Supplement to the Telecommunications Regulatory Commission Sanction Notice regarding the LIME BVI Investigation Concerning Mobile Voice Calls to Specific Caribbean Destinations.

Pursuant to a recommendation received from the Board's independent economic advisor, the TRC has decided to supplement its Sanction Notice with this note on a theory of harm and an assessment of LIME's relevant termination revenues. As indicated in the Sanction Notice, the TRC may take enforcement action if LIME BVI is found to be carrying out its business in a manner contrary to the public interest within the meaning of section 75(1)(a)(iii) of the Act. The Sanction Notice sets out the evidence demonstrating the margin squeeze which is deemed to be anti-competitive. The theory of harm expounded below explains why this margin squeeze may be expected to have anti-competitive effects contrary to the public interest.

The theory of harm

The theory of harm assesses (1) what would happen if the identified anti-competitive behavior which is manifested through a margin squeeze were to continue; and (2) the scope and requirement for regulatory intervention. As explained in the Sanction Notice, LIME BVI is operating a margin squeeze through its All Talk calling plans to LIME Caribbean destinations[1]. The retail price that LIME BVI charges to its customers is significantly below the wholesale price that it charges to CCT for CCT to terminate calls on its network across the Caribbean. For the purposes of clarification, the estimated retail revenues that LIME BVI collected from its All Talk customers over the period from January 2009 to August 2010 are lower than the purported wholesale cost of delivering calls to LIME Caribbean destinations. Therefore, the service is not profitable and fails the equally efficient operator "EEO" test. From September 2010 onwards, when the All Talk Plus plans were launched, LIME BVI's revenues including the estimated termination revenues are higher than the wholesale cost to LIME BVI.

The theory of harm is that the margin squeeze practiced by LIME, in the context of Digicel's margin squeeze with respect to pan-Caribbean calls, creates a significant risk that CCT will be forced to exit the market entirely. LIME launched the All Talk Plan as a precursor to Digicel's entry in November 2008, and in order to prevent loss of market share LIME BVI has retained the All Talk plan and launched the All Talk Plus plan to continue competing with Digicel's pan-Caribbean calling packages. Over time, CCT will be forced to exit the market for mobile telephony in the VI, thereby leaving the VI with a duopoly in the provision of mobile services and, as a result of the decreased competition, higher prices to customers. Unlike the conclusions drawn in the Digicel analysis, the TRC does not believe that LIME BVI is solely responsible for causing long-term harm to VI consumers but that LIME BVI is playing a significant role in aggravating the effect of the margin squeeze that Digicel continues to practice and which has continued anti-competitive effect.

In developing the theory of harm, it is possible to identify two main scenarios as follows:

[1] The LIME Caribbean networks beyond the VI are: Anguilla, Antigua and Barbuda, Barbados, Cayman, Dominica, Grenada, Jamaica, Montserrat, St Kitts and Nevis, St Vincent and the Grenadines, Turks and Caicos

1) **Continuation of the status quo.** With the All Talk plans in the market as competition to Digicel's Caribbean plans, the margin squeeze practiced by Digicel BVI continues with low retail prices charged by Digicel to their customers and the high wholesale prices charged to CCT. Accordingly, CCT will be unable to compete with both LIME BVI and Digicel BVI on an equal basis in offering calls to LIME pan- Caribbean destinations and is therefore unable to compete equally for all subscribers in the VI mobile voice telephony market. At present there are three mobile network operators ("MNOs") in the market and two kinds of Caribbean plan on offer (Digicel's Caribbean plans and LIME's All Talk plans). Over time, as CCT is unable to compete on an equal basis, the company loses market share until the point when it ceases operation. The market is left with two MNOs operating as a duopoly. The decrease in competition would then allow the two remaining operators to increase prices to maximize profits.
2) **Counterfactual with no margin squeeze.** In the view of the TRC it is appropriate to consider two possibilities for the counterfactual.
    a. No margin squeeze due to higher retail prices. LIME prices calls to pan-Caribbean destinations in such a way that the retail price is set above the wholesale price charged to CCT. LIME retail prices to call LIME destinations are higher than they currently are under the margin squeeze scenario. There are no specific low priced calling plans in the market and CCT would be able to match LIME's retail offers. In this case, three operators continue to function in the market without any of them being pushed out.
    b. No margin squeeze due to lower wholesale prices. LIME prices termination services to its pan-Caribbean network in such a way that the retail price is above the wholesale price and there is no margin squeeze. There are three operators in the marketplace and it is possible for all three operators to offer pan-Caribbean calling plans.
3) The TRC would like to point out that consideration of the second counterfactual (i.e. 2)b. above) does not imply that the TRC has the authority to require LIME operations outside of the VI to reduce their termination rates. This scenario, where the margin squeeze disappears because LIME lowers the wholesale charge to CCT (and indeed to LIME BVI), would enable CCT to offer the same retail plans as LIME on a profitable basis and it could therefore be expected that retail prices would be lower. Compared to the theory of harm whereby CCT cannot offer the same retail plans as LIME and continues to charge higher retail prices to CCT customers and to lose market share, the second counterfactual clearly outlines the benefit from lower wholesale rates and hence the anti-competitive effect of the margin squeeze. If an anti-competitive effect of a margin squeeze is to be expected relative to this scenario, then a fortiori, such an anti-competitive effect is to be expected relative to the second scenario. Therefore the TRC elects to focus the counterfactual analysis on the first scenario (i.e. 2)a. above) in considering whether an anti-competitive effect can be expected to flow from the margin squeeze.

