

Case study

Bringing Telstra NaaS to life

By Dawn Bushaus, *Managing Editor*, **TM Forum** | October, 2018

As part of its [Network Evolution 2020 and Digitization strategy](#), Australian communications service provider (CSP) Telstra is betting on a network as a service (NaaS) architecture. This is a massive undertaking that requires digital transformation of the network, underlying operational and business support systems (OSS/BSS) and processes, and people.

Telstra is working closely with OSS/BSS supplier Amdocs on a digital transformation that paves the way for ‘softwarization’ of the network. The companies are using the [TM Forum Open Digital Architecture and Open APIs](#) to achieve this, an effort TM Forum [recognized recently](#) with an Excellence Award for Open Digital Ecosystem Platform of the Year.

The transformation is a collaboration between Network and IT teams to build Telstra’s ‘Networks for the Future’ architecture, which is moving away from traditional physical networks supported by silos of OSS/BSS to virtualized, software-defined networks

supported and orchestrated by centralized IT.

This software-driven architecture dramatically enhances speed to market through digitized and re-usable capability, enabling simpler and more flexible products to be offered to customers. This supports near real-time activation and provisioning, end-to-end order tracking and dynamic service changes, which in some cases will reduce lead times from weeks to hours.

Lupo adds that embracing digital technology isn’t the only important transformation happening within Telstra.

“Transformation is about people,” he says. “We have a technology enabler in the NaaS architecture, but this is really about the product managers and people in IT, network domain, network technologies and operations who will see the see the benefits – and, of course, our customers.”

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This project is similar to a circuit breaker analogy,” says Guy Lupo, General Manager, Head of NaaS 2020, Telstra. “It is breaking the legacy and transitioning – it’s about switching from one way of working to another with little impact. Telstra is moving towards a fully digitized future. Eventually all orders will be digitized –this is not something that we’re doing for one project; we’re doing it for the whole of Telstra.”

Gaining visibility and control

During the first phase of the transformation, which began in 2016 and is now complete, the IT team implemented the [Amdocs Order Delivery Orchestrator \(ODO\)](#) platform as a ‘fulfillment visibility layer’.

“Our first task was to help Telstra gain visibility and control over their existing process,” says Jin Suk, Director, Product & Solutions Marketing – B2B & Enterprise Technology and New Offerings, Amdocs.

Early during the transformation, it became clear that Telstra would not be able to ‘rip and replace’ all the existing operating systems that support its 300+ enterprise products. Instead, the team decided to use the ODO as an umbrella orchestrator. It was deployed on Amazon Web Services, which accelerated the process considerably – it took just five months to complete the visibility layer.

The next two steps of the transformation – automating order delivery and deploying NaaS – are happening now simultaneously.

Achieving automation

Using ODO, Telstra and Amdocs are deciding jointly what the priorities should be for automation. “We can’t automate everything all at once, so we are trying to identify the key pain points and then automate and expose them through this visibility layer,” Suk explains.

“The key objective here is system consolidation,” Suk adds. “There are tons of legacy systems that need to be consolidated and automated with real-time status checking. We have around 2,000 tasks to automate.”

Why is NaaS so exciting?

While automation is underway, Telstra cannot realize the full benefits without transforming the network layer through virtualization. By moving network functionality into software and creating a catalog of exposed services, the company can use ODO to compose different combinations of products and offers with minimal impact or reconfiguration on the network side.

Lupo’s team is working to develop and deploy NaaS capabilities as a network abstraction layer, creating a unified, standard way to publish and consume network-exposed services using TM Forum Open APIs. They are pioneering NaaS as part of networks and digital technology – the key building blocks of Telstra’s strategy. The methodology is based on software refactoring, only this time applied to network and IT, which enables “Network Operational Domains” to take advantage of automation while exposing a well-defined standard service to ODO so that products and offers can be composed with minimal dependencies on the network resources.

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“With a NaaS-exposed catalog of network services and a standard and agreed way for ODO to consume them, we are able to use existing ‘LEGO blocks’ to build and create new competitive offers,” Lupo says. “We are looking forward to a significant reduction in the time it takes to develop products and go to market.”

Without NaaS it typically takes many months for a CSP to develop a new product or even tweak an existing one because every IT system supporting the product must be manually updated, tested and retested with the underlying physical network capabilities.

It isn’t easy

NaaS is not a slam-dunk, however. It is very difficult to orchestrate and manage end to end and requires a new architecture. Today, CSPs provision and manage enterprise services that cross the network boundaries of one or more partners, such as other CSPs, by predefining the service, making sure everyone ‘speaks’ the same language and uses the same service definitions. The vision, however, is for operators and suppliers to agree to use common information, data models and standard APIs, allowing orchestrators in different domains to communicate so that this can happen autonomously. This is a goal of the ODA, which Telstra, Amdocs, and other large CSPs and suppliers are defining in TM Forum’s Collaboration Community.

Telstra, for example, has been active in an ongoing TM Forum Catalyst proof of concept which is studying how to implement NaaS with partners.

