

**SUBMISSION ON SECOND CONSULTATION PAPER FOR PROPOSED FRAMEWORK
FOR THE ALLOCATION OF SPECTRUM FOR INTERNATIONAL MOBILE
TELECOMMUNICATIONS (“IMT”) AND IMT-ADVANCED SERVICES AND FOR THE
ENHANCEMENT OF COMPETITION IN THE MOBILE MARKET**

Liberty Wireless Pte. Ltd. (“LW”) appreciate the opportunity to provide feedback on Infocomm Development Authority’s (IDA’s) consultation on the proposed allocation of spectrum for international mobile telecommunications (“IMT”) and IMT-advanced services and for the enhancement of competition in the mobile market.

Our submission is structured as follows:

PART I – Background and Statement of Interest	Page 2
PART II – Summary of Major Points	Page 4
PART III – Specific Comments	Page 8
PART IV – Conclusion	Page 13

The authors would be happy to clarify any of the views and comments made in this document.

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PART I - BACKGROUND AND STATEMENT OF INTEREST

1 LW is a Singapore-based telecommunications company with deep roots in Singapore.

2 LW has a long-term interest in the regional telecommunication industry in general and in Singapore in particular.

3 LW will launch Circles Asia, its operating brand, towards the end of 2015 as the first Thick Mobile Virtual Network Operator ('thick MVNO') and the first post-paid focused MVNO in Singapore.

4 LW's objective is to empower mobile users by bringing product and service innovation to the market and enhancing and personalizing the way consumers experience telecommunications services.

5 LW fully supports IDA's broad objectives to establish Singapore as a Smart Nation of the Future and shares IDA's mission of enhancing the vibrancy of Singapore's telecommunications and wireless landscape by encouraging more innovation in products, services, and prices.

6 LW understands that the second consultation paper is primarily about (1) the allocation of spectrum bands, (2) the facilitation of the entry of a fourth mobile network operator (MNO), and (3) the establishment of a framework to facilitate the entry of thick MVNOs into the market.

7 In our response, LW would like to share a number of unique perspectives and insights for IDA's consideration.

8 Our submission herein focuses on addressing the third point, the one related to the framework to facilitate the entry of thick MVNOs which IDA has sought advice on through Question 8 of the consultation paper. This question pertains to IDA's 'Proposed Negotiation Principles for Wholesale Access' and directly impacts the ability of thick MVNOs, such as LW, to bring innovative services to the market.

9 Second, we address the facilitation of the entry of a fourth MNO. IDA has sought advice on this topic through Question 7 of the consultation paper. Since Question 7 relates indirectly to LW, we only provide a high-level perspective.

10 Third, while we provide general responses to IDA's consultation regarding the spectrum allocation, captured in Questions 1 to 6, we believe others, such as MNOs and telecom infrastructure firms, are better placed to take a stronger stance on technical issues around the appropriate allocation of specific bands raised in these questions.

11 In summary, we agree that enhancing competition in any mobile telecommunications market requires care and balance. Given Singapore's context then, this consultation process is both crucial and timely. Putting in place a framework that promotes competition and increases the vibrancy of the telecom market will be essential in achieving IDA's stated outcomes.

12 We are keen to support IDA in achieving these objectives and thank IDA for giving us this opportunity to share our perspective on the topics raised in its second consultation.

PART II - SUMMARY OF MAJOR POINTS

13 IDA efforts to enhance competition in the Singaporean market by facilitating the entry of new MNO and MVNO players are encouraging to consumers and to new entrants such as LW. If the regulatory objectives are met in an efficient and effective manner, it could result in significant benefit to the end consumer.

Thick MVNOs

14 Thick MVNOs, such as LW, are mobile operators that gain access to underlying Radio Access Network (RAN) of a host MNO but retain control over their brand, customer relationship and databases, operations, network core, and full range of service offerings. This allows them to bring about market innovation by launching innovative services to benefit the most demanding and savvy customer segments.

