PROVIDING QUALITY OF SERVICE INFORMATION TO CONSUMERS OF PUBLIC TELECOMMUNICATIONS SERVICES

PUBIC CONSULTATION PAPER

23 July 2004

INTRODUCTION

1. All sectors of the telecommunications industry have now been liberalized and are open to competition. Consumers and businesses in Hong Kong can now enjoy more choices of service providers, a wide range of innovative services as well as competitive prices. The telecommunications industry in Hong Kong has been performing remarkably. According to the Digital Access Index[1] ("DAI") published by the International Telecommunication Union ("ITU") in November 2003, Hong Kong has the most affordable broadband Internet service in the world. The Mobile/Internet Index[2] published by ITU in September 2002 also ranked Hong Kong the top worldwide. In addition to these achievements, the fixed line, mobile and broadband penetration rates in Hong Kong are amongst the highest in the world.

2. The success of the telecommunications industry in Hong Kong can be attributed to a very large extent to the efforts and investments made by the network operators and service providers of all different sectors. In such a competitive market, service providers are expected to compete on both price and quality and those service providers failing to meet consumers' requirements or expectations in price or service quality would be forced out of market. However, to get the full benefit of competition, consumers need to be well informed, particularly on the non-price aspects of the service to be provided, for example, quality of services ("QoS") of different service providers in the market.

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[1] The Digital Access Index aimed at measuring the overall ability of individuals to access and use information and communication technologies.

[2] The Mobile/Internet Index measured how the economies were performing in terms of mobile and Internet technologies and how likely they were to be able to take advantages of new developments in the field.

3. Complaint statistics collected by the Office of the Telecommunications Authority ("OFTA") in the past years indicate that there has been an upward trend in the number of consumer complaints relating to public telecommunications services since 2001. The upward trend can be attributed to a number of factors, including the increasing service penetration, increasing user awareness of the channels to lodge complaints and more aggressive marketing tactics. However, a significant number of the complaints are attributable to the lower-than-expected or misunderstanding of the QoS pledges of service providers. While it is an undeniable fact that consumers are getting good value for money from telecommunications services in Hong Kong, there is an urgent need for all parties concerned, including the industry and the regulator, to face the challenge of ensuring that service quality will be upheld in the face of intense competition.

4. In recent years, service providers tend to sign up new customers by offering them attractive special rates, concessionary service plans, free gifts or a combination of all these. In return, the customers agree to be bound by fixed-term contracts. Under such a contract, the customers will be required to pay a penalty if they terminate the contract before the contract period expires. Even if a customer finds the service quality provided by the service provider unsatisfactory during the commitment period, many of them would have to continue to subscribe for the service reluctantly to avoid losses resulted from penalty charges.

5. To ensure consumers to make better-informed purchasing decisions, the Telecommunications Authority ("TA") considers that there is a need to implement a framework for providing QoS information to consumers so that consumers may have ready access to information on the non-price aspects of the various competitive services on offer in the market. It is hoped that with this information, the consumers will be able to make informed choices before they decide to sign up for the service. In fact, the Panel on Information Technology and Broadcasting of the Legislative Council has expressed concerns about the quality of telecommunications services, and urged the TA to expedite the implementation of the framework such that QoS information of individual service providers would be made available to consumers as soon as possible.

6. Many developed economies have taken initiatives to regulate the QoS of their telecommunications services. Service providers in Singapore, Australia, the United Kingdom, the United States and Canada are required to submit performance statistics on a periodic basis to the regulators. As shown in the following table, statistics on comparative performance indicators are published either by the regulators or by independent organizations endorsed by the regulators. In addition, some regulators set minimum performance standard for service providers to comply with and impose penalty on service providers for non-compliance. Consumer satisfaction surveys are also used in some jurisdictions for monitoring QoS.

