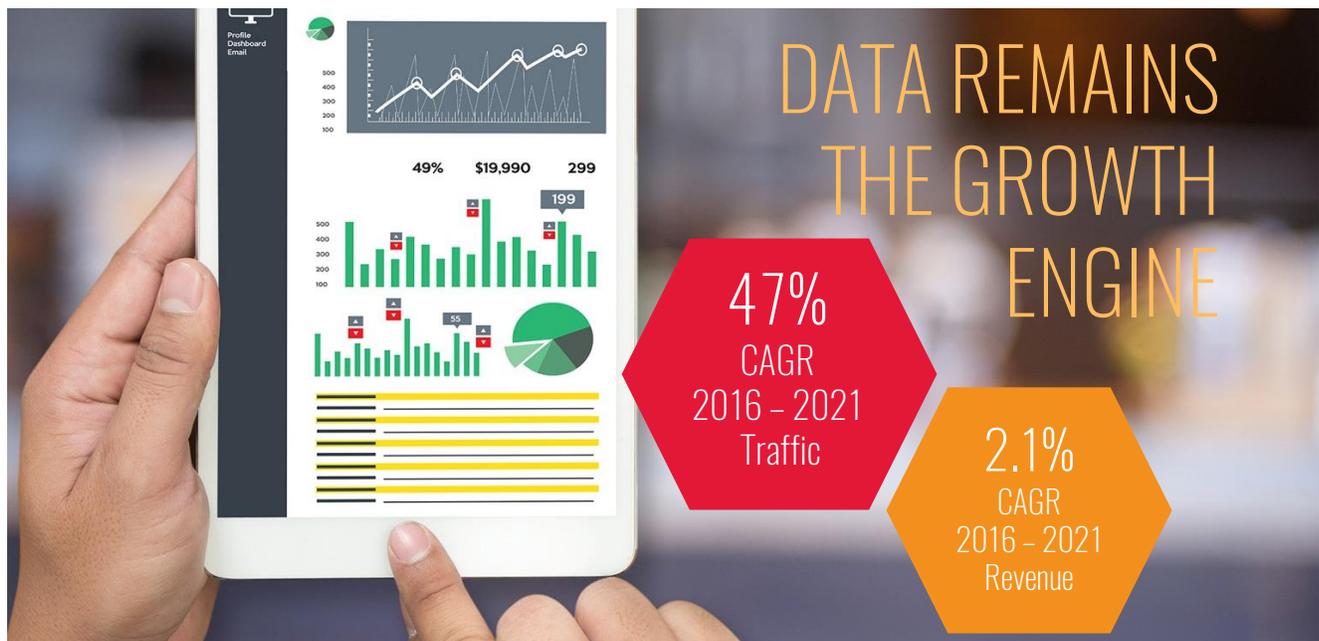


Network Slicing can make the MNOs Smarter

Network Slicing is key to 5G monetization

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It is a well established fact that value is created by providing innovative services rather than utilitarian services. In the context of telecom services providers, revenue growth has not been keeping pace with the data traffic growth on the networks. See figure below:



Growing revenue-traffic divide only means that operators will be challenged to seek new business models to move away from utility services to innovative, dynamic, flexible and on demand services. This has been the challenge that has been facing the telecom operators – both mobile and fixed since the days of broadband. While they spent much regulated billions into building their network and infrastructure, the internet companies, social networks and over the top services providers have created trillions of dollars of wealth riding over the top of their network infrastructure. To a large extent the telecom operators never got any of that action except some breadcrumbs.

It's not that they have not tried. They have been trying with then new valued added services like VPN/IP/MPLS etc in the enterprise space and MMS, SMS, Voice Messaging, Ringback tones, media content like jokes, clips, sports video, mobile TV

and more. Since 3G started and until 4G came there have been several attempts by the mobile network operators across the world on creating Value Added Services and trying to monetize over and above the plain old voice & data.

It will need a bigger research and it is worthy of a Harvard case study on why these initiatives never succeeded. Most of the large telcos have a large product and marketing organizations working with innovators, startups and established players and launched many such new paid value added services. But the biggest problem is that the consumers were/are not willing to pay more for these value added services – they want free services paid by sponsors and advertisers. The MNO's marketing organizations have ignored this one simple fact. At the same time unlike the internet companies, the MNO's are heavily restricted by the regulators on how they use customer data for targeting and other indirect revenues.

