

## MESSAGE

In the Information Age of the new century, telecommunications services will no longer develop in the traditional mode but will integrate with innovative Internet and multi-media applications. To serve as a telecommunications and Internet hub in Asia, Hong Kong needs to seize the full opportunities brought by globalisation and convergence in technology and services.



Hong Kong has built up one of the best telecommunications systems in the region. We must continue to develop our telecommunications infrastructure to maintain our competitive edge. To increase the bandwidth needed to support Internet and e-commerce applications, it is vital to encourage investment in our broadband infrastructure and enhance our external connectivity. To this end, we have made great strides in 2000 in implementing our liberalisation policy. The licensing of new cable-based and satellite-based external facilities operators helps meet the exponential growth in demand for external connectivity and provides more choices to consumers and businesses in the supply of external circuits. With the progressive liberalisation of the local fixed telecommunications market, we are now able to enjoy enhanced broadband networks and services offered by a total of ten operators, including six new entrants. To press on with our commitment under existing policy to issue new local wireline-based fixed telecommunication licences for operation from 1 January 2003, we plan to invite licence applications in 2001.

Our vibrant mobile services market maintains a leading role in the regional market, with a mobile penetration rate of 69% as at June 2000, the highest in Asia. Current developments in our mobile market stand us in good stead to reap the full benefits of third generation (3G) mobile services. Consumers will enjoy personalised multi-media services anywhere, anytime. Mobile-commerce will open up new business opportunities for the business sector. The challenge for the Government is to provide a regulatory and licensing framework that is conducive to the development of the 3G mobile

network and services. Our target is to license 3G operators in 2001 so as to ensure timely introduction of the services in Hong Kong.

A pro-competition and open regulatory regime will continue to underpin our liberalisation policy for the telecommunications industry. In 2000, we have completed a major legislative exercise to put into force enhanced competition safeguards. We will continue to review and update the pro-competition regime. We are firmly committed to provide a level playing field in the telecommunications industry in Hong Kong in order to maintain the most favourable environment for private investment. This is the best way to ensure that consumers get the best services at competitive prices.

A handwritten signature in black ink, appearing to read 'Carrie Yau', written in a cursive style.

( Mrs Carrie Yau )  
Secretary for Information Technology  
and Broadcasting

# **Telecommunications**

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## **Policy Objective and Key Result Areas**

# TELECOMMUNICATIONS

Our Policy Objective is to facilitate the development of the telecommunications industry and enhance Hong Kong's position as a telecommunications hub.

## Overall Targets

Our targets this year in pursuing this Policy Objective are –

- to enable Hong Kong to be recognised as a world-class telecommunications centre for doing business
- to ensure that Hong Kong has available high quality telecommunications services at competitive prices
- to ensure that Hong Kong has high performance in telecommunications as measured against the Organisation for Economic Co-operation and Development (OECD) economies

## Progress

In the past year, we aimed to deliver results in the four Key Result Areas (KRAs). We have achieved satisfactory results in all these KRAs. These will be further described later in this booklet.

At the Policy Objective level, we had three targets last year.

Our first target was to enable Hong Kong to be recognised as a world-class telecommunications centre for doing business. To achieve this target, it is vital for us to maintain a fair and transparent regulatory framework. During the year, we have enacted the Telecommunication (Amendment) Ordinance 2000 to improve the regulatory framework, which includes enhancement of competition safeguards, improvement to interconnection and access arrangements for telecommunications services, and empowerment of the Telecommunications Authority (TA) over certain technical matters.

Our second target was to ensure that Hong Kong has available high quality telecommunications services at competitive prices. We believe that liberalisation of the markets will bring about more effective competition, which in turn will lead to improvements in service quality, as well as better value for the consumers. We have taken great strides in liberalising our telecommunications market. Following the liberalisation of our external telecommunications facilities market with effect from 1 January 2000, all sectors of our telecommunications market, local and external, services-based and facilities-based, are open to competition. Consumers and businesses now enjoy more choices of service providers, a wider range of innovative services as well as competitive prices. Competition has resulted in a substantial reduction in International Direct Dialling (IDD) call rates and improved quality of services. In view of the decreasing IDD call rates, we estimate that consumer savings in 1999 amounted to HK\$4.2 billion.

