year. The current business focus is on pure maintenance and improvement of current operations.

Network Services | New network infrastructure has been high on the agenda of the Company to meet the business objectives for the development of Internet, Cellular and Data related services. These business objectives to support Telekom Malaysia's mission were formulated to retain its dominant player status in voice and data broadband markets, achieve a 40% revenue stream from data services, expand its wholesale business as well as position Malaysia as the regional telecommunications hub.

Telekom Malaysia continues to be the main provider of basic telecommunication services in Malaysia. In fulfilling the commitment to provide world class telecommunications and IT infrastructure, the Company has spent RM1.272 billion on capital expenditure in year 2001.

Telekom Malaysia has installed an extensive fibre network particularly in the access network with physical VFC 1.94 million, ECP 7.17 million, RFC 73,703. The widespread availability of fibre in the access network provided flexibility in the provisioning of future broadband services.

Network Services had been actively pursuing the centralisation of operational and maintenance activities to achieve maximum efficiency and therefore, reduction in cost.

CCS No. 7 Signalling Network Management System was extensively used to monitor the health of the signalling network. The same system was also used to centrally diagnose network faults thus saving on maintenance cost.

Keeping in touch through Telekom Malaysia's world class network

As part of the cost reduction measure, Network Services had implemented the Network Management System (NMS) with the objective of centralising the operations and maintenance process. In conjunction with this, the National Operations Centre (NOC) for NEAX exchanges was launched.

Network performance results especially on systems availability was very encouraging with an overall average of 99.998%.

Currently, Telekom Malaysia's mostly fibre optic based international network has the capability to provide high capacity and high quality global connections for Internet and other broadband services. The C7 links established with most countries would provide faster and high quality call set-up.

To complement the above services, Telekom Malaysia had introduced VSAT services for both domestic and international private network applications and international gateway projects. The new VSAT services known as TM Dialaway, TM Skystar Advantage and TM Faraway were deployed to address the digital divide in rural and remote areas. These new services would be suitable for private network set-ups including telecommunication services for numerous data applications as well as Internet for underserved and remote areas. TM VSAT complemented the existing terrestrial networks for applications, such as COINS, and served as the main infrastructure for ad hoc requirements, such as disaster recovery. As at end December 2001, Telekom Malaysia had commissioned 350 VSAT terminals for private applications, rural telephony and special government projects.

In addition to the above, Telekom Malaysia also embarked on new submarine cable projects such as the SAT3/WASC/SAFE cable system which was scheduled for completion in April 2002. This new cable system would be the first cable system to link Malaysia and the African continent, and would cater for the untapped African market while providing diversity of routes to Europe. These systems are poised to further improve the overall resilience and accessibility of Telekom Malaysia's international network.

As part of its support to the nation in hosting international sporting events, Telekom Malaysia was fully involved in managing telecommunication networks that supported the communication needs of the XXI SEA Games held in Kuala Lumpur in September 2001.

Telekom Malaysia would embark on an Integrated Network Management System (I-NMS) to achieve an end-to-end management of the network to meet Telekom Malaysia's business objective of providing world class telecommunication and multimedia services at competitive rates to customers.

There is a need to optimise all network resources on an integrated basis to reduce manpower, cost and time. In this regard, Telekom Malaysia planned to introduce the New Generation Network (NGN) the implementation of which would involve migration towards a packet based network. NGN should be capable of handling data, voice and video communications and should be flexible in offering value-added services. Next Generation DLC or MSAN (Multi-Service Access Node) would be introduced in the Third Quarter of 2002 as a single access node for both narrowband and broadband services.

The CDMA network provides an alternative solution to fixed line demand and would be able to cater for about 100,000 subscribers in the first year of its rollout. IS95B CDMA was introduced under Business Plan 2001. It could cater for up to 64 Kbps data services. The Business Plan 2002 had planned for an upgraded version of the network called CDMA 1X, with a data capability of 144kbps maximum. Three CDMA stations in Sarawak namely Asiajaya Station, Bukit Sigalang Station and Bau Station were made ready by the Fourth Quarter 2001.

In its strategic move towards broadband, Telekom Malaysia has installed ADSL (Asymmetrical Digital Subscriber Line) in the Critical Business Areas of the Klang Valley, Penang and Johor Bahru. This technology is capable of delivering a downstream speed of up to 8 Mbps without disturbing the telephony service already installed on the same line as both data and voice services could be used at the same time. Under Business Plan 2002, Network Services would introduce ADSL to all states with a forecasted expenditure of RM330 million for the project.

Several trials and pilot runs were conducted throughout the year which will be beneficial to Telekom Malaysia in terms of understanding and enhancing future technologies and services platforms such as Broadband Fixed Wireless Access (BFWA), Wireline Broadband Access Technology (WBAT) and Next Generation Services for CDMA.

The Company continued to explore new and cost effective technologies in order to achieve the objective of 30% CAPEX efficiency in 2 years.

Customer Network Operations | Customer Network Operations is responsible for the operations and maintenance of Telekom Malaysia's access network and acts as a front-liner, interfacing with customers. Its two main activities are installation and maintenance of customer products and services, comprising telephony lines, leased circuits and broadband (XDSC).

Highlights of Service Quality
Service Reliability
    i)   Fault Rate (KTT) – MCMC target is 0.5, TM TelCo Target is 0.25
        Service reliability indicates the average fault rate experienced by customers each year in respect of the telephone service subscribed. Under the MCMC framework, it is targeted to have less than, or equal to 500 faults reported per 1000 lines per year. Achievement for KTT in the year 2001 is 0.26. This is well above the 0.5 target set by the MCMC. TM TelCo's target is 0.25.

    ii)   Service Restoration
        Service restoration is a measure of cycle time for fault restoration from the time the customer lodges a complaint to the time the fault is cleared inclusive of weekends and public holidays. The target set by CMC is 80% fault clearance within 24 hours whereas TM TelCo's target was 85%. TM TelCo's YTD achievement for year 2001 is 81.6% which is slightly above the set target by the CMC.

Information Technology Services | Information Technology Services's major product is BIZsecure, that provides complete IT and communications recovery services with the mission to deliver a diverse spectrum of business continuity solutions, allowing free enterprises to embrace technology, while maintaining an acceptable level of business availability.

