

## PROPOSED REGULATORY APPROACH FOR 3G MOBILE VIRTUAL NETWORK OPERATORS (MVNOs):

### SUBMISSION OF MILLICOM INTERNATIONAL CELLULAR (ASIA) PTE. LTD.

#### 1. Introduction:

1.1 Millicom International Cellular (Asia) Pte. Ltd is a fully-owned subsidiary of Millicom International Cellular S.A. (“Millicom”). Millicom operates cellular telephone services, and has interests in 34 cellular operations in 21 countries (in Asia, Europe, Latin America, Russia and Africa). Millicom currently has over 3.1 million cellular mobile customers worldwide, is listed on NASDAQ, and is based in Luxembourg.

1.2 Millicom’s sister company, Tele2 AB, is currently operating as a “full” MVNO in Denmark (with the Danish operator, SONOFON), and similar collaborations are anticipated during 2001. As a MVNO, Tele2 can operate as a fully-fledged GSM operator in Denmark, without investing in its own radio network. However, Tele2 will have its own switches, and will thus have the ability to handle incoming and outgoing traffic.

1.3 The IDA has correctly noted that MVNO services can be provided in a number of ways. However, this is not to imply that MVNOs are a vague or undefined entity. One of the most straightforward definitions of MVNOs comes from the Office of Telecommunications (OfTel) in the United Kingdom, which has defined MVNOs as “an organisation that offers mobile subscription and call services to customers but does not have an allocation of spectrum. It would therefore pay Mobile Network Operators (MNOs) for use of the mobile networks”. Taking a different approach, Ofta in HongKong has detailed the technical characteristics of MVNOs (see Annex 1 of “Open Network Regulatory Framework for Third Generation Public Mobile Radio Services in HongKong”). While under Ovum’s definition, MVNOs can be clearly differentiated from other operators in the market by the independence of their pricing/branding, and by their provision of network elements (see below).

**Definitions: MVNO vs MNO and Service Providers**

	Service provider	Indirect access operator	Enhanced service provider	Mobile virtual network operator (MVNO)	Mobile network operator (MNO)
Spectrum					Own licence spectrum
SIM card			Brands host SIM card	Issues SIM card	Issues SIM cards
Network infrastructure		Switch and transmission	Varies and can be none	Switch + HLR (+ transmission if required)	Switch + HLR + VLR + transmission
Pricing		Partially independent	Partially independent	Fully independent	Fully independent
Branding	Some independent branding	Some independent branding	Independent branding	Independent branding	Independent branding

*HLR = Home location register*

## 2. Types of Services and Benefits:

### **(a) IDA seeks comments on the possible types of service a 3G MVNO might offer, the role that they might play to promote competition, the benefits they would bring to consumers and consequently the scope of network access and services that 3G MNOs should offer MVNOs**

2.1 Millicom considers that 3G MVNOs could provide customers with a wide variety of personalised value-added services, particularly in the areas of entertainment and information. We further consider that, as MVNOs may include non-traditional operators (such as entertainment and content providers), 3G MVNOs could potentially provide a range of new services even wider than those provided by the 3G MNOs.

2.2 The introduction of 3G MVNOs would also lead to a significant strengthening of competition in the mobile market. The Singapore mobile market is not currently subject to very strong levels of price competition. There is a risk that if the 3G market is structured along the same lines as the 2G market (with only three operators and with high barriers to entry), the limited price competition in the 2G market could be duplicated in the 3G market. However, the introduction of new 3G MVNOs, each looking to establish its own customer base, would lead to a significant increase in price and non-price competition in the market. This would have major benefits to customers, and would significantly expand the overall mobile market.

2.3 Millicom considers that the limited number of operators in the mobile market, and that market's high barriers to entry, mean that radio spectrum (and the "core network" utilising it<sup>1</sup>) should be considered a bottleneck facility. We therefore believe that 3G MNOs should be required to allow MVNOs to access capacity on the MNOs' core networks. This access should be provided on a non-discriminatory and cost-oriented basis.

