MARKET NOTE

5G Operational Readiness: Oracle's Digital Experience for Communications Solution

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EXECUTIVE SNAPSHOT

FIGURE 1

Executive Snapshot: 5G Operational Readiness — Oracle's Digital Experience for Communications Solution

The 5G technology upgrade cycle is both a golden business opportunity and a solution management nightmare for the global communications service provider (SP) operations (OSS) and monetization (BSS) supplier community — opportunity from delivering advanced management functionality that meets the business and network requirements of a dynamically defined connectivity and services environment and nightmare because solution management within a hybrid 5G virtual network consisting of new capabilities mixed with multiple generations of older technology is challenging, if not impossible, to always get right. This document gives IDC's perspective on Oracle's Digital Experience for Communications (DX4C) solution.

Key Takeaways

• The communications industry stands at the brink of an enormous opportunity. To fully unlock the value of this opportunity, communications SPs must rethink their approach to nearly every customer-facing and back-office operational system now installed. Ignoring this challenge means failing to generate the expected return on billions of dollars of network investment and, in most cases, losing existing market share to organizations that can meet the operations needs of 5G.

• In addition to 5G’s advanced network capabilities pertaining to speed, latency, and capacity, 5G services will involve partner contributions consisting of content, data management functions, and applications. Together these components form end-to-end solutions that can address many kinds of business problems. Meeting the management needs of such solutions involves greater levels of operations and monetization complexity than communications services from the past, especially as network slices within a Multi-access Edge Computing (MEC) architecture are deployed.

• Oracle's DX4C solution strategy addresses both the monetization and the operations management needs of 5G/IoT services. Using a cloud-native and continuous integration/continuous delivery (CI/CD) software approach, Oracle is well positioned as a strategic partner in the communications SP market.

• Designing and implementing real-time management software to meet the internal needs and rising external expectations of 5G services is perhaps the most challenging endeavor any communications SP and corresponding operations or monetization solution supplier has ever engaged in before.

Source: IDC, 2020
IN THIS MARKET NOTE

As the communications industry evolves – from physical networks to virtual functions and from early generations of mobile connectivity to the current 5G architecture that promises a vast improvement regarding several connectivity attributes – customer needs are changing too. Business customers want end-to-end solutions to solve challenges that are much more involved than simply a reliable, secure, and cost-friendly connection. Consumers want an improved experience at lower cost, powered by increasing bandwidth, lower latency, and faster speeds.

Oracle has delivered operations (OSS) and monetization (BSS) solutions to the communications service provider (SP) industry for more than 20 years. The company continues to do so today through a cloud solution strategy known as Digital Experience for Communications (DX4C), which includes next-generation OSS and BSS as well as customer experience. This document provides IDC's perspective on Oracle's DX4C solution and how Oracle is delivering the next generation of management functionality for addressing the 5G operational readiness conundrum.

IDC'S POINT OF VIEW

5G Customer Expectations and Operational Realities

Consumers and business customers from every industry want an always-on, real-time, and personalized connection with on-demand features that incorporate use cases such as virtual reality, gaming, multiparty video, industrial automation, and connected events, to name a few. 5G can accommodate these new service components and business concepts in a combined radio access and core network. However, delivering services in this environment means communications SPs must enhance traditional business models or establish new ones to deliver value and to fully monetize the customer experience.

Beyond the essential 5G monetization management functions of charging and billing, and beyond the critical 5G operations management functions of dynamic inventory, real-time service fulfillment, and orchestration and assurance, two more critical ingredients are needed for 5G/IoT solution success. The first is simplified onboarding and partner management, while the second involves analytics, machine learning (ML), and eventually AI within certain process steps.

The New 5G Operations and Monetization Functions: A Tough Business

5G/IoT business solutions such as remote healthcare, agricultural optimization, autonomous transportation, and even several types of Smart City services are not possible without partner involvement. In addition, complexity within a network construct, combined with the real-time needs of virtual network reconfiguration, makes manual manipulation of network and service definitions impractical and not fitting within most SLA availability limits. In this type of B2B2X environment, IDC believes that enhanced customer value comes from a partner orchestration function that can deliver needed management, monetization, and remuneration support. In addition, a well-defined data analytics platform that can not just harvest insight from customer usage but gain intelligence from a combination of factors including network behavior, customer usage, and external data inputs (social media) is essential for business success.

Installed systems, without cloud-native architecture and advanced functionality, can never reach the level of agility needed to address current levels of market change and provide the capacity to accommodate rapid growth from pent-up demand for 5G-based services. Yet doing the nearly
impossible is what the communications industry now expects its management software solution suppliers to do in:

- Delivering ways to address advanced operations and monetization functionality
- Supplying elastic capacity to address growth and support in real time
- Addressing multilayer (customer layer, service layer, network layer) change to network configuration and service parameters
- Charging for services involving new, real-time business models

There is also a growing expectation that the new operations and monetization functions will be delivered at a lower cost than what was provided in the past. IDC believes that companies launching 5G-based services without updating their installed systems or commissioning new ones will fail to efficiently monetize these new service offerings. As new functionality and scalability requirements add to existing service and customer management needs, without updated systems, companies will be forced to use manual methods. In this environment, either increased costs will exceed planned new service revenue or the manual approach will be ineffective in addressing the functional requirements these new services bring to light.