In 2001, BIZsecure was awarded the premier EMC 'Hot-Shots' Award for best working partnership, and was among the final contenders in the corporate sector for the prestigious '2001 Anugerah Perdana Teknologi Maklumat' jointly organized by MAMPU and PIKOM. BIZsecure has been promoted throughout the year with a national roadshow to Telekom Malaysia corporate customers. The company has been active in the development of partnership programmes with other technology providers. BIZsecure Centre IT and environmental infrastructure are continuously upgraded to ensure all service level offerings are guaranteed

to customers. The year started off with BIZsecure having 2 customers while 8 more potential customers are in the pipeline. Efforts are being undertaken to further enhance, upgrade and expand services offered, based on changing trends in technology and the market place.

Two new services currently being developed are DIZsecure, a 'Disk Storage-On-Demand' service, and WIZsecure, a 'Bandwidth-On-Demand' service based on the 'Pay-As-You-Use' concept.

Service Quality Initiatives | Telekom Malaysia's Service Quality Initiatives are closely related to the Company's effort to spearhead and implement the Quality Policy and Quality Improvement and Business Excellence (QIBE) initiatives. Telekom Malaysia's quality policy has served as the framework for all the continuous quality activities in TM TelCo's quality management programmes.

TM TelCo's Quality Policy is made up of the following principles:
- To practice total customer satisfaction
- Total commitment to deliver full and best services end to end
- To continuously apply effective quality management systems
- To ensure all quality initiatives add value to Telekom Malaysia's business, stakeholders and customers
- To do the right things right, the first time and all the time.

Telekom Malaysia Business Excellence Assessment (TMBEA)

- Telekom Malaysia has developed its own Quality Management System, named Telekom Malaysia Business Excellence Assessment (TMBEA). The TMBEA quality management system was derived from the Motorola Quality System Review, Malcolm Baldrige National Quality Award criterions, and ISO 9000 requirements. TMBEA is a management tool which enables objective assessment of the continuing health of the company towards world class standards for each of Telekom Malaysia's major business units.

- The Customer Satisfaction Index (CSI) Survey conducted in the Company is one of the TMBEA initiatives to gauge commercial and residential consumers' perception and satisfaction levels on service quality provided specifically by the fixed line services. The CSI performance for 2001 of 7.4 indicated a significant improvement over that recorded the year before.

ISO 9000

- In addition to TMBEA, Telekom Malaysia continued to focus on ISO 9000 certification for its critical and frontline functions to meet customer satisfaction besides serving as a marketing strategy to win customer confidence.

- Since 1996, a total of 14 major divisions had successfully attained and maintained ISO 9001/9002 certification. In year 2001 the following divisions have successfully attained the ISO 9000 certification:
  – TSSSB in 22 Locations
  – Network Management Operations in 381 Locations
  – Network Coordination & Management

Other major divisions in TM TelCo are also actively pursuing the ISO certification programme, based on cross functional processes rather than on divisional functions.

*ISO 9002 Certification
– commitment towards excellence*

Quality Improvement Teams | The Quality Initiative in Telekom Malaysia continues to encourage teamwork, resulting in an increased number of Quality Improvement Teams (QIT) and Quality Control Circles (QCC). Currently, there are 470 teams company wide. Most teams have successfully completed their improvement projects. The Customer Satisfactions Index increased 3% to 74%, over the previous score. Various efforts to sustain customer loyalty have been carried out throughout the year.

2001 was another year of success for Network Management & Operations in terms of quality improvement initiatives. Network Management & Operations had undergone the re-assessment audit for its ISO9002:1994 Quality System. The scope of coverage was extended to include the Transmission Management Division, all Network Engineering units in the operating regions, Quality Management and New Services of International Network Operations, as well as transmission stations and switching exchanges. The total number of stations certified to date stood at 524.

TCS Convention | The TCS Convention is an annual event, which serves as a showcase for the Quality Improvement Teams (QIT) and the Quality Control Circles (QCC) to present quality improvement project findings. TCS Conventions have been organised at the state as well as national level.

Standardisation of Projects | A standardisation committee has been set up to identify and recommend viable projects for standardisation 55 projects had been identified for standardisation in year 2001.

Customer Perception Management | An inter-divisional committee has been formed to address and rectify issues relating to external customers which could influence customers' perception of Telekom Malaysia's products and services. The committee's finding had resulted in the successful implementation of the following initiatives in 2001 to strengthen customer services:
• Opening of Kedai Telekom counters on non-working Saturdays
• Installation of customer care hot lines
• Enhancement of the image and professionalism of front line staff
• Upgrading of Kedai Telekoms
• Provision of better facilities for customers to make payment
• Improvement of processes for telephone installation and restoration.

1 Emerging Technologies: MULTISERVICES network

Background

The current telephone network, which has been developed over the decades, has not undergone any fundamental change. This legacy network is based on a dedicated facility allocation, also known as 'circuit switching'. Services are limited to basic access or are 'connections' oriented.

Each of these services is served from a separate network platform for voice telephony, mobile voice telephony and data traffic. These discrete networks require their own network elements and provisioning systems and they have to be managed separately. This technique has been proven inadequate for future services.

The new Multiservices Network offers a solution towards an integrated voice and data communications system. It will enable Telekom Malaysia to meet current challenges and tap into tomorrow's opportunities in the most flexible, scalable and cost-effective manner in order to maintain its market leadership.

WHAT IS MULTISERVICES NETWORK?

The Multiservices Network converges fixed, mobile, video and data onto a singular multiservice platform. It covers all aspects of network facilities. It is made of four distinct layers, namely the access, core, control and the service or application layers. A typical Multiservices Network is illustrated in Fig.1 below.

To facilitate the access layer some new equipment has been introduced recently. These include the Multi Service Access Node (MSAN) and Digital Subscriber Loop Access Multiplexer (DSLAM). These new network elements will enable the offering of more economical high bandwidth services to the customers.

In addition to the need for high-speed connections, there are also urgent requirements for mobility, roaming and wireless in the access domain. In supporting these needs, focus is being given to 3G in mobile and Code Division Multiple Access (CDMA) technology.

The core layer is made up of a packet/cell switching system which is interconnected by a high speed transmission system, namely the Dense Wavelength Division Multiplexer (DWDM). This single infrastructure is able to switch all types of traffic, including voice, video and data. The gateway (GW) network element serves as a mediator between packet based switches and conventional media.

The control layer serves to ensure that the call setup is carried out effectively. Soft-switches are used for this purpose.

The service or application layer provides the platform from which all services are generated to serve the customers. It basically consists of servers able to cater for all applications or dedicated to a few, depending on the volume and complexity of the service.

All these elements are then managed by a single Network Management System (NMS) platform for easy end-to-end management of services from provisioning to operations and maintenance.