15 The facilitation of thick MVNOs in particular can and will contribute meaningfully to the vibrancy of the Singaporean mobile market. In comparison to MNO entrants, thick MVNOs can provide a full range of consumer offerings without the challenges of managing their own RAN or allocation of spectrum. The speed to market of thick MVNOs innovations ensures a more immediate and sustainable impact on the market and benefit to end-consumer. The lean capex investment required by thick MVNOs ensures a more efficient allocation of resources towards a vibrant and innovative telco ecosystem.

16 In particular, thick MVNOs, such as LW, support IDA's objective stated in the iN2015/2025 masterplans by:

- a. Bringing product and service innovation, resulting in enhanced customer experience through technology enabled services
- b. Ensuring that end-consumer prices remain competitive
- c. Ensuring a short time-to-market and rapid roll-out of services
- d. Competing in a sustainable manner because of their efficient organization and financial structure
- e. Creating greater efficiencies in the market by ensuring better utilization of scarce spectrum that has already been allocated to MNOs

17 However, for thick MVNOs to successfully enter the market and grow sustainably, they require wholesale access to the MNO mobile network that is just and reasonable. Wholesale access agreements are complex and cover multiple components including but not limited to price, quality of service, length of term, minimum guarantees, access to network components, and market access. Some components such as price are more relevant for market entry while others such as quality of service and length of term are more relevant for market sustainability.

18 In any such MNO-MVNO negotiations and relationships, MNOs possess an unequal bargaining position and it's difficult to expect a balanced outcome without fair and proper regulatory guidance. In the absence of true competition, it is often believed that the regulator in such situations should serve as the 'proxy competitor'.

19 In Singapore, the mobile wholesale access market has not been viewed as contestable given the lack of adequate economic incentive for MNOs (who control

the network and underlying spectrum) to host, much less encourage growth for, MVNOs. The market has not seen a thick MVNO emerge in the past. Other resale MVNOs with narrow focus have had limited impact on the market.

20 Without an effective regulatory framework, wholesale market access no doubt remains incontestable in Singapore and may very well result in market failure that limits reasonable access for thick MVNOs and in turn limits them from making reasonable impact towards IDA's own objectives. To be sure, our main argument is on the incontestability of the mobile wholesale access market and not on the mobile retail market (i.e. mobile retail market is deemed contestable).

21 LW believes that it is imperative for IDA to ensure any regulatory framework provides for the: (1) the practical entry of thick MVNOs into the market and (2) their sustainable existence in the market. To be clear, conditions for practical entry (1) do not automatically assure conditions for fair market sustainability (2). Addressing both aspects will ensure that thick MVNOs have a fair chance to finance, build and grow their businesses meaningfully.

22 In our response to the 1st consultation paper, we highlighted the various regulatory frameworks regulators around the world have adopted to address wholesale access. Some were hard-touch (mostly in Europe) that instituted mandated access at reference rates for wholesale access. Others were focused on a MNO cost-plus method. Others still, used a light approach that included a retail-minus approach (e.g., Korea). Most importantly, in all cases, the regulator recognized the inaccessibility of the wholesale market and codified *ex-ante* rules to provide more certainty to all MVNOs and the underlying business plans.

23 Taking in to account Singapore's context today and the potential regulatory burden, we had advocated a light-touch approach to achieve contestability of the wholesale access market in our response to the 1st consultation paper.

24 We appreciate IDA's acknowledgement of the situation and its proposal to publish 'Negotiation Principles for Wholesale Access' to facilitate thick MVNOs in the 07 July 2015 consultation paper. We also appreciate IDA's acknowledgement of our earlier suggestions in the first consultation response regarding the retail-minus pricing of MVNOs' wholesale access to the host MNO's access network.

25 Given our extensive experience participating in wholesale access negotiations over the last year or so, we believe that the 'Negotiation Principles for Wholesale Access' are an excellent starting point but need to be improved to achieve what will work best for the Singapore market, and the Singapore consumer. Regulatory frameworks are introduced infrequently and if the most effective approach is not selected now, there is a risk of revisiting past market failures.

26 First, LW recommends that IDA consider codifying certain *ex-ante* rules as part of the Negotiation Principles. Such rules would definitively govern the relationship between thick MVNOs and host MNOs. LW believes that two such areas that merit such codification can be limited to two aspects: (1) network access prices and (2) network quality of service. It is economically unsound to believe that the MNO be permitted to offer price no greater than its own retail price. Specifically, wholesale

prices should be set so that all avoidable MNO costs are removed. In addition the MNO must offer to its MVNO customer equivalent network inputs to those it offers itself in self-supply.

