

5G network delivery brings operations complexity. Addressing the needs of customer service offerings and new business models brings an evolved approach that goes beyond what installed systems can now deliver. Satisfying this gap requires a new way of doing business for which SaaS-based business management solutions are ideally suited.

5G Network Evolution and Changing Customer Needs Call for SaaS Ops Solutions

April 2022

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Introduction

The global communications industry is experiencing unprecedented change brought on by 5G SA deployment, new service delivery models involving 5G slicing, and the promise of advanced business opportunities from services offered by a 5G multi-access edge computing (MEC) architecture. 5G is not faster connectivity services alone, nor is it just a next generation of mobile technology. 5G is certainly not on a linear scale for end-to-end (E2E) solutions to business problems. 5G and 5G/MEC are moving the course for how business opportunities can be addressed.

Launching and managing 5G services means communications service providers (SPs) need to incorporate dynamic and real-time operations, orchestration, and monetization functions within the service delivery and management processes. But the installed operations support systems (OSSs) and business support systems (BSSs) were never designed to address this type of service management need. A systems uplift is sorely needed.

Coupled with the newly forming 5G environment is the cost efficiency and service agility potential that "network cloudification" such as cloud-native functions (CNFs) bring to communications SPs. In this environment, communications SPs need to transition their internal processes and especially systems to a more flexible approach for addressing customer demands or risk finding themselves losing out to competitive forces that can. Such requirements clearly demonstrate why business as usual no longer applies.

This report focuses on how communications SPs must cost effectively address the changing business model and monetization needs that are a major part of today's evolving operations management environment. The paper explains why cloud-based software-as-a-service (SaaS) models are strategic for enabling rapid service prototyping and in supplying an experimental environment through which the best approach to handling customer challenges in the new 5G technology environment can be discovered. The paper also explains how SaaS solutions reduce risk, optimize operating costs, and minimize the time to become operationally ready for 5G services, especially 5G slicing services.

AT A GLANCE

WHAT'S IMPORTANT

- » 5G brings real-time and dynamic operational needs that existing OSS/BSS were never designed to address. This means operations systems and business management processes must now include options for communications SPs to easily adapt agile and flexible ways of satisfying customer expectations.
- » BSS "as a service" can help achieve agility and operational efficiency while meeting the low-entry barriers that traditional approaches cannot match.
- » Using a SaaS model for critical OSS/BSS functions gives communications SPs a distinct advantage in trying new strategies and business models that can help them determine the best approach for satisfying customer needs in the 5G era.

Agile Business Support Means Advanced Systems and Processes

Network flexibility and operations agility are not the only challenges today's changing business environment brings when it comes to meeting customer needs and in addressing business and technological change. Communications SPs also require new capabilities to help transform how network services are delivered and to stay competitive in the 5G era. They expect 5G networks to help them design and deliver innovative services within the consumer market. More importantly, in what will be the defining characteristic of the 5G era, communications SPs expect to redefine the value provided to enterprise organizations and hence the commercial engagement with this lucrative business segment.

Amid the backdrop of heightened competition and the ongoing challenge to drive fresh revenue opportunities, the fundamental aspects of today's rapidly evolving network refresh are rooted within the business processes and systems of the communications SP market — fulfillment (network resource designation and service-level orchestration), assurance (network service performance and the customer experience), and billing (usage-based transaction rating, charging, and customer notification). Hybrid networks made up of fixed broadband along with LTE and now 5G SA mobile, customer services involving ubiquitous indoor/outdoor coverage through cellular and Wi-Fi interaction, multiple teleco cloud and edge endpoints, and new business models that incorporate contributions from partner ecosystems complicate what was the traditional flow of call detail records (CDRs) from the network to the monetization and data management functions.

Service offerings will see limited deployment until the operations, orchestration, assurance, analytics, customer experience, and monetization systems are adequately addressed. For example, quickly launching, learning from, and scaling digital services are critical to stay relevant, build brand loyalty, and maintain a solid customer base. Such actions require advanced revenue management and customer experience solutions that deliver functionality well beyond the capability set of most BSSs installed just five years ago. These and other new business requirements define the rapid responsiveness capabilities that business solutions such as those delivered through a SaaS-based model can bring to light. But updating software systems is not the only concern.

Business processes need updating to include real-time charging, customer self-care, and automated service assurance functionality to satisfy an evolving technology and business environment. Communications SPs must redefine how they do business in a dynamically changing market landscape, which is especially relevant for B2C, B2B, and B2B2x business models that are now energized through an everything connected world. They also need to charge for categories of customers and sometimes even specific customers based on a unique set of optimized resources and network topology with SLA-specified behavior tied to speed, latency, and load-carrying capacity. In yet other situations, monetization outcomes will need to be used such as advertising, incentive-based promotional discounts, and the very likely combination of multiple factors for defining how a business solution or customer service is managed.