Overseas Experience in Regulating the QoS of Telecommunications Services

	Singapore	**Australia**	**United Kingdom**	**United States**	**Canada**
Year of Launching the QoS Scheme	2001	1994	1995	1983	1982
Who set the Minimum Standard for QoS?	Regulator	Regulator and industry self-regulatory body	Service providers (i.e. the regulator would not set the minimum standard)	Service providers (i.e. the regulator would not set the minimum standard)	Regulator
Who Publish the Performance Statistics?	Regulator	Regulator	Independent organization	Regulator	Regulator
How to Monitor QoS?	- Service providers to submit performance statistics to the regulator on a periodic basis. - Impose financial penalty on service providers if they fail to meet the minimum standard. - Conduct customer satisfaction survey.	- Service providers to submit performance statistics to the regulator on a periodic basis. - Impose financial penalty on service providers if they fail to meet the minimum standard.	- Service Providers to submit performance statistics to the regulator on a periodic basis. - Conduct customer satisfaction survey.	- Service providers to submit performance statistics to the regulator on a periodic basis. - Conduct customer satisfaction survey.	- Service providers to submit performance statistics to the regulator on a periodic basis. - Service providers to prepare a note (which would be published on the regulator's web-site) to explain why they fail to meet the minimum standard.

7. OFTA has all along adopted a light-handed regulatory approach i.e. regulation should be applied only when the market does not work properly. Therefore OFTA does not intend to set the minimum standards for QoS. Instead, an effective market should set such minimum standards. However, considering that information asymmetry between the suppliers and the consumers is a cause of market imperfection, it is necessary to foster the development of an effective market by making available sufficient information to consumers on QoS of the suppliers. Therefore OFTA proposes to implement a QoS framework whereby the QoS of service providers in the market will be measured, reported and published based on definitions and measurement methodology uniformly applied across the industry.

WORKING GROUP

8. To provide an opportunity for service providers, industry associations and consumer interest groups to discuss the proposal of implementing the QoS framework for public telecommunications services in Hong Kong, the TA organized an industry forum on 19 September 2003. In the industry forum, OFTA presented the proposals of requiring service providers to make pledges for and report their performance. In concluding the forum, the TA indicated that OFTA would set up working groups with the participation of service providers, industry associations and consumer interest groups to identify the key performance indicators ("KPI") and to work out how these indicators were to be defined, measured and reported.

9. The stakeholders (including the industry, consumer interest groups, end users and the regulator) need to prioritize their resources. OFTA's statistics on consumer complaints show that up to end of 2003, the Internet access services sector has received the largest number of consumer complaints. Since the number of users of broadband Internet access services has overtaken that of narrow-band Internet access services and it is predicted that narrow-band Internet access services consumers would increasingly migrate to broadband Internet access services, OFTA decided that at the initial stage, the QoS framework should focus on the broadband Internet access services market. A working group on QoS for broadband Internet access services was accordingly set up in January 2004. With support from the working group members, five working group meetings had been held. OFTA had gathered valuable inputs from the industry and consumer interest groups. Views and opinions expressed by the working group members during the meetings have been incorporated in this consultation paper. All interested parties are welcome to comment on all aspects of the proposal put forward in this paper.

PROPOSED APPROACH

General Principles

10. The TA considers that the following general principles should be

adopted in formulating the QoS regulatory framework for broadband Internet access services:

- Principle One: The TA considers that there is effective competition in the market of broadband Internet access services at retail level. Therefore, he considers that instead of setting the minimum standard for QoS himself, the service level should rather be determined by the market.

- Principle Two: Broadband service providers themselves should make pledges of the QoS standard of their services and make these pledges known to the regulator, potential customers and the customers that they are serving.

- Principle Three: QoS achieved by broadband service providers in the market should be monitored and published on a periodic basis so that consumers can make informed choices in the market.

11. On the three general principles, some working group members took the view that a set of minimum standard should be determined and universally applied to all broadband service providers. Some members also considered that service providers should only need to publish whether they had passed, or failed to pass, the performance pledges instead of publishing the exact figures of performance statistics.