- Service/ Application Layer
- Control Layer
- Core/Backbone Layer (Media Layer)
- Access Layer
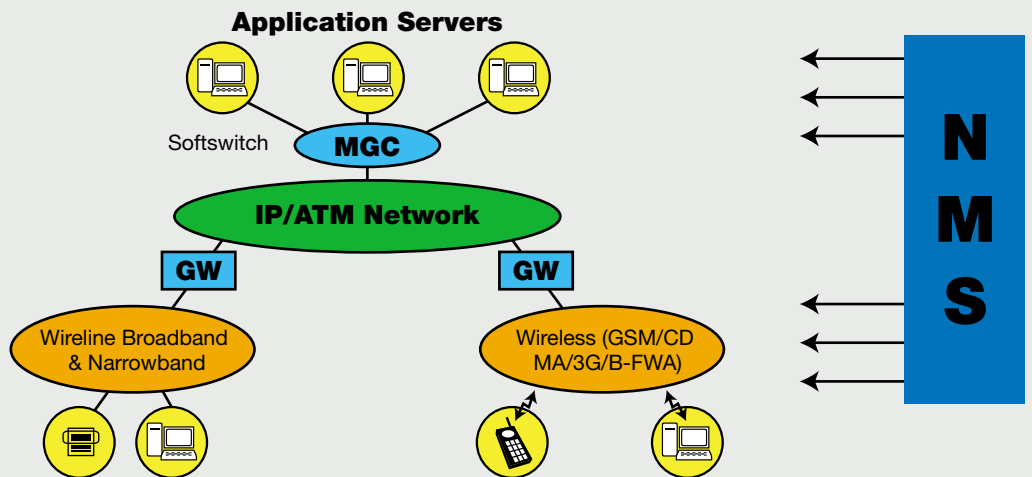
NMS : Network Management System
GW : Gateway
MGC : Media Gateway Control
IP : Internet Protocol

ATM : Asynchronous Transfer Mode

Figure 1: A Typical Multiservices Network Structure

1

Emerging Technologies:

MULTISERVICES
network

SERVICE REQUIREMENTS

The Government of Malaysia aims to move the nation into the information age in its effort to improve the country's social and economic standing in the world. In realising these aspirations, Malaysia is looking at the dissemination of knowledge to its populace by positioning itself as the preferred hub in telecommunications, business, education and information in the Asia Pacific region.

In supporting the Government's aspiration to build a K-society, Telekom Malaysia has invested heavily in its move towards becoming a leading regional telecommunications provider. The Group promotes a customer focused culture by enhancing customer relationships through innovative products and services. This can be achieved by creating groups within the Company, specifically focusing on multimedia, cellular and data services. The Company currently supports a host of services required by customers within its present infrastructure.

The future opens up opportunities for the introduction of new and enriching value-added services capable of catering for the needs of customers on a more personalised level. New customer requirements will include fast service provisioning, Internet capability, newly enhanced services and unlimited bandwidth capacity. Other future multiservices offerings include the following:

- Unified Messaging Services
- Televoting
- Calling Card (enhanced)
- Network Call Centre
- Voice Mail (option IP)
- Prepaid (enhanced)
- Sponsored Call
- Internet Call Waiting
- Internet Call Diversion (ICD)
- Short Messaging
- Wide Area Centrex
- Universal Access Number
- Split Charging
- Personal Number Services
- Converged Virtual Private Network
- Virtual PBX
- Home Zone Billing
- Location Based Services
- Enhanced 994/991

Figure 2: Future Multiservices Network Offerings

In addition to the communication-based services described above, the drive towards the K-economy also encompasses content and transactional services. These services offer customers extra convenience in an array of interesting new services such as e-commerce, financial and stock transactions, which are accessible via both fixed and mobile Internet.

THE FUTURE MULTISERVICES NETWORK

Existing infrastructure requires service activation to be done distributively at every network facility. It is, however, not adequately versatile to provide all the required services of the future. It would be inefficient and resource prohibitive to provide these services to all customers.

The Multiservices Network will address these limitations by having a single consolidated network, through the integrated management systems, where resources are shared and handled more efficiently. Overall cost reduction is anticipated and the savings can then be transferred to the customers. Figure 2 shows the migration from the existing network to the new Multiservices network.
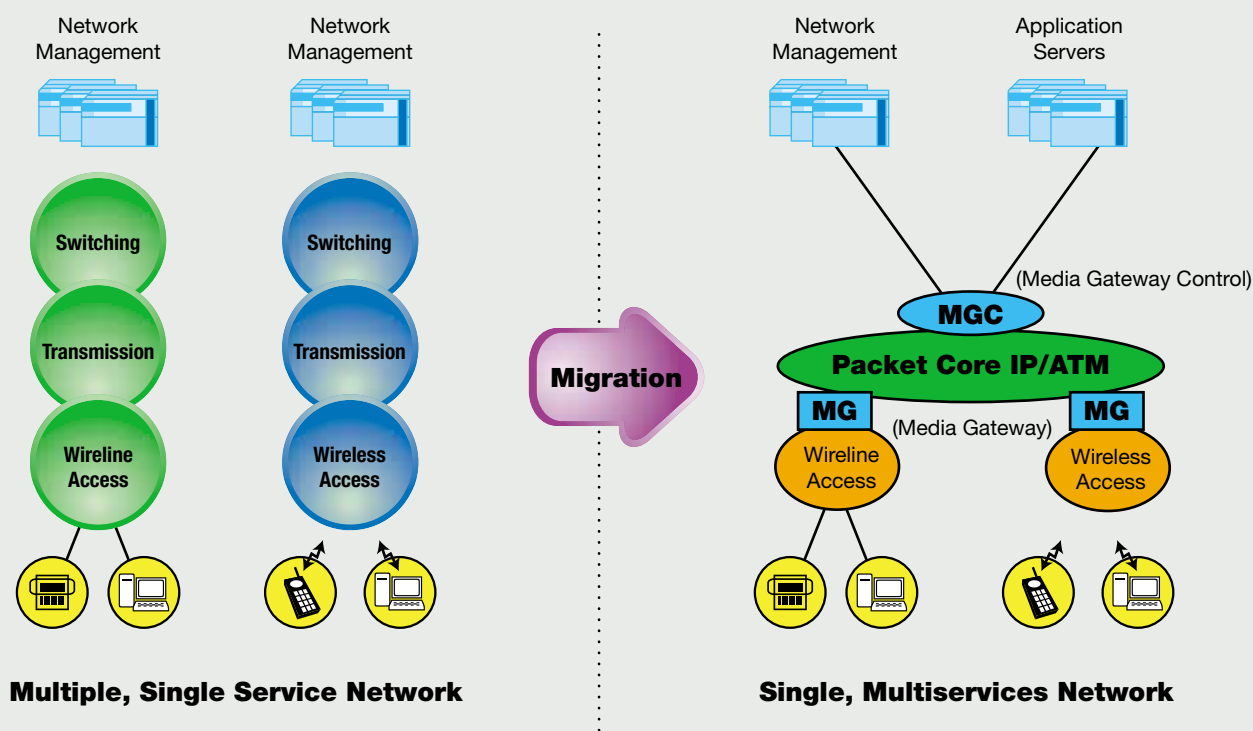
Figure 3: Migration from Current Network to Multiservices Network

The Multiservices Network operates on a service centric principle, which effectively supports growth in value-added services and does so expeditiously. It is a single network infrastructure with a greatly simplified architecture, which translates into reduced operational costs.