Quickly launching, learning from, and scaling digital services are critical to stay relevant, build brand loyalty, and maintain a solid customer base. These actions require advanced revenue management and customer experience solutions that deliver functionality well beyond the capability set of most BSSs installed just five years ago. These and other new business requirements define the rapid responsiveness capabilities that SaaS-based business solutions can bring to light.

Why Communications SPs Need SaaS-Based Solutions

Delivering digital services and partner-involved service bundles is the very lifeblood of how 5G will change the face of business. Fulfilling service orders, assuring that end-to-end services are working correctly, and billing for services using a variety of business models are driving 5G service delivery now. But orchestrated partner interactions with network connectivity are the differentiating force factor along with an ability to accommodate rapidly changing business conditions that can bring new business and operations support strategies to light.

The change in business structure and strategy is also the reason for deploying systems differently to minimize risk and increase the level of success not seen regularly from massive IT transformation projects of the past. It is the world in which cloud strategies such as SaaS not only take root but widely deploy business success. Change in strategy and business management tools are sorely needed by the communications SP industry for increasing relevance in the eyes of the end customer.

Augmented reality (AR) and virtual reality (VR) services for example, especially those involving gaming, require high-level upload and download speeds in the vicinity of 100Mbps or greater. To fully satisfy customer expectations, they must also provide connectivity with approximately 5–10ms or less of latency along with high-volume storage. Charging must not only be highly responsive but it also needs to incorporate several new billing parameters such as latency, reliability, compute capacity, storage volume, and data input/output flow along with the more traditional parameters of usage volume and transport speed. Rapid responsiveness to changing customer needs and market conditions is a must.

IDC believes that communications SPs should address the monetization of new generation services through a flexible platform that can accommodate service change defined by market factors, technology evolution, and buyer behavior. For example, committing to a monetization solution designed to support a particular use case or even group of use cases is a business-limiting proposition due to flexibility limitations. Organizations that engage with a trusted services partner with proven abilities to direct any level of transformational change has a very good chance of mitigating the risk for failure due to the multiple levels of complexity associated with new network technology functions and business models.

The Benefits of SaaS in Support of New Services

One of the strategic benefits from engaging with a new software delivery model such as SaaS is that a SaaS business management environment encourages market experimentation around new ideas and pricing strategies. This approach enables an organization to rapidly create a complex service and then deliver the new service to a selected customer base to test the market, adjust the new service as needed, launch it, and scale it up to a wider market. This is accomplished through business analyst involvement, rather than IT programming help. It also comes without disruption to existing customer systems and processes, and then, at the proper time, it can enable a near-transparent transfer of customers to the new solution. Other benefits include:

- » **Customer focus rather than technology management.** SaaS business management solutions enable an organization to focus on customers without needing to manage issues involving complex software operations such as infrastructure capacity, operating system compatibility, software versioning, and security.
- » **Software operations.** IT technical resources are no longer needed to manage software performance and general software operations.

- » **Elastic capacity.** Expansion to meet capacity needs from new customer additions or to accommodate expansion plays is automatic, while also available in reducing needed capacity should customer uptake fall. Another example involves managing capacity peaks during bill cycle runs, special promotion days, and related actions.
- » **Continuous delivery.** SaaS delivery mode makes it easier to implement upgrades. Cloud architecture separates software from underlying hardware, making hardware upgrades much simpler, if needed at all. SaaS delivery mode also makes it much easier to deliver upgrades on an ongoing basis.
- » **Starting small to test the market.** Most SaaS business models are closely related to the size of the business. This, in combination with fast time to market (TTM), enables communications SPs to test new offerings or markets with relatively low investment and risk.
- » **Lower barrier to entry.** With low initial costs associated with SaaS, communications SPs can try the model in one line of business and later expand near seamlessly to additional lines of business.
- » **Trials of new digital services.** Traditionally, initial IT spend was a major hindrance to launch new services since it was very difficult to set up even simple support without heavy investments in hardware and platforms. With SaaS, setting up new services is quick, low cost, and flexible — enabling agility, unmatched by traditional IT models.
- » **Paying for what is used.** While traditional IT sizing is based on "worst-case scenario" + safety overhead, with the elasticity of SaaS solutions a communications SP can pay exactly for what is needed, growing or shrinking demand as needed. This includes not only cloud infrastructure and platforms (IaaS and PaaS) but also spend on actual software. In this manner, IT spend is much more aligned with a communications SP business, converting capex into opex, which some communications SPs prefer, especially in light of heavy capital investments such as 5G.