27 Of the many wholesale components highlighted in paragraph 17, LW has focused on only two *ex-ante* rules. This supports our general view toward a light-touch regulatory approach by leaving room for the many other components to commercial discussions.

28 Second, LW recommends that IDA consider strengthening the spirit and intent of the Negotiation Principles. For instance, as an alternative to positioning itself as merely a mediator between MNOs and thick MVNOs, IDA should consider requiring third-party arbitration between the parties in case of any negotiation disputes. In the absence of a threat of binding arbitration, MNO-MVNO negotiations can, and will be subjective and long-drawn. Given the sensitivity of MVNOs to market movements along with the unequal power in such discussions, mediation may be too little, too late as thick MVNOs incur irreversible losses and public disruptions especially if the MVNO is operational.

29 Third, LW believes that it is important to clarify and add certain elements to the Negotiation Principles. LW believes that such enhancements will be in the interest of all market stakeholders (i.e. IDA, incumbent telecom players, new entrants, and consumers) and achieve the long-term vibrancy of the Singaporean telecom market.

30 Finally, the 2nd consultation paper states that 'IDA may amend and review these principles from time to time.' In contrast, LW believes that the Negotiation Principles should be set to provide commercial certainty to all stakeholders. Uncertainty in the principles would impact MVNOs more than MNO given the unequal market positions.

Fourth MNO

31 While LW appreciates the move IDA has proposed to take to facilitate the entry of a 4th MNO player in the market by setting aside spectrum for such a player, LW encourages IDA to uphold the stringent technical requirements for the roll-out of a 4th MNO's network in order to maintain high quality of service levels for all customers. Furthermore, the introduction of a new MNO player in the market must be done with thoughtful plans in order to ensure the long term sustainability of price competition and product and service innovation in the entire market.

Spectrum Allocation

32 With regard to the spectrum allocation, LW believes that MNOs need to retain sufficient incentive and certainty to justify and deploy adequate capital commitments. Therefore, when drafting regulations to enhance competition in the market, IDA should be mindful that incumbents and new entrants alike seek market conditions that encourage and support the viability in the end to justify continued investments. Price only competition or regulatory uncertainty dampen incentives for market players, including LW, to innovate.

33 As an interesting option that links the three broader questions together, IDA may want to consider spectrum incentives for MNOs that host thick MVNOs. Similar approaches have previously been used in the spectrum allocation and new entrant facilitation in Malaysia and Ireland.

PART III – SPECIFIC COMMENTS

SPECTRUM BANDS TO BE ALLOCATED

Question 1: IDA would like to seek views and comments on the proposed allocation of the 700 MHz band together with other suitable bands for mobile services in the next spectrum allocation exercise; and the mechanism to allow the delay of the commencement date of the 700 MHz spectrum right, and correspondingly, the expiry date as well as the spectrum right payment due date, in the event of a delay in the ASO.

Question 2: IDA would like to seek views and comments on:

- a) The proposed 800 MHz band plan based on the 3GPP band 26, or a combination of 3GPP band 27 and band 5 (excluding the EGSM band), including views on the possible phased approach and timeline to migrate existing users of the band; and**
- b) The impact to existing users (i.e., Trunked radio and SRD) of the 800 MHz band plan based on the 3GPP band 26, or a combination of 3GPP band 27 and band 5 (excluding the EGSM band).**

Question 3: IDA would like to seek views and comments on the allocation of the short-term spectrum rights for the EGSM band, including the approach to extend the short-term spectrum right.