12. The current initiative is to ensure that the widest range of quality telecommunications services is available to consumers at reasonable price. Quality standards should be set with reference to the balance between the associated costs and benefits, where consumer's willingness to pay for quality should provide the appropriate incentive and signal for the service providers to determine their own marketing strategies and set their own service levels. It should be optimal to allow quality standards to vary between different service providers, or even between different groups of consumers served by the same service provider. As such, the TA does not consider that a universal minimum standard would be meaningful for either the service providers or the consumers. The purpose of the QoS regulatory framework is, by publishing the performance statistics of service providers, to provide consumers with information on various levels of QoS of different service providers. The TA

does not therefore consider that there is a need to set any minimum standard, given the fact that the broadband Internet access market is effectively competitive at the retail level.

13. The TA also has reservations with the "pass or fail" approach since this would fail to make distinctions for various levels of substandard and superior service. He considers that the best way to achieve the ultimate goal is to publish the pledges and the exact figures of the achieved level of performance of individual service providers. Publication of comparative performance statistics will encourage service providers to strive for higher level of QoS and stimulate competition in the market in non-price aspects. Further, pressure from public scrutiny of the exact performance figures will motivate the service providers to address substandard performance. Accordingly, it is proposed to publish the pledges and the exact figures of performance statistics of individual service providers.

Publication of Performance Pledges and Statistics of Service providers

14. Publishing the statistics of performance indicators of service providers is a very efficient and effective way in monitoring QoS. OFTA would first define the KPIs and then require the service providers to make pledges for the level of performance they can achieve for the indicators. The performance pledges made by the service providers will be important information for consumers to make informed choices before they decide to subscribe or switch to other service providers. It is proposed that service providers be required to publish their performance pledges as well as quarterly statistics of the KPIs on their web-sites. They are also required to submit the pledges and statistics to the TA, who will collate the returns and publish the performance of the service providers. In this way, consumers will have ready access to information regarding the comparative non-price performance of the service providers.

PROPOSED SCOPE OF THE REGULATORY FRAMEWORK

15. The broadband Internet access services market in Hong Kong can be broadly divided into two market segments: residential market segment and business market segment. Business users are generally protected by the service level agreements signed with the broadband service providers. If the service

levels set in the agreements cannot be fulfilled by the service providers, business users would be compensated in accordance with the terms and conditions defined in the agreements. Furthermore, business users usually have stronger power to bargain with the service providers than residential consumers do. As such, OFTA proposes to focus on residential market segment first. It may consider monitoring the business market segment at a later stage.

PROPOSED TARGETS OF THE REGULATORY FRAMEWORK

16. Regarding the targets of the QoS framework, the TA initially considers that there would be two approaches. One approach is to set some criteria and those service providers who meet the criteria would be obliged to comply with the framework. Another approach is to implement the scheme on a voluntary basis.

Approach One: To Set Criteria for Defining the Targets of Monitoring

17. As at 31 March 2004, there were 197 Internet Service Providers ("ISPs") in Hong Kong. Based on the number of residential broadband Internet access service subscribers in March 2004, the top 5 service providers have accounted for over 97% of the market shares. The remaining service providers are therefore providing service on a very limited scale. Inclusion of these small service providers in the proposed QoS regulatory framework would not appear to bring much value to the consumers. Therefore, OFTA proposes to include only the top 5 residential broadband service providers (based on the number of residential broadband Internet access services subscribers) in the QoS monitoring scheme. In view of the dynamics of the telecommunications market, it is proposed that the criteria for defining the targets of the regulatory framework should be reviewed within two years from the date of implementation.

18. Residential broadband service providers that are not among the top 5 providers would be exempt from the QoS monitoring scheme. However, OFTA welcomes voluntary participation from these service providers. Business broadband service providers are also welcome to participate in the QoS monitoring scheme.

19. If the approach based on market share is to be adopted, one implementation issue may arise. Service providers would not know whether they would be included in the monitoring scheme because they do not have access to information of market share. If the service providers start the implementation only after OFTA has informed them that they meet the aforementioned criteria, they may not be able to collect the statistics in time. One possible solution is to update the list of the top 5 residential broadband service providers on an annual basis. For example, based on the market share information for the period of July – September 2004, the top 5 residential broadband service providers would be notified by OFTA, say by end of November 2004. The 5 service providers would then be obliged to collect and submit the statistics for four consecutive quarters starting with the quarter of March to May 2005 and ending with the quarter of December 2005 to February 2006. By end of November 2005, OFTA would announce the new list of the top 5 residential broadband service providers using the market share information for the period of July to September 2005 and a new cycle will then begin.