Our third target was to ensure that Hong Kong sustains a high performance in telecommunications as measured against OECD economies. Last year, Hong Kong's telecommunications industry continued to enjoy robust growth. Our telecommunications sector continued to outperform its counterparts in many developed economies in the world. For instance, our mobile telephone penetration rate rose to 69% in June 2000, the highest in Asia. Hong Kong has broadband coverage to practically all commercial buildings and some 90% of households.

We also achieved the following progress in our four KRAs.

## **1 Provide the necessary regulatory framework and set standards for telecommunications in Hong Kong**

To implement the policy decisions made in 1999 to progressively liberalise the local and external fixed telecommunications market, we have put in place the appropriate regulatory regime and completed the first licensing exercise in early 2000. The Telecommunications Authority (TA) has issued six new local licences to enhance competition in the local fixed telecommunications market. They include the five local fixed telecommunications network services (FTNS) licences for the operation of local fixed wireless networks as well as the FTNS licence to the existing cable television operator to provide telecommunications services over its hybrid fibre coaxial cable network. As regards the issue of new external

telecommunications facilities licences, the TA has up to now invited 15 successful applicants to obtain licences to operate satellite-based external facilities and issued Letters of Intent to grant licences to 15 successful applicants who will bring new overland and submarine cables into Hong Kong.

We have commenced public consultation on the licensing framework for third generation (3G) mobile communication services, with a view to finalising the licensing framework and inviting applications in around end-2000 or early 2001.

We have made satisfactory progress in the development of new standards. In multilateral fora, we have continued to play a proactive role in the Asia-Pacific Economic Co-operation (APEC) in establishing a Mutual Recognition Arrangement (MRA) for telecommunications equipment in 2000.

## **2 Create an open and competitive telecommunications market**

Last year, we aimed to bring into effect the enhanced competition safeguards and the streamlined licensing framework under the Telecommunication (Amendment) Bill 1999, subject to the passage of the Bill by the Legislative Council.

Progress towards this target is satisfactory. In June 2000, we enacted the Telecommunication (Amendment) Ordinance 2000. The enhanced competition safeguards have already come into operation on 16 June 2000. We are making preparations to bring into effect the streamlined licensing regime in phases, starting in late 2000.

## **3 Facilitate the development of an open, integrated broadband telecommunications network**

There was substantial improvement in the coverage of the broadband telecommunications networks. At present, about 90% of the households can now access broadband telecommunications networks, as compared to below 75% in mid-1999. Practically all commercial buildings are already covered by broadband telecommunications networks.

Having conducted two rounds of industry consultation in November 1999 and June 2000 on the principles and costing standards for the

interconnection of broadband networks, we would announce the regulatory decisions within 2000. The regulatory framework would serve to facilitate the continued broadband network roll-out and promote effective competition for broadband services.

#### **4 Establish Hong Kong as a world-class telecommunications centre**

Last year, we aimed to make the teleport site ready for use by operators to enable external facilities competition to commence from 2000. Progress towards this target has been satisfactory. Tying in with the first licensing exercise for new external facilities operators using satellites and cables, we awarded a Teleport site to a successful tenderer in January 2000.

Progress on each previously announced initiative under the above KRAs is set out in the “Detailed Progress” section of this report.

#### **Looking Forward**

To achieve our overall targets this year, we will undertake the following initiatives and targets under each of the KRAs for the coming year.

# 1

## **Provide the necessary regulatory framework and set standards for telecommunications in Hong Kong**

As Hong Kong's telecommunications services and facilities are provided by the private sector, a pro-competition and pro-consumer regulatory framework is essential in providing a good investment environment for the telecommunications industry. We aim to adopt international best practices in this regard.

