

**FINAL DECISION OF  
THE COMMUNICATIONS AUTHORITY**

**BILLING ERRORS OF  
HONG KONG BROADBAND NETWORK LIMITED**

<b>Telecommunications Licensee Investigated:</b>	Hong Kong Broadband Network Limited (“HKBN”)
<b>Issue:</b>	HKBN made incorrect charge entries to the bills of its mobile service customers for the month of June 2018
<b>Relevant Instruments:</b>	Special Condition (“SC”) 5.1 of HKBN’s Services-based Operator Licence (Licence No. 094) (“SBO Licence”)
<b>Decision:</b>	Breach of SC 5.1 of HKBN’s SBO Licence
<b>Sanction</b>	HKBN is advised to observe more closely SC 5.1 of its SBO Licence
<b>Case Reference:</b>	LM T 69/18 in OFCA/R/R/269 C

## **BACKGROUND**

On 7 and 8 June 2018, HKBN, as a mobile virtual network operator (“MVNO”) licensed under its SBO Licence, reported to the Office of the Communications Authority (“OFCA”) that there were two billing error incidents of its mobile services.

### **The First Incident**

2. According to HKBN, erroneous bills were issued to mobile service customers on 1 June 2018. Incorrect charge entries of mobile local data services (involving the additional charges incurred by customers when their usage exceed the monthly quota of data usage volume entitled under their service plans (“thereafter charge”)) for the month of April 2018 were made to the bills of the abovementioned customers. The incident affected 4 773

customers with the erroneous charges amounting to about HK\$ 400,000. HKBN discovered the error on 6 June 2018 upon receipt of a number of enquiries from the affected customers.

## **The Second Incident**

3. During the investigation into the first incident, HKBN discovered another billing error which led to incorrect charge entries of credit card pre-payments for mobile handsets of new mobile service subscriptions between 24 and 31 May 2018 made to the bills of the affected customers for the month of June 2018. The incident affected 155 customers with the erroneous charges amounting to about HK\$ 200,000.

## **OFCA'S INVESTIGATION**

### **Relevant Licence Obligation**

4. SC 5.1 of HKBN's SBO Licence sets out the requirement pertaining to billing and metering accuracy. It specifies that –

*“5.1 The licensee shall take all reasonable steps to ensure that any metering equipment and billing system used in connection with the service is accurate and reliable.”*

5. With a view to enhancing transparency of chargeable items in bills issued by telecommunications service providers, the former Telecommunications Authority issued a voluntary “Code of Practice in Relation to Billing Information and Payment Collection for Telecommunications Services” (“CoP”) in October 2011. Paragraph 4 of the CoP specifies that –

*“4. Service providers shall take all reasonable, necessary and practical steps to ensure that their billing information provided to customers are accurate and error-free in respect of all forms of bills and means of payment including but not limited to direct debit made to the bank accounts of customers.”*

6. Paragraphs 5 to 9 of the CoP set out the information which should be provided in telecommunications service bills to allow customers to verify the charges incurred for usage of telecommunications services. Paragraphs 11 to 14 of the CoP also set out the reporting requirements, under which service providers are required to “*report to [OFCA] immediately after occurrence of any incident involving systematic errors in the billing information or payment collection, and provide timely progress update of the remedial action so that [OFCA] can take the necessary remedial action to minimise the impact of the incident on the community.*”

7. At present, major mobile network operators and fixed network operators (“FNOs”) have pledged their compliance with the voluntary CoP. HKBN has since July 2012 pledged to comply with it. In the current case, HKBN followed the requirements specified in the CoP to report to OFCA the two incidents, and submitted to OFCA a preliminary report on 21 June 2018 and a detailed incident report on 6 July 2018. In the course of OFCA’s investigation into the two incidents, HKBN also provided supplementary information in response to OFCA’s enquiries.

8. Having considered the findings and assessment of OFCA, the Communications Authority (“CA”) issued its Provisional Decision to HKBN on 19 December 2018 and invited HKBN to make representations within 14 days. HKBN submitted its representations on 2 January 2019, indicating that it has no comment on the CA’s Provisional Decision.

## **MAJOR ISSUES AND OFCA’S ASSESSMENT**

### **The Cause of the Incidents and the Adequacy of HKBN’s Preventive Measures**

#### ***HKBN’s Representations on the First Incident***

9. According to HKBN, the first incident was caused by a human error of an information technology (“IT”) programme developer of HKBN during the automation process of an operational procedure for upload of mobile data usage files. The human error resulted in a software programme bug that led to duplicated upload of mobile data usage files, causing two identical entries of thereafter charge of the same month (i.e. April 2018) for mobile local data services shown in the affected bills.

