



OPEN RAN: WHAT SHOULD TELCOS DO?

Questions and answers

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This document outlines the questions and answers received during the STL Partners webinar, Open RAN: What should telcos do?, which was hosted on Tuesday, 4th August 2020. You can watch the recording of the session, and also access the slides, from the site [here](#).

If you have any questions not addressed in the webinar or this Q&A document, or want to hear more about our latest [report on Open RAN](#) or our consulting [work in the Telco Cloud space](#), please contact:

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Q1) The claim that Open RAN will bring significant CAPEX and OPEX savings is debatable – GPUs and software are not cheap unless there are voluntary discounts. Where and why do you see these significant savings specifically?

DM: Operators that have already carried out admittedly limited open-RAN deployments have in fact reported considerable cost savings. For example, as I said in the webinar, Telefonica claims that the CAPEX to deploy the Internet para todos 4G network in Peru was around 80% to 90% lower than would have been expected from a legacy-type deployment. Similarly, Rakuten claimed it was expecting 40% lower OPEX from its cloud-native network as a whole – including the open-RAN – compared with a more traditional deployment; although how these estimates are drawn up, and what is being compared with what, is not obvious.

Truth is there haven't been enough large-scale deployments to accurately measure the cost benefits – and how Rakuten fares in reality will be a first big indicator.

In the last slide of our presentation, we included a list of all the supposed benefits – including costs and other efficiency savings – attributed to open-RAN, together with some counter-arguments from the legacy RAN side. I would recommend checking that out.

MP: I would add that our back-of-the-envelope modelling of ROI on virtualisation of the mobile core network indicates that the payback period is so long (decades, in some cases) that it would be entirely wrong to green-light a deployment based on cost savings alone. You could argue that the RAN will be the same. But this includes the cost of replacing/EoLing existing deployments and infrastructure. The remote-area Open RAN deployments David refers to above are greenfield, to a large extent, and so the cost of what was there before does not apply.

Q2) Backhaul forms a large proportion of the costs to serve “uncovered areas”. Open RAN does not help with backhaul costs, in fact, some more ambitious projects may even require fiber connectivity, which is not a cheap option. Why would Open RAN be a good use case for this scenario?

DM: Whether you use open-RAN or not, the backhaul costs will still be the same for any given deployment, won't they? Except, if the deployment is 4G serving sparsely populated areas, the backhaul traffic will be relatively low, so a comparatively cost-effective solution

(e.g. microwave?) could be adopted. But the greater proportion of the cost is still the radio and baseband, so the largest cost savings can be made there.

In addition, part of the claim for open-RAN is that it enables operators to use 'non-optimal fronthaul', e.g. existing Ethernet or IP links. So these can also be re-used for the backhaul (if those links exist).

- Q3) What is an estimated market size comparison between Open-RAN and Open RAN, and how does that then compare with worldwide RAN?

DM: Good question. We don't have the data in house to answer it accurately. But I would venture to suggest that open-RAN is a very small portion of the market as of yet (perhaps <1%) but has the potential to grow extremely rapidly over the next five years or so, both through large greenfield deployments (e.g. Rakuten, DISH and Jio) and through replacement of existing 4G and roll-out of SA core-based 5G in the macro networks of established operators.

Re open RAN (non-hyphenated), this represents a much bigger (but still minority) share of the market, as centralised and 'cloud' RAN versions of existing RAN stacks have been offered by the major vendors for some time. Again, we don't have accurate data; but this is something we would be happy to look into as part of a bespoke consulting project

- Q4) Why would most of the Open RAN trials occur in low income areas?

DM: They are not mostly in low-income areas. Cf. Vodafone trials in the UK; O2 trials in the UK, Germany, Spain and Brazil; US incumbent operators; Japan's Rakuten; Etisalat in UAE.

However, you're right that some of the main trials and deployments to date have been in low-income markets. This is because of the cost economics of open RAN, which make it possible to roll out 4G (or consolidated 2G, 3G and 4G) in areas where it hasn't been before, where there is a significant market opportunity.

MP: It would be wrong to segment markets and operators solely on income. This to some extent mirrors what we've seen in the mobile core. Many of the high-profile virtual core deployments have been by large operators in more developed markets – but behind the scenes, there are deployments being made by operators of all shapes and sizes, including in less developed markets where demand for mobile broadband is exploding and capacity needs to be built out fast. While operators in these markets may not be at the forefront of technology developments, the amount of traffic they are trying to deal with is often much higher than with the "high income" operators – and so they have a more pressing need to deploy. It's likely that the same factors will impact on the RAN.

- Q5) What should the strategy be for incumbents in Open-RAN?

This question is addressed to a large extent in the presentation.

- Q6) Is there a viable way to deploy open RAN 5G next to legacy 2/3/4G or is consolidation the only option?

DM: I think in markets where it's necessary to maintain 2G and 3G networks – for commercial or regulatory reasons – consolidation is a promising solution, certainly for adding or boosting 4G. Consolidation hasn't been tested in a live 5G setting; so I couldn't say there.

In markets where 2G and 3G are being phased out, the issue is more whether – from a Total Cost of Ownership (TCO) perspective – it's more or less cost-effective to rip out the legacy 4G RAN in any given operating region and replace it with an integrated 4G / 5G solution, so as to eliminate the multi-G / multi-vendor integration and interoperability headaches.

However, it is debatable whether open RAN is yet sufficiently mature to deliver on that. (By contrast, see the recent rumours about Verizon potentially replacing its Nokia legacy 4G RAN with an integrated 4G / 5G open RAN solution from Samsung.)

- Q7) When adopting Open RAN, what complications do you foresee will exist during its integration into the existing core, particularly with traditional core telco vendors?

DM: I think I answered this question during the webinar. For a start, I don't think open RAN would ever be deployed alongside a legacy, non-virtualised core. But open RAN platforms should in theory be just as interoperable with multi-vendor, virtualised / cloud-native cores as legacy RANs – if not more so, owing to the cloud-native characteristics of both the 5G core and open RAN.

- Q8) What is the impact on OPEX, particularly in the case of a single vendor managed service, when adopting several vendors for Open RAN?

DM: This is clearly one of the major challenges open RAN has to overcome, and many of the present trials are directly addressing it. In addition, the TIP OpenRAN group and other industry players (e.g. VMWare and Intel, as announced earlier this week) are working on reference architectures and deployment templates that will offer standardised configurations, telco cloud platforms and orchestration that should make a lot of this much more streamlined and automated.

- Q9) What business models are used when adopting Open RAN, with reference to hardware licences, software fees and activation fees?

DM: This is not something I've directly looked at. This is maybe something you could take up with the challenger RAN vendors themselves.

- Q10) From a total-cost-of-ownership standpoint, will Open-RAN remain competitive, keeping in mind factors such as cost of multi-vendor integration, performance changes, potential integration issues and necessary maintenances during its lifecycle?

DM: This is something I address in my answers to Q6 and Q8. Reducing operating costs and complexity is perhaps the biggest challenge for open RAN. But there's a lot of work going on to make integration of multi-vendor open RAN much simpler and more automated.

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