The 'open' nature of the Multiservices Network allows ease of third party application development and speedy service deployment.

Thus, the motivation for creating a Multiservices Network is to have a highly efficient single network capable of providing exciting new services in a timely manner. What is most important is that this can be achieved in a most cost-effective way.

IMPLEMENTATION OF MULTISERVICES NETWORK

Telekom Malaysia supports the above initiatives through the creation of a Multiservices Network, capable of conveying all types of communication services. It will provide convenient and hassle-free access at the customer end irrespective of the type of service requested. This network allows rapid service creation and is able to reach customers within a short period from conception.

Telekom Malaysia will deploy a Multiservices Network by procuring the relevant network elements. Implementation of Media Gateways will commerce at the end of 2002. The development of the Multiservices Network and its migration will be

staggered through several calculated and carefully planned phases. Selective services will be offered by the 2nd Quarter of 2003 and will be followed in stages by other services.

Finally, it is anticipated that the overall Multiservices Network structure will mature to the extent that it will enable the integration of multimedia-based services. When that occurs, the customer will be able to enjoy a myriad of services with short provisioning time and at minimum cost.

subsidiaries

vads berhad

VADS Berhad (VADS), a wholly owned subsidiary of Telekom Malaysia since 1997, provides networking services, electronic commerce solutions and applications for commercial enterprises operating in the field of e-business, thus ensuring vital communications at a global level. In supporting managed networking services and addressing growing customer demand, VADS also provides managed e-Services and e-Solutions through its two subsidiaries, VADS Solutions Sdn. Bhd. (formerly known as The Network Connections Sdn. Bhd.) and VADS e-Services Sdn. Bhd. (formerly known as Electronic Commerce Sdn. Bhd.).

Year 2001 marked a particularly significant milestone in the Company's history.

In August 2001, the Securities Commission approved VADS's application to be listed on the Second Board of the Kuala Lumpur Stock Exchange. Details are currently being finalised for public listing, scheduled for 2002. On completion of the process, VADS will become the first subsidiary of Telekom Malaysia to be listed on the local bourse.

Despite operating in a sluggish economic environment, VADS has once again demonstrated resilience and improvement, recording a sales turnover of RM123.9 million in 2001, a 54% increase from the previous year's performance. 2001 is its best performance year to date.

Since its inception ten years ago, VADS has concentrated on the implementation of a carefully planned strategy. The hiring of highly skilled personnel to operate its autonomous business units has created a human resource ethos of dedication and expertise with planned career development paths and skill building programmes for employees. A schedule of aggressive marketing in the corporate arena, building on strategic alliances with reputable global players, has helped carve a niche for VADS as a leading e-business solutions provider in the country. The Company has long operated a policy of education in the corporate world with the two-fold benefit of creating a more efficient and knowledgeable business environment in Malaysia, better understanding of the products on offer, while realising greater commercial opportunity and better returns. VADS believes its ongoing campaign to educate enterprises on the economies-of-scale that can be derived from outsourcing data networking needs. The subsequent acceptance of this

proposition has contributed significantly to its business growth in 2001.

The outstanding achievements recorded here can be attributed to the VADS team of committed professionals who have worked hard to ensure the solutions and services offered are customer-centric and cost-effective.

While VADS is cautiously optimistic that there will be an economic turnaround in 2002, the Company will continue to focus on its core business of providing managed network services to enterprises and to further move up the value chain in the provision of auxiliary products and services to customers. These products and services include the provision of e-commerce applications, customer relationship management and call centre management software applications.

Furthermore, VADS's strategic alliances with world-class solution providers will continue to strengthen the Company's presence and capabilities. VADS's strategic partners include AT&T, MCI WorldCom, Sun Microsystems, Cisco Systems, Microsoft and Onyx Software Corporation.

Ever prudent, VADS will continue to implement cost-efficiency measures as well as maximise resources to ensure a continued growth path. As a result, VADS will be able to offer better value to customers and maintain its competitive edge in an ever more challenging marketplace.

Fiberail

fiberail sdn. bhd.

Fiberail Sdn. Bhd. (Fiberail) is a joint venture company between Telekom Malaysia and Keretapi Tanah Melayu Berhad (KTMB). Anticipating a huge demand for telecommunications services, the Ministry of Energy, Communications and Multimedia has awarded Fiberail the licence to provide telecommunication network related services. Fiberail has also been granted the exclusive right by KTMB to use their railway corridor for a fibre optic cable network.

Fiberail has a 1,600 km fibre optic cable network connecting all major towns in Peninsular Malaysia. With that, Fiberail has been able to offer cost effective and high quality network solutions to meet the demands of the fast growing information, communications and entertainment industry. With the Network Facilities Provider (NFP) and Network Service Provider (NSP) individual licences, Fiberail offers flexible leased fibre optic packages, broadband services and total business solutions. To complement its core products, Fiberail also offers ancillary services such as telecommunications tower space and equipment cabin space. These products will meet the requirements of telecommunication operators, financial institutions, broadcasting organisations, multinational corporations and the ever-expanding and fast growing IT industry as well as multimedia service providers. Fiberail has also introduced numerous value-added services such as Consultancy services and Co-Location services to cater for customer demand in diversified services. Fiberail has been appointed as the consultant to the Double Track Project for the relocation of the fibre optic cables from Rawang to Ipoh.

The 100% fibre optic network helps customers in reducing network set-up time and cost. The Integrated Network Management System (NMS) and the National Control Centre (NCC) in Kuala Lumpur monitor the systems for performance quality, usage and access security. Regional Control Centres and Operation Centres are strategically placed to watch over the network from regional sites and they communicate with the NCC on technical situations to ensure smooth functioning. With the support of a professional and highly committed marketing and technical team, Fiberail will ensure high quality and reliability of network service, particularly for high volume, high speed data and mission critical applications to customers who require total solutions for their telecommunication needs.