10. HKBN submitted that the first incident was an isolated case. Upon detection of the first incident on 6 June 2018, it had taken immediate remedial actions to make necessary adjustments in the bills concerned in the following month, inform the affected customers to disregard the wrong bills, and rectify the problematic software programme. On 8 June 2018, HKBN issued notifications with apologies to all the affected customers through emails and Short Message Service (“SMS”). According to HKBN, it received 76 complaints/enquiries pertaining to the first incident and they were all settled. HKBN submitted that none of the affected customers suffered monetary loss in that incident.

11. In order to prevent recurrence of similar incidents, HKBN submitted that it has reviewed the workflow for software programme development and, since 30 June 2018, put in place measures including conducting cross-checking and additional test on newly developed software programmes by IT supervisors before putting them into operation.

### ***HKBN’s Representations on the Second Incident***

12. According to HKBN, the root cause of the second incident was due to a missing general ledger account code (“GL code”) in its billing system when HKBN introduced its newly adopted data security measure known as “tokenisation” which enables HKBN to bill its customers without the need to keep their credit card information<sup>1</sup>. After the implementation of the new data security measure, for each payment cycle, HKBN would need to use payment files supplied by a third party token service provider for upload to its billing system for corresponding updates of customers’ payment records. Information in the payment files would be required to map with the GL code to generate the associated ledger transactions of the customers in its billing system.

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<sup>1</sup> Generally speaking, tokenisation is the process of substituting a sensitive data element with a non-sensitive equivalent (which is commonly referred to as a token). Prior to the introduction of the abovementioned data security measure, credit card information of HKBN’s customers was stored in its system for payment transaction with the banks directly. During the new process of tokenisation, the credit card information of HKBN’s customers would be passed to a token service provider appointed by HKBN. In return, the token service provider would provide HKBN with a unique token for each of the customers’ credit card numbers for subsequent payment transactions. Upon completion of the process, HKBN would no longer need to keep the credit card information in its system. The token service provider would, on behalf of HKBN, process the transactions with the banks and prepare payment files containing the payment results of the customers to HKBN after the transactions.

13. HKBN submitted that, during the process of tokenisation which took place shortly before the second incident, it failed to create a new GL code for the purpose of the new payment transaction method. Even though credit card payments were successfully made by the customers, due to a missing GL code, the billing system was unable to generate the required general ledger transactions when the payment files were uploaded thereto, leading to corresponding payment records not reflected in HKBN's billing system. As a result, the same charge entries were repeated in the affected bills in the following month (i.e. the bills for the month of June 2018).

14. HKBN submitted that upon identification of the second incident on 7 June 2018, it had taken immediate remedial actions and put in place the required GL code in the billing system. On 14 June 2018, HKBN issued notifications with apologies to all the affected customers through emails and SMS. On 19 June 2018, HKBN provided all refunds to those credit card accounts of the affected customers. According to HKBN, it received two complaints/enquiries pertaining to the second incident and both were settled. HKBN submitted that none of the affected customers suffered monetary loss in that incident.

15. In order to prevent recurrence of similar incidents, HKBN submitted that its internal departments have reviewed the operating procedures and strengthened the internal control including reviewing the arrangement for setting up new general ledger account with clearly defined steps and responsibilities of each departments involved to prevent recurrence of the above-mentioned problem and any misconfiguration issue in future. Dummy transactions will also be created under the production environment to reaffirm successful upload of payment files.

### ***OFCA's Assessment of the First Incident***

16. OFCA notes that the cause of the first incident was due to oversight of the importance and essential requirement of software verification and validation during the development of a new programme script for upload of mobile data usage file. OFCA also notes that prior to the first incident, HKBN's in-house software developer was responsible for drafting, reviewing and launching of software programme all by himself. OFCA considers that such an arrangement is unsatisfactory as there is no cross-checking and control

mechanism in place to ensure that a proper verification and validation process is conducted to assure the correct functioning of the software being developed before it is put into operation. Without such a mechanism, human errors or other mistakes could easily go undetected and result in wrong billing. OFCA acknowledges HKBN's corrective actions taken after the first incident, in particular the establishment of a proper cross-checking and control mechanism to ensure that each new programme will be reviewed and tested before it is put into operation.