Hong Kong's open operating environment and the adoption of a technology-neutral approach has assured our access to the most modern technology. This has benefited telecommunications service operators, equipment manufacturers and consumers. We aim to develop and implement standards appropriate to Hong Kong, in conjunction with regional and international bodies. Hong Kong will continue to play a leading role in the implementation of the APEC's multilateral arrangement for mutual recognition of conformity assessment for telecommunications equipment. This will facilitate our manufacturers' access to markets in other economies and ensure our access to advanced telecommunications equipment.

We will assess our performance in respect of this KRA against the following indicators –

- The issuance of codes of practice and guidelines which adopt international best practices. Our target is to ensure that all the codes of practice and guidelines will adopt international best practices.
- The timely revision and implementation of new or revised regulations and standards. Our target is to anticipate market development and provide a timely response.



We will pursue the following initiatives and targets to deliver results in this area –

Initiative *	Target
To implement the improved regulatory framework provided under the Telecommunication (Amendment) Ordinance 2000 <i>(Office of the Telecommunications Authority (OFTA))</i>	To issue in 2000-2001 the guidelines as required under various provisions of the Telecommunication (Amendment) Ordinance 2000, including those for licence applications under the streamlined licensing regime
To implement the licensing framework for third generation mobile communication services <i>(OFTA)</i>	To issue in 2001 licences for the provision of third generation mobile communication services
To set quality standards for metering and billing accuracy for public telecommunications operators <i>(OFTA)</i>	To stipulate the required standards and implement a quality control system in 2001 with support and input from licensees through an industry forum

\* the bracketed information denotes the agency with lead responsibility for the initiative

Hong Kong's telecommunications market is one of the most open in the world. Our telecommunications services and facilities are not subject to foreign ownership restrictions and we are committed to a level playing field in telecommunications. Greater and more effective competition gives consumers greater choice and increases market efficiency. Telecommunications services also underpin all other business and commercial services. The provision of quality telecommunications services at competitive prices will enhance Hong Kong's overall competitiveness.

Hong Kong is committed to the progressive liberalisation of the telecommunications sector. We now have ten licensed operators in the local fixed telecommunications market, all of which provide broadband networks and services. We have liberalised the external facilities market with effect from 1 January 2000. We have authorised the three existing new local wireline-based fixed telecommunications network services (FTNS) licensees to operate external facilities. We have also up to now invited 15 successful applicants to obtain licences to operate satellite-based external facilities. Furthermore, we have issued Letters of Intent to grant licences to 15 successful applicants to operate cable-based external facilities. The investment by the external facilities operators are highly capital intensive and will increase very significantly our external connectivity, which is key to our development as a leading telecommunications and Internet hub in the region.

We will assess our performance in respect of this KRA against the following indicators –

- The number of local FTNS licensees. Our target is to maintain the existing number of local FTNS licensees in operation in the market until end-2002.
- The number of external telecommunications services licensees. Our target is to maintain a level playing field so as to ensure that the market determines the optimal number of licensees.

- The number of external FTNS licensees. Our target is to maintain a level playing field so as to ensure that the market determines the optimal number of licensees, subject to any physical constraint.
- The number of mobile phone licensees. Our target is to maintain a level playing field so as to ensure that the market determines the optimal number of licensees, subject to any spectrum constraint.
- The number of paging services licensees. Our target is to maintain a level playing field so as to ensure that the market determines the optimal number of licensees, subject to any spectrum constraint.
- The number of Internet Service Providers. Our target is to maintain a level playing field so as to ensure that the market determines the optimal number of providers.

We will pursue the following initiatives and targets to deliver results in this area –

<b>Initiative</b>	<b>Target</b>
To promote fair competition in the telecommunications sector <i>(Information Technology and Broadcasting Bureau)</i>	To review in 2000-2001 the regulatory framework to ensure effective competition, having regard to the advent of the third generation mobile communication services
To introduce further competition in the local wireline-based fixed telecommunication network services (FTNS) market <i>(Office of the Telecommunications Authority)</i>	To invite in 2001 licence applications for operation of local wireline-based FTNS from 1 January 2003

# 3

## Facilitate the development of an open, integrated broadband telecommunications network

An important consideration in designing the regulatory framework is that it should encourage the provision of broadband services which are widely available at reasonable cost to the consumer. This will facilitate the development of an open information infrastructure, accessible throughout Hong Kong, through which Government, businesses and individuals can exchange information and conduct transactions easily. The availability of such broadband services at reasonable prices will enhance our overall competitiveness, promote electronic business and improve the social and personal life of individuals.

