# ORACLE®
## Communications

# Thriving in 2030: Cloud-Based Digital Marketplaces are the Future for Communications Service Providers

Doug Suriano, SVP and GM, Oracle Communications

# ORACLE®

# Table of Contents

## INTRODUCTION: DIGITAL MARKETPLACES DRIVING GROWTH OPPORTUNITIES

By 2030, Cloud and 5G-based smart ecosystems – whether they be smart cities, smart industries, or smart homes – will be the primary way people engage, transact and share information.

Today, we are experiencing smart city services for transportation, connectivity, and utilities in Chicago, London, Singapore and Toronto, participating in digital marketplaces such as eBay, Airbnb, Uber, DHgate, and Alibaba, and changing the way we create products in smart factories like Mitsubishi Electric. These disruptive business models have proven to increase innovation, revenues, and access to new customers as they evolve to include the following key elements:

• A community of participants with rich capabilities that jointly create value, innovate, and share risks and rewards;

• Digital marketplaces as a platform for shared digital service offerings, managing transactions and communications among partners and customers, and collecting and optimizing customer data to personalize and secure services;

• Software-as-a-Service (SaaS) business and operational models that leverage software-defined infrastructure to provide the scale, speed, security and intelligence needed to support these platforms and services.

Accenture Strategy recently surveyed more than 1,200 global leaders from diverse industries and found that companies are pursuing new ecosystems to navigate, or lead, disruption (see Figure 1).

**"CSPs will need to create digital marketplace platforms that enable them to rapidly deliver new services based on different pricing models, operate across multiple digital channels, and support complex partner relationships. This will require business model changes that encourage shared risks and rewards such as software-as-a-service, operational model changes including the adoption of cloud native approaches and open APIs, and cultural changes that foster improved collaboration in delivering services to enterprises and consumers. These changes will ensure CSP success in the smart ecosystems of the future."**

**Doug Suriano, SVP and GM, Oracle Communications**

**60%**

Executives surveyed who would build ecosystems to disrupt their industry.

**76%**

Business leaders surveyed who agree current business models will be unrecognizable in the next 5 years—ecosystems will be the main change agent.

**63%**

Executives who believe ecosystem participation allows businesses to innovate.

**58%**

Those who anticipate an increase in revenue growth from their ecosystem participation.

Source: Cornerstone of Future Growth: Ecosystems, Accenture, 2018.

Figure 1: Ecosystems as the Cornerstone of Future Growth and Market Disruption

Every industry is susceptible to this type of business-model disruption and the communications industry is no different. Communications service providers (CSPs) can no longer spend billions on infrastructure only to let other digital innovators capture most of the value. To thrive in the next decade, they will need to provide more personalized, intelligent and intuitive services to both enterprises and consumers in order to play a central role in these smart ecosystems. They will also need to evolve to software-defined architectures and SaaS models to reduce costs and increase speed and agility.  Only then can they benefit from the US $1.2 Trillion 5G smart ecosystem opportunity. In a recent Oracle-sponsored survey of more than 60 CSPs on the future of networks,  61 percent of respondents thought that CSPs and vertical industries should work together to develop new 'trust' frameworks, which are critical for these new collaboration models. CSPs also saw their future role as a provider of integrated, industry-vertical solutions consisting of

connectivity, platform, applications and devices directly to enterprises.

Several CSPs have taken major steps toward transforming their business models to capture these opportunities and grow revenues beyond traditional connectivity services. Verizon and Orange have created new digital business divisions for telematics and banking, respectively; AT&T has made major acquisitions to become a media and entertainment powerhouse; and NTT DoCoMo has created a 'Smart Life' marketplace platform for commerce, mobile financial services, and applications. These important strategic efforts are defining new roles for CSPs as digital service providers, and are the tip of the iceberg as business models evolve to incorporate more capable 5G and cloud-based ecosystems.

Fortunately, CSPs have several unique capabilities that they can leverage to support digital marketplaces and grow their businesses including:

• Networks to connect people, devices, and applications;

• Experience in operating and managing complex services;

• Large and loyal customer bases;

• Secure, scalable, and trusted platforms for activation, billing, and customer care;

• Customer databases that store and analyze vast amounts of data;

• The ability to provide robust and secure identity management.