Approach Two: To Implement on a Voluntary Basis

20. Some working group members indicated that the monitoring scheme should be implemented on a voluntary basis. Service providers would be driven by market competition to participate in the monitoring scheme. The administration of this approach is much simpler and would not encounter the implementation issue mentioned in paragraph 19. However, the TA is concerned that a voluntary regulatory framework would not work without the participation of service providers.

21. The industry, consumer interest groups and other interested parties are invited to make comments on the two approaches.

IMPLEMENTATION

22. It is recognized that some KPIs are more complicated than others. The definition, calculation methodology and measurement methodology for these more complicated KPIs may take longer to formulate. The TA would therefore propose that, while the participating service providers would make pledges and publish performance statistics for the less complicated KPIs (such as service

performance indicators), the definition and measurement of the more complicated KPIs (such as technical performance indicators) should be carried out by an independent institution which has the necessary technical expertise. The intention is to make the technical performance statistics available to the consumers as soon as possible.

Service Performance Indicators

23. These service performance indicators are to provide meaningful information to the general consumers. The appropriate number of performance indicators should be determined by the quality of data available for measurement. Since quality is more important than quantity, it may be prudent to start with a manageable number of KPIs and progressively increase the number of indicators later as more operational experience is gained. OFTA therefore proposes the following five KPIs, with focus on the service performance of service providers:

- Service provisioning time
- Service restoration time
- Customer-reported faults per 1000 customer lines
- Complaint handling time
- Enquiry call answering time

The detailed definitions and calculation methodology of each of these service indicators can be found in **Appendix I**.

24. Participating service providers are required to submit the performance pledges and the quarterly statistics of the five service performance indicators to OFTA. During the working group meetings, some members took the view that certain extent of flexibility should be allowed for service providers to make pledges and report statistics. While views and comments on the extent of flexibility would be highly appreciated, the TA is mindful that too much flexibility may render comparison between service providers difficult, if not impossible.

25. To facilitate the comparison among different service providers, it is proposed that service providers should make pledges and report statistics in accordance with a standard format so that OFTA may summarize the pledges

and statistics in form of a league table and publish it on its official web-site.

26. The QoS framework will be meaningful only if service providers publish true and reliable statistics of their KPIs. It may be costly for service providers to have all the quarterly statistics audited by external parties before publishing the statistics. Balancing the cost and benefits of auditing the performance statistics, OFTA proposes that service providers should submit audited performance statistics only once a year, e.g. the statistics for one quarter of every year. The statistics for the other three quarters in the year do not need to be audited by external parties. Another possible option is to audit the four quarterly reports in an annual audit exercise. In other words, the reports of the first three quarters would not be audited until end of the fourth quarter.

27. Some service providers might argue that external auditing is not necessary to ensure true and reliable reporting of performance statistics from service providers since the Telecommunications Ordinance ("the Ordinance") already has safeguard against misleading and deceptive conduct. Any incorrect information on QoS reported by service providers might constitute misleading or deceptive conduct under section 7M of the Ordinance. The TA invites views and comments on whether section 7M of the Ordinance would be a sufficient safeguard, and if not, whether external auditing should be set as a mandatory requirement for participating service providers.

28. The TA does not consider that reporting performance statistics would unduly increase the cost burden on residential broadband service providers. The TA considers that service providers themselves, in any case, should measure and monitor their performance as part of the management control system so as to ensure that they are providing satisfactory QoS to customers in compliance with their licence obligations. Furthermore, the implementation of the QoS framework will also bring benefits to the service providers. Under the QoS monitoring framework, service providers with superb performance may make use of their performance statistics as a powerful marketing tool for attracting new customers and building up brand images and reputations.

Technical Performance Indicators

29. OFTA proposes the following KPIs which focus on the technical

performance of service providers:

- Download Time from the Service Provider's Web-site
- Download Time from a Local Web-site
- Download Time from Overseas Web-sites
- Upload Time to the Service Provider's File Transfer Protocol ("FTP") Server
- Network Latency

The detailed definitions and measurement methodology of each of these technical indicators can be found in **Appendix II**.