We aim to improve access for telecommunications services so as to facilitate the development of an open, integrated broadband network to provide the necessary infrastructural support for information technology and broadcasting development and upgrading.

We will assess our performance in respect of this KRA against the following indicators –

- The coverage of households or businesses by broadband telecommunications networks. Our target is to facilitate the private sector’s continued network roll-out.
- Prices for broadband services. Our target is to promote effective competition for broadband services in order to bring about more competitive prices.

We will pursue the following initiative and target to deliver results in this area –

Initiative	Target
To improve access to buildings for the extension of coverage of the broadband telecommunications network <i>(Office of the Telecommunications Authority)</i>	To step up publicity and liaison efforts in 2000-2001 to facilitate the wireline and wireless broadband network operators to have access to buildings to extend the coverage of their networks

Hong Kong is already a key regional telecommunications hub. The capacity of our submarine cable and satellite communications links is amongst the largest in the region. Through maintaining an open and competitive telecommunications market, we will encourage private sector investment and innovation necessary for Hong Kong to maintain its position as a world-class telecommunications centre.

We aim to strengthen our position by establishing Hong Kong as the Internet hub for the Asia-Pacific Region. We shall, in addition, develop a world-class teleport for external telecommunications and broadcasting services, which will enable external facilities providers and broadcasters to provide sufficient capacity for satellite links to and from Hong Kong to cope with demand in the coming years.

We will assess our performance in respect of this KRA against the following indicators –

- The timely development of a world-class teleport. Our target is to closely monitor the demand for sites for building external telecommunications facilities.
- The level of fixed line penetration, mobile telephone penetration and access to broadband telecommunications networks. Our targets are as follows. First, to facilitate the market to determine the optimal level of fixed line and mobile telephone penetration. Second, to facilitate access to broadband telecommunications networks.
- The capacity of external telecommunications connectivity. Our target is to facilitate expansion of external telecommunications connectivity by the private sector by licensing all satisfactory applications for external telecommunications facilities.

We will pursue the following initiative and target to deliver results in this area –

<b>Initiative</b>	<b>Target</b>
To improve the radio communication environment <i>(Office of the Telecommunications Authority)</i>	In 2001, to implement an automated Direction Finding (DF) system to enhance the efficiency of interference investigation activities and to establish an information database on radio stations in Hong Kong and Guangdong to more effectively handle cross-boundary interference

# **Telecommunications**

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## **Detailed Progress**

# 1

## Provide the necessary regulatory framework and set standards for telecommunications in Hong Kong

To achieve results in this area, various initiatives have been undertaken in the past years. Details are set out below –

Initiative *	Target #	Present Position +
<p>To develop and implement the appropriate regulatory framework subsequent to the decisions to progressively liberalise the external telecommunications facilities market from 1 January 2000 and to license operation of non-wireline-based local fixed telecommunications networks</p> <p><i>(Office of the Telecommunications Authority (OFTA))</i></p>	<p>To issue licences for the provision of external telecommunications facilities and the operation of non-wireline-based local fixed telecommunications network in 1999-2000</p> <p><i>(1999)</i></p>	<p>OFTA has completed the licensing exercises in early 2000 with the following results –</p> <ul style="list-style-type: none"> <li>● OFTA has issued five licences for the operation of wireless local fixed telecommunications networks and a licence to the existing cable television operator for provision of telecommunications services over its hybrid fibre coaxial cable network.</li> </ul>

\* the bracketed information denotes the agency with lead responsibility for the initiative