Being the first licensed telecommunications operator to achieve ISO 9002 certification, Fiberail never compromises on the quality of products and services to customers. Moving forward in meeting new challenges, Fiberail will focus on further improving the quality of service and the enhancement of products and services according to customer demands and expectations.

Staff training and empowerment is paramount in contributing to the success of any company, and in line with the national aspiration, it remains a high priority to Fiberail. With a staff strength of 138, this dynamic company has recorded a healthy growth in profit, and satisfactory revenue per employee figures, in what has been a demanding year in economic terms.

Providing quality products and services to its customers is the main reason for Fiberail's success. In the near future, Fiberail will embark on the Network Diversity project. This second cable network project will be implemented in stages and Fiberail will be able to enhance its services to the level of 'fine nines' equivalent to international standards.

Future demand for a fibre optic telecommunications system is deemed huge as the need for high-speed audio, video and data transmission increases at national and international level. With constant review and upgrading of technology for its network planning, equipment and engineering support, Fiberail is confident in ensuring superior quality products for a full range of service packages for customers. Fiberail is also identifying the value of international market demand and the credibility of foreign investors.

Even though year 2001 has been a very challenging year, Fiberail has benefited from the rapid growth of the telecommunications industry. Fiberail will continue to be committed to its customers and aims to be recognised as a Company that can provide the necessary support for the growth of their businesses.

meganet
communications sdn. bhd.

Meganet Communications Sdn. Bhd. is a joint venture company between Telekom Malaysia and Nippon Telephone and Telegraph (NTT), Japan. Meganet is licensed to provide Intelligent Building Systems (IBS), Integrated Telecommunications and Information Technology Solutions including multimedia applications to both the Government and private sectors.

Meganet offers a wide range of IBS Services including Integrated Building Management System (IBMS), Structured Cabling System, Network/ Telecommunication System, Local Area Network (LAN) and Wide Area Network (WAN) System, Building Access and Security Management System, Car Parking System, Audio Visual System, Smart Card Application Solutions and Intelligent Building Electrical System (IBES).

The year 2001 demonstrated continued strong performance of Meganet with the completion of several high profile projects, such as the Putrajaya and Wisma Telekom Jalan Semarak Building infrastructure. Meganet is on track in achieving its short and long-term goals by focusing on repeat businesses from the same and potential clients.

As part of the Group's initiative to further strategise its business in year 2001, Meganet added Intelligent Building Electrical System (IBES) to its existing list of products and services. With this expansion and diversity in products and services offered, Meganet is better positioned at meeting customer needs.

Year 2001 saw management changes at Meganet, with Encik Mohd Noordin Mohamed leading the Company as the new Chief Executive Officer and Dr. Idris Ibrahim as a new member of the BOD.

The year also witnessed Meganet entering a new business on Security Management Systems. This venture introduces the Company to a new and challenging horizon, with the exploration and potential expansion of its capabilities in security operations, thus ensuring a high intrinsic long term value for Meganet.

In line with Meganet's mission and vision of becoming one of the top IBS service providers, it continues to work with Telekom Malaysia as a turnkey contractor for Telekom Malaysia National Operation Centre particularly in developing Intelligent Building concept. Meganet is deeply involved in the design and build stage of the project.

Although 2001 had been a challenging year, Meganet showed a healthy growth in the period under review. Excellent solutions and services are the key contributing factors for the significant increase in the number of clients and projects undertaken. The Company is confident in forecasting a healthy growth trend in future years.

TELEKOM SALES & SERVICES
SENDIRIAN BERHAD (190662 - X)

telekom
sales & services sdn. bhd.

Telekom Sales & Services Sdn. Bhd. (TSSSB) is a customer service organisation that focuses on providing one-stop solution for Telekom Malaysia Group's products and services. With its 93 Kedai Telekom outlets nationwide, TSSSB serves to act as the prime channel to market an array of Telekom Malaysia's products to its consumers and business customers.

To complement its customer service function, TSSSB also provides a host of Information and Communication Technology (ICT) products and Customer Premises Equipment (CPE) to its customers through its Kedai Telekom outlets, corporate sales division, and its network of dealers and agents.

The Company also works very closely with Telekom Malaysia's product marketing division, TM Multimedia, vendors, suppliers, manufacturers and business partners in providing certain key products and services such as prepaid phone cards, TM Rented Payphone, TMnet services, ISDN special promotions to individuals and business customers.

For customised services and solutions, the Company, through its corporate sales division provides customers with professional advice and consultancy services ranging from feasibility study and proposal stage to actual procurement, delivery, installation and projects commissioning of various sized projects.

As part of its continuous effort to enhance quality, 25 Kedai Telekom outlets were awarded ISO accreditation in August 2001. As manifestation of the premium placed on quality, the remaining 68 Kedai Telekom and the Company as a whole will be pursuing ISO certification in the coming year.

With a total workforce of 1,290, TSSSB continues to serve the 4.6 million Telekom Malaysia direct exchange line (DEL) customers, comprising more than 200 corporations, government departments, major businesses and SOHO ICT/CPE customers.

TSSSB's objective is to enable its business and residential customers to communicate using an extensive product and service portfolio covering voice, data, internet and multimedia being made available by the Company and Telekom Malaysia Group as a whole.

The clarity of
our future is guided by
one crucial factor...

... you.

Reaching Out, To Tomorrow

You want to work faster.

You want to work easier.

That's what technology does.

An enabler enhancing everything we do.

We're constantly evolving our technology solutions.

So that you'll never notice how it works for you.

We're reaching out with the right technology.

So you can play, work and learn more,

in less time than ever.

Just reap the benefits.

Cellular

Dato' Dr. Ir. Mohd Khir Harun
chief executive officer
TM Cellular Sdn. Bhd.

TMTOUCH is the digital cellular telephone service provided by TM Cellular Sdn. Bhd. (TMCSB) formerly known as Telekom Cellular Sdn. Bhd., a wholly owned subsidiary of Telekom Malaysia Berhad. TMTOUCH is based on the Global System for Mobile Communication (GSM) technology, operating on the 1800 MHz frequency spectrum, which offers high quality service to customers. GSM provides greater security, better coverage both indoors and outdoors, superior speech quality, clearer transmission and improved capacity for data transmission capabilities.

As a result of the implementation of various programmes to encourage usage and achieve good revenue generation, the period under review saw TMCSB moving closer towards realising its aim of becoming a leading cellular provider in Malaysia with improvements made in customer service, coverage, capacity and quality. TMTOUCH operates 34 customer service centres nationwide, with 8 in the Central, 6 in the Northern, 4 in the Southern and 3 in the Eastern region of Peninsular Malaysia, 8 in Sabah and 5 in Sarawak.

