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Doing 5G right

As communications service providers (CSPs) discuss, trial, deploy or launch 5G, a fundamental question arises: how should we approach 5G? Put another way, how can we do 5G right and maximise its return on investment (ROI)?

Looking at what CSPs, journalists, analysts and vendors are saying – especially about the critical areas of test, monitoring and analytics – we could identify two main approaches.

DO TRADITIONAL (?)

For those who do not like uncertainty, it would be reassuring to follow a similar approach to doing, say, 4G. While not exactly business as usual, a methodology built upon experience should help successfully launch and monetise 5G. So, we just need to slightly update our “classic-recipe” book of network launch and operation. Right?

DO MODERN (?)

5G promises to change everything, an exciting prospect for those who like change. Should we do 5G by sticking to “outdated” methodologies? As digital transformation becomes prevalent, it is time for a fresh approach that embraces uncertainty and removes the shackles of the past. So, the network launch and operation book should be written from scratch. Right?

Well, before commenting further, let us examine some key factors.

THE COMMON THREAD

5G is about options, non-standalone (NSA) or standalone (SA), which will vary from CSP to CSP. So will the approach to 5G.

That said, every CSP will need to establish an increasingly more automated and ultimately autonomous mode of network

operation. This is where machine learning and artificial intelligence (AI) based on big data analytics would come in. Actionable insights of diagnostic, predictive and prescriptive nature are to be driven by combining network expertise and data science. This type of intelligence will be a vital common thread in doing 5G everywhere.

NO ESCAPE FROM THE (NETWORK) PAST

The 5G dependence on legacy networks should not be overlooked. For optimal 5G NSA, the underlying 4G performance must be optimised. Even in SA mode, 5G will require fallback mechanisms (at least, to begin with). The evolution of 4G – including virtualisation – would support this requirement.

More broadly, to do 5G, we should keep in mind the legacy infrastructure. And although virtualisation is essential for 5G, CSPs are to use their existing physical resources too, employing a hybrid strategy while minimising disruption to operations and customers.

THE TREE AND THE FOREST

Similar to past generations, 5G comprises various domains or networks, each with its own challenges. For example, the dynamic radio environment affects the radio access network (RAN) performance. For the transport network, on the other hand, the significance of fibre deployment and remote monitoring has been increasing.

Every domain is important, and so is domain interoperability. For optimal customer experience and end-to-end network performance – especially network slicing – 5G necessitates optimal domain and cross-domain operation. Doing 5G also calls for dynamic topology visibility so that network element issues are captured and addressed before they degrade customer experience.

(UN) LIMITED SOLUTIONS

To test, build, activate and operate 5G, diverse solutions are required. For example, to validate the new 5G core before deploying it, a simulation-based lab solution should be used. Then as 5G deployment progresses, new site verification and testing could be performed in the field and/or remotely (similar to 4G).

In general, the challenges of doing 5G will be best addressed with a mix of solutions based on equipment, software and services. For best results, these should be network equipment-agnostic and chosen using objective criteria. Any kind of solution bias, due to CSP and/or vendor predisposition, is likely to endanger the deployment, operation and overall success of 5G.

KILLER FEATURES OR USE CASES?

The temptation to focus on the 5G features is hard to resist. But the emphasis should be on selecting and enabling use cases. For example, if enhanced mobile broadband (eMBB) is the generic use case to prioritise, it will be essential to accurately identify the data hotspots for 5G deployment. Understanding the relevant subscriber, device and usage profiles will be crucial too.

Of course, 5G is also expected to enable new services and support diverse verticals, including use cases not specified yet. So, along with the CSP-specific requirements, doing 5G will mandate a smarter, use case driven, approach from conception to operation/monetisation.

In effect, every factor (above) reflects the need for a pragmatic, adaptable methodology that is fit for purpose.

DO PRAGMATIC

The unique nature of 5G calls for a unique approach, not limited to a pre-written

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“recipe” book. In some cases, a “traditional” methodology and lessons learned from past launches and transitions/transformations will be relevant. Other cases will mandate more “modern” thinking. And there will also be a need for a mix of methodologies, to a varying and challenge-specific extent.

In effect, the approach that maximises the 5G ROI and delivers the benefits expected by consumers and enterprises is the right way of doing 5G. This must be well-thought, innovative and collaborative, blending experience and expertise to deal with the complexity and uncertainty of 5G, and provide peace of mind to CSPs.

In practice, 5G done right requires a unified platform enabling advanced automation and real-time visibility from network core to subscriber. Such end-to-end visibility, including rich, granular insights into customer experience, is no longer a nice-to-have: it is business-critical for next-gen deployments.