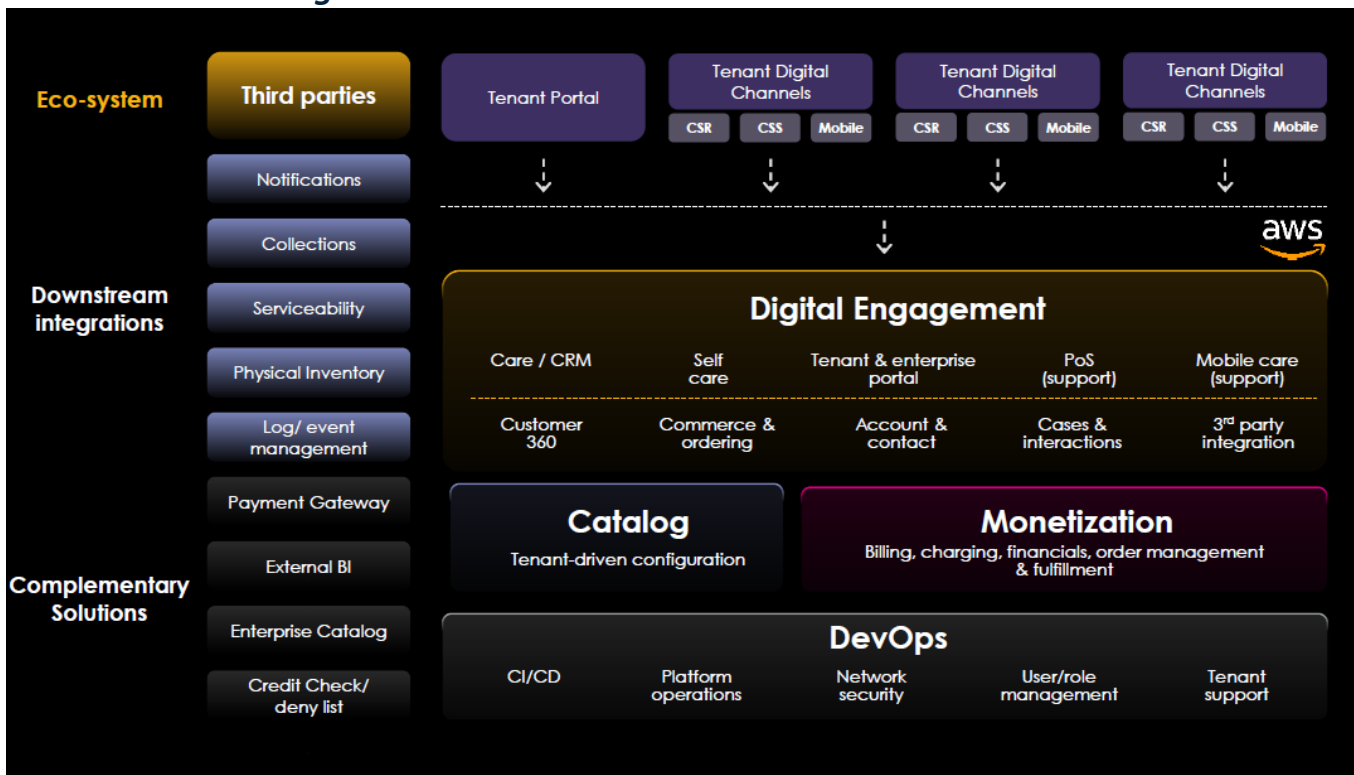
Amdocs Digital Brands SaaS Suite

Amdocs Digital Brands SaaS Suite is a full-stack BSS solution provided in a SaaS model and deployed over AWS cloud (see Figure 1). It offers communications SPs the ability to rapidly deploy and easily manage digital experiences for their customers through predefined use cases and business flows that encompass digital care, commerce, and monetization. It addresses several challenges tied to a communications SP's adoption of SaaS:

- » **Need for fast time to market.** Amdocs Digital Brands SaaS Suite employs Amdocs' marketing-driven business catalog. This enables business teams to centrally define offers and promotions that are used by all the different BSS components, with a graphical UI.
- » **Competing at a best-in-class level.** Amdocs Digital Brands SaaS Suite is built with a strong foundation that already supports more than 100 communications SPs, ranging from very large to very small. While not all capabilities are necessarily exposed for each predefined "package," the maturity and stability of the back end ensures support for existing and future communications SPs needs.
- » **Minimal resource availability.** The Amdocs Digital Brands SaaS Suite incorporates TM Forum's open APIs and configurations-led operations to ensure ongoing operation and platform management can be performed entirely by business teams through the platform's self-service portal. These APIs reduce integrations overhead and eliminate the need for most ongoing code changes.

