

MVNOs World Congress

24-26 June 2024, Brussels

Does the Rise of Tower Companies and Software Defined Networks Suggest that MVNOs are the MNOs of the Future?

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It's been 30 years since EU allowed public network access to 3rd parties in fairly priced and non-discriminatory basis and approximately 25 years since the first MVNO launched (Virgin Mobile UK).

Within that time-frame, the MVNO business, evolved as a 'challenger' business model to the one of the MNO, having the radio/access network acting as the border-line between the two.

Being a 'challenger' typically means embracing innovation faster, running lean operations better, constantly looking into product innovation and service differentiation, and that, for the last decade and a half, delivered some truly innovative and successful MVNO business which, despite the limitation of depending to competing MNOs for their access network, delivered better value for money to their subscribers and improved competition across the markets overall.

During that 'early MVNO' period, that stretches to today, I would dare to say that, the most interesting 'bet' MVNOs took was the one related to 'softwarizing' their core networks as well as their OSS/BSS infrastructures.

To some extent out of necessity, to avoid established vendor's expensive hardware, the MVNOs gave birth to a niche software industry developing software-defined telecom infrastructure for the 'cost-cautious' buyer.

That industry, with some helpful industry-wide standardization initiatives that came to be during the same period of time, is now mature enough to offer carrier-grade products that even MNOs prefer using and choose over more 'conventional' approaches, reaping the fruits of 'early MVNO' bets and labor.

In a way, MVNOs were at least a decade early on the 'softwarization' of telecom infrastructure and the introduction of the 'software defined network' principles we hear about today.

MNOs adopting key chapters of the MVNO 'playbook' might feel like a critical milestone been reached, and it probably is. However, this is most probably not the last milestone.....

Recent developments in the MNO business models, suggest that, maybe, what we considered to be the 'MVNO' model today, is actually only the 'first phase' of it, and the radio/access network borderline may soon be questioned, having the MVNOs moving further and beyond within MNO territory, as MNOs are approaching.

Some of the key points that make this narrative worth considering are already here, today. Some are visible with a 4-6 year horizon, and some hide a bit further into the future. Nevertheless, I think it all there, in place, waiting to unleash (or not) the next phase of the MVNO evolution.

The Key-Point of Today

The key-point of today is clearly the MNO divesting wireless infrastructure assets to TowerCos. TowerCos are growing fast and MNOs seem to willingly trade balance sheet assets for cash and debt reduction, considering the risk of losing control of these assets is introducing is worth taking (or must take).

TowerCo's make, for the first time, critical radio access network infrastructure, such as masts and poles, 'visible' to MVNOs (and other interested parties), taking down a very strategic market entry barrier of the past.

Of course, there is a lot of room to bargain on the details. Specifically: What the access terms to this infrastructure will be. If there will be discriminations or 'favorable tenants' in the TowerCo-MNO agreements. Nevertheless, opening access to such core assets is a decisive step towards leveling the field between the MNOs and the MVNOs.

The 4-6 Year Horizon

Next up from 'now' is the '4-6 Year Horizon', which is a technology evolution watch-list, and the key technologies on our '4-6 Year Event Horizon watch-list' are: Open-RAN and 5G network slicing.

Both technologies stem from the 'software defined' (softwarisation) trend in networking, which I think was born out of (datacenter) necessity, rather than some kind of theoretical 'urge' to 'free' data switching and forwarding planes from the 'mastery' of their control plane – and as such (born out of necessity), I think it more future-trust-worthy.

Already by 2020, datacenter switching silicon was getting too complicated and too expensive for any single company to address on its own. Building a 25 or 50 Tbps switching ASIC is not an easy thing to do.... so we needed companies that could efficiently pack lots of high-end SERDES (Serializer-Deserializers) and manufacture them at scale, rather than deciding what to do with them, how to run them and how to control them.

In a way, it is the same thing as Intel and AMD manufacturing CPUs, but leave the O/S and application programming to be done by someone else.

This is probably, in a few words, the humble origins of the Software Defined Networking Trend we read and hear so much about during the last couple of years.

Both Open-RAN and 5G Network Slicing could ride that same SDN 'wave' and become mainstream by the end of the decade, further promoting MVNO opportunity in MNO territory.

Growing SDN principles outside the datacenter, managing to orchestrate a control plane that spans across diverse networks is easier said than done, but Open-RAN and Network Slicing come with strong financial incentives-to-deploy on their own, so if these two 'happen', the chances of MVNOs becoming the MNOs of the future could realistically grow to 'reasonable' within the next 4-6 years time.

The strong financial incentive (for MNOs) over Open-RAN is mostly, and simply, cost reduction and vendor-lock-in avoidance.

The financial incentive for Networks Slicing is revenue diversification and new service introduction, but I believe grows much further than that under the surface. Network Slicing can mark, in the near future, a departure-point from the 'best-effort-only' networks of today, towards networks that will additionally offer 'guaranteed quality of services'.

This is a really big debate that touches 'noisy' issues like Network Neutrality, with many people thinking that guaranteed QoS poses threads to Net Neutrality, which is definitely NOT the case, or others thinking that 'best-effort' networks is the only type of network we need, incorrectly assuming the bandwidth will always be free and abundant (which is also NOT the case either)

Hidden a bit Further into the Future

With TowerCo's been the 'now', Open-RAN and Network Slicing been 'the imminent future', there is still a 'bit further into the future' component we need to consider, before the 'MVNO's as the MNO's of the future' picture is complete.

This is the future of spectrum auctions and spectrum licensing.

Assuming that MVNOs manage to expand their 'software-defined kingdom' outside their core networks reaching the TowerCo poles and the O-RAN access network antennas, there is still the 'problem' of licensed spectrum that needs to be addressed.

The way spectrum use is licensed now is too 'capital intensive' for MVNO business models and practically excludes MVNOs from getting access to it. However, even in the heavily bureaucratic universe of spectrum licensing, there are some initiatives that hint possible changes in the status quo of spectrum licensing.

FCC's Dynamic Spectrum Sharing over Citizen's Broadband Radio Service, or CBRS, (a 150MHz slice over 3.5GHz) is such an initiative, where spectrum access and management are orchestrated by a

'dynamic spectrum access system', practically a centralized ledger keeping track of 10MHz channel use within the CBRS 150MHz slice.

In CBRS domain, FCC only asks for a fee to access the Spectrum Access System/SAS (the server that keeps track of the channel's use) and not a fee to license the spectrum itself.

If the challenge of scaling a centralized system (such as the SAS) is successfully addressed in this pioneer project, and early pilot deployments prove Spectrum Sharing to be reliable in the field, the future spectrum licensing auctions might change so that spectrum for MVNOs is not an 'off limit' resource.