Nokia SaaS

Telecom’s B2B Growth Opportunity

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BACKGROUND
In July 2022, Appledore was invited to attend an event cohosted by Nokia and the TM Forum on the topic of SaaS in Telecom. This was a good opportunity to hear from the leadership of a relatively new business line, as well as from multiple UK operators, on the topic of telecom SaaS. Nokia officially introduced Nokia SaaS to the market in November 2021.

Nokia Cloud & Network Services is a distinct unit within the Nokia business, conceptually air-gapped from its larger IP, Optical and RAN business units. This gives this unit greater scope to innovate and engage with the industry than might be considered typical for a network equipment provider (NEP).

TO B2B OR NOT TO B2B
For the TM Forum, Contributing Analyst Tony Poulos presented findings from their own survey, with Vodafone also adding color from their research indicating the steadily growing preference of enterprises for putting workloads onto the cloud – implying a consequential swing towards more SaaS-based consumption models.

However, though sales by CSPs of Security, IoT and Cloud services are growing fast, it’s from a tiny base (<3%). The dilemma for CSPs is choosing between a high-volume, lower margin business (typically 10% for B2B SaaS-based services), versus today’s (relatively) high margin but low growth connectivity business (typically 30%+).

Nonetheless, it is clear that telcos are pinning hopes for growth on B2B sales, with around two-thirds of responders to the TM Forum survey preferring “selling additional services” to “selling more connectivity” as the better strategy for growth. (Appledore sees this as a somewhat false dichotomy – additional services should be seen as a way to generate increased demand for connectivity. After all, providing connectivity is what telecom knows how to do best, and to make good money from.)

The issue (as Appledore sets out in a related report) is that selling new value-added services to enterprises today requires some fundamental re-plumbing on the CSP side: not only Day 1 automation and orchestration, but also more flexible ways (commercially and technically) for enterprises to consume those services. In some cases, these sorts of services may be classed as “service chains”, in other cases “network slices”. Many in the industry refer to digital services and how IoT will drive new digital services. The traditional web term is “mashup”.

Enter Nokia Telecom SaaS.
Nokia's view of Telecom SaaS does not mean simply the SaaS-ification of current offerings. Rather, it sees Telecom SaaS as the flipside of Network-as-a-Service, and as a fundamental enabler (technically and commercially - more on that later) of the lofty use cases often rolled out to sell the benefits of 5G, from robot factories to smart cities to Uber-for-drones.

A service delivering a business outcome, bought as a subscription, based on cloud-native software, delivered with a fully digitalized business experience and a fully automated services lifecycle, designed for telco-grade workloads

**Figure 1: Nokia Definition of Telecom SaaS (Courtesy of Nokia)**

The concept of Network-as-a-Service has been around for at least a decade. Nokia's take is that only now are we seeing a coming together of the enabling technologies – such as programmable networks, sufficient availability of hyperscale cloud infrastructure, high-bandwidth, flexible mobile (in the form of 5G), distributed computing and cloud-native application software (as realized in various Edge visions).

In telecom, the case for SaaS is helped by the widespread rise in acceptability of SaaS generally, and especially for business-critical or sensitive functions such as CRM and Finance, and from the most risk-averse buyers such as government and healthcare providers.

**STRATEGY**

Officially unveiled in November 2021, Nokia SaaS is a multi-phase strategy to enable recurring revenue streams based on services – both for its customers (telco and to some extent enterprise) as well as for Nokia.

At launch, Nokia targeted its SaaS push at the “$3.1bn” that CSPs and enterprises are forecast to spend on cloud-based services for everything from security to supply chain management – with telcos as potential participants. (*The conditionality of telcos’ supposed Enterprise bonanza is something that Appledore explores in greater depth in a July 2022 report.*)

For Nokia, that strategy starts with offerings that customers already understand – security, analytics – delivered in a new way. But it aims to expand to much more sophisticated propositions –
marketplaces and ecosystems which will likely require “inorganic” (read: challenging) change across more of a telco’s organization: procurement, partner management, developer community support (not a telco strong point, and even currently suffering mixed industry messaging on hiring vs partnering). Nokia deserves credit at least for being up front about what this journey to major new revenue from B2B involves – and it isn't just network technology.

In terms of the evolution of its own offerings, what it plans is a progression towards a more “network-services-on-demand” world. This aligns with the TM Forum's own Open Digital Architecture (ODA).