Assessment of the theory of harm:

Under the theory of harm, an anti-competitive effect may be expected to flow from the margin squeeze in the following circumstances:

1. **LIME BVI generates revenue from the All Talk calling plans which is insufficient to cover the termination cost of the plans.**

LIME BVI has stated that it pays an average fixed termination charge to LIME affiliates of [redacted] and an average mobile termination charge to LIME affiliates of [redacted]. The TRC has calculated that the average fixed termination rate that CCT pay to terminate on LIME Caribbean networks is [redacted] and the average mobile termination rate that CCT pay to terminate on LIME Caribbean networks is [redacted]. LIME BVI has submitted examples of debit notes exchanged between LIME BVI and its affiliated companies to provide proof of termination payments and receipts. Whilst the TRC is not in a position to assess the validity of these debit notes, in the absence of compelling evidence that LIME BVI does not make and receive these payments, the TRC assumes that LIME BVI pays an average fixed termination rate of [redacted] and an average mobile termination rate of [redacted] to LIME affiliates. Taking total All Talk minutes, it is then possible to calculate estimated average termination payments from LIME BVI to LIME affiliates for terminating All Talk traffic.

LIME BVI termination revenues

It is also possible to take total All Talk retail revenues and add relevant termination revenues to calculate total revenue accruing to the All Talk Plan. The crucial input in calculating termination revenues is incoming minutes from LIME Caribbean destinations which are terminated to All Talk customers. The TRC has requested incoming minutes on four occasions and has received the following responses:

1. LIME BVI submitted data for the interconnection consultation which show that outgoing international traffic as a whole is [redacted] as total incoming international traffic
2. LIME BVI submitted data following the original data request issued to LIME at the beginning of the investigation which shows that total outgoing international traffic to LIME Caribbean destinations is [redacted] as incoming international traffic from LIME Caribbean destinations.
3. LIME BVI stated in their response to the Sanction Notice and verbally at the hearing that it was reasonable to assume that outgoing traffic [redacted] incoming traffic.
4. The TRC asked for verification of this assumption in a data request following the hearing. In response, LIME BVI submitted outgoing traffic information to LIME Caribbean destinations from All Talk and All Talk Plus customers but not incoming traffic information.
5. The TRC then asked again for incoming minutes and received total outgoing and incoming minutes “for all destinations and for LIME Caribbean destinations”. In the data submitted, outgoing traffic is [redacted] incoming traffic.

Based on LIME BVI’s most recent submission, the TRC applies the EEO test on the following assumption: international outgoing traffic to LIME Caribbean destinations [redacted] as international incoming traffic from LIME Caribbean destinations to All Talk customers (EEO test: Subscription revenue + termination revenue – termination costs):

This gives a total loss of [redacted] over the period January 2009 to July 2011 and an average monthly loss of [redacted] over the period January 2009 to July 2011. However, the calculations show losses up until the end of August 2010 and positive revenues from September 2010 when the All Talk Plus plan was introduced. On this basis, average monthly losses were [redacted] from January 2009 to August 2010 and average monthly revenue was positive at [redacted] from September 2010 to July 2011. If LIME BVI is indeed paying termination charges then it was only able to do so during the period January 2009 to August 2010 by incurring a loss or through cross-subsidy rendering the All Talk Plan unprofitable in its own right.