However, they also face significant challenges as they accelerate the shift to delivering digital experiences. CSPs will need to cede some control to work effectively within an

ecosystem, including: adopting cloud-based SaaS business and operational models; implementing cloud platforms with open application programming interfaces (APIs) to integrate third-party applications; becoming more attuned to the specific requirements and regulations of enterprise customers in different industries; pursuing more collaborative and equitable relationships with global partners; and sharing data. They will need to prioritize which industry verticals, ecosystems and marketplaces they want to pursue, as well as what role they want to play — from market maker to orchestrator, to commerce broker, to platform owner, to partner participant.

### DIGITAL MARKETPLACES: PLATFORMS FOR SHARED CUSTOMER EXPERIENCES AND TRANSACTIONS

Digital marketplaces are rapidly transforming beyond connecting service creators and consumers into platforms to deliver new services. As shown in Figure 2, cloud-based marketplaces enabled by 5G and an intelligent edge will offer several benefits. They will provide memorable and trusted personal experiences using community data and dialogue. They will establish and automate transactions and interactions among partners. And they will allow CSPs to develop deeper, ongoing, and recurring relationships through enhanced subscriptions and trusted transaction mechanisms. Meanwhile, customers will enjoy greater choice, simplicity and convenience.

**Sharing**
- Mobile-first, cloud-based user experience tailored to the demands of urbanization and a shifting demographics
- Multi-party marketplaces that deliver innovative services and benefit all participants

**Personalization**
- Intelligently harness multiple data sources to delight customers with personal experiences and privacy preferences
- Work and life transactions through multi-channel social engagement

**Subscription+**
- Deeper, ongoing and recurring relationships and engagement with customers
- Maximize total lifetime value through multiple business models that deliver greater benefits to service creators and consumers

**Platform**
- Higher value digital marketplace that connects customers, partners and resources
- Establishes and automates transactions and interactions among partners
- Intelligent service discovery, search and recommendations
- Business agility through API-driven integration and zero-touch administration

Source: ATIS and Oracle

Figure 2: Features of Advanced Digital Marketplaces

For example, when customers set out to organize a trip to a city event, they do not set out to simply purchase tickets. They also want to see the best transportation options and times to get there and back, what meal options are nearby that meet their dietary requirements, which friends and family are also going and on which days, and the weather forecast.

The process by which customers discover solutions for their trips today requires access to different applications, websites, networks, and payment systems. These services do not match personal preferences with options, reviews, reservations, event coupons, and logistics.  A similar situation can often be seen in enterprises, where disjointed applications and services are often woven together with difficulty and added complexity. Digital marketplaces will take a more holistic and contextual approach. They will be able to develop simpler, more convenient and intuitive experiences that create stronger loyalty and mutual value exchange among service participants.
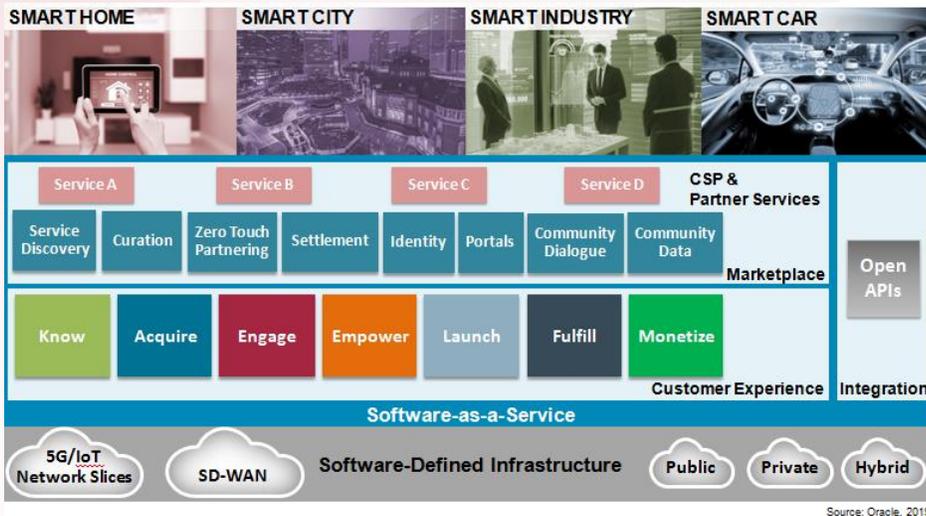
Figure 3: Smart Ecosystem Building Blocks

