

# THE KEY TO WINNING 5G IS A UNIFIED NEXT-GEN CATALOG

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# The Key to Winning 5G Is a Unified Next-Gen Catalog

## Introduction

5G will accelerate telcos' evolution as they restructure themselves to take advantage of it. 5G can help communication service providers (CSPs) become purveyors of digital services given the low latency and other features associated with advanced versions of next-generation networks. One of the key justifications for the large capex spend on 5G is the potential to create new growth opportunities across different lines of business.

This stems from slower growth or a decline in legacy businesses, such as fixed-line telephony, over the past decade. The next generation of mobile networks is an opportunity for telcos to use connectivity as a wedge to pry open a market and then offer a wide range of services, up to and including complete solutions for enterprises if not consumers. As a result, telcos will be able to capture far more market value than just

connectivity, establishing a dominant position in a new market and increasing margins and customer loyalty by delivering these value-added services. Telcos were meant to develop said use cases across many industry verticals, such as travel and transportation, smart cities, smart homes, supply chain and manufacturing, and healthcare and wellness. Over the years, however, these have proven to be problematic to scale and deliver, due to insufficient technological capabilities for many of the envisioned use cases — namely speed and latency requirements.

5G networks are at the forefront of change for telcos, giving new hope to a class of companies looking to generate new revenue and refurbish if not overhaul operations. 5G is driving the transformation of telcos as it addresses most of these challenges because it provides a path to address the full range of connectivity requirements mandated by many use cases, including the ability to offer very high capacity, very dense device connectivity, very low latency, and high reliability. Digitalization of telco operations and support systems also enable telcos to efficiently address the complexity and fragmentation of markets.

However, a key aspect to capitalizing on the 5G opportunity is the evolution of business operating models, driving optimization and innovation via a leaner telco business model. 5G networks will also offer telcos an opportunity to capture value by collaborating with ecosystem partners that in turn play an integral role in the development of the next generation of services, based on new 5G currencies with faster speeds, lower latency, and improved reliability.

### AT A GLANCE

#### KEY TAKEAWAYS

- » As 5G emerges and introduces a wide range of services, partners, and new business models — some of which are still unknown and undetermined — CSPs need to easily define and configure the services attributes through a unified, business-driven product catalog, spanning BSS, OSS, and partner ecosystems.
- » The reality for most CSPs is that they are burdened by legacy catalogs. To successfully deliver on the promise of 5G they must rethink their business readiness to easily develop and deploy new services, speeding both time to market and time to revenue.
- » To meet market expectations and ROI, CSPs must consider a centralized, cloud-native, and citizen-developer-led catalog as core to BSS transformation, providing a single source of truth and delivering a consistent view for all product and services across the business.

## How do CSPs Capitalize on 5G Opportunities?

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CSPs can capitalize on 5G opportunities by monetizing services for 5G-enabled use cases, across industry verticals, but what are the key building blocks to prepare CSPs to deliver innovative services for both consumers and enterprises to drive top-line growth for the business?

For a CSP to remain competitive they must consider a **5G-ready catalog** to:

- **Reinvent the customer experience across digital channels serving all network, charging, and commerce needs** to enable their customers to gain a more personalized view of their usage in real time, dynamically providing a list of contextualized offers based on intelligence-driven recommendations.
- **Rapidly define and deploy new services** to manage the end-to-end life cycle of next-generation services dynamically in their offerings, leveraging 5G APIs via network exposure function (NEF) for network slicing and edge, creating the right campaigns and promotions to rapidly respond to market demands and conditions, and adapting to the digital lifestyle. To truly monetize 5G use cases CSPs will need to leverage a centralized catalog platform to support a new ecosystem with partnership federation, creating bundles and offers of generic and vertical-ready solutions with external third-party catalog systems.
- **Reduce operational and maintenance costs** to maintain a unified, centralized catalog serving end-to-end needs (fully synchronized commercial and technical service definitions, charging policies and commerce) deployed in the cloud with a microservices-based architecture. A 5G-ready catalog will need to be a collaborative platform that considers business and marketing users as part of the overall process to quickly introduce 5G solutions.