TMTOUCH is dedicated to the continuous improvement of services on offer. It gives top priority to customers and is taking appropriate measures to meet the demands of an increasing subscriber base by offering an increasing range of products and services. The company has seen considerable growth in its customer base increasing from just 9,000 subscribers in September 1996 to a current registered 1.2 million subscribers at the end of 2001. This number is expected to touch 2.5 million by 2003.

TMCSB is constantly improving and upgrading TMTOUCH's network coverage throughout Malaysia. Our main focus is to introduce the latest technology to customers and create a platform for the provision of future services such as 3G. Accordingly, several agreements have been sealed between TMCSB and various

vendors to develop the TMTOUCH Network Management System (NMS), and to upgrade the Voice Compression Equipment (VCE) as well as the General Packet Radio Services (GPRS) capability. By installing these various equipment, our subscribers will be able to enjoy better network quality and capability, as well as faster, smoother and clearer incoming and outgoing calls.

The international roaming service provided by TMTOUCH has been substantially increased from 45 roaming partners in 2000 to 57 countries through 79 networks worldwide. TMTOUCH offers a variety of value added services such as Caller Line Identification Presentation (CLIP), Call Holding, Call Waiting, Voice Messaging (TOUCH Link), Call Forwarding, Itemised Billing and International Direct Dialling Access (IDD). Wireless Application Protocol (WAP) services which were available since October 2000 offer the latest news, stock prices, business information, entertainment updates and traffic information. TMTOUCH operates a

operations REVIEW

corporate homepage http://www.tmtouch.com.my which is divided into 3 segments: informative (information based contents), interactive (a mediator between customer and company, a one stop centre) and transactional (a business centre via the web).

In order to catch up with the fast paced growth of the telecommunications industry today, TMSCB has decided to re-position the TMTOUCH brand in order to reinforce awareness of it in relevant markets. This new master brand positioning will project TMTOUCH as 'Making Everyday Life Better'. In other words TMTOUCH is the choice for people wanting to make their everyday lives better. The new brand will convey the message that TMTOUCH not only provides the best of communication technologies but also offers value for money, innovative and versatile products and solutions in a caring way.

operations review Cellular

A major area of growth in the cellular market worldwide has been the massive rise in the use of Short Messaging Services (SMS), allowing customers telecommunication contact at a fraction of the price of a voice call. SMS is particularly popular in the TMCSB young market segment. To that end, TMTOUCH has launched several SMS based products to further attract new customers and now offers a suite of eight SMS services.

Touch Messaging enables subscribers to send messages from one handset to another, while Touch Stock allows subscribers to request instant stock information. The TMTOUCH SMS Summons Checkpoint allows subscribers to check on the possibility of summons for traffic infringements. This new infotainment service gives TMSCB the distinction of being the first cellular operator in the country to offer subscribers such a service. This effort has been recognised and acknowledged by the country's Official Record Keeper and will be listed in the next publication of The Malaysia Book of Records, as the 'First Summons Check Via Cellular Phone'. Besides that, TMTOUCH is also offering its subscribers instant access to entertainment, communication and information via the Zed Mobile Value Added Service. This is yet another SMS-based service, a collaboration between TMSCB and Sonera Zed Philippines Inc. Zed offers various forms of unique ringtones and graphics to personalise users' handsets, new games to captivate its users and other new services like mobile chat, sports and news information for people on the move. TMTOUCH subscribers can use the ZED Mobile Value Added Service immediately without having to register. All they need to do is to be a postpaid subscriber and posses a handphone, supporting text messaging. The access code for Zed is 1234 and the cost for enjoying the service ranges from RM0.20 to RM1.50.

The TMTOUCH Yahoo Messenger service enables the sending of messages through a mobile phone instead of via personal computers. TMTOUCH subscribers who enjoy its Touch Messaging facility will be able to use this service to send, receive and reply to instant messages with their acquaintances online. The service also doubles up as a presence awareness application. The TMTOUCH Mood Swingers facilitate the download of a variety of ringtones and logo graphics from the TMTOUCH's website. Ringtones dedication, picture messaging, flash messaging, blinking messaging, greeting package and TMTOUCH Soccer Alert are also available on this service. During Ops Sikap, TMTOUCH subscribers received SMS messages with details of accident blackspots and numbers of fatal accidents a week before and after the Hari Raya period. The TMTOUCH Cool Chat service supports conversation between more than 2 parties at one time. Each party will be able to listen and talk to multiparties simultaneously. The party invoking the conferencing service must be a subscriber of TMTOUCH while the call recipients could be 013 peers themselves, other mobile operators or PSTN subscribers, both local and overseas.

Our customers' convenience is our top priority. Bearing that in mind, TMTOUCH will always try to create ease for our subscribers especially in eliminating unnecessary stress or problems. To cater for service excellence to its customers, the TMTOUCH Telecare Centre is available anytime between 8.00 a.m. to 12.00 midnight, seven days a week. This Centre can be contacted at 013-1111 or 03-2687 8888 for postpaid and prepaid subscribers. All call-in complaints/enquiries will be answered by our Customer Service Consultants whereas written complaints will be attended to by the Customer Correspondence Consultants. All our Consultants will provide information to potential users and escalate problems to the relevant departments for speedy resolution. The Telecare Centre is well-equipped with the latest technology such as the Customer Contact Management (CCM) system which enables our Consultants to respond to each enquiry as fast as possible. The Centre is not only established for the benefit of our customers but also for

TMTOUCH to gather feedback from customers regarding our services. This will help us to improve our services and fulfill the requirements in the Customer Satisfaction Index (CSI) survey conducted by the Malaysian Communications and Multimedia Commission (MCMC).

The cellular market has witnessed increasing demand and a growing customer base in the prepaid segment. TMTOUCH offers a choice of two services, Touch Advance or Prepaid *intm*.

Touch Advance has been in the market since December 1998 and as of 31 December 2001, it has a total of 285,030 net subscribers. It offers two flexible and innovative rate plans. The ValueCall-Local package offers lower local rates for all off-peak calls at RM0.39 sen per minute with a cost saving of 33%, while the ValueCall-Nation comes with a lower long distance rate for all off-peak calls at RM0.67 sen per minute, over 40% lower than the current charge. Starter packs for Touch Advance retail at RM178 with recharge cards in denominations of RM50 and RM100.