To be successful, CSPs will need to evolve their traditional business and operational systems into cloud-based customer experience platforms. These platforms will be a major building block in creating digital marketplaces over the next decade, as shown in Figure 3 above, and will provide the following capabilities:

- **Know, Acquire, and Engage:** These capabilities provide a deep understanding of a user's digital behavior combining first and third-party information from which a digital profile can be developed. This knowledge, together with artificial intelligence (AI) and machine learning (ML), then allows CSPs and their partners to offer more personalized and relevant services in a timely manner and to acquire customers through new digital channels such as social listening and digital marketing. Once acquired, the customer's buying experience can be supported by seamless engagements across multiple channels such as a mobile device and a retail store, using a common service catalog and cart. In this way, the service provider never loses the valuable context of the transactions, despite the changing modes of engagement.

- **Fulfill:** This capability supports any pre-service inquiries necessary to capture an accurate customer order. It then decomposes and fulfills the order on all systems and for all partners involved. The increase in the bundling of digital services as well as the growth of integrated partner services increases the need for sophisticated digital service fulfillment capabilities. A key function of this fulfillment component is to decouple commercial offers from how they are fulfilled, and provide dynamic orchestration of services across participating systems, partners and networks.

- **Monetize:** Monetization is enabled by flexible subscription and usage-based models including real-time balance, rating, and revenue management for all digital services across industries and ecosystems. This is particularly important as new digital propositions, accelerated by 5G network slices, Cloud and the Internet of Things (IoT), will require increasingly sophisticated monetization capabilities for CSPs and their partners to differentiate themselves in the market. This approach will significantly increase the speed and agility, innovation, scalability, and availability of digital marketplace services.

- **Empower:** Empowering the customer can be through both customer self-care and agent-assisted care. Customer self-care can leverage contemporary and intelligent digital channels such as chat bots to answer common customer inquiries. In addition, such engagements can seamlessly transition from unassisted to intelligently-assisted to person-assisted through the course of a single interaction.

For all the capabilities described above, real-time actionable AI-driven insights across the customer experience – from engagement, to acquisition, to fulfillment to empowerment – will be important to successfully monetize services and increase customer lifetime value.

Over the next decade, CSPs will leverage these customer experience capabilities to create new digital marketplaces that will require additional innovative attributes to thrive including:

- **Service Discovery, Curation, and Engagement:** The value of a marketplace is unleashed when more intuitive and convenient services and transactions are made possible. This can occur through catalog browsing as well as AI-based search, algorithmic recommendations, and affiliations with other services. It can also occur when the marketplace provides end-to-end SaaS capabilities that enhance the platform for service creators and consumers. Examples of this include: marketing features like ranking optimization, dynamic pricing, promotions, and consumer protection; logistical features like procurement, managing supplies, and shipping; transactional features like sales tax processing and analytics; APIs for third-party application services; and tools that recommend and selectively attract which partners should participate in new offers. As composite CSP and partner services become the norm, the ability to provide seamless customer support for a particular partner service component will be necessary via multiple digital channels such as chat bots, live chat, voice, and video. This support will also need to be integrated across services.

- **Zero Touch Partnering:** The agility, speed, and cost of partner integration is a major challenge for digital marketplaces that require a wide range of partners to deliver integrated and bundled services to customers. Zero Touch Partnering is about on-boarding partners, operational integration, and inclusion of partner services in a marketplace, all with no IT development. This will speed up time to market for new offers and enable CSPs to partner with each other to create global offers that can effectively compete with digital innovators.