Today's catalog management principles will not scale to match the needs of CSPs in the 5G era, which will be further challenged by adjacent digital services from partners, new applications/content emerging as global 5G rollout continues, and the myriad use cases that have yet to be defined or developed. CSPs must strive to overcome existing challenges associated with legacy catalog systems as they will become more amplified when trying to deliver the value chain of IoT, edge, and 5G services.

## CSPs' Current Catalog Challenges

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Catalog management systems have been the heartbeat of the OSS/BSS portfolio, alongside billing and charging, for decades. Catalog-driven decomposition and orchestration drives a CSP's order management system to fulfill and provision an order, steers the revenue management platform to charge and bill customers, guides the portfolio inventory platform to make sure the CSPs has a registry of what products, services, and resources the customers have activated, and, most importantly, drives commerce and order capturing for CSPs.

However, over the decades catalog management systems within the OSS/BSS stack have become cumbersome. Diversified portfolios and expanded lines of business, coupled with an uptick in CSP M&A activity, have made catalogs inefficient and impractical, with an overlay of complex

architecture silos, disparate catalogs, and over-reliance on IT to manage the end-to-end life cycle of products and services.

CSPs face the following issues and challenges with legacy catalog solutions in the 5G era:

- Current challenges with **disparate catalogs** will be compounded in the 5G era — without a centralized catalog providing consistency and speed to market, CSPs will struggle to introduce new products that are unified across the OSS/BSS stack, and services will no longer be competitive. CSPs face high operational costs to manage, support, and maintain the catalog across multiple systems, which lack standardization and are often interconnected with hard-coded propriety methods. As most OSS/BSS functions in the stack have their own embedded catalog — such as order management, billing, and order capture — the lack of an integrated centralized catalog has historically caused a large proportion of orders to fail due to inconsistent entries and a lack of synchronization between systems. This has a knock-on effect on customer satisfaction and puts further strain on customer call centers as they need to resolve issues manually.
- **Non-intuitive interfaces** and a general lack of an enterprise-grade product life-cycle management (PLM) system block business stakeholders from being involved in the overall creation (and retirement) of products and services, therefore restricting the catalog to IT only. CSPs will face a challenge to remain competitive and relevant if they do not continually bring to market new ideas and solutions, and the non-inclusive nature of most catalogs hinders innovation, stretching the time to market of new products and services. Business and marketing users are well equipped to provide input to define new propositions, and are generally closer to the customer and understand market expectations. Knowledge from the business and marketing teams can therefore be leveraged to quickly pivot focus toward new trends and innovations in the market.
- As the volume and complexity of offerings grow, CSPs will struggle to satisfy their customers if they cannot proactively deliver customized solutions based on their habits and needs. Understanding customer behavior will enable CSPs to formulate a more attractive portfolio of offers and services, driving overall better **customer experience**. The traditional methods of tracking a campaign's performance using static and deterministic formulas will not scale, and CSPs need to be able to quickly refine their offerings and bundles to develop more personalized alternatives through intelligent segmentation and a data-driven recommendations engine.

The reality for most CSPs is that they are burdened by legacy catalogs at a time when they need to bring solutions to market faster, find efficiencies, and, most importantly, offer better customer experiences. To successfully deliver on the promise of 5G and seize on the boundless possibilities they must rethink their business readiness, giving them the flexibility in ever-changing conditions to accelerate product innovation that will differentiate them from the competition and remain relevant with their customers.

## The Importance of a Next-Gen Catalog in the 5G Era

The competitive landscape for CSPs is diversifying with the influx of digitally native players entering the market. With 5G acting as a catalyst for digital transformation and innovation, new revenue opportunities from non-telco players are being recognized and tapped into for 5G-enabled use cases, unlocking opportunities in both the consumer and enterprise markets, spanning AR/VR, connected vehicles, cloud gaming, and a wide range of industrial IoT applications. To compete in this market CSPs must look to new business model opportunities. Specifically, this will be how they charge for 5G services — for example, this can be based on slice type, network type, or quality of service. These changes will need to be modeled within the catalog and reflected in the revenue management platform.