TMTOUCH recently introduced a second prepaid service, *intm*, which by 31 December 2001, had registered a total of 102,557 subscribers. Targeted at teenagers and the early twenties market, *intm* was fittingly launched with a hip-hop commercial, and offers a 20% discount on airtime for calls made after midnight until 11.59 a.m.. The *intm* starter packs retail at RM168 with recharge cards available at RM50 or RM100.

TMTOUCH serves an extensive market comprising corporate, government and individual sectors. Although its major focus is on the 18-25 year age group, for which it launched its Touch Advance prepaid services, the Company has also lined up several packages for its post paid market segment, including the Millennium Plus Package (Public Package) and Super Saving Promotions (Super Touch and Super Off-Peak) until March 2002. The packages offer a variety of attractive rebates and discounts.

TOUCH Extreme, TOUCH Premium and the new Millennium Plus packages are especially designed to attract market attention, thereby inducing subscription to TMTOUCH. TOUCH Extreme is designed for heavy users, offering consumers the flat rate of RM0.20 sen per minute, nationwide. The service also provides a credit limit of RM500, with no connection fee or monthly fee for value added services. TOUCH Premium, designed for those who receive but rarely make calls, offers a reduced monthly tariff of only RM20, and the new Millennium Plus package, while retaining its tariff, offers subscribers airtime rebates, free connection fee and monthly fee for value added services.

TMTOUCH was the Official Cellular Provider for the prestigious XXI SEA GAMES, held in Malaysia in September 2001 as well as for the Telekom Malaysia Le Tour de Langkawi 2001.

2

Democratising Technology:
Telekom Malaysia
as a BRIDGE to the
digital divide

The term 'Information Economy' brings to our minds the tools and assets of a prosperous society: peer-to-peer computing, mobile devices and enterprise resource planning systems. Malaysia has a lot to gain from being 'connected'. A small-scale farmer and those in the cottage industry may have little use for supply-chain management tools but they would benefit considerably if they could pick up a mobile phone and find out a buyer who can offer him the best price for his products.

Like many other developing countries, Malaysia also suffers from the lack of a comprehensive telecommunications infrastructure particularly within certain areas of its rural communities. The problem is large enough for it to have its own terminology: Digital Divide. The concern here is, how do we bridge this divide? How do we make technology available to everyone? How do we achieve the democratisation of technology?

CONCEPTS AND DEFINITIONS – GENERAL

In just about every country, a certain percentage of people have the best information technology that society has to offer. These are the people who have the most powerful computers, the best telephone service, fastest Internet service as well as a wealth of content and training relevant to their lives.

On the other hand there is another group of people, who, for one reason or another, do not have access to the newest or best computers, the most reliable telephone service and the fastest or most convenient Internet connection. The gap in accessibility between these two groups of people is the phenomenon commonly called the Digital Divide.

To be on the less fortunate side of the divide means that there is less opportunity to take part in the new information-based economy, in which many jobs are related to computers and computer-related advantages. There is less opportunity to take part in education, training, shopping, entertainment and communication opportunities that are available on-line. In general, those who are poor and live in the rural areas are likely to run the risk of being left behind than wealthier residents of urban areas.

Low-income groups, the less educated, and children of single-parent households, particularly those who reside in rural areas, are among the groups likely to be deprived of access to information resources. Education, national infrastructure and income appear to be among the leading elements driving the digital divide today.

Bridging the Digital Divide means bridging the gap between individuals or groups – the elderly, people with disabilities, those who live in rural areas, and so forth – who are in danger of being excluded from the Information Age economy.

DEFINING THE DIGITAL DIVIDE FROM A PRIVATE SECTOR PERSPECTIVE

A country's most important resource is its people. Companies are only as good as their workers. Highly skilled, well-educated workers make for stellar businesses and create superior products. In a society that increasingly relies on computers and the Internet to deliver information and enhance communication, we need to make sure that everyone has access. Thus ensuring access to the fundamental tools of the digital economy is one of the most significant investments our nation can make. Our domestic and global economies will demand it. Ready access to telecommunications will help produce the technology-literate work force that will enable Malaysia to become a force to be reckoned with in the global economy.

The reverse of the Digital Divide, Digital Inclusion, not only advances the good of society, but the bottom line interests of businesses.

Alternatively, failure to address the problem of digital inequality could have grim implications for individual companies. If we believe in what business leaders like Intel Corporation's Andy Grove said just over two years ago that: "in five years, a company will either be an Internet company –

or it won't be in business at all", then we should bring the issue into focus.

THE "PHYSICAL" BRIDGE OF THE DIGITAL DIVIDE: ACHIEVING ACCESS AND INTERCONNECTION

It is obvious that infrastructure is a high priority need for Malaysia and a huge impediment to access. For example, the tele-density rate for Malaysia or the number of telephone lines per 100 people is about 19.8%. The comparable density for both Canada and the United States is more than 60% (Ovum, 2002). Imagine the market potential for Malaysian companies if our economy were to enjoy that level of infrastructure.

In this aspect, the burden of developing infrastructure still lies with the incumbent telecommunication companies. Only the private sector has the resources, technical knowledge, and the sense of innovation and bottom-line interest that are essential to developing quality fibre optic networks and other systems that form the backbone of the digital economy.

The vision that infrastructure development in Malaysia can and will make progress in bridging this digital divide is a matter of particular concern. This is because one cannot even think about access to the information highway when you have no highway.

In this regard, the Government's role is clear. Federal mandates need to exist and be enforced. To create the legal, regulatory and business environment that encourages private investment,

regulators in Malaysia have put in place facilitating and transparent governance. This will ensure that markets are open and competitive, where issues are addressed and made equitable, where new competitors, domestic and foreign, can set up businesses quickly and make money.

SOFT BRIDGE OF THE DIGITAL DIVIDE: DEVELOPING THE HUMAN CAPITAL

The second element in addressing the Digital Divide is developing the human capital. The government has traditionally been the major provider of education and training. It is expected that the public sector will continue to play a major role in preparing a skilled labour force for the IT-intensive economy of the 21st century.

Concurrently, the private sector, in collaboration with non-profit groups and educational institutions, has assumed increasing responsibility in developing high technology skills for business workforces in selected industries and communities. Government and businesses must join forces to enhance access to computer technology and the Internet for specific groups who are in danger of being excluded from the Digital Revolution. These partnerships are central to our efforts to achieve digital equality and hence the democratisation of technology.

2 Democratising Technology:
Telekom Malaysia
as a BRIDGE to the
digital divide

Dozens of projects, sponsored by governments and by non-profit organisations and supported by the private sector, are under way to reverse this trend. But the problem is too big to be solved by them alone. To build an all-encompassing telecommunication infrastructure significant amounts of capital investments will be needed.