The key conclusion to draw is that if these termination revenues are correctly calculated and are included in the EEO test, then the All Talk plans fail the EEO test from January 2009 through to August 2010. However, the introduction of the All Talk Plus plan in September 2010 has changed the profitability of this offer such that the All Talk plans still in effect and the All Talk Plus plans do not fail the EEO test from September 2010 to July 2011. This has significant implications for the theory of harm. This analysis shows that LIME BVI exercised a margin squeeze from January 2009 to August 2010 and exerted an anti-competitive influence on the VI mobile telephony market, which under the theory of harm would lead to CCT ultimately exiting the mobile telephony market. However, given that the margin squeeze ceased to exist from September 2010, LIME BVI cannot be said to be causing further harm to the market through a margin squeeze.

Inclusion of other revenues

The TRC does not consider it relevant to include other revenues accruing to the All Talk customers in the EEO test. For example, revenues generated by All Talk customers for calls to non All Talk destinations are not included in the plan. This is because to take up the All Talk package, a customer has to be an existing LIME customer either on a postpaid package or as a prepaid customer and would be making calls to non All Talk destinations regardless of the All Talk plan. In each case, the non All Talk revenues are relevant for considering the overall cost of mobile service for a subscriber not the specific cost of providing the All Talk plan.

In terms of sending traffic to LIME Caribbean destinations, whilst the traffic must ultimately terminate on a LIME network, CCT has the choice of either routing that traffic via LIME BVI or via a third party provider such as Verizon. The data submitted to the TRC confirms that CCT routes some traffic that originates on CCT in the VI to countries where LIME has a presence via LIME BVI. The data submitted by CCT and LIME BVI is not conclusive in recording the precise percentages of traffic terminated via LIME BVI but clearly shows that LIME BVI routes some of CCT’s outgoing traffic to LIME Caribbean destinations.

As explained above, whilst CCT has a choice of routing traffic via LIME BVI or third parties, the termination bottleneck persists regardless of the traffic route. CCT faces market power in the termination of calls to LIME networks as outlined in the Sanction Notice with reference to Market 4 "a wholesale or "access" market for voice call termination from numbers on non-LIME networks in the VI to LIME MNO networks in the rest of the Caribbean." This upstream market is further defined as a separate market for termination on each LIME network. In the UK, Ofcom has stated that it defines "as separate markets each market for all calls to a given UK mobile number range for which a communications provider can determine the termination rate,"[2] and in the view of the TRC, it is appropriate to define each market for the termination of calls to LIME networks. As outlined in the Sanction Notice, each LIME MNO has significant market power in the termination of calls to its own network, as, in general, any MNO is dominant in the market for the termination of calls to its own network. Therefore CCT faces market power in the termination of calls to LIME networks and has no choice but to terminate calls to LIME networks on LIME networks which leads to condition 2.

2. **CCT cannot offer the same priced retail product to call LIME destinations in the Caribbean as LIME without incurring a loss and there is ineffective retail competition. As a result, LIME maintains market share and CCT loses market share (mainly to the newer entrant Digicel) and profitability and ultimately exits the market. No other operators enter the market.**

   CCT's financial position [redacted] since 2008, when Digicel entered the market. In 2008, CCT [redacted] and in 2011,[redacted]. [redacted] What is relevant here is not that CCT is a loss-making entity per se but that the magnitude of CCT's losses has increased since Digicel's entry into the market and the launch of the LIME's All Talk plans pre-empting that entry in November 2008. CCT is losing market share as per the key indicators below:

1. CCT's total subscriber market share has [redacted] from July 2009 to September 2010 as indicated by the Sanction notice.
2. CCT's total number of subscribers [redacted] from June 2009 to March 2011
3. CCT's total number of prepaid subscribers [redacted] from June 2009 to March 2011
4. CCT's prepaid revenues [redacted] from June 2009 to March 2011
5. CCT's total international outgoing traffic to countries with LIME networks in the Caribbean (including traffic to other networks) [redacted] from June 2009 to March 2011. Of this [redacted] CCT attribute [redacted] to Digicel networks and [redacted] to LIME networks.
6. CCT present figures to show that average monthly traffic to Digicel destinations [redacted] in H1 2009 to [redacted] in H1 2011 and that average monthly traffic to LIME destinations [redacted] in H1 2009 to [redacted] in H1 2011.
7. CCT's EBITDA margins [redacted] in 2008 to a projected [redacted] in 2011.