- **Trust and Settlement:** Building consumer trust requires accurate service listings, timely fulfilment of service requests, competitive pricing, efficient customer service, and secure transactions. From a service creator perspective, trust and settlement involves contracts, a fair and equitable dispute resolution process, an effective and timely payment system, and fraud prevention mechanisms. Cloud-based Blockchain technology will play a critical role in marketplace partnering, trust and settlement as it provides the distributed database system required to instantaneously record, validate, secure, authenticate, and distribute marketplace transactions. In the future, these value transactions will be the exchange of any asset with marketplace value – customer and identity data, billing information, IoT sensor data, a business contract, loyalty points, credits, or payment records.

- **Secure Identity Management:** As trusted guardians of customer and identity data, CSPs can provide secure identity services both within a marketplace and across marketplaces that leverage data from network nodes, mobile apps and devices, biometrics, social media, and customer service engagements. Blockchain technology can be used as a shared marketplace ledger that provides identity, authentication, authorization, data management and storage services to both customers and partners. Some benefits include giving customers control of their data including what they want to capture, and how, when and where they want to share it. Furthermore, customer data and transactions can be securely shared with permission across marketplaces, opening up new business models.  As security and privacy concerns grow, many customers will prefer to do business with marketplaces that allow them to control their own data.

- **Community Dialogue and Data:**  Digital marketplaces will develop new ways to stimulate community dialogue and create

unexpected personal connections. By applying AI and ML techniques to vast amounts of data captured in secure autonomous databases that are self-driving, self-healing, and self-repairing, CSPs and partners will be able to gain new insights, attract customers, monetize data, and evolve services.

### SOFTWARE-AS-A-SERVICE MODELS AND SOFTWARE-DEFINED INFRASTRUCTURE UNDERPIN SUCCESS

• CSPs will need to embark on a journey towards cloud-based SaaS business and operational models over the next decade. Successfully leveraging, in addition to offering, software-as-a-service to customers will be the best way to compete with web-scale companies. As everything becomes software-defined and as compute and connectivity become democratized through 5G, public cloud, and SD-WAN technologies, multi-cloud SaaS operational models will become the norm. These models will enable CSPs to procure networks-as-a-service tailored to specific industry verticals in much the same way as they currently acquire other industry-specific SaaS services. Procurement within the broader context of a marketplace or ecosystem will further reduce costs and risks compared with building infrastructure in-house.

A key first aspect to consider in this journey is a change in mindset. Too many CSPs still think of cloud as a means of lifting and shifting workloads, or simply as the extension of a data center or infrastructure strategy. But this is changing as CSPs start asking how they can use cloud native technology and cloud APIs to develop, test and launch services at a rate and scale not seen before. As they start to look at cloud as a platform for achieving long term growth and innovation, new possibilities open up including using cloud as a way to access AI, automation, blockchain, security and other tools to improve services and optimize networks. This new mindset will enable

CSPs to create more profitable and dynamic ecosystems and marketplaces.

When implementing a cloud native approach, it is essential that CSPs consider:

- **Container** usage which also includes the rich ecosystem of services to orchestrate, schedule, network, deploy, instrument and maintain them;

- **Microservices** that are not just "smallish" applications, but applications that promote a different way of thinking about the service, how resources are used, how state is persisted, and how they work in a distributed environment;

- **DevOps,** which encompasses the significant cultural shift in how software is developed, integrated and operated; and

- **Continuous Integration and Continuous Delivery** (CI/CD), which goes beyond a cookbook and collection of scripts by building a pipeline that spans all aspects of creating and running a service, embracing automation at every step, and strict governance – literally turning the business into code.

Likewise, some important considerations in implementing API-based cloud integration include:

- **API-Enabled Zero-Touch Partnering** for business-to-business-to-end user (B2B2X) opportunities that encourage different ways to participate in an ecosystem or marketplace;

- **API Granularity** which is focused on extracting the concise business value needed to service the buyer, rather than micromanaging the service lifecycle that is typical in traditional vendor supply chains;

- **APIs to Speed Adoption** – Often times CSPs spend too much time attempting to normalize interfaces while others have embraced processes necessary to incorporate and even re-factor APIs swiftly, so they can maximize service agility;

- **API Types and Uses** which are more important than architectural styles. Although representational state transfer (REST) is the current architectural style for APIs, another style may come along in the future.  Adopting the right underlying contextual model will allow CSPs to swiftly change architectures and maximize business outcomes from their APIs.