**SaaS target: network services on-demand**

Unifying vision of future-state SaaS suites

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**Figure 2: Towards Network Services On-Demand (Courtesy of Nokia)**

Ultimately, Nokia is on a journey towards offering its SaaS proposition in three suites:

- **“Nokia Digital Engagement”** – Assisting CSPs secure, predict, orchestrate, automate and monetize 5G operations.
- **“Nokia Digital Marketplace”** – enabling new vertical solutions including “supply chain, transportation, healthcare, telecom, smart cities, governmental agencies, etc”. Interestingly, this was originally launched as the Data Marketplace, to facilitate secure sharing of data between enterprises and CSPs, “providing real time access to massive, trusted data sets”, and allowing monetization of data set exchange between “customers or business ecosystem participants”. The new badge fits better with the vision.
- **“Nokia Digital Networking”** – network capabilities for 5G, called down on-demand and consumed as-a-Service.

In this way, Nokia aims to address multiple distinct audiences (Operations, Enterprise LoB, and Network buyers), all of whom have their own reasons for wanting to explore a SaaS route – in no particular order: faster time-to-value, lower TCO, greater business agility, scalability, revenue potential – or more sustainable security.
Clearly, hyperscale partners (In Nokia’s case, Microsoft Azure, Google Cloud and Amazon Web Services) are essential to realizing this vision. That begins with applications that can run on those cloud platforms but extends to giving developers access to network power (via high-level APIs), but without the complexity of having to manage the differences between individual cloud platforms.

The Nokia Cloud & Network Services portfolio contains 55 software applications, many already cloud-native and able to operate in a multi-cloud environment.

“NETWORK AS CODE”

Nokia Cloud & Network Services CTO Jitin Bhandari highlighted how today’s CPaaS providers (Twilio, Vonage, Ring Central…) had been able to create billions of dollars in value using just a handful of exposed capabilities: voice, video, messaging and email. 5G, by definition, allows a much larger set of network capabilities to be exposed to third party applications. In the right context, these are not simply APIs, but indeed become “value vectors” that can be specifically monetized.

![Network as Code can multiply the scope of capabilities & reach](image)

Figure 3: 5G Features Exposed Can Enable New Value Creation *(Courtesy of Nokia)*

If (and it is a big if), telcos can expand their success metrics – from subscribers, sessions and population coverage, and towards counts of active developers and API calls – then there is chance to realize significant new value from 5G. Demand for edge applications (especially in manufacturing) may provide the spur – but telcos need to be prepared, with ready-to-use SDKs and serious developer-enablement programs that offer a clear path to significant revenue for developers, not just PoCs and publicity.

On this front, Nokia reports positive indicators, with numerous hackathons and over a dozen CSPs in “active discussion” about using Nokia’s API framework. A demonstration showed a drone-based surveillance service, switching from low-res, low-rate video feed over 4G to a hi-res, fast frame rate...
one, triggered by (AI-enabled) detection of a moving human form in a video stream. A simple but powerful enough example of the sort of “service” that should be more just possible but straightforward to develop (and to deploy, and commercialize!) based on high-level network APIs.

5G will only be truly game-changing if telcos commit to a model that exposes its novel power and sophistication.

**OPERATOR PERSPECTIVES**

The event provided a chance to hear from operators on the topic of SaaS. Suffice to say that the thinking seems much less joined up on the operator side. The impact of any “beyond connectivity” strategy has not yet been seriously felt in Procurement (vendor-facing) or Marketing (customer-facing) departments, even if the Security or Networks teams are busy finding areas to be concerned about in relation to SaaS.

In fairness, there are examples of operators moving in the right direction. Vodafone Business’ [Edge Innovation Program](#) is fostering real companies to solve real problems (not just in-house “fresh from our labs” demonstrators), with a viable path to commercial operation. Though the focus here is edge computing (via partner AWS), the model could presumably expand if more 5G network features were exposed.
TAKEAWAYS

With its SaaS push, Nokia is not claiming ownership of some technological breakthrough or innovation. NaaS, on-demand, multi-access edge, APIs and even ecosystems have all been around for a while. It is, however, throwing down the gauntlet somewhat to telcos, with a range of offerings that not only provide sellable point services, but also act as an on-ramp to this new model for telecom. CNS CTO Jitin Bhandari was bold enough to badge this as “Telecom 2.0” – a statement of intent if ever there was one.

SaaS (and all that goes with it – agile procurement, developer communities, ecosystem…) may be mainstream in many other industries but has yet to make serious inroads in telecom. With its SaaS strategy, Nokia is attempting to bridge several gaps: between the growth opportunity and the reality of telecom business operations today; between the investment already committed to rolling out 5G, and the investment yet required (especially beyond equipment) to unlock its value; between the availability of APIs and the real-world use of them to generate meaningful commercial value for application developers. It is at least in a good position to experiment directly with both telcos and enterprises – and see which will be quicker to grasp the opportunity.