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An Excerpt From: Change, Innovation, and the Communications Industry – Global ODAM 10 to Watch in 2016

(UXP Systems – Powering the Digital User Lifecycle)

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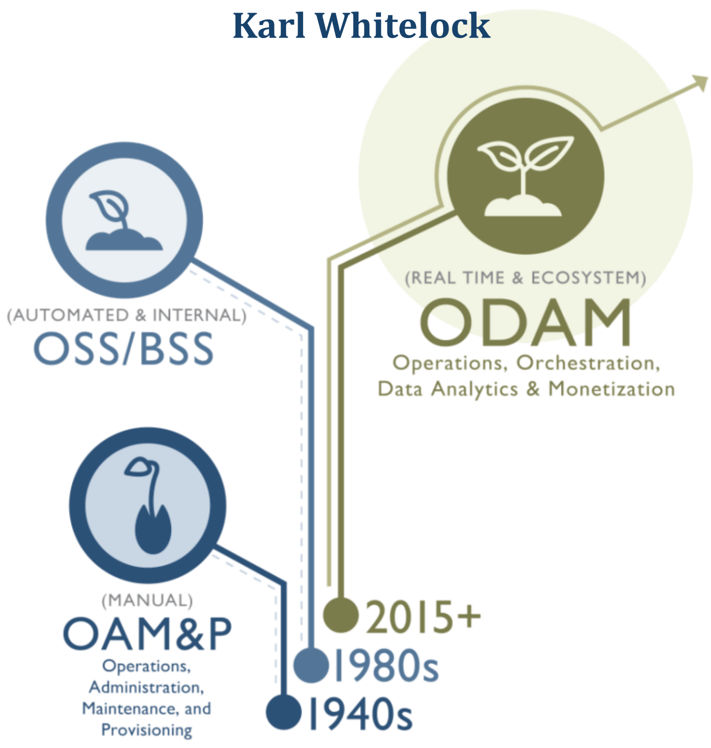

Operations, Orchestration, Data Analytics & Monetization (OSSCS)

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An Excerpt From: Change, Innovation, and the Communications Industry – Global ODAM *10 to Watch* in 2016

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Introduction[1]

Sometimes, when one looks at the changes occurring in the communications industry, the temptation is to think that this is some sort of unique event in history. However, 2,500 years ago, Greek philosopher Heraclitus stated "the only thing that is constant is change." Today, communications service providers (CSPs) understand that Heraclitus spoke the truth.

Change has been constant for CSPs, particularly in the last two decades since deregulation of the North American market, and then more recently in other geographic sectors. However, the level of change is expanding, and the rate of change is accelerating across all global markets. This applies to CSPs and nearly every other industry in our globalized society. Perhaps change of this magnitude is concerning to some; but opportunities abound in a changing world, particularly to those software and solution suppliers that are stepping up to help CSPs succeed in their bid to become more than the network operators they have been in the past.

For suppliers of Operations, Orchestration, Data Analytics & Monetization (ODAM)[2] solutions, change is driving innovation and growth. But growth only comes to those companies, big and small, which can show that their innovations satisfy the evolving needs of the global CSP marketplace.

Transformation of the global CSP community includes a number of business drivers. Stratecast has described many of these drivers for years; yet, their relevance in 2016 remain high. They include:

[1] Please note that the