Question 4: IDA would like to seek views and comments on:

- a) The proposed re-allocation of the L-band for wireless broadband in Singapore in the longer term; and**
- b) The allocation of the L-band for trial, temporary use and/or commercial services in the interim period.**

Question 5: IDA would like to seek views and comments on:

- a) The proposed approach for local operators to coordinate with neighbouring countries' operators to address potential co-channel interference in the use of the 2.5 GHz band;**
- b) The use of the proposed 5 MHz guard band in the 2.5 GHz band to prevent interference between TDD and FDD systems operating in adjacent bands, versus the imposition of suitable mitigation measures to prevent interference; and**
- c) The possible adoption and/or suitable restriction levels for Block Edge Mask, synchronisation of TDD networks and any other suitable mitigation measures to prevent co-channel or adjacent channel interference between different TDD systems or between TDD and FDD systems.**

Question 6: IDA welcomes views and comments on the proposed allocation of the spectrum bands in the next allocation exercise, including on the proposed uses and spectrum right durations of the spectrum bands, the proposed 'Clock Plus' auction format, as well as the appropriate spectrum caps and regulatory obligations to ensure the optimal use of the spectrum.

34 While LW has broadly addressed these questions raised in its introductory remarks, we would like to restate two key points: (1) emphasize the urgency to

establish these allocation rules in the soonest possible time to give the market certainty; (2) generalized support over the spectrum cap process to offer balanced incentives to both the legacy and new entrants

PROPOSED FRAMEWORK TO FACILITATE NEW ENTRY

Question 7: IDA would like to seek views and comments on the proposed facilitation framework for the new MNO, including on the set-aside spectrum, the reserve price for the set-aside spectrum, the auction format, and the regulatory obligations on the new MNO.

35 As we noted in paragraph 34 we look forward to rule clarity as soon as possible.

Question 8: IDA would like to seek views and comments on the proposed negotiation principles to facilitate wholesale access negotiations between thick MVNOs and MNOs.

36 LW agrees with IDA recognition's that thick MVNOs can bring innovation to the market. Unlike 'thin' MVNOs (i.e. wholesale spectrum resellers) which have demonstrated limited impact on enhancing innovation and competition in the past, thick MVNOs are well-positioned to bring about such impact.

37 First, LW would like to clarify the definition IDA uses to describe thick MVNOs in its consultation paper. While LW broadly agrees with IDA's definition, it recommends that the focus of such a definition should be on an MVNO's ability to serve innovative product and services to end-consumers and its ownership of the associated network functions. Namely, a thick MVNO:

- a. Designs, prices and offers end-consumer packaging
- b. Owns and manages customer relationship, database and care
- c. Owns and operates its own policy, charging and invoicing system
- d. Owns and operates its own number level(s)
- e. Performs elements of network routing
- f. Is fully responsible for customer service delivery

38 In contrast, thin MVNOs mostly focus on branding, distribution and reselling.

39 In general, IDA should seek to maintain the definition of a thick MVNO based on aforementioned customer driven criteria and not on specific core network and access elements which are subject to change due to advancements in network technology.

40 Second, in order to effectively and sustainably serve its own end-customers thick MVNOs require just and reasonable access to the mobile network. The following elements are critical for a thick MVNO:

- a. The right to gain network access at wholesale rates that are fair and reasonable
- b. Full control and ability manager their traffic which should not be restricted or restrained by their host MNO

- c. Flexibility to define, price and manage its own service offerings (especially the ability to tailor and customize value-added services)
- d. Protections and guarantees that their customer-specific information such as traffic usage, name and address, or contact details, to name a few, will only be used for service provisioning and will otherwise be kept confidential.
- e. No unfair termination without due reason and process

41 To ensure just and reasonable access, LW strongly recommends codifying certain *ex-ante* rules to the wholesale access framework that governs the relationship between thick MVNOs and host MNOs and go beyond the Negotiation Principles. Such rules should address two fundamental dimensions:

- a. **Network Access Prices:** IDA should ensure that host MNOs sell network access to thick MVNOs at retail-minus wholesale prices. LW recommends a retail-minus price control framework given that it:
 - i. Is easy to implement and sets a starting point for any MNO and thick MVNO negotiations
 - ii. Provides flexibility for the host MNO and thick MVNO to commercially negotiate the exact quantum of the 'minus'
 - iii. Limits market failure that may be difficult to avoid in an *ex-post* or fully unregulated (*laissez-faire*) approach
 - iv. Is a proven approach to enhancing competition in many mature markets such as Europe
- b. **Quality of Service (QoS):** IDA should ensure that host MNOs offer thick MVNOs' end customers no less than the QoS that they provide to their own customers. To operationalize this, LW proposes that such requirements be made enforceable between the MVNO and MNO by SLAs addressing two main areas:
 - i. Operational SLA metrics, e.g. handling time, response time, resolution time of problem
 - ii. Performance SLA metrics, e.g. network performance, service coverage, service availability

These rules should cover wholesale access to not only the existing technologies (voice, SMS, 4G) but also to the future-generation technologies.