So when the Mobile Network Operators(MNOs) spent billions in building the 4G network and capacity, their product marketing organization have failed them to a large extent because they have not extracted value out of this additional capacity, throughput and features such as HD Voice, Video calling, device capability awareness, and myriad technical features offered by 4G network. Many customers are not aware or even told that their voice call quality is now better - unless they are an audiophile or a technically oriented person who pays attention.

Dumb pipe vs Smart pipe in 5G

Here we are at the beginning of the next technology reset in the mobile networks. Much has already been written and anybody and everybody is talking about how 5G will revolutionize communication, how we live, work and play etc.,. But what is most important and interesting to see is, if the MNOs are going to become smarter in monetizing the next cycle of investments by creating a smarter pipe rather than remaining a mere dumb pipe. To large extent the onus of this strategy will reside with the product marketing organization of the MNOs.

The good news is we have started hearing this message across the MNO product marketing organizations across the world. This manifests in different ways. But mostly all of them call it “5G Monetization” initiatives. Most of these initiatives are around finding new applications to exploit the advanced features of 5G such as low latency, high throughput, high bandwidth, and **most importantly the network slicing capabilities**. Those of us who have been around for long remember similar “4G Monetization initiatives” during LTE rollout but they failed. **But it is our opinion that, in 5G the network slicing feature if implemented well will pave the way for these initiatives to be successful.**

In one of our advisory sessions with our customers a very smart CMO of a tier 1 US operator said “*We hope not to squander away the next cycle of technology refresh without putting smart ways to leverage and monetize this new investments without handing the keys to the kingdom to over the top players and social network companies - the likes of Microsoft,*

Amazon, Apple, Alphabet and Facebooks”. Whether they will succeed or not is yet to be seen. **Network Slicing being one of the fundamental 5G building block, MNOs will get ample opportunity to not just give away all the new capabilities being built as part of the 5G network without extracting value.** To be able to do that, it is important to understand what is network slicing.

What is network slicing?

As many of you may already know, network slicing technology is being introduced as part of the fundamental 5G architecture. The slicing word originated from Operating system work where a scheduler time slices the processor compute capacity with multiple processes. But the same has become lot more complicated in 5G. In its simplest form, network slicing is the ability of the network to behave differently for different network applications depending on the requirements of the application.

For example: In case of the IOT devices, main requirements are to be able to connect large number of devices but each device consuming much less data traffic. Also they need low power consumption and provide better coverage. So for such a network latency and speed are not important but coverage, power consumption and connectivity at low cost are of high importance.