[2] Ofcom, Wholesale mobile voice call termination Market Review, Volume 2 – Main consultation, 1 April 2010

It is reasonable to expect that CCT's international traffic to Caribbean destinations may fall with the entry of a third operator with a strong regional brand. However, if this traffic falls due to the presence of a margin squeeze which also causes consumer harm in the long-term, then this reduction in traffic occurs as a result of anti-competitive behavior rather than pure competition and requires regulatory intervention.

As the graph below shows, the decline in CCT's prepaid subscribers has been taking place since November 2008, when the All Talk plans were first introduced. In December 2008, Digicel entered the market and introduced its own Caribbean plans in June 2009 causing a further decline in CCT market share. In the view of the TRC it is likely that LIME BVI may have kept the All Talk plans in place to continue competing against Digicel's pan Caribbean calling offer.

[Graph redacted]

However, the direct anti-competitive effect of LIME BVI's All Talk plans is less than that of Digicel for the following reasons:

- A small proportion of LIME BVI's customers are on the All Talk Plans (less than [redacted]).
- The number of customers on the plan has been falling

However, in the view of the TRC, LIME BVI has been instrumental in causing anti-competitive harm to CCT as LIME BVI launched the plan in the first place. LIME BVI has kept the plan in place to compete with Digicel which has sustained the anti-competitive effect on CCT. The primary cause of harm is the presence of the Digicel Caribbean plans which enables Digicel to win market share from CCT. However the presence of the Digicel Caribbean plan was brought about by the presence of the LIME All Talk Plans. Furthermore, whilst only a small percentage of LIME customers are on the All Talk Plans, in the view of the TRC the presence of the All Talk plans acts as a deterrent to LIME BVI customers moving to CCT and to Digicel BVI removing the Caribbean plans from the market.

In addition, CCT's prepaid revenues decline markedly from June 2009 as shown in the graph below. Whilst it is not possible to attribute the decline in prepaid subscribers and revenues entirely to the introduction and take-up of the LIME AND Digicel's Caribbean plans, it is plausible to suppose that the introduction of the plans contributed significantly to the reduction in CCT prepaid customers. From July 2009 to September 2010, CCT's market share of total subscribers decreased by [redacted] percentage points and LIME's market share of total subscribers remained stable[3].

[Graph redacted]

[3] As set out in section 2.22 of the Sanction Notice

Hence it is evident that over the duration of the plans CCT has been losing customers whilst LIME has been able to maintain a stable market share in the face of Digicel's entry. This reinforces the point that LIME BVI has retained the plans in order to remain competitive with Digicel. Whilst LIME BVI's All Talk subscriber base may be small, CCT still loses the opportunity to market to these types of customers who wish to make low-priced calls to LIME Caribbean destinations.

Due to the presence of LIME's All Talk Plans and Digicel's Caribbean plans, CCT's addressable market size is smaller than it otherwise would be and it is reasonable to suppose that ultimately CCT would be forced to exit the market for mobile telephony in the VI.

Although CCT was loss making prior to Digicel's entry into the market, the TRC considers that the effect of the introduction of the plans has been to exacerbate the reduction in revenues and subsequent financial losses. The TRC acknowledges that whilst there may be other factors compounding CCT's financial difficulties, the Caribbean plans generate by themselves a significant risk that CCT will be forced to exit the market.

In the view of the TRC, CCT has made attempts to meet the competition over the course of the past year in order to address its declining market share. In response to Digicel's market entry in December 2008, CCT was the first MNO to introduce "Unlimited" calling plans to the VI market. However, LIME was able to offer unlimited plans with a regional angle including calls to LIME Caribbean destinations which CCT could not match as explained in the Sanction Notice. CCT's next move in November 2009 was to make Unlimited plans available to customers without a contract encouraging prepaid customers to benefit from Unlimited plans. However, LIME were then able to react by offering the All Talk plans to prepaid customers. LIME BVI then introduced the All Talk Plus plan in September 2010 which included data. In this way, each time CCT has launched an Unlimited product LIME has been able to compete more strongly with a product that offers a regional calling dimension that appeals to the VI's significant immigrant population.