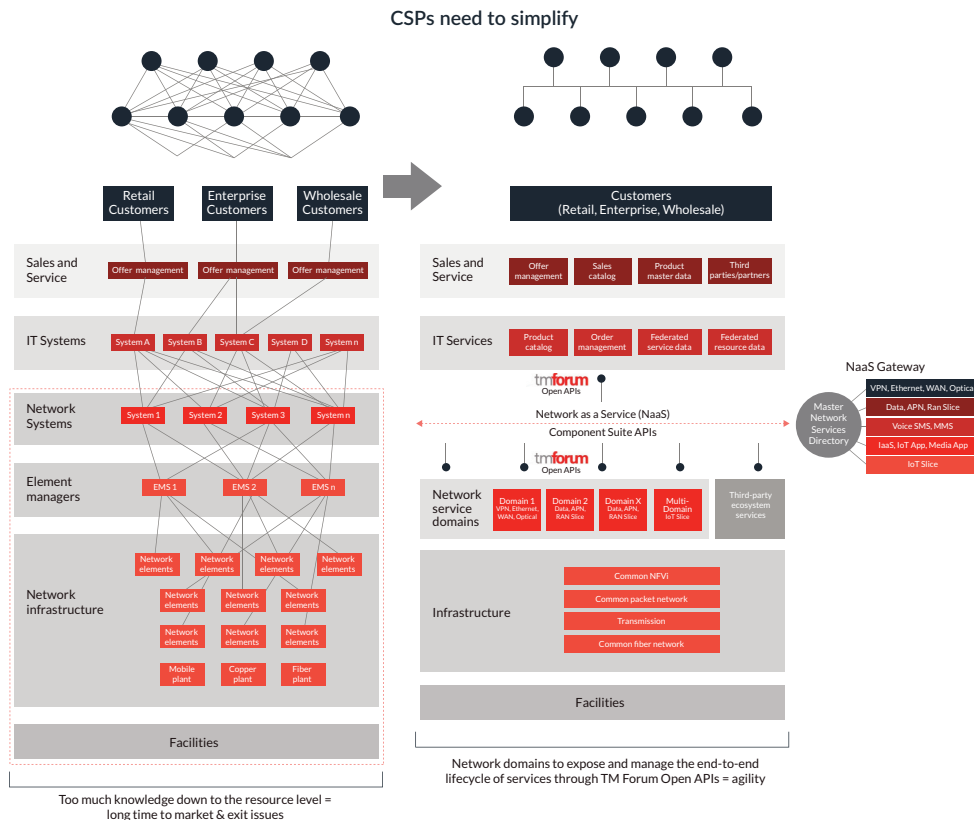
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“What we are really trying to do is decouple the IT [OSS/BSS] systems from having to understand how every bit of our underlying resources need to be configured,” Lupo explains. “We want to have network domains expose services so that the IT systems don’t have to know about or configure anything at the resource level anymore, which is a massive change. This is how we’re going to achieve our goals around agility, operational costs and time to market.”

Decoupling IT from the underlying resources

Through implementing the NaaS architecture, Telstra is using intent-based management, where operational domains abstract the complexity of the network at a high level and expose network services (service function chains made up of interconnected virtual and/or physical network functions) through a standard API – in this case the TM Forum Service Configuration and Activation API – to the Amdocs ODO. The goal then is to manage the lifecycles of these network services autonomously using the customer’s intent, policy, closed control loops, data analytics and machine learning.

Importantly, the network services exposed and used for products sold to customers can be reused without having each product defined and associated with the complete resource definition for each network service. Instead, products are linked to network services and it is the responsibility of the operational domain to decide how that network service will be delivered.



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Moving to this decoupled, or loosely coupled, architecture allows Telstra to reach its customers through many different digital channels and rapidly create new offers that include not only Telstra's capabilities but also those of partners. Lupo says this change is critical to create an "80-20 effect", where Telstra wants to spend 80% of its time on innovation and differentiation and 20% on integration and customization. Today, most CSPs spend much more on integration than innovation.

"It costs millions of dollars to keep everything in sync, but once you put in a layer of standard APIs and focus on the data payloads and the data relationships that make up services, products and offers, suddenly we're no longer busy doing system testing for every change. We can focus on testing new product innovation and fail fast with very minimal impact," Lupo says. "To me that's the beauty of what we're trying to do now."

A different kind of marketplace

Lupo and Suk agree that a major benefit of decoupling through the use of APIs is that network and IT can evolve in parallel and work together as part of a digital ecosystem. Indeed, that's why they submitted their transformation project to the TM Forum Excellence Awards in the Digital Ecosystem of the Year category, which is typically reserved for customer-facing marketplaces.

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"A lot of ecosystems today are just another set of portals that allow you to buy stuff," Lupo says. "We're talking about coming together as IT and network converged for the first time with an ecosystem that allows you to expose network services on a catalog and then compose, create and consume them from a digital system to do as many permutations as you can possibly imagine. Our NaaS strategy combined with the digital strategy allow us and other partners not only to publish our products but also for Amdocs to put them out in a very fast way out to the market as offers and monetize them. It's a new breed of ecosystem."

