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on

Mobile Virtual Network Operator (MVNO)

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Comments from

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Issue: Do you think there is a need to introduce MVNOs in the Indian Telecom Market. If yes, is it the right time to introduce MVNOs as a distinct service provider?

Yes, Diamond believes that there is a need to allow MVNOs in the Indian telecom market and this is the appropriate time to do so because of the following reasons:

- **Introduction of MVNOs typically result in additional benefits for mobile subscribers**

Many MNOs in India suffer from the limitations of a "one size fits all" strategy while they try to cater to mobile subscribers with very different profiles and needs. While this has led to scale benefits and lower operating costs, it is likely to have caused some dissatisfaction amongst specific customer segments. As seen in a short survey conducted by Diamond (Figure 1), there is significant room for improvement in the level of customer service. MVNOs could offer an opportunity for businesses with strong brands and loyal customers and extensive distribution infrastructure to offer their own brand of mobile communication services to address the under-served and dissatisfied customer segments.

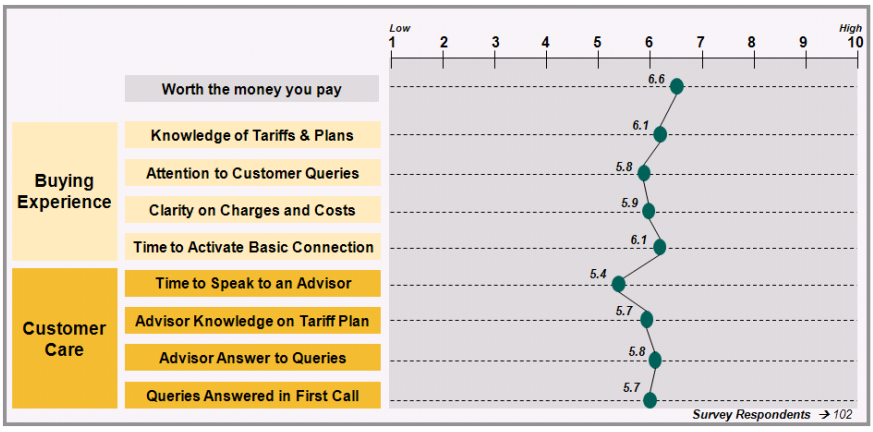

Figure 1: Rating of customer satisfaction on different service parameters (10 point scale)

- **Introduction of MVNOs will benefit some MNOs**

MVNOs typically offer some MNOs a potential opportunity to maximize returns on their network investments by utilizing excess capacity for carrying MVNO traffic. This is particularly true for new MNO entrants or an MNO with a less competitive retail operation and is often a "win-win" scenario for both MNO and MVNO. As seen in Figure 2, a leading MNO in the US generated significant profits from their wholesale business as an MNO. The profits from the wholesale business was significantly higher than the estimated cannibalization of profits from their retail operations.

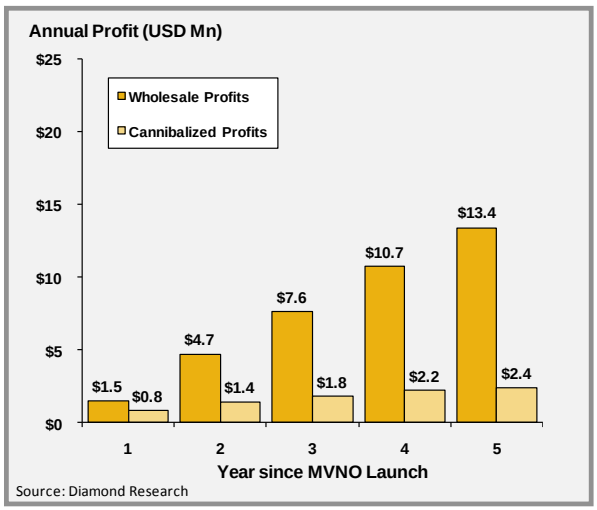

Figure 2: Financial impact of an MVNO launch on an MNO

- **Specific parts of the India market appear to be ready for MVNOs**

Diamond analysed data from 16 countries where MVNOs have been operating for a few years now to understand the mobile market characteristics at the time of launch of MVNOs. As shown in Figure 3, MVNOs are typically seen in markets when they cross a threshold of 40% mobile penetration. Additionally, when measured in terms of competition using the Herfindahl-Hirschman Index (HHI), fourteen out of sixteen markets in the sample had HHIs of over 18% at the time of launch of the first MVNO, which would categorise them as "highly concentrated". When the same conditions are applied to the individual circles in the Indian market, it can be observed (Figure 4) that the metro circles display some of the same market conditions that characterise countries at the time of their first MVNO launch. However, several circles are still under-penetrated and significantly below the 40% threshold indicating that the MVNO opportunity in these circles may still be few years away.