Therefore it can be expected, according to the theory of harm, that this cycle will continue and CCT will continue to lose market share until it is forced to exit the market for mobile voice telephony in the VI leaving a duopoly situation. It is then not expected that any other operator would enter the market, given the fact that the incumbent had been forced to exit. Furthermore, as CCT's financial situation worsens, there is a realistic prospect that CCT's assets would be bought by either or both of Digicel BVI and LIME BVI. There are no signs at the present that any operator outside the VI would seek to acquire CCT's assets. Once those assets were bought by one or both of the existing operators, the market would then be a duopoly.

3. **The theory of harm predicts that the long-run effect, following exit by CCT and no entry by other operators, to be a reduction in competition and hence an increase in retail prices.**

Based on information covering the development of the market since LIME launched the All Talk plan in November 2008, the TRC is of the view that the long-run effect that may be expected to follow from CCT's withdrawal from the VI mobile telephony market, in the absence of entry by any other operators, would be an overall increase in price or a lack of innovation in the VI market compared to the counterfactual in which three MNOs continue to operate in the VI.

The VI moved from a two-player market to a three-player market in November 2008. Digicel BVI launched with on-net and off-net call prices 5 cents and 10 cents respectively, cheaper than CCT and LIME. At the same time, CCT launched unlimited plans in the BVI and LIME and Digicel followed suit. Since Digicel entered the market the VI consumer has benefited from greater choice in the marketplace and more competitive pricing. Continued growth in mobile penetration and mobile revenues, despite negative economic growth of -11.7% in 2009, provides evidence to support the view that a three-player market is more competitive and more beneficial to VI consumers than a two-player market. If the VI were to move back to a two-player market, it could be expected that retail prices would rise back to pre-November 2008 levels and it is possible that the unlimited plans could be withdrawn. Whilst it is difficult to predict accurately the path of pricing in a dynamic market such as telecommunications, it is therefore reasonable to suppose that prices would be higher in a two-player market than a three-player market.

Furthermore, the TRC is of the view that a duopoly in the VI may be expected to result in a slower rate of innovation than the counterfactual where three operators continue to operate in the VI market. Presently, CCT is the only Wimax operator in the VI and if CCT were to exit the market entirely then VI customers would cease to benefit from a Wimax internet product offering in the VI. It is also reasonable to imagine a slower rate of LTE deployment in the VI in a two-player environment compared to a three-player market as LIME and Digicel would follow the timetables set by their regional strategies rather than responding to the competitive dynamics of the VI market.

It is the conclusion of the TRC, therefore, that a third player in the market exerts significant competitive pressure.

Conclusion

On the basis of the theory of harm analysed above, the TRC concludes that there are credible conditions in the VI for the margin squeeze identified in the Sanction Notice to give rise to anti-competitive effects and consumer harm over the long run. Continuation of the price squeeze by Digicel which may in part caused by the continuation of LIME's All Talk and All Talk Plus plans may be expected to contribute to CCT's declining market share of subscribers, [redacted] Over time, it is realistic to suppose that CCT would be forced to exit the market or would be absorbed into a competitor's operations leaving two mobile network operators in the VI market. The result would be likely to reduce competitive pressure, raising prices for consumers and slowing the rate of innovation in the VI.

This supplemental note concludes that on the basis of new evidence submitted by LIME BVI, that LIME BVI was guilty of a margin squeeze from the period of January 2009 to August 2010 for the duration of the All Talk plans. However, since the introduction of the All Talk Plus plan in

September 2010, the evidence suggests that LIME BVI is no longer itself operating a margin squeeze with respect to its All Talk packages. In light of this new information and analysis, the TRC therefore sees fit to modify the sanctions to be imposed upon LIME BVI outlined in the Sanction Notice. The TRC believes that whilst LIME BVI has played an instrumental role in introducing this type of plan which can result in a margin squeeze and indeed continues to exert competitive pressure on Digicel by keeping the All Talk Plans in place, LIME BVI has effectively, either by design or default, ceased such anti-competitive behavior with respect to the All Talk plans and therefore the sanctions imposed on LIME BVI should be reduced.

Based on this view the investigation team proposes to the TRC Board to impose the following sanctions on LIME BVI:

1) an order that LIME BVI cease imposing an anti-competitive margin squeeze on CCT from the date of the order;[4]

2) a fine equivalent to 3% of the annual turnover of LIME BVI's mobile business for breaching the prohibition on anti-competitive behavior in section 75(1)(a)(iii) of the Act.

[44] This sanction is in place of that proposed in sections 5.3 and 6.2 (1), (2) and (3) of the Sanction Notice.