EchoStar's retreat from its Open RAN deployment serves as a warning for new entrants

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James Kirby

Boost Mobile is a US prepaid wireless carrier that EchoStar (parent company of Boost Mobile) sought to transform into a major facilities-based challenger using Open RAN. However, in recent weeks, EchoStar has announced the sale of swathes of its spectrum to AT&T and SpaceX, as well as plans to decommission elements of Boost Mobile's Open RAN network. This is a reversal on EchoStar's strategy for Boost Mobile as a RAN owner, and will inevitably spark questions over whether Open RAN was to blame.

In reality, the real roadblocks were not always about Open RAN. However, the failure does show that the deployment of Open RAN alone is far from being enough to disrupt entrenched competitors – many other aspects of a new entrant's strategy need to line up.

EchoStar's reversal on Boost Mobile's Open RAN strategy raises fresh doubts about the business case for the architecture

EchoStar's sale of its low-band and mid-band spectrum marks an end to Boost Mobile's Open RAN deployment story, which had resulted in an impressively advanced network architecture but very little commercial impact.

Questions remain about Boost Mobile's new infrastructure strategy, but it is moving away from being a RAN owner. EchoStar announced that "as a result of this transaction, elements of Boost Mobile's RAN will be decommissioned over time". Boost Mobile will continue to operate as a type of hybrid mobile virtual network operator (MVNO), providing connectivity with its own 5G core, but relying on AT&T and T-Mobile for its RAN connectivity.

This move raises fresh concerns about Open RAN and its business case, especially for new entrants, and bad news for Boost Mobile's RAN vendors (including Fujitsu, Mavenir, Nokia and Samsung). Its deployment was a high-profile case study of a multi-vendor, flexible, public cloud-based deployment, and it delivered many market firsts. The operator itself, as well as the Department of Justice (DOJ)[1] in the USA, hoped it would become the fourth nationwide facilities-based carrier.

However, Boost Mobile's move away from the RAN seemingly marks the end of its Open RAN story.

[1] The DOJ approved the T-Mobile–Sprint merger in July 2019 on the condition that Dish Network (Boost Mobile's previous parent company) would step in as a new fourth nationwide wireless carrier to replace Sprint and preserve competition.

Boost Mobile faced many challenges and its ambitious RAN strategy left it competing on all fronts

Boost Mobile's ambitious Open RAN strategy did have a negative impact on its success, however there were a range of other factors impacting its performance, including the following.

- **Competition.** The US market is saturated, with three strong incumbents, and a range of local MVNOs offering a degree of competition.
- **Wholesaler relationships.** Boost Mobile competed directly with its wholesale providers, faced price increases and saw unfavourable service changes caused by T-Mobile shutting down its 3G network.
- **Customer experience.** Its service changed in supply, moving between Sprint, T-Mobile and AT&T as coverage providers. Its customers were subject to a 3G shutdown[2] that did not align with its strategy and the company experienced a significant outage of its enterprise IT systems, impacting billing, customer account access and customer data.
- **Regulatory impact.** Boost Mobile had substantial population coverage targets tied to its spectrum assets, meaning it had to deploy quickly, versus honing its RAN strategy regionally before expanding.
- **Differentiation.** It failed to deliver a differentiated value proposition for enterprises or consumers, despite its plans to adopt advanced open network capabilities, such as slicing.

Open RAN was not the main reason for Boost Mobile's challenges. However, it was part of an over-ambitious plan in which its network strategy and capabilities lacked a clear link to compelling commercial differentiation. It opted to deliver a highly complex Open RAN, hoping to support a broad range of services, including slicing, edge services, network as a service (NaaS) and enterprise hybrid/private networks. In reality, the company did not have a meaningful competitive advantage in these areas and failed to deliver them beyond a few private/hybrid network pilots.

It also struggled to deliver a very low cost base from its Open RAN network, reducing its ability to be competitive on price. Many successful new entrants worldwide (for example DIGI, Iliad and SIMBA) have adopted a low-cost strategy, using traditional RAN. They have focused on delivering simple, low-priced mobile plans, steering clear of advanced network features and the enterprise market (which is notoriously difficult to enter).

Open RAN may be capable of delivering a low-cost strategy, particularly as the technology matures. However, it is often initially more expensive to deploy than traditional RAN in a like-for-like network (with most savings coming from long-term total cost of ownership (TCO)). Boost Mobile's network was especially expensive as it was ambitious, combined many vendors and had several deployment challenges.

Such an ambitious network was impressive, flexing capabilities to deliver long-term cost savings and to support advanced enterprise services. However, failing to deliver on these in a meaningful way left Boost Mobile competing directly with the incumbent operators on multiple fronts, without a clear differentiation.

2 T-Mobile completed the shutdown of Sprint's CDMA (3G) network in March 2022. This network supported Boost Mobile's 3G services.

A winning strategy is possible with Open RAN, but a conservative approach tied to clear business goals is required

EchoStar's reversal on Boost Mobile's strategy should not be seen as an Open RAN failure, as many factors were involved. However, a lower-cost and narrower focus in its RAN strategy, paired with a more differentiated commercial approach, would have improved the operator's chances of success.

While Open RAN has the potential to deliver a range of capabilities, it is not in itself a differentiator, and its benefits must be closely aligned with a particular strategic focus. For operators targeting a low-cost approach, this means deploying a less complex network initially, with the aim to support multi-vendor where required longer term. For those targeting higher value enterprise markets, this means developing differentiated expertise or a unique service approach, and not relying on architectures to differentiate the business. Breaking into the enterprise market requires long-term persistence.

However, Open RAN has evolved since Boost Mobile started its deployment, and it continues to evolve. Costs are expected to decrease as more large deployments are delivered and its support for differentiated services will mature. For now though, Open RAN requires relatively high levels of initial investment from operators, with an extended time to return on investment (ROI). Rakuten Mobile has only just started to return profits from its mobile business, despite having started deployment of its Open RAN network in 2018.

Analysys Mason offers insights into Open RAN within its Wireless Technologies programme, covering key aspects of the architecture's business case, with reports on specific topics such as TCO savings, systems integration, ecosystem progress, cyber security and more. Our recent report, *Operators' requirements for their next-generation RANs: survey results and analysis*, investigates operator adoption plans for Open RAN and vRAN adoption, as well as their associated challenges and solution requirements for Open RAN. For any further information please reach out to James Kirby.