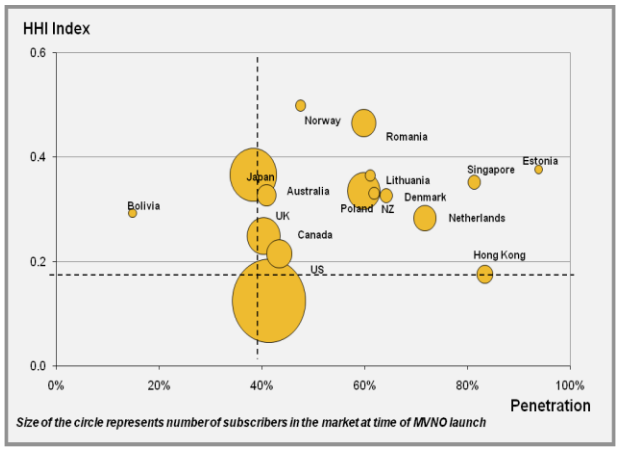

Figure 3: HHI vs. Mobile Penetration (International Markets at time of launch of first MVNO)

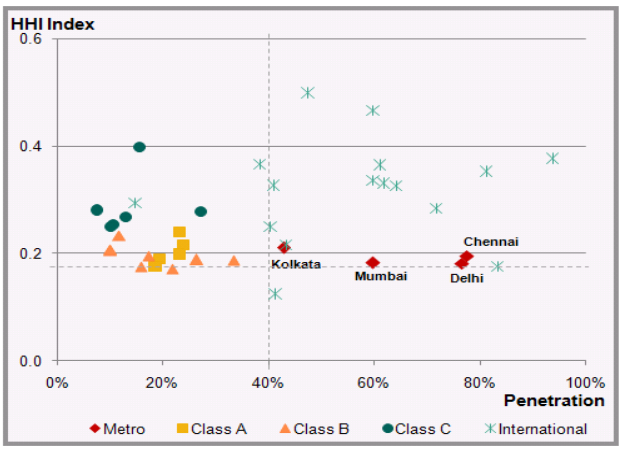

Figure 4: HHI vs. Mobile Penetration (Telecom Circles in India)

Issue: To what extent should the MVNO be permitted to set up their own infrastructure?

By definition, an MVNO should not be permitted to set up access (network) infrastructure. On the other hand, Diamond believes that the MVNOs should be allowed to choose their extent of non-access infrastructure deployment because of the following reasons:

- **MVNOs should be allowed to setup infrastructure as per their business needs**

The required level of ownership of infrastructure is dictated by the desired levels of customer ownership and service independence of the MVNO. MVNOs make strategic choices about the pieces of infrastructure to invest into depending on their chosen MVNO model ranging from "Reseller" to "Full MVNO". As shown in Figure 5, MVNOs have successfully pursued different models of investment in their own infrastructure depending on the specific requirements of their customers. Therefore, an MVNO should be free to determine the extent of infrastructure it chooses to set up on its own depending on its chosen business model.