## 3. Licensing Framework:

### **(b) IDA seeks comments on whether a distinction should be made of the different types of MVNOs, and if certain "maximalist" MVNOs should be more appropriately licensed as FBOs.**

---

<sup>1</sup> The "core network" is defined as:

- a. the radio transmission link, its control functions and the mobile management functions that keep track of exactly where mobile handsets are located so that calls can be delivered to them; and
- b. some transmission and switching facilities needed to link the radio facilities to the point of interconnection, either with the MVNO's system direct, or with transit network operators.

See "The Emergence of the Mobile Virtual Network Operator – Virtually Here", Gilbert & Tobin, 27 February 2001.

3.1 Millicom considers that the existing licensing framework is sufficiently robust to deal with the different forms of MVNOs. We therefore believe that it is unnecessary to establish specific categories (or sub-categories) of licenses for MVNOs.

3.2 As noted above, MVNOs may choose to establish their own infrastructure (switches, links, etc), or could choose to limit their activities to billing and marketing. MVNOs taking the former approach would need to be licensed as Facilities-Based Operators, while MVNOs taking the latter approach would be more appropriately licensed as Services-Based Operators. It is therefore unnecessary to introduce specific licence categories for “maximalist” or “minimalist” MVNOs, as the existing licensing framework already has the flexibility to cover the various forms a MVNO might take.

#### **4. Level and Nature of Competition in the 3G Market:**

**(c) IDA seeks comment on the benchmarks and parameters that the IDA should use to determine the competitiveness of the 3G market; and hence on when and how it should intervene where commercial negotiations between MNOs and MVNOs fail.**

4.1 The “competitiveness” of a market can be assessed on a range of factors including: the number of operators in a market, the concentration of market share, the range of services being provided, and the degree of price competition in that market. From Millicom’s perspective, it is not clear whether three operators in the 3G market is sufficient to generate robust competition (particularly as those operators all have existing 2G operations, which they will not want to cannibalise by aggressively pricing 3G services).

4.2 Millicom therefore considers that the IDA should be prepared to intervene in MVNO negotiations, to facilitate access to bottleneck facilities, in the event that the parties are unable to reach an agreement through commercial negotiation. We see strong parallels between regulatory intervention on MVNOs and regulatory intervention on interconnection. In both cases it is necessary for the regulatory authority to intervene, to facilitate access to a bottleneck facility, in order to promote competition, should it prove impossible for the parties to resolve matters through commercial negotiation.

#### **5. Regulatory Intervention Approach and Charging Principles:**

**(d) IDA seeks comments on the charging framework and principles that the MNOs should base their charges for network access and other services they offer to MVNOs. Under what circumstances and conditions should the charging framework and principles be applicable? Should there be variations depending on the circumstances and conditions and as the market develops? What are the non-price terms and conditions that should be set?**

5.1 As stated above, Millicom believes that the MNO’s spectrum (and the associated core network) should be considered a bottleneck facility. In the event that negotiations between the MVNOs and MNOs fail, and the IDA intervenes, we believe that network access charges for MVNOs should be based on the relevant long-run average incremental

cost of operating the network and providing the conveyance service. This cost should include an appropriate cost of capital commensurate with the risk of investing in a 3G network (to ensure that investment incentives are preserved).

5.2 Millicom considers that this charging framework should only apply to the bottleneck facilities in the MNO's network. If a MVNO sought access to non-bottleneck facilities (for example, to some particular content or entertainment service), we believe that the terms and conditions of access should be set solely through commercial negotiations.

5.3 Millicom does not believe that there should be variations to the charging framework and principles depending on the circumstances and conditions, or as the market develops. We believe that such variations would cause uncertainty for all of the parties, and would encourage the parties to "re-litigate" the regulatory regime for MVNOs. Millicom considers that the regulatory regime for MVNOs should be established and then allowed to operate.