30. Given that technical indicators are more complicated than service performance indicators, OFTA foresees that it will take much longer to reach consensus among different service providers as well as consumer interest groups on the definitions and the measurement methodology of these indicators. In order that the technical performance statistics may be made available to the consumers as soon as possible, the TA will consider to commission an independent institution to measure the technical indicators for residential broadband service providers. The intention is to implement the monitoring of service performance and technical indicators in parallel. Views and comments on this proposal are invited.

PROPOSED TIMELINE

31. The proposed preliminary timeline for the implementation of the monitoring scheme of QoS can be found in **Appendix III**. According to the proposed timeline, the service performance and technical statistics of residential broadband service providers would be first published on OFTA's web-site in mid-2005 and subsequently updated every three months.

LEGAL BASIS

32. General Condition ("GC") 18(1) of the Fixed Telecommunications Network Services ("FTNS") Licence, Special Condition ("SC") 6(1) of the Fixed Carrier Licence as well as SC 5(1) of the Public Non-exclusive

Telecommunications Service ("PNETS") Licence for International Value-added Network Services[3] ("IVANS") require the licensee to furnish to the TA such information related to the business run by the licensee under the licence, as the TA may reasonably require in order to perform his functions under the licence.

33. GC 10(1) of the FTNS Licence, SC 5(1) of the Fixed Carrier Licence as well as GC 1 of the PNETS Licence for IVANS require the licensee to operate, maintain and provide service in a manner satisfactory to the TA. In order to ascertain whether the service is provided satisfactorily by the licensee under GC 10(1) of the FTNS Licence, SC 5(1) of the Fixed Carrier Licence or GC 1 of the PNETS Licence for IVANS, the performance pledges made by the licensee as well as the performance statistics of the licensee are considered as information that *"the TA may reasonably require in order to perform his functions under the […] licence"*, and should be furnished to the TA under GC 18(1) of the FTNS Licence, SC 6(1) of the Fixed Carrier Licence or SC 5(1) of the PNETS Licence for IVANS. In other words, the TA is legally empowered to mandate the concerned licensees to furnish to him the performance pledges and statistics on QoS under the relevant licence conditions.

34. Under GC 18(3) of the FTNS Licence, SC 6(3) of the Fixed Carrier Licence as well as SC 5(2) of the PNETS Licence for IVANS, where the TA proposes to disclose information obtained and the TA considers that the disclosure would result in the release of information concerning the business or commercial or financial affairs of a licensee which disclosure would or could reasonably be expected to adversely affect the licensee's lawful business or commercial or financial affairs, the TA will give the licensee a reasonable opportunity to make representations on the proposed disclosure before the TA makes a final decision whether to disclose the information.

35. Before the TA discloses the performance pledges and statistics on QoS of service providers, the TA will give the concerned licensees a reasonable opportunity to make representations on the proposed disclosure. The TA considers that this consultation exercise provides an opportunity to all concerned licensees to make representations to the TA on the proposed disclosure of QoS pledges and performance statistics. Having considered the representations to be made by the concerned licensees, the TA would make a

[3] Under the current licensing regime, Internet service provider is issued with a PNETS licence for IVANS.

final decision on whether to disclose the QoS information furnished by residential broadband service providers.

REVIEW OF THE QoS FRAMEWORK

36. In view of the dynamics of the broadband Internet access services market, OFTA proposes reviewing the QoS regulatory framework biennially. A public consultation may be initiated for the review exercise to solicit views and comments from the industry, consumer interest groups and general public.