### ***OFCA's Assessment of the Second Incident***

17. OFCA considers that the cause of the second incident was largely due to communications problem among HKBN's various internal departments and the lack of a cross-checking and control mechanism for implementation of the new tokenisation process. Similar to the first incident, HKBN did not have a cross-checking and control mechanism in place during the material time of the second incident. This can be seen from HKBN's remedial actions regarding the addition of such a mechanism to (a) review the arrangement for setting up new general ledger account with clearly-defined steps and responsibilities of each departments involved to prevent recurrence of similar problem and any misconfiguration issue in future; and (b) conduct test with dummy transactions on production environment to reaffirm successful upload of payment files (see paragraph 15 above).

18. In OFCA's view, both incidents could be avoided had HKBN established appropriate cross-checking and control mechanism in its operating procedures for rollout of new IT projects, particularly those relating to billing and payment collection.

19. In conclusion, having examined the facts and circumstances of the two incidents and information provided by HKBN, OFCA considers that the handling of IT project developments for the purposes of billing and payment collection by HKBN and communications among its internal departments were not acceptable. HKBN has failed to take all reasonable steps to ensure that the billing system used in connection with the service was accurate and reliable for compliance with the licence obligation under SC 5.1 of its SBO Licence.

## **HKBN's Communications with Customers and OFCA over the Incidents**

### ***HKBN's Representations in Both Incidents***

#### Communications between HKBN and its Customers

20. HKBN submitted that in both incidents, it had issued notifications via emails and SMS to all the affected customers. Entries for credit adjustments were also made immediately to the affected bills for the month of July 2018 to correct the respective billing errors. Details of the relevant communications and arrangements are as follows –

(a) in the first incident,

- (i) apologies were issued to the affected customers by emails and SMS on 8 June 2018;
- (ii) if payments had not been made by the customers, the corrected amount stated in the emails should be paid;
- (iii) if payments had been made by the customers, adjustments would be made in the next monthly invoice (i.e. July 2018); and

(b) in the second incident,

- (i) apologies were issued to the affected customers by emails and SMS by 14 June 2018;
- (ii) if payments had not been made by the customers, the corrected amount stated in the emails should be paid;
- (iii) if payments had been made by the customers, refunds would be made to the credit card accounts of all the affected customers by 19 June 2018.

21. According to HKBN, it had received a total of 76 and two complaints/enquiries regarding the first incident and the second incident

respectively. All the complaints/enquiries had been settled. OFCA had not received any complaint/enquiry from the general public.

### Communications between HKBN and OFCA

22. Following the reporting requirement specified in the CoP, HKBN reported the first incident to OFCA on 7 June 2018 and the second incident on 8 June 2018. It also submitted to OFCA a preliminary report on 21 June 2018 and a detailed incident report on 6 July 2018. In the course of OFCA's investigation into the two incidents, HKBN also provided supplementary information in response to OFCA's enquiries.

### ***OFCA's Assessment***

23. After examining the actions taken by HKBN, OFCA is of the view that HKBN has taken prompt and appropriate actions to rectify the billing errors and to inform all the affected customers in a timely manner. HKBN had also informed OFCA about the incidents in accordance with the timeframe set out in the CoP.

## **THE CA'S CONSIDERATIONS AND DECISION**

24. Having examined all the facts and circumstances of both incidents and the assessment of OFCA, the CA considers that HKBN has failed to comply with the licensing obligation to ensure billing accuracy and is in breach of SC 5.1 of its SBO Licence. As for the CoP, other than the same billing accuracy issue, HKBN did not violate other requirements of the CoP in the aspects of billing information and payment collection.

25. Under the Telecommunications Ordinance, the CA may impose a number of remedies on a licensee for contravening a licence condition. These include the issue of a direction and imposition of financial penalties. A number of administrative remedies are also available to the CA, such as the issue of advice and warning to the offending licensee.

26. In considering the sanction on HKBN for the current case, the CA notes that –



- (a) the billing errors were caused by a lack of cross-checking and control mechanism in HKBN's operating procedures which led to generation of erroneous bills;
- (b) the incidents did not cause any disruption of services to customers;
- (c) although a total of 4 928 customers were affected in the two incidents (representing 1.8% of the total number of HKBN's mobile service customers), no actual monetary loss was suffered by the customers in either incident;
- (d) this is the first time where HKBN has breached a licensing obligation of such a nature;
- (e) HKBN has been in full cooperation with OFCA in the course of the investigation and has taken prompt remedial actions to prevent recurrence of similar incidents; and
- (f) no complaint case was received by OFCA for both incidents.

27. Taking into account all the facts and circumstances of the incidents as well as HKBN's representations of 2 January 2019, the CA takes the view that, as a sanction for the breach, HKBN should be **advised** to observe more closely SC 5.1 of its SBO Licence.

**The Communications Authority**  
**January 2019**