**Oracle's DX4C Cloud-Native Operations and Monetization Solution**

As shown in Figure 2, Oracle's DX4C platform provides a means for communications SPs to capitalize on the 5G opportunity through an end-to-end, cloud-based solution that leverages data-driven insights to transform how communications SPs can deliver customer value.

**FIGURE 2**

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**Oracle DX4C Functional Architecture**

![Oracle DX4C Functional Architecture](source: Oracle, 2020)
While an in-depth discussion of each DX4C functional domain is beyond the scope of this document, IDC believes that Oracle is offering the communications industry a viable cloud-based operations and monetization solution that is capable of meeting the real-time and data-driven requirements that 5G brings to light. Multiple function modules define DX4C as follows:

- **Digital acquisition**: Consumers and many business customers expect personalized, contextual interactions. The digital acquisition module provides a means to better understand customer behavior and the intent of every prospect and customer by using AI-sourced data to create digital customer profiles. Using timely intelligence helps personalize the customer experience in real time and optimize brand experience across the customer life cycle.

- **Frictionless selling**: Customers may start their exploration process on a website, place an item in their cart, then days later come to a retail store or establish a care center call, and expect their selections to persist. The frictionless selling module provides customers with an omni-channel and persistent experience so they can research options and easily complete their purchase through any channel.

- **Proactive care**: 5G places customers in a new phase of buying behavior as services are extensively offered with QoS guarantees. Connectivity performance issues will not be tolerated as SLAs imply always-on connectivity. Proactive care is designed to use customer and network data to identify and resolve issues before they become customer affecting, which is accomplished through AI and ML technology. This means that interaction must draw on full billing, order, network, entitlement, and even social media content. In addition, customers want self-care tools to give them visibility and control into managing their services.

- **Data-driven and AI-powered life-cycle management**: For most communications SPs, data is siloed across multiple systems, each with unique data models. Understanding customers, managing life cycles, and engaging them in this environment are challenging. With 5G, the amount of data only escalates and will potentially come from more sources than today's environment. Data-driven and AI-powered life-cycle management is designed to deliver a consolidated view of the data to underpin personalized and omni-channel experiences.

- **Intelligent launch**: The communications industry is presently identifying a wide variety of creative 5G use cases, but it is unclear as to which ones will deliver the kind of business value that customers will pay for. Communications SPs have an unfortunate history of launching many service offers with minimal uptake, thereby missing strategic revenue opportunities. Intelligent launch incorporates first- and third-party data (social media) to help communications SPs better ideate, design, and launch services with a higher likelihood of customer uptake.

- **Dynamic fulfillment**: 5G-enhanced mobile broadband, massive machine-type communications, and ultralow-latency communications services introduce new multilayer orchestration challenges. Dynamic fulfillment addresses many new requirements including increased order volume, support for new domains, increased numbers and types of devices, dynamic inventory, intelligent automation of fulfillment flows, network slice selection, and bundling to meet complex service needs. The key to dynamic fulfillment's capability set to complete provisioning is within its information model backed by Oracle's intelligent automation software.

- **Modern monetization**: 5G requires real-time converged charging to address complex pricing and discount plans using an array of metrics. Modern monetization provides granular monetization of network slices along with extreme scalability and the automation required to ensure auto-discovery of the charging function by other core network functions including integration with policy management for spend control.
DX4C is data driven and AI/ML powered to address the new requirements of 5G operations. Oracle explained to IDC that its four decades of data marketing experience went into establishing the platform, which is specifically designed to enable communications SPs to provide their customers with personalized experiences. DX4C accomplishes this task by delivering predictive recommendations using customer-driven insights that are delivered across an omni-channel environment.

While DX4C is designed as an end-to-end solution with a cohesive information model and experience on Oracle Cloud, each of the previously described modules can be purchased separately. Modules conform to open APIs to facilitate simplified integration and to enable multipartner ecosystems. Available on Oracle’s cloud infrastructure, DX4C leverages deep autonomous capabilities and security.

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Synopsis

This IDC Market Note outlines IDC’s perspective on Oracle's Digital Experience for Communications (DX4C) solution and how it provides the delivery, management, and monetization functions needed to support digital services for both business customers and mass-market consumers.

"5G technology deployment is not a one-time effort, as the standards process will attest. New business management, operations, orchestration, and monetization requirements are now at hand. Operations and monetization software capable of updating and augmenting presently deployed OSS and BSS solutions to address these needs should be scalable and flexible enough to address future challenges tied to advanced business models and new technology architecture. This is where cloud-based solutions fit in. Oracle's DX4C solution with its data-driven intelligence is one example of the functionality and customer focus needed today along with flexibility to address future needs," says Karl Whitelock, research vice president, Communications Service Provider Operations and Monetization.
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