INVITATION FOR COMMENTS

37. The TA invites comments on the proposed QoS regulatory framework of residential broadband Internet access services in Hong Kong. All views and comments should be made in writing and should reach the TA on or before ***23 September 2004***. The TA reserves the right to publish all views and comments and to disclose the identity of the source. Any part of the submission, which is considered commercially confidential, should be clearly marked. The TA would take such markings into account in making his decision as to whether to disclose such information or not. Submissions should be addressed to:

Office of the Telecommunications Authority
29/F, Wu Chung House
213 Queen's Road East
Wanchai
Hong Kong
(Attn: Senior Regulatory Affairs Manager (Economic Regulation)$_1$)

Comments may also be sent by fax to 2803 5112 or by e-mail to hyslai@ofta.gov.hk

Office of the Telecommunications Authority
23 July 2004

Appendix I

Service Performance Indicators

1. Service Provisioning Time

Definitions

This indicator represents the service provider's performance in fulfilling orders for the provision of new services, or for changes to existing services, by the date pledged by the service provider to the customer, i.e. performance pledge on service provisioning/activation.

"Order" is defined as a commitment made to a customer to provide a product or service, or to effect a change to an existing service. However, the following scenarios do not fall within the definition of order:

- All orders for cessation of services, products or features
- All orders which are cancelled by the customer before the installation is completed
- All orders which only require the delivery of hardware through the post, and receipt is not subsequently confirmed with the customer
- Administrative additions or alterations to customer information of the existing services, e.g. spelling amendments, changes of address or name, etc.

"Order Completion" is deemed to have occurred when all items are available for use by the customer (as confirmed by the service provider) and the billing process is put into effect. Multiple lines at the same installation address should be counted as one single order. For the purpose of illustration, if a customer order includes installation of three lines at one installation address and another line at another installation address, this customer order should be counted as two separate orders.

All orders where the dates are changed, either (i) at the request of the customer or (ii) as a result of unavailability of the customer at the time of the scheduled appointment, will not be counted as missed commitments unless the subsequent rescheduled date is missed.

Calculation Methodology

(I) Proposal made by OFTA

% of orders completed on or before the pledged date = 100 * A / B

where

A = Number of orders completed on or before the pledged date during the period

B = Total number of orders completed during the period.

(II) Proposal made by some working group members

Some of the working group members inclined to adopt the consumer complaint figures on service provisioning as the performance indicator. OFTA, however, considers that the calculation methodology proposed by OFTA in the preceding paragraph should be adopted as this is the one commonly adopted by other telecommunications regulators.

2. Service Restoration Time

Definitions

This indicator represents the service provider's performance in restoring service, after a fault has been reported by a customer, within the period of time pledged by the service provider, i.e. performance pledge on service restoration time.

"Customer-Reported Fault" is a customer's report of the inability of an item to perform a required "function" resulting in an impaired service, excluding inability due to planned maintenance. "Functions" of residential broadband Internet access services should include (i) access to the Internet and (ii) access to the e-mail system. Failure to perform either function should be considered as a fault. Multiple faults at the same address should be counted as one single fault report. For the purpose of illustration, if a customer-reported fault includes fault report of three lines at one address and another line at another

address, this fault report should be counted as two separate fault reports.

However, the following scenarios do not fall within the definition of fault reports:

- Faults proven to be the customer's responsibility
- Faults in any equipment beyond the network termination point
- If a fault report is taken against the same customer line while the original fault report remains open, the subsequent fault report should not be considered as another report
- Fault reports from third parties who is not acting on the customer's explicit instructions

"Completion of Restoration" is deemed to have occurred when all items reported faulty are again available for use by the customer as confirmed by the service provider.

In determining the "Restoration Time" for a fault, any portion of the time attributable to the customer may be excluded from the total, e.g. delays attributable to unavailability of the customer for an agreed appointment or delays attributable to the customer preventing the service provider's action to restore service. The service provider must clearly state in their performance pledge how the restoration time is going to be measured, e.g. when the measurement commences (particularly for those fault reports with appointments), whether the basis of measurement is actual or working hours, what the defined working hours are, etc.

If an appointment is rescheduled to a later time at the service provider's request, then the previously agreed time for the appointment shall nevertheless be used in calculating the delay. On the other hand, if an appointment is rescheduled to a later time at the customer's request, then the newly agreed time for the appointment shall be used in calculating the delay. In case of rescheduling to an earlier time, the newly agreed time for the appointment shall be used in the calculation.