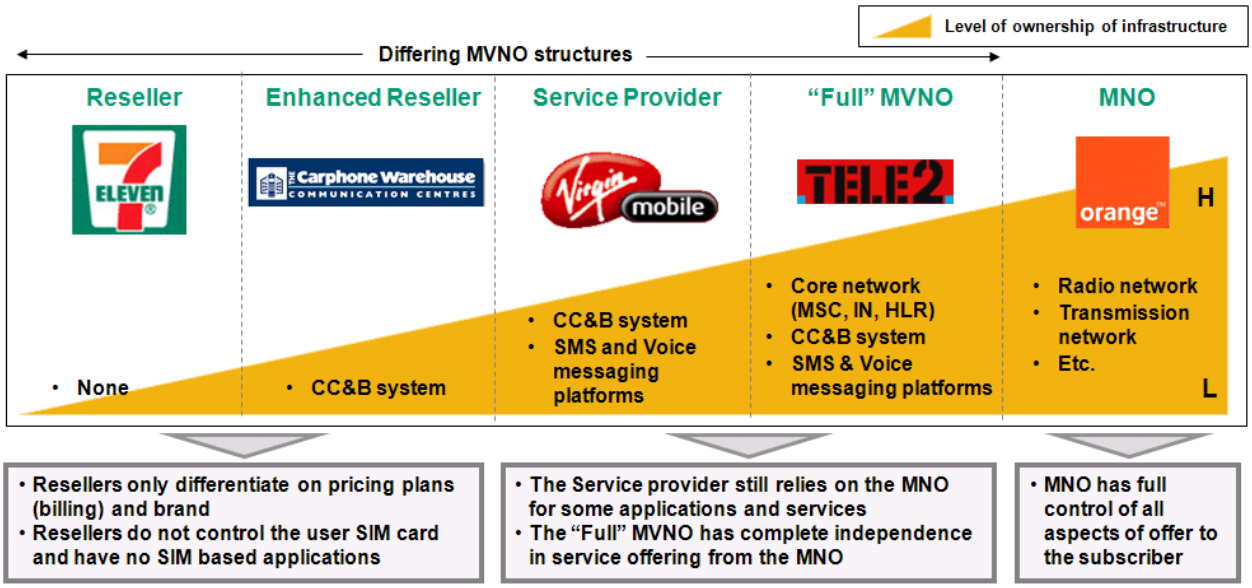

Figure 5: Different MVNO Business Model and Corresponding level of Infrastructure Investment

- **An MVNO's license obligations should independently ensure that it meets the interests of its customers without having to impose limits on MVNO infrastructure**

MVNO licensees would be subject to certain obligations towards their customers in terms of service levels and experience provided. If these obligations are defined and enforced properly, the extent to which an MVNO sets up the infrastructure should be irrelevant.

Issue: What Regulatory Model should be followed for an MVNO in the Indian context? What kind of obligations may be imposed on MNOs so that Mobile Virtual Network Operations are implemented effectively in India benefiting the customers?

Diamond believes that the MVNO regulatory model in India should allow market forces to encourage MNOs to consider hosting MVNOs on their networks and to decide when and how to open their networks to MVNOs. The regulatory model should ideally not mandate or prescribe any obligations to the MNOs in the 2G market.

- The 2G telecom market (GSM and CDMA) appears to be very competitive with each circle being served by 7-8 players, and new entrants are expected to take this number beyond 10 in most circles. Market forces will ensure that no mobile network operator can exercise market power and prevent entry of MVNOs.

On the other hand, the 3G market may require an MVNO regulatory model that mandates 3G MNOs to share network capacity with MVNOs.

- It appears likely that 3G licenses would be restricted to 4-5 players as per the current availability of 3G spectrum. Therefore, it may become necessary to mandate 3G MVNOs to share network capacity with MVNOs to encourage competition as was done in some other international markets.
- As shown in Figure 6, the regulatory position regarding MVNOs across the world ranges from prohibition to forcing MNOs to share network capacity with MVNOs at prescribed limit on cost-plus margins. Most regulators around the world agree that a free market – through commercial negotiation and legal enforcement – is sufficient to ensure growth of MVNO services and provide benefits to all stakeholders. However, in some regions such as Hong Kong, Japan, Slovenia and Spain, regulators did not believe that MVNOs would succeed without their intervention and have mandated an 'Open Network Access' system on the MNOs.
    - **Spain**: The Spanish telecom market regulator, the CMT, awarded the first MVNO licenses in May 2005 to a number of operators. However, the mobile market was then highly concentrated (HHI = 0.36) and initially, Spain's existing mobile operators (Telefónica Móviles, Vodafone Spain, and Amena) tried to stall MVNO agreements, in an attempt to avoid cannibalization of their revenues. However, the CMT took measures to ensure that the three companies opened their infrastructure up to MVNOs in efforts to boost competition in the mobile market. Under a regulation introduced in January 2007, existing cellular operators were obliged to finalise MVNO negotiations within two months of being approached by potential MVNOs. The country is now seeing several MVNOs lining up including Sweden's Tele2 and UK based Carphone Warehouse.
    - **Hong Kong**: In Hong Kong, 2G mobile network operators have no 'Open Network Access' obligation under their licenses; however, 3G network operators must open 30% of network capacity to 'non-affiliated (i.e. entities where the MNO has less than 15% control of voting shares) service providers, including MVNOs and content, application and service providers. The mandate is not without some critical terms and conditions that include some minimum

level of infrastructure investment by the MVNOs. The MVNO is also expected to enter into commitments on minimum quantity of traffic volume over a minimum period of time.

The primary reasons for the regulator OFTA to bring in this regulation were to

a) Enable operators who do not have 3G spectrum to participate in the 3G business market and promote competition
b) Preserve business incentive for investment in network infrastructure

Regulatory position	Examples	Relevant regulations	Number of MVNOs

Force MNOs to share network	• Denmark
	• Hong Kong
	• Ireland
	• Norway
		• Example market: Hong Kong
		  • 30% of network capacity (3G) should be dedicated to MVNOs
		  • No limit on the number of MVNO licenses
		  • TA may determine terms and conditions if commercial agreement cannot be reached
			• Denmark: 16
			• Hong Kong: 7
			• Ireland: 7
			• Norway: 8