In addition, CSPs must easily onboard partners, their services and products, and incorporate them into bundles offered to consumers and enterprises, automating that process from an end-to-end perspective. CSPs need agility in this context, including a self-service portal that enables partners to onboard themselves and trigger internal automation within the partner ecosystem management to perform the administration, testing, and validation of products and services. Importantly, a catalog with a standardized integration gateway will be crucial to expand the digital value chain, managing offers by designing bundles and pricing models of product and services owned by third-party catalogs.

To meet market expectations CSPs must consider a centralized, cloud-native, and citizen-developer-led catalog as a core BSS transformation fundamental, providing a single source of truth and delivering a consistent view for all product and services across the business, offering scalable deployment models on a microservices-based architecture and empowering business users to be part of the overall product creation process that can reduce IT dependency.

To successfully monetize new services and drive new revenue streams, CSPs must deliver:

- A **centralized** catalog that is 5G ready serving all network resources, charging and policy and commerce needs. This will be more critical than ever as CSPs are expected to adopt a more modern, open, and multivendor approach together with an ecosystem of partners to deliver beyond the traditional use cases in the 5G era. This modularization and centralization of products/services will give CSPs more flexibility and speed to deliver new product offerings and new business models to market. Network slicing in particular will provide a wide range of opportunities by offering flexible access to network resources and will enable CSPs to offer highly tailored service offerings, delivered with the help of their networks and partners in a B2B2X model.
- Flexible frameworks of deployment that incorporate agile methodologies. Many progressive CSPs are in the process of developing 5G capabilities through **cloud-native** functions, leveraging microservices-based architecture. The benefits for CSPs will be flexibility of deployment on a public cloud, private cloud, or hybrid cloud, with a single pane of glass for governance together with unified management tools such as DevOps and CI/CD — considered two of the most useful and productive software development methods. The catalog needs to match the flexibility, speed, and agility of a cloud-native

network, taking advantage of the inherent capabilities such as security, scalability, multiple zones, and resilience, while also benefiting from a common data framework for better interoperability between vendors.

- A **collaboration** platform with an easy-to-use interface, embracing the "citizen developer" narrative that empowers business users to be part of the PLM process, easily defining a product or service from conception to retirement, with an influence into each key milestone along the way — ultimately making CSPs more competitive by reducing the time to market (TTM) for newer and more innovative services. A 5G-era catalog must also go beyond data centralization and embrace data-driven optimization across the multiple domains by way of an intelligent recommendations engine and predictive analytics for offers and bundles.

Leveraging over 35 years of industry experience, Amdocs has created Amdocs Catalog to help transform the way CSPs introduce products and services to market. Amdocs Catalog is a cloud-native, low-code platform catalog that is 5G ready. It was developed to overcome the typical inefficiencies and complexities associated with legacy catalogs, serving the commerce, charging, and network needs of modern CSPs. The collaborative platform supports a simple user interface for design creation needs, along with embedded intelligence to rapidly define, develop, test, and launch new offers, products, and services — ultimately accelerating product innovation and driving digital transformation for CSPs.

## Amdocs Catalog — A Centralized 5G-Ready Catalog

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Amdocs Catalog is Amdocs' next-generation enterprise catalog system, helping CSPs to be better prepared for 5G-enabled use cases. Its unified and centralized characteristics serve the end-to-end needs of enterprise catalog readiness, from network resources and associated network asset management, to network and service operational definitions, to charging and policy and commercial modeling (pricing, commerce, and ordering).