<u>Calculation Methodology</u>

(I) Proposal made by OFTA

An appointment is a meeting agreed with the customer in which the service provider is required to visit the customer's premises for the purpose of restoring the service. If the restoration does not require visit to the customer's premises, this is not considered as an appointment. As such, this indicator should be broken down into two categories depending on whether the service provider needs to visit the customer's premises or not.

Scenario 1 – Fault reports without specific appointment

% of fault reports restored within the pledged time during the period = 100 * A / B

where

A = Total number of fault reports without specific appointment restored within the pledged time during the period

B = Total number of fault reports without specific appointment during the period

Scenario 2 – Fault reports with specific appointment

% of fault reports restored during the period = 100 * C / D

where

C = Total number of fault reports with specific appointment restored within the pledged time during the period

D = Total number of fault reports with specific appointment during the period

Some working group members opined that it might not be necessary to break down the indicator into two scenarios, i.e. with/without specific appointment.

In view of the fact that most faults could be rectified within a relatively short time while some faults may take a longer time, some working group members suggested that the service providers could make pledge in a more flexible way, e.g. *"90% of the reported faults can be rectified and service be restored within XX hours and all reported faults can be rectified and service be restored within XX days."* Views are sought as to whether such kind of flexibility in pledging

would make it difficult for residential consumers to make comparison among different service providers.

(II) Proposal made by some working group members

Some of the working group members inclined to adopt the consumer complaint figures on service restoration as the performance indicator. OFTA, however, considers that the calculation methodology proposed by OFTA in the preceding paragraph is one commonly adopted by other jurisdictions.

3. Customer-Reported Faults per 1000 Customer Lines

Definitions

For the definition of "Customer-Reported Fault", please refer to the performance indicator of **Service Restoration Time**.

Calculation Methodology

(I) Proposal made by OFTA

No. of customer-reported faults per 1000 customer lines = 1,000 * A / B

where

A = Total number of fault reported by customers during the period

B = Average number of direct customer lines during the period, which can be calculated by halving the sum of the total number of lines at the start and at the end of the period

(II) Proposal made by some working group members

Some of the working group members suggested the use of the number of customer complaints rather than the number of faults reported by customers. Some members were concerned that if value-added services ("VAS") were to be covered in the indicator, the overall performance of the service provider might be attenuated since the number of complaints for newly launched VAS was usually higher than that of the existing basic services. This might

discourage service providers from launching new VAS. As such, some members suggested exclusion of VAS from the calculation.

4. Complaint Handling Time

The indicator measures the performance of the service provider in resolving complaints within the period of pledged time, i.e. performance pledge on complaint handling time.

Definitions

"Complaint" is defined as an expression of dissatisfaction with the service provider or the service provided, received from a user or a member of the public by the service provider, whether or not the complainant has used any key words such as "complaint" or the complainant's tone of voice is irate. The dissatisfaction must be related to "non-performance of the contractual agreement by service providers". All complaints irrespective of the means by which they were communicated (including telephone, fax, letter or email) shall be included. It should be noted that a complaint should not be confused with a query (a request for information) or with a fault report (when a customer is reporting a service or equipment failure, etc.)

A complaint shall also be included irrespective of whether it is deemed by the service provider to be justified, or whether it is satisfactorily processed at the first point of contact. Complaint about how a fault has been handled should be counted as a complaint, although the original fault report itself is not counted as a complaint. A single complaint that involves several service issues requiring different timeframes to process should nonetheless be counted as one complaint. It should not be deemed to be resolved until all the individual issues are themselves processed.

A complaint will be regarded as having been "Resolved" by the service provider when:

- The complainant agrees that all issues have been satisfactorily dealt with;
- The complaint is withdrawn; or
- The service provider has completed all stages of its internal complaint

handling procedures and has informed the complainant accordingly.

Calculation Methodology

Service providers may make pledges on (i) the complaint acknowledgement time and (ii) the complaint handling time. Presumably, the complaint handling time should be roughly the same regardless of the means by which the complaint was communicated to the service providers.