- » **Low capacity of large IT transformation projects.** While the Amdocs Digital Brands SaaS Suite covers the entire BSS stack, it was built with a "business first" approach to support the most relevant customer journeys and is delivered "as a service" using Amdocs Digital Brands SaaS Suite veteran services teams. The result is less integrations, less overhead, improved performance, and less IT expert resources required from the communications SP side for implementations.
- » **Strategic relationship with AWS.** While SaaS vendors take full responsibility for the technology behind the application, including platforms, web services, infrastructure, and data models, seamless operations requires close collaboration between the application vendor and the underlying cloud infrastructure vendor. The needs of the communications industry are in many cases different than other industries, and specific expertise is required to optimize cloud resources efficiently, to design architectures that overcome potential issues such as latency, ultra-high availability for certain data sets, performance at scale, or efficient data recovery. The Amdocs Digital Brands SaaS Suite has a strategic relationship with AWS to ensure that the Amdocs Digital Brands SaaS Suite platform is delivered with carrier-grade performance and stability.

FIGURE 1: *Amdocs Digital Brands Solution Suite Functional Architecture*



Source: Amdocs, 2022

Business and Industry Solution Challenges

Satisfying Evolving Customer Expectations

Customer expectations about service quality, network availability, and end-to-end solution delivery are going up as 5G technology pushes along differentiated service offerings based on quality, performance, and end-to-end solution functionality. The pandemic has been a catalyst over the past few months for the drastic changes in connectivity demand, download capacity, and responsiveness to change. It has driven digital transformation for many communications SPs, while customers continue to look for more — faster, stronger, more innovative, and increasingly available. As the hyperscaler cloud providers (HCPs) and other technology leaders set new bars for the user experience, it places communications SPs in a continuous battle to stay relevant. Many communications SPs have tried to bridge the gap between how they address customer expectations and the simplifying ways that the technology giants offer services by developing in-house solutions for billing, commerce, or CPQ, but found themselves in an engineering abyss of technical complexity and increasing costs.

Agility Requires Close Performance Monitoring

Revenue management in the past was usually addressed via a rules-based approach designed to identify network capacity usage weighed against a predefined allocation of calling minutes, data volume, or similar factors for revenue accountability. Business process and technology evolution has made certain business approaches obsolete or at least in dire need of redefinition. In today's environment where communications SP partner-enabled business solutions and edge devices are fast becoming a next-generation business reality, new machine-driven approaches to revenue management and customer experience analysis are essential for thwarting unintended consequences from unplanned actions. Continuous process changes and evolving business models open the opportunity for less-than-ideal operations and the potential for fraud.

Systems and Process Transformation Even in a SaaS Environment

Market conditions have radically changed since the COVID-19 pandemic broke. Yet communications SPs adopting a digital services strategy prosper because they transformed established systems and processes to meet the dynamic needs of today's environment. Other communications SPs are still in a state of transition. Implementing new network technology, combined with needed changes in existing business processes, introduces the potential for revenue disruption and even an inadvertent lack of revenue accountability. Worse still is the potential for fraud in any of its forms from within and outside a communications SP's business environment. Digital operations and monetization solutions capable of responding to market changes when they occur will continue to be a top priority for several months and even years to come.

Organizational Focus on Rapid Business Solution Delivery and Maintenance

Business management, charging, customer support, and data analytics are not new to any organization. However, the combined focus of functions for reducing risk and mitigating the negative impacts caused by unknowns that may have an adverse impact on a communications SP's top-line revenue and bottom-line profitability is always a point of concern. These processes take a combination of software tools and services working together. This also means that existing business processes must be updated to reflect current-level thinking and new business model adoption. Time will play a role in moving initially manually managed services to effective automated functions. Suppliers of SaaS-based solutions need to be mindful of how often operations and monetization teams need to be updated on available solution capabilities.

Conclusion

5G is bringing significant operational change to the business processes and support systems for communications SPs globally. Much of this change rests in moving to a dynamically changing and real-time operations environment, which existing systems were never designed to address. Capitalizing on the ease of use and try, fast fail, and try again approach that SaaS-based solutions can deliver creates an opportunity window for communications SPs to stay out in front of competitors trying to gain customer attention. The challenge all communications SPs face is moving quickly enough to address the needs of technology evolution and partner ecosystems that combine to bring new service capabilities never provided before now to customers — both consumers and business customers. The Amdocs Digital Brands SaaS Suite, combined with Amdocs services expertise, is one solution option that has a proven track record of SaaS-based business support success.

About the Analyst



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Karl Whitelock leads IDC's communications service provider operations and monetization solutions global practice. He offers strategic insight and global perspectives concerning several operations and monetization functions, formerly known as OSS/BSS, including rating and charging, policy management, partner management, customer experience, revenue assurance and fraud management, service assurance, network data analytics, service orchestration, and network operations.

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