TELEKOM MALAYSIA IS REACHING OUT TO THE MASSES

That goal may not be all that impossible. The initiatives will rely on the cellular and wireless technologies because it is faster to deploy and far less costly than the wire line versions. The target population are often very large and underserved, which helps make up for the low per capita ability to pay.

A solution that is now being offered to allow telecommunications access to remote Malaysian communities is through the use of fixed access wireless technologies. Since 1994, Telekom Malaysia has deployed a technology known as RiLL (Radio in Local Loop) throughout Malaysia, which offers voice telecommunication services for those in rural and remote areas. A newer technology known as

WiLL (Wireless in Local Loop) has also been deployed since 1999 allowing access to even data communication services, like the Internet. Currently, the state-of-the-art CDMA (Code Division Multiple Access) technologies are deployed around the country to allow those in remote areas to have access to digital telecommunication services.

Another potential solution is through the use of no frills mobile services. The key here is collaboration between mobile operators and companies eager to communicate with low-income subscribers. Business information providers, for instance, would probably jump at the chance to sell price forecasts to small-scale farmers, and would likely pay operators for the privilege.

Other emerging technologies with potentials are digital satellite services, xDSL, wireless LAN and Broadband Fixed Wireless Access (BFWA).

In addition to developing physical infrastructures, human capital and the ample supply of knowledge workers are also critical elements of the digital economy. Telekom Malaysia has taken important steps in addressing issues of primary to tertiary education as

well as creating the right environment to stimulate the development of human capital.

Telekom Malaysia's Smart School project started in 1999 is now coming into its third year. The project will involve development of 90 schools into fully fledged Smart Schools, which will serve as a Connected Learning Community. It will provide Individualised and Continuous Learning, Learning Anytime Any Place and Dynamic Learning Environments; Home to School Portals; and a comprehensive and integrated School Management System.

9,000 more schools throughout Malaysia are expected to be incorporated into the project. The Smart School project has given invaluable experience to Telekom Malaysia.

At the tertiary level, the private sector is playing an important role equal to that of the Government. The Multimedia University, for example, is a wholly-owned subsidiary of and fully funded by Telekom Malaysia. With an approximate 12,000 student population, MMU is playing a catalytic role in rolling out the ICT workforce required by the country.

Telekom Malaysia has also set up a chain of training centres known as Telekom Training Colleges in Kuala Lumpur and other locations. These centres have trained more than 24,000 students to date, including over 300 foreign students. The training colleges offer more than 1,400 courses and through these colleges, Telekom Malaysia aims to produce k-economy workers with the best ICT skills. The colleges' mission is to be learning centres of excellence by developing people to become the best in their class.

The most challenging issues are still those where high cost is required to develop new human capital and the effort in trying to retain them. The number of institutions of higher learning today is still inadequate to meet requirements. At the same time, Malaysia is experiencing a serious brain-drain to more developed countries that offer much more to attract specific skill sets.

At the community level, Telekom Malaysia has embarked on wide-ranging initiatives. With VSATs (Very Small Aperture Terminal), Telekom Malaysia has set up a pilot e-community in the remote northeastern town of Bario in Sarawak. This initiative, called e-Bario, offers members of the Bario community, voice, data and multimedia services on par with modern cities and other urban areas. More initiatives like this are underway and will serve as a model for the rest of the world.

Another community level project is the Subang Jaya 2005 initiative (SJ2005). Here, in collaboration with the National Information Technology

Council (NITC), plans are underway for Telekom Malaysia to set up broadband and multimedia services and applications to be made accessible to everyone in the Subang Jaya municipal council. This is an e-community showcase in Malaysia.

BRIDGING THE DIGITAL DIVIDE THROUGH TECHNOLOGY

Dramatic progress has been gained through Telekom Malaysia's past initiatives in bridging the Digital Divide. Since 1992, fixed telephony service penetration has grown from just over 11% to 19.8% today, and is forecast to reach 24% by 2007 (Ovum, 2002). In fact, the number of Internet users will be more than 8.9 million by the year 2007, up from 3.5 million today (Ovum, 2002). Telekom Malaysia has been the catalyst in and instrumental to this Internet growth by providing more and more people access to the Internet through its TMnet service. From its humble beginnings in 1996, TMnet has acquired more than 1.3 million Internet subscribers today. All these have contributed, and will continue to contribute, towards the progress of the economy and country; shift towards an 'Information Economy'.

TMnet Subscribers

	1996	1997	1998	1999	2000	2001

Internet Users

	2001	2002	2003	2004	2005	2006	2007
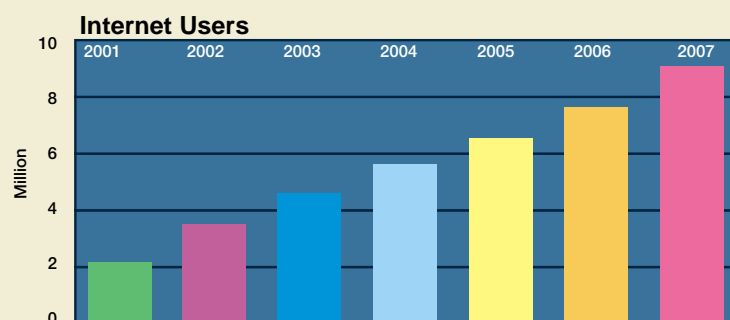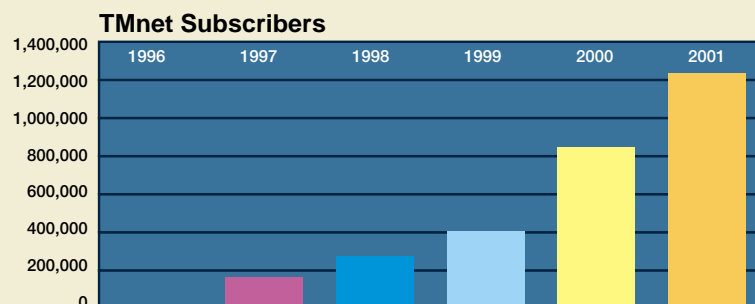
Information technology, far from widening the digital divide, will someday narrow it. When farmers can acquire the knowledge to improve crop yields, and cottage industries can reliably sell goods to the highest potential buyer, untapped human talent should start yielding significant returns.

Reaching Out, Staying Connected

You need to communicate.
To tell stories. To give advice. To seek help.

How we do it doesn't matter.
Be it through the telephone,
mobile to mobile or across the worldwideweb.

We will be there to make sure
your message always gets through.

With absolute clarity.

Connecting you to
him, her and them.

That's what we're all about.