% of complaints acknowledged within the pledged time during the period
= 100 * A / B

where
A = No. of complaints acknowledged within the pledged time during the period
B = Total number of complaints received during the period

% of complaints resolved within the pledged time during the period
= 100 * C / D

where
C = No. of complaints resolved within the pledged time during the period
D = Total number of complaints received during the period

5. Enquiry Call Answering Time

This indicator measures the performance of the service provider in fulfilling its commitment in answering the enquiry call within the period of time pledged by the service provider, i.e. performance pledge on enquiry call answering time.

Definitions

"Enquiry Call" covers the customer interface with the hotline operator on all issues.

If the service provider operates an interactive voice response system ("IVRS")

for answering enquiry call, the measurement of "Answering Time" should commence when the customer chooses the option to talk to the hotline operator. In the absence of an IVRS, the measurement should start when the customer hears the first ringing tone.

Calculation Methodology

Some service providers may pledge different target times for answering technical support enquiry call, customer service enquiry call and other types of enquiry call. For those service providers who do not have separate pledges, they can make a single pledge for answering all kinds of enquiry call.

Scenario 1 – The service provider has made different pledges for answering different types of enquiry call

% of calls for a particular type of enquiry answered within the pledged time during the period = 100 * A / (B+C)

where

A = Total number of calls for a particular type of enquiry answered within the relevant pledged time during the period

B = Total number of calls for a particular type of enquiry answered during the period

C = Total number of calls for a particular type of enquiry abandoned during the period

Scenario 2 – The service provider has made a single pledge for answering all types of enquiry call

% of enquiry calls answered within the pledged time during the period = 100 * A / (B+C)

where

A = Total number of enquiry calls answered within the pledged time during the period

B = Total number of enquiry calls answered during the period

C = Total number of enquiry calls abandoned during the period

Appendix II

Technical Performance Indicators

The industry, consumer interest groups and the general public are invited to provide inputs on the technical performance indicators and their measurement methodology. The technical details would be finalized after the TA has considered all the input.

Technical Performance Indicators

1. **Download Time from the Service Provider's Web-site** refers to the time required for downloading a file from the service provider's web-site to the customer's computer.

2. **Download Time from a Local Web-site** refers to the time required for downloading a file from a local web-site other than the service provider's to the customer side. In order to measure the download time, a representative web-site in Hong Kong should be selected to facilitate the measurement. Since most of the major service providers have direct connections with the Hong Kong Internet Exchange (HKIX) for routing their local Internet traffic, OFTA proposes to designate the web-site of the HKIX (www.hkix.net) as the "local web-site" in the measurement.

3. **Download Time from Overseas Web-sites** refers to the time required for downloading a file from a group of overseas web-sites to the customer's computer. OFTA proposes to select three representative overseas web-sites that are popular with users of Hong Kong in respect of browsing activities.

4. **Upload Time to the Service Provider's FTP Server** refers to the time required for uploading a file using FTP from the customer's computer to the service provider's FTP server.

5. **Network Latency** refers to the time required for a network to respond to a customer command. This indicator serves as a quantitative figure to reflect

the round trip delay which is crucial to real-time interactive applications such as on-line games. OFTA proposes to select three representative overseas servers that are popular with users of Hong Kong in respect of real-time interactive applications.

Measurement Methodology

OFTA's preliminary view is that the technical performance indicators should be measured at the customer side and during peak hour to reflect the real network situations. For the sake of consistency, the following configurations of the measuring apparatus and measurement conditions are proposed:

Configurations of the Measuring Apparatus

The apparatus to be deployed should be a personal computer with the widely used hardware and software configurations (e.g. web browser).

Measurement Conditions

- File size: Taking into account the typical size of multimedia files (e.g. JPEG photos) and the need to avoid overloading the network during the measurement, the file to be used in the download and upload process should be approximately 2 M bytes in size.
- Peak hour: 23:00-24:00 hour, based on the switching statistics of the HKIX.
- Measurement locations: 20 locations at the customer side which are to be randomly selected within the coverage area of a broadband network and the selected locations should be spaced out evenly.
- Data sampling: At each location at the customer side, not less than 10 samples should be taken for each reference web-site or server with intervals of not less than 5 minutes during the peak hour. The performance of each indicator will be the average value of all the samples taken.

Appendix III

Preliminary Timeline for the Implementation of the Monitoring Scheme of QoS