Empowering Next-Gen Networks with No-code Orchestration

By: [Matt Torchinsky](#)

Over the past few years, telecom operators have responded to the exponential growing demand for traffic and connectivity services, and their accomplishments in this area have been incredible. The downside has been that in the face of this demand, revenues have been flat or growing linearly versus exponentially. The traffic growth curve doubles every two years, but revenue growth remains below three percent per year. Something doesn't add up.

On the positive side, networks are evolving and the cost per gigabit of traffic is decreasing year after year. These reductions, however, are still not enough to offset the expenditures incurred by operators to maintain the level of traffic growth.

There's also added pressure to deliver new, innovative and customized services that anticipate and fulfill customers' needs immediately. This market demand exerts extra pressure on the business and the operation, which must constantly invest in the design and introduction of new products while bringing them to market quickly, placing additional pressures on communication service providers (CSPs) to be flexible and agile.

Furthermore, there has been a massive explosion in the introduction and rollout of OTT apps. Bandwidth has become a commodity, and CSPs must rethink their strategy to expand their offerings and generate new sources of revenue. For CSPs, the competition for the customer's wallet has widened. They no longer compete against other telcos, but also against other software-as-a-service platforms.

Surmounting the obstacles to increased profitability can be daunting, but there are a few methods CSPs can use to accelerate their path to becoming digital service providers (DSPs). For example, speed to market, ability to change existing services quickly, and reducing overall operational expenditures—all through automation—are actions CSPs can take to improve operations and the customer experience. The adoption of a no-code orchestrator is a key step toward becoming a DSP with a path to achieve agility and operational excellence, reduce time to market and speed up product development.

The next-gen network

Major capabilities are part of this path to DSP: automation, orchestration and serviceability. The advantages of orchestration are well known in the industry. The trend is clearly toward an open, interoperable, standards-based ecosystem that allows "any-to-any" communication, along with end-end services orchestration. This is the ability to provision and activate a service across multiple silos of network elements within a CSP (or cross-CSP) to create an end-to-end service. Future networks will be governed by autonomous processes that allow the allocation and release of resources. Automation and orchestration will help to drastically reduce errors resulting from manual tasks.

Meanwhile, the concept of zero-touch provisioning has also taken hold: no form of manual intervention is necessary to deploy new equipment, either on the network side or at the customer's premise.

These concepts directly impact various business KPIs, including operational excellence, time to market, and OPEX reduction. The networks of the future are no longer static, rigid systems. Instead, they are software-driven and will be as flexible as the business requires.

No-code orchestration: expanding the possibilities

A no-code cloud-native provisioning and orchestration solution is designed to accelerate CSPs' transformational goals in building future-proof networks. Whether they need to deploy SD-WAN/SASE, GPON, 5G, Remote PHY, or other technologies, it stands ready to support them

with multiple use cases and deployment scenarios. It is designed to allow CSPs to automate service lifecycle management without investing in time-consuming and budget-heavy projects.

From a differentiation standpoint, a no-code orchestrator provides a graphical component, a visual tool that is very simple and allows the product and operations teams to design new provisioning processes and product integrations quickly. This agility is key because it is one of the characteristics that define a DSP.
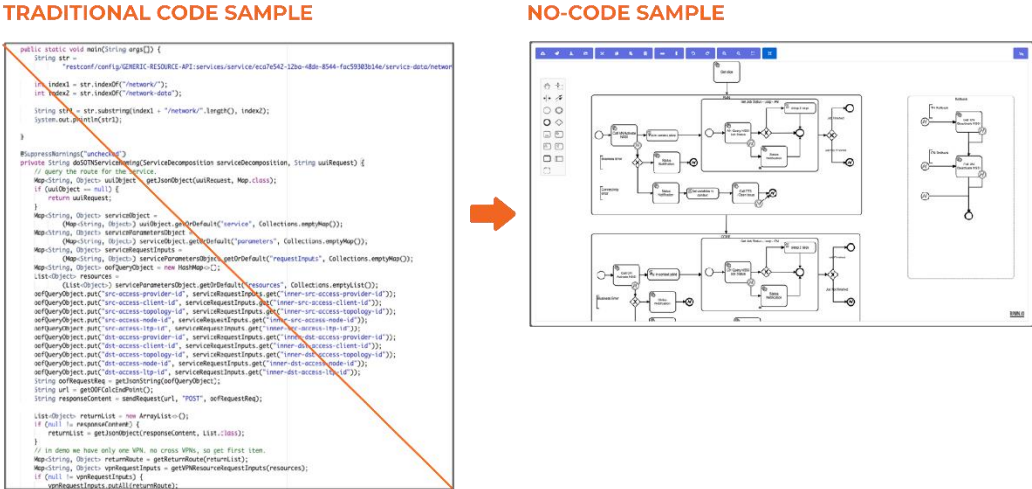