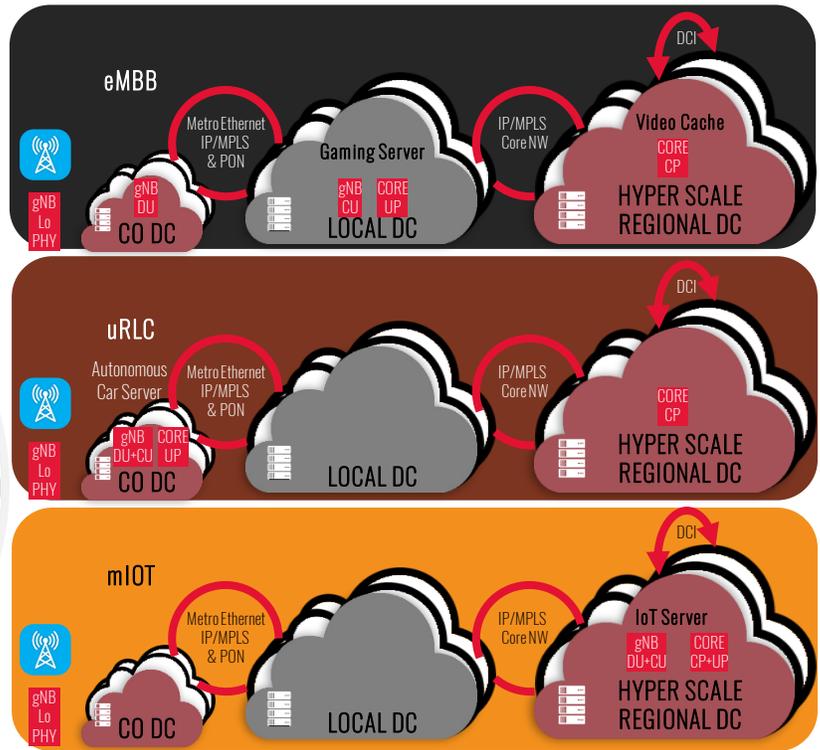
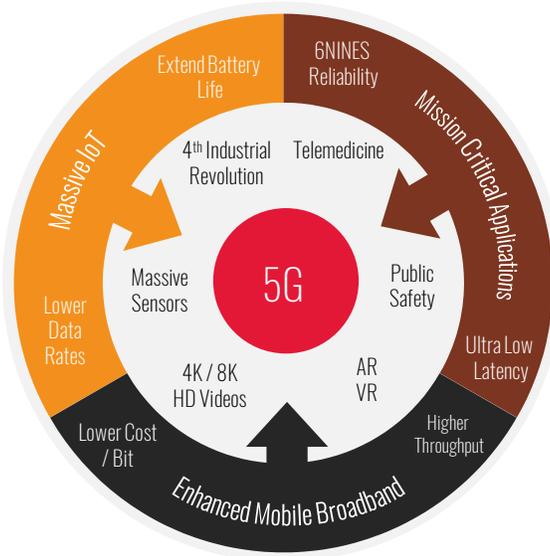
On the other hand, a connected car or autonomous car application needs low latency and instantaneous connections. Here the network requirements are ultra-low latency, reliability and medium throughput requirements.

A third uses case could be AR/VR applicable for gaming and sports where the low latency and high throughput are the key network requirements.

All of this can be implemented in a 5G network by creating these logical network slices using various design architectures and with SDN and NFV all of this can be created purely by orchestrating them through software and not having to rewire the network physically. Here is a great illustration that depicts the creation of the such 3 different network slices.

Network Slicing

Dynamic Network Arrangements



Smart Pipe Strategies using Network Slicing

So as you can imagine, because 5G standards incorporated software configurable network slicing, the product marketing organization can create monetization strategies to charge more for the new features being introduced by 5G technologies – not only directly from the consumers but also from enterprises.

For example a gaming company hosting multiplayer gaming platform on a subscription model may be willing to pay the MNOs for offering their players a better, low latency, experience on their mobile networks. Alternatively consumers may be willing to pay extra for being able to kill their buddies' avatars on the virtual battle fields faster.

It is important that the product marketing organizations don't focus on just launching 5G first to market but rather launch 5G only on opportunity basis. For the basic services the network offered will be as the existing 4G but for all the enhanced 5G features someone should be paying directly or indirectly – either enterprises and platform providers such as gaming companies, Facebook and Netflix etc., or consumers directly.

Conclusion

We believe that the era of killer-apps and dumb pipes is behind us. 5G will usher an era of Smart Networks. 5G is creating a new network blueprint, where the network will adapt to best

meet the needs to the end enterprises and applications. We no longer will have to deal with a static network that had to be engineered for mass market enablement of a small set of services. Network slicing will enable network capabilities and resources to be dynamically requested such that they best meet the needs to end application. With 5G, monetization will move well beyond the limited traditional voice, messaging and data services. CSPs will be able to offer diverse Digital Services to industry verticals. Network Edge will reshape how CSPs will deliver meaningful value to end applications. With 5G, networks will move well past the traditional Closed Management Systems; Open APIs will enable Self-Service/DIY, On-Demand business models.

While the planners and designers shaping the 5G future have done a phenomenal job of designing a technology and a great vision for the future, the operators across the world and their business teams should ensure that this vision is well monetized and not given away free. There will be new system challenges that will have to be answered by SIs like Tech Mahindra. Some of the challenges are: How will this affect the traditional BSS systems. What will be the impact of network slicing on product catalogue? How will the network slicing capacity be created? What are the planning processes and tools? What are the new business process templates? Some of this is being answered by the Catalyst project we just implemented and show cased in TM Forum, Nice – A catalyst project on demonstrating how a network slice management can be done using portals. This is a nascent area and we are engaged with several customers and hope to report on this further after 6 months.

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