42 Such *ex-ante* rules are critical to ensuring a level playing field and a fair starting point of discussions. Without such *ex-ante* regulatory guidance, 'good faith' negotiations may drag on indefinitely – impacting market innovation by disrupting the thick MVNO business plans. For on-going MNO-MVNO relationships, the same *ex-ante* rules will provide for quick resolution to most pricing and QoS related disputes ensuring sustainably and smooth operations.

43 In addition to the *ex-ante* rules that focus on Network Access Price and Quality of Service (QoS), IDA's Proposed Negotiation Principles for Wholesale Access remain relevant to cover other aspects of the thick MVNO and MNO relationship – with a few suggested improvements.

44 In paragraph 28 we had recommended the use of binding arbitration to resolve disputes.

45 While the Negotiation Principles cover the main safeguards expected by thick MVNOs in their relationship with host MNOs, there are key elements that should be made clearer and others that should be added to the existing list to ensure fair and non-discriminatory treatment of and by all parties. LW suggests that IDA make the following areas clearer and more explicit in its list of Negotiation Principles:

- a. When stating that the host MNO and Requesting Party (“RP”) should negotiate in ‘good faith’, IDA should clearly state that the objective of both parties should be to conclude negotiations without unreasonable delay.
- b. When stating that the ‘wholesale prices imposed by the Host MNO should be reasonable, and in any case, should not be higher than the retail prices charged by the Host MNO for similar services or a combination of services,’ we recommend that IDA be more explicit about an acceptable pricing framework it expects from host MNOs, i.e., ‘retail-minus.’
- c. IDA should support and endorse other elements of ‘non-discrimination’ that support market vibrancy such as unreasonable capacity restrictions or exclusivity without corresponding commercial or financial considerations.
- d. Finally, IDA should ensure all wholesale inputs it offers itself downstream not be restricted to thick MVNOs, or if it is to restrict such access it must be required to justify. IDA should broaden the requirement for Host MNO to give thick MVNOs access to all of its wholesale inputs.

46 Players such as LW that require access to same network elements that it horizontally competes with its supplier, would recommend and expect adequate Negotiation Principles. Market forces alone are inadequate to achieve just and reasonable wholesale access. LW sees parallels to the need for a Section 6 in the Code of Practice for Competition when the Singapore telecommunications was opened for wider competition. While the MNOs have not been classified as ‘dominant’ at the retail layer, the MNO holds and controls an input – a critical resource – at the wholesale layer. Section 6 recognized this lack of commercial incentive to offer its network, and set out clear guidance to insure that the resource would be offered justly and reasonably. Therefore *ex-ante* regulation was critical to insure that competition would be achieved.

47 If enhancing competition in this sector is seen as critical to market vibrancy, then LW strongly urges IDA to employ the same methods as it did then to achieve similar outcomes.

PART IV – CONCLUSION

48 We fully appreciate the complexity of the task in front of IDA to sort through the various interests to arrive at the positions that best serve the entire market and all of its stakeholders.

49 LW would like to summarize the primary proposals made in the previous three Parts below:

- a. Use of ex-ante rules codified through the Negotiating Principles and covering network access pricing and network quality of service
- b. Binding arbitration by an independent third party in the event that negotiation disputes cannot be resolved
- c. Establish a meaningful and clear set of Negotiating Principles now, and retaining them for the foreseeable future until the competition is sufficiently enhanced
- d. The thick MVNO definition should be consumer-need focused, forward-looking and open-ended to allow for technological changes to be adopted

This paper is prepared in response to IDA's consultation document dated 7 July 2015 and represents LW's views on the subject to IDA. LW assumes no liability for any loss or damage resulting from the use or misuse of any information contained in this paper by any third-party.