Figure 1: No-code solution
[click to enlarge](#)

Figure 1 (above) illustrates a no-code solution. On the left is a classic image of any code. In the "classic" BSS/OSS environment, you must have people with advanced software development capabilities deeply involved in all facets of the system. When making changes to a service, you have a typically long process to rewrite or add code to an already complex system, which adds cost and lengthens time to market. On the right is an image of a flow developed on a no-code orchestrator. On no-code orchestrators, the development process is significantly simplified and more agile. Primarily a visual tool, the creation of routines or flows can be carried out by network engineers (not necessarily developers), and the "development" process is carried out mainly by "drag and drops" and connecting flow elements to accomplish the provisioning and orchestration tasks to launch a service.

Onto the digital transformation path

On CSPs' journey toward becoming digital service providers, no-code orchestrators play a key role in developing and deploying new (and changing) digital services quickly, creating a more efficient digital operation.

Dynamic provisioning

Dynamic provisioning is the efficient use of network resources. In general, the virtualization of network functions and distributed architectures, such as RPD or small cells, enables virtual

resources as required (vCCAP, virtual routers, virtual switches, and more) and, in turn, releases them when demand decreases.

Autonomous networks

Networks are no longer passive and are increasingly intelligent. They can collect and correlate metrics based on data or events and trigger optimization actions like self-healing and self-optimization.

NaaS

With virtualization, networks add the ability to expose certain functionalities as a service and provide an interface to be consumed by any platform. By exposing the network as a service, a variety of new and powerful business models are enabled, including the ability for end users to configure and operate the network through APIs.

Automation and service availability enable operators to develop network capabilities such as dynamic provisioning, autonomous networks, and network as a service (NaaS). These capabilities provide the benefits of operational excellence, OPEX reduction, and faster time to market.

Benefits of a no-code orchestrator

One of the most important benefits of leveraging no-code with orchestration is agility. The use of graphical tools significantly simplifies the effort required to create or modify business processes, which implies that launching a new service is measured in terms of hours rather than weeks. Hyper-specialized development resources are no longer required, but instead a trained user performs the modeling.

Additionally, CSPs can avoid vendor lock-in. A no-code orchestrator allows CSPs the ability to break this dependency by adding support for multiple vendors for a specific technology (as in SD-WAN). This is accomplished through configuration. It is not necessary to change the orchestrator code itself.

No-code orchestrators are designed to connect any element, whether software or hardware, with a communication interface and support multiple out-of-the-box protocols. This guarantees that integration with future platforms and network elements is simple and straightforward, leveraging industry standards (TMF, among others).

We see no-code orchestration systems as the future in that they provide outstanding flexibility and agility in creating business processes. Moreover, they are necessary tools to support high user demand for new products, delivered "instantly." Creating service-oriented automation processes with a no-code platform is a snap and, in many cases, only a few clicks away. These platforms provide a wide range of tools that allow users to orchestrate and integrate very complex activation flows, multi-vendor network devices and virtual services without writing a single line of code and without really having to engage with the underlying details of the network protocols.

Orchestration capabilities must evolve to handle the end-to-end service lifecycle, collecting information from the network and automatically acting accordingly to dynamically adapt resources to demand and automatically optimize configuration.

This new paradigm of self-adaptive networks and zero-touch automation will be essential to support the scale of 5G networks and massive deployments of IoT.