Another important aspect for CSPs to consider is integrating SD-WAN and 5G network slices into marketplaces to create a major market disruption. CSPs have spent billions on mobile infrastructure based on previous 'Gs' only to see other digital innovators capture most of the value. But 5G and subsequent generations can be different. Network slicing, a revolutionary feature of these 5G networks, uses specialization to meet service and industry-specific requirements in terms of network priority, geography, latency, security, data rates, quality of experience, and other parameters. Similarly, SD-WAN technology provides the security, quality of experience and reliability needed to migrate enterprise applications to the cloud. Together, these two technologies create an integrated intelligent edge with an unprecedented ability to meet vertical industry demands. This will enable CSPs to capture a significant share of ecosystem and digital marketplace revenues by:

Creating and monetizing new ecosystem, digital marketplace, and industry vertical offers using personalized, secure, and dynamic networks;

Scaling, securing, and analyzing billions of transactions and zettabytes of data generated by digital services using cloud-based, AI-driven autonomous databases; and

Managing billions of devices and sensors as more people and 'things' connect, transact and communicate with each other.

The final aspect for a CSP to consider is using multi-cloud SaaS models. Initial 5G network deployments targeting enhanced mobile broadband and fixed-wireless access network slices for consumers are taking place within CSPs' own data centers for reasons such as data sovereignty and regulation. However, future digital marketplace and enterprise vertical use cases will not have the same restrictions and will enable CSPs to compete on a more equal footing on a global basis. Additionally, according to a recent study by ABI networks sponsored by Oracle, the total cost of ownership for a network slice-as-a-service could be two to three times less than if a CSP built the infrastructure itself. For these reasons, CSPs will start subscribing to 5G network slices that are made securely and reliably available from partner clouds on a SaaS basis, with integrated applications for specific industry verticals, marketplaces and ecosystems. This will be driven by a desire for accelerated revenue growth, greater operational efficiency, lower costs, and more rapid service delivery.

Bringing this all together is not trivial. It literally takes a platform in and of itself to enable an agile cloud. It requires a deep understanding of service reliability and an awareness of the operational aspects of what the end-to-end solution will need. Service creation must start with the service definition itself, including well-defined APIs. And cloud security must be based on zero-trust principles and highly automated, detective and predictive to prevent cyber attacks, data theft and fraud. Also needed are autonomous databases with integrated AI, ML and

analytics capabilities to capture, store, analyze and monetize data, along with deep enterprise vertical expertise and relationships. For all these reasons, CSPs will increasingly partner with major cloud service providers to implement these new SaaS business and operational models.

CONCLUSION

Smart ecosystems and digital marketplaces are starting to flourish thanks to the scale and speed of the latest generation of cloud native platforms and applications, and advances in mobile networks, autonomous databases, AI and machine learning, and real-time personalization. The biggest strategic challenge for CSPs will be meeting the demands of digitally savvy consumers and enterprises expecting personalized, intelligent and intuitive services delivered by these new business models. To thrive in the next decade, CSPs will need to play a central role as market makers and disruptors to capture trillions of dollars in opportunity by evolving their customer experience systems into collaborative digital marketplace platforms, integrating cloud, SD-WAN, and 5G network slices to create unique ecosystem and marketplace offers, and adopting SaaS business and operational models to reduce costs, and share risks and rewards.

To Learn More about Oracle Communications' 5G and SD-WAN Solutions, visit www.oracle.com/communications.

## ORACLE CORPORATION

**Worldwide Headquarters**
500 Oracle Parkway, Redwood Shores, CA 94065 USA

**Worldwide Inquiries**
TELE    +  1.650.506.7000    +  1.800.ORACLE1
FAX      +  1.650.506.7200
oracle.com

## CONNECT WITH US

Call +1.800.ORACLE1 or visit oracle.com. Outside North America, find your local office at oracle.com/contact.

blogs.oracle.com/oracle-communications          facebook.com/oraclecommunications          twitter.com/oraclecomms

linkedin.com/company/oracle-comms

**Integrated Cloud** Applications & Platform Services

Oracle is committed to developing practices and products that help protect the environment