Facilitate launch of MVNOs	• Australia
	• Belgium
	• France
	• Denmark
		• Example market: Australia
		  • Mandatory sharing of networks enforced on operators with Significant Market Power
		  • Wholesale pricing on a cost-plus basis with regulated margins
			• Australia:22
			• Belgium: 15
			• France:10
			• Denmark:16

Indifferent to MVNOs	• Austria
	• Canada
	• Portugal
	• UK
		• Example market: UK
		  • No requirement on MNOs to open networks to MVNOs
		  • Wholesale pricing agreements completely left to commercial negotiation
			• Austria: 4
			• Canada: 5
			• Portugal: 5
			• UK:25

Discourage development of MVNOs	• Bolivia
	• Argentina
		• Example market: Argentina
		  • Large number of MNO licenses granted to make market unattractive to MVNOs
		  • Stringent rollout obligations to MNOs make MVNO entry difficult
			• Bolivia: 1
			• Argentina: 0

Prohibit MVNOs	• Greece • India	• Example market: Greece • MNOs are not allowed to enter into any kind of MVNO agreements	• Greece: 0 • India: 0

Source: Diamond Research

Figure 6: Regulatory Position Regarding MVNOs Across the World

Issue: Should there be any restriction on the number of MVNOs attached to an MNO? Please elaborate the comments with appropriate reasoning.

Diamond is of the view that there should be no restrictions on the number of MVNOs attached to an MNO. There appears to be no rational criteria based on which any limit can be placed on the number of MVNOs attached to an MNO in India.

- Each of 23 circles is a different market in itself and the ideal MVNO partner for an MNO may be different for each circle.
- Even within a circle, there are several categories of underserved segments around which multiple MVNOs can provide offerings.

Issue: What should be the commercial model/framework for spectrum sharing by MVNO; w.r.t. (i) Department of Telecom and (ii) MNO?

Diamond has the following opinion:

(i) The MVNO should not be required to pay any spectrum charges to DoT. However license fees may be paid by the MVNO as combination of an initial entry fee and an annual revenue share. In addition, MVNO subscribers should be included in MNOs subscriber base to determine MNO eligibility for additional spectrum.

The MVNO and DoT commercial arrangement should design the revenue share such that it ensures that the total license and spectrum fee collected by DoT from the MNO and MVNO is not lower than the potential license and spectrum fee from the MNO's independent retail operations for the same number of subscribers.

The supporting arguments are as follows:

- Since an MVNO is not directly assigned any spectrum, it should not be required to pay spectrum charges.
- Since MVNOs provide mobile services similar to those offered by MNO licenses (who pay an entry license fee and an Adjusted Gross Revenues (AGR) linked license fee), a license fee for MVNOs seems fair in order to ensure a level playing field. In order to maintain parity with the MNOs, the MVNO should ideally be required to pay the same % of AGR as revenue share towards the annual license fee, as an MNO in the same circle.
- The calculation of AGR for an MVNO should exclude the cost of wholesale network capacity leased from the MNO in addition to other standard reductions such as access service providers/ roaming charges and service tax/ sales tax paid to the Government to prevent double taxation.

(ii) Diamond believes MNOs should be allowed to set wholesale prices based on their business objectives and that the market forces should determine the commercial model between the MVNO and MNO.

The supporting arguments are as follows:

- Following the entry of new UASL licensees, there would be sufficient competition in the Indian 2G telecom market with 10 or more licensees in each circle. Therefore market forces should be able to ensure a competitive MNO market.
- There is appetite for a wholesale model among the existing and new mobile operators
    - New entrants may prefer to open networks to MVNOs to gain critical mass of subscribers as soon as possible as opposed to organically acquiring retail customers to "fill up the network".
    - While some MNOs may not prefer MVNOs as several circles are underpenetrated and there is plenty of scope to increase the MNO subscriber base on its own, the business case for

certain MNOs with less competitive retail operations may be improved by adopting a wholesale model, in addition to their retail model.

Issue: What should be the method and consideration for determining the entry fee for MVNO?

Diamond believes that there should be no entry fee for MVNOs. The financial and performance guarantees should be designed such that they are sufficient to exclude non-serious players.

The supporting arguments are as follows:

- MVNOs may choose to address a niche segment, and the target subscriber base would be much smaller for a mass-market MVNO compared to a niche-segment MVNO in the same circle.
- Therefore, it would be hard to assign a universal fixed entry fee or to design an efficient auction due to the wide range of opportunity valuation for different kinds of MVNOs.
- The UAS license fees paid by MNOs comes bundled with start-up spectrum which is a scarce resource, and therefore an entry-fee is justified. But an MVNO does not block any scarce resource, and therefore the entry fee should not become an entry barrier for a small scale MVNO operation
- In a non mandated regulatory model, the commercial arrangements between the MNO and the MVNO will exclude non-serious and unviable MVNOs