Amdocs' approach to Amdocs Catalog is clear: For CSPs to fully harness every opportunity in the 5G era they will require comprehensive catalog capabilities with the flexibility and agility to build and support new business models, optimizing the use of network resources and engaging the broader digital value chain through a partner ecosystem. For **business users** Amdocs Catalog delivers:

- Embedded intelligence capabilities that incorporate contextual recommendation, alerts, and predictive analytics, driving insights and data-driven recommendations that can further refine offer selections for customers. This business intelligence can help CSPs gain a more competitive edge by boosting marketing effectiveness.
- A dashboard that tracks the business performance of catalog-defined products and offers, benchmarking KPIs and other analytical data. This enables business users to continually monitor the effectiveness of their offers and products and execute on the actionable insights provided. The recommendations capability offered by Amdocs Catalog enables CSPs to enhance customer loyalty and reduce churn, bringing them closer to their

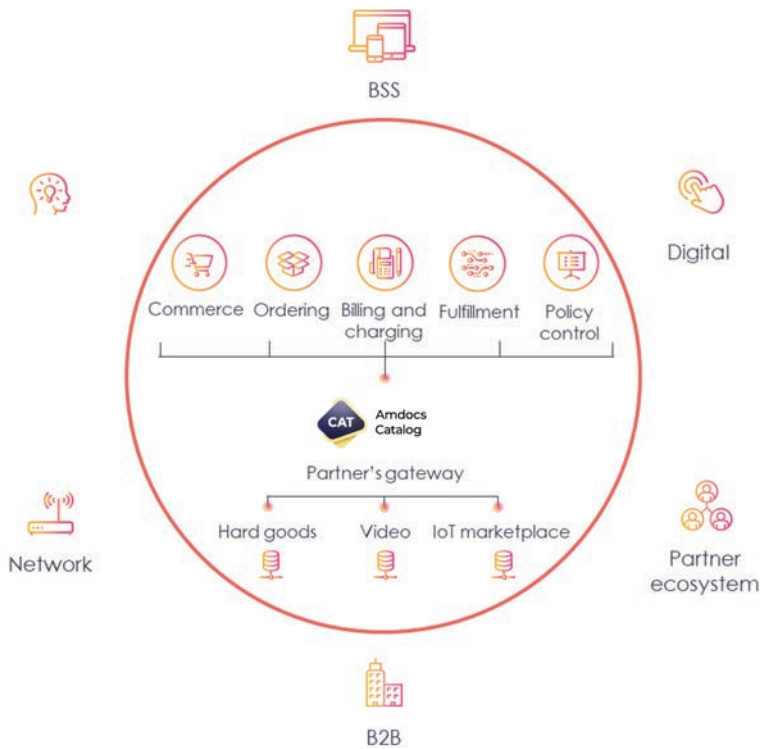
customers and ensuring that every offering and campaign is optimally positioned and priced for maximum profitability.

- A collaborative platform to integrate the business and marketing departments in the product design and creation process, shifting that responsibility solely from IT. Amdocs Catalog is a low-code-based configuration tool that leverages a business-driven intuitive UI, expanding the PLM process beyond IT and relieving the strain from a small pool of resources. The shared management of the offer life cycle will help accelerate collaboration between departments and provides broader perspectives on how offers and services should be modeled — driving innovation.

Amdocs Catalog can be leveraged across both the business and technology domains and is part of Amdocs' wider CES21 customer experience suite. Its architecture is cloud native and built on microservices and open source principles.

- Amdocs Catalog has been built from the ground up with flexibility, agility, and scalability in mind, building strong cloud capabilities with leading cloud platform providers as the boundaries between telco infrastructures and public cloud are blurred. As a consequence, CSPs can benefit from an open, cloud-native catalog solution that enables services to launch in minutes rather than days and weeks, and take advantage of predefined carrier-grade CI/CD automation to enable faster agility in smaller release iterations.
- Amdocs Catalog can also easily connect to third-party catalogs and incorporate their products and services into offers and bundles. The integration gateway to the onboard partner's offering is based on a standardized open API model from TM Forum. This will help accelerate the interactions with third-party content and service providers, building new services to match customers' requirements. The ability to add, edit, and access the catalog easily and quickly will be essential to this process.