# the bracketed information denotes the year in which the target was set

+ the bracketed information denotes the status of the target



Initiative	Target	Present Position
		<ul style="list-style-type: none"> <li>● OFTA has invited 15 successful applicants for licences for the operation of satellite-based external facilities and issued 15 Letters of Intent to successful applicants for the operation of cable-based external facilities.</li> </ul> <p>OFTA has also issued a new invitation for applications for licences to operate external facilities.</p> <p><i>(Action Completed)</i></p>
<p>To develop and implement standards appropriate to Hong Kong so that the industry can adopt the most modern technology to improve services</p> <p><i>(OFTA)</i></p>	<ul style="list-style-type: none"> <li>● To implement the APEC Mutual Recognition Arrangement for telecommunications equipment by 2000 <i>(1999)</i></li> <li>● To take an active part in the development of new standards in multilateral fora in 1999, with Hong Kong's requirements in mind <i>(1998)</i></li> </ul>	<ul style="list-style-type: none"> <li>● Hong Kong was among the first APEC economies to implement Phase II of the APEC Mutual Recognition Arrangement for telecommunications equipment from July 2000</li> </ul> <p><i>(Action in Progress: On Schedule)</i></p> <ul style="list-style-type: none"> <li>● OFTA has actively participated in the standardisation activities of various fora, including the International Telecommunication Union on the standards for third generation mobile services.</li> </ul> <p><i>(Action in Progress: On Schedule)</i></p>

Initiative	Target	Present Position
<p>To establish a licensing framework for third generation mobile communication services (OFTA)</p>	<p>To establish a regulatory framework and invite licence applications in 2000, after consultation with the industry (1999)</p>	<p>OFTA issued in March 2000 a public consultation paper on the licensing framework for third generation mobile services. We will finalise the licensing framework and invite licence applications in around end-2000 or early 2001.  (Action in Progress: On Schedule)</p>
<p>To review the regulatory framework for universal services in the light of development of an information society (OFTA)</p>	<p>To conduct public consultation and complete the review in 2000 (1999)</p>	<p>OFTA is reviewing the scope of universal services and will issue a public consultation paper before end-2000.  (Action in Progress: On Schedule)</p>

# 2

## Create an open and competitive telecommunications market

To achieve results in this area, various initiatives have been undertaken in the past years. Details are set out below –

Initiative	Target	Present Position
<p>To enhance the regulatory framework for fair and effective competition to facilitate further development in the local and external fixed telecommunications market</p> <p><i>(Information Technology and Broadcasting Bureau)</i></p>	<p>To bring into effect in 2000 the enhanced competition safeguards and the streamlined licensing framework under the Telecommunication (Amendment) Bill 1999, subject to the passage of the Bill by the Legislative Council</p> <p><i>(1999)</i></p>	<ul style="list-style-type: none"> <li>● The provisions on competition safeguards in the Telecommunication (Amendment) Ordinance 2000 came into operation on 16 June 2000.</li> <li>● Regarding the new licensing regime, we are preparing the necessary subsidiary legislation and guidelines, with a view to introducing the new licensing regime in phases starting in late 2000.</li> </ul> <p><i>(Action in Progress: On Schedule)</i></p>
<p>To improve the efficiency of telecommunications licensing and offer a customer-friendly service by making use of the Internet for licence applications</p> <p><i>(Office of the Telecommunications Authority)</i></p>	<p>To implement a pilot project on licence applications via the Internet in 1999</p> <p><i>(1998 and 1997)</i></p>	<p>The pilot Internet-based licensing system was installed in December 1998. Licensees may submit licence applications and pay licence fees via the Internet for three of the telecommunications licences from March 2000. OFTA will continue to refine the system as appropriate.</p> <p><i>(Action Completed)</i></p>

# 3

## Facilitate the development of an open, integrated broadband telecommunications network

To achieve results in this area, various initiatives have been undertaken in the past years. Details are set out below –