## **6. Timing for MVNO Entry:**

**(e) IDA seeks comments on whether there should be a moratorium before MVNOs should be allowed to enter the market; and if yes, how long such moratorium should be and under what circumstances and conditions such moratorium should be reviewed and removed or extended.**

6.1 Millicom believes that, in order to promote competition in the mobile market, MVNOs should be able to enter the 3G market as soon as possible. We do not believe that establishing a moratorium over the entry of MVNOs would have any benefits to consumers or the market overall. Millicom considers that the IDA should allow the MVNOs and MNOs a reasonable period of time to negotiate the necessary agreements (and we believe that three-to-four months is a reasonable timeframe for these negotiations). After this time has elapsed, the IDA should be able to intervene, with the ability to set terms and conditions for access.

6.2 It is important to note that establishing a MVNO involves considerable work (in terms of establishing a corporate entity, developing a brand, purchasing and installing network equipment, etc). In reality, it will take 4-6 months for the MVNOs to establish themselves in the market. Millicom does not see any need to artificially lengthen this period.

## **7. Number Portability and Quality of Service:**

**(f) IDA seeks comments on whether 3G MVNOs should be required to offer number portability services; whether IDA should impose minimum quality of service standards on 3G MVNOs; and if so, whether the requirements and standards should be different from that imposed on MNOs.**

7.1 Millicom believes that 3G MVNOs should be required to offer number portability services. Number portability is an established facet of the regulatory regime, and the entry of MVNOs into the 3G market should in no way restrict number portability. Millicom is not aware of any technical or operational impediments to MVNOs implementing number portability in the Singapore market.

7.2 Millicom considers that 3G MVNOs should comply with the same minimum quality of service standards as the MNOs. As the MVNOs and MNOs will be in direct competition, it would be discriminatory and inequitable to impose differing quality of service levels between the two groups. However, it is important to note that the quality of service the MNO provides to the MVNO will heavily influence the quality of service the MVNO provides to its customers. There could be circumstances in which a failure in the MNO's network could jeopardise the MVNO's quality of service.

7.3 Therefore, if the MVNOs and MNOs are required to comply with the same quality of service standards, then:

- Either the MVNO must be able to “back-to-back” the risk of network failure, so that the MNO is liable to the MVNO in the event that a failure in the MNO's network causes the MVNO to miss the minimum quality of service standards; or
- In the event that failures in the MNO's network cause the MVNO to miss the minimum quality of service standards, this will be treated as force majeure for the purposes of the assessing the MVNO's compliance with the terms of its licence.

## **8. Technical Issues:**

**(g) IDA seeks comments on the technical issues that should be addressed, in particular, and potential technical issues from the MNO's technical operations perspective that might arise that could potentially impede or restrict the MVNO operations and service offerings and how these may be resolved satisfactorily , taking into account the concerns of both parties and yet allow the development of fair and sustainable competition.**

8.1 Millicom does not see any major technical issues to be addressed for MVNO operations and services. The parties will of course have to work through such matters as:

- The forecasting of traffic (to ensure that the MNO has sufficient capacity to carry the MVNO's traffic);
- The arrangements for interconnect traffic (whether the MVNO has its own interconnect links to the other operators in the market, or uses the MNO as a hub for such traffic);
- The capacity of the links to run between the MVNO and the MNO (which relates back to forecasting);
- Numbering arrangements (whether the MVNO utilises a sub-range of the number blocks allocated to the MNO, or seeks its own distinctive number blocks); and

- The range of network elements in the MNO's network that the MVNO wishes to access.

8.2 However, we believe that all of these matters are eminently resolvable. The technical implementation of MVNOs is effectively a combination of roaming and interconnection arrangements, which all of the existing operators in Singapore are familiar with. In addition, there are numerous MVNOs operating today, which suggests that the technical issues associated with MVNOs can be overcome.

## **9. Conclusion:**

9.1 There is a growing body of international precedent for regulatory intervention on MVNOs. The Danish regulator has taken steps to facilitate the entry of MVNOs; while Ofta in HongKong has mandated that 30% of capacity in each 3G network must be reserved for use by MVNOs; and the Irish regulator (ODTR) has indicated that 3G network operators which are willing to open up their infrastructure to MVNOs will be given preferential licensing terms. Given these trends, we believe that it would be appropriate for the IDA to also facilitate the entry of 3G MVNOs.

9.2 Millicom is grateful for the opportunity to comment on this issue.