FIGURE 1  
Amdocs Catalog Solution



Source: Amdocs

Being able to rapidly define and deploy new innovative services will be key to determining the successes of CSPs moving forward, with a 5G-ready catalog having a principal role in tackling the reduction in time to market as new waves of services are introduced in the 5G era. Amdocs Catalog is a low-code platform that acts as a centralized catalog that can be connected across the entire OSS/BSS portfolio, ensuring consistency and traceability, and is a key driver of business growth. It serves the end-to-end needs of a 5G-ready catalog, enabling a unified commercial, service, and network resource catalog, and supports a cross-vendor partner ecosystem to extend the digital value chain through a simple and intuitive user interface. Amdocs Catalog is ready to serve any 5G use case and supports new business models to enable CSPs to effectively monetize 5G and flourish in an ever-changing digital world.

## Conclusion

Inflexible architecture, high maintenance costs, and new requirements mean that CSPs need to upgrade their catalog systems to remain competitive in a 5G-driven, digital services environment.

5G will lead to a strong omni-channel ecosystem and will drive lifetime value-oriented customer experiences. 5G networks will create many touchpoints, such as IoT devices and connected cars, that are maintained by customers in addition to traditional channels. Partner management and settlement of relationships will play a critical role in complex partner-enabled 5G business models as well.



The systems employed by CSPs were simply not designed with dynamic network configuration, continuous quality of service monitoring, and partner ecosystem management in mind. Unless CSPs rejuvenate their telecom operations and business system stacks, the maximization of 5G-related revenue is likely to be more difficult.

Telcos are increasingly turning to IT vendors and software companies for help as IT and software design principles are essential components of operational transformation. As part of our *Global Telco Survey* last year, CSP decision makers told IDC that the implementation of DevOps/agile processes (68%) and the adoption of processes/practices from the IT or OTT world (63%) were the most important factors to ensure successful digital transformation.

CSPs should update their operations, orchestration, and monetization systems/processes — with a unified and centralized catalog serving all network and commercial needs a key component — to better manage the demands that 5G networks will place on them. That means allocating the resources needed to develop digital business models. To that end, CSPs need to build agile, multidisciplinary teams that develop software-driven products in discrete areas, across product and system value chains. CSPs can also create digital business models by leveraging IT, software, and cloud vendors as well as digital platform suppliers and technology specialists while simultaneously managing legacy telco equipment suppliers during the transition period.

## MESSAGE FROM THE SPONSOR

Amdocs aims to enrich lives and improve society, using creativity and technology to build a better connected world. Amdocs and its 27,000 employees partner with the leading players in the communications and media industry, enabling next-generation experiences in 85 countries. Our cloud-native, open, and dynamic portfolio of digital solutions, platforms, and services brings greater choice, faster time to market, and flexibility to better meet the evolving needs of our customers as they drive growth, transform, and take their business to the cloud. Listed on the NASDAQ Global Select Market, Amdocs had revenue of \$4.2 billion in fiscal 2020. For more information, visit Amdocs at [www.amdocs.com](http://www.amdocs.com).

## About the Analysts

### [Ahmad Latif Ali](#), Associate Vice President, European Telecommunication Insights



Ahmad Latif Ali leads IDC's European Telecommunications Insights program, directing research in this area as the telecommunications industry becomes an integral part of cutting-edge technology adoption. He provides strategic insight and perspectives on how European telcos are evolving from traditional CSPs to platform players at the heart of digital ecosystems — deciding where to operate in the digital value chain, who to partner with, and how to manage and orchestrate new technologies.

### [Kevin Restivo](#), Research Manager, European Enterprise Mobility



Kevin Restivo is research manager for IDC's European Enterprise Mobility in the 5G Era program. He delivers data-driven insights and analysis on 5G buyer priorities, use cases, and market developments primarily to technology vendors and service providers. He also leads IDC Europe's Task Force on 5G, the next generation of mobile technology. In addition, he covers the mobile security market and follows workplace trends such as the emergence of digital workspaces and the unified endpoint management market in Europe by country.

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