Initiative	Target	Present Position
<p>To improve access to land and buildings for mobile telecommunications network operators to extend their network coverage, with a view to ensuring that there is as wide a coverage of mobile networks as practicable in Hong Kong</p> <p><i>(Information Technology and Broadcasting Bureau (ITBB))</i></p>	<ul style="list-style-type: none"> <li>● To bring into effect in 2000 measures to improve access to shielded areas by mobile telecommunications services, subject to the passage of the Telecommunication (Amendment) Bill 1999 by the Legislative Council</li> <li>● To implement measures to facilitate the mobile network operators' installation of telecommunications equipment on Government land and buildings for extension of coverage of their networks in 2000</li> </ul> <p><i>(1999)</i></p>	<ul style="list-style-type: none"> <li>● The improved access arrangements to shielded areas for mobile telecommunications services under the Telecommunication (Amendment) Ordinance 2000 came into operation on 16 June 2000.</li> <li>● To facilitate the mobile network operators' installation of telecommunications equipment on Government land and buildings for extension of coverage of their networks, we have put in place a new mechanism to charge cost-based access fees on the installations with effect from 1 April 2000.</li> </ul> <p><i>(Action Completed)</i></p>

Initiative	Target	Present Position
<p>To improve access for telecommunications services by making the provision of in-building access facilities for fixed telecommunications networks a mandatory requirement for new buildings</p> <p><i>(Planning and Lands Bureau/ITBB)</i></p>	<p>To complete the consultation and introduce necessary legislative amendments in 2000</p> <p><i>(1999)</i></p>	<p>Amendments to the building legislation to make the provision of in-building access facilities for fixed telecommunications networks a mandatory requirement for new buildings have been passed by the Legislative Council in June 2000 and will come into operation on 1 November 2000.</p> <p><i>(Action Completed)</i></p>
<p>To develop principles and costing standards for the interconnection of broadband networks</p> <p><i>(Office of the Telecommunications Authority (OFTA))</i></p>	<p>To complete industry consultation and announce decisions in 2000</p> <p><i>(1999)</i></p>	<p>Two rounds of industry consultation on the principles and costing standards for the interconnection of broadband networks have been completed. OFTA aims to issue a Telecommunications Authority Statement on broadband interconnection by end-2000.</p> <p><i>(Action in Progress: On Schedule)</i></p>

# 4

## Establish Hong Kong as a world-class telecommunications centre

To achieve results in this area, various initiatives have been undertaken in the past years. Details are set out below –

Initiative	Target	Present Position
<p>To host an international telecommunications exhibition cum conference “ITU TELECOM Asia 2000” organised by the International Telecommunication Union</p> <p><i>(Information Technology and Broadcasting Bureau (ITBB))</i></p>	<p>To facilitate the staging of “ITU TELECOM Asia 2000” to be held from 4-9 December 2000</p> <p><i>(1999)</i></p>	<p>A Hong Kong, China Secretariat has been set up to organise host city activities. A Steering Committee is chaired by the Secretary for Information Technology and Broadcasting to co-ordinate efforts by government departments.</p> <p><i>(Action in Progress: On Schedule)</i></p>
<p>To enhance Hong Kong’s position as a centre for satellite communications</p> <p><i>(Office of the Telecommunications Authority)</i></p>	<p>To facilitate the launching of a new satellite in 2000 and to help promote the wider use of satellite services provided by Hong Kong-based operators</p> <p><i>(1999)</i></p>	<p>A licence was issued to a satellite operator for the operation of a satellite scheduled to be launched in 2002.</p> <p><i>(Action Completed)</i></p>
<p>To develop a world-class teleport at Chung Hum Kok to facilitate the installation of external telecommunications links</p> <p><i>(ITBB)</i></p>	<p>To make the teleport site ready for use by operators to enable external facilities competition to commence from 2000</p> <p><i>(1998)</i></p>	<p>We completed the first tendering exercise in January 2000 by awarding a site to a successful tenderer. A second tendering exercise has been initiated in the third quarter of 2000 to dispose of two more sites.</p> <p><i>(Action in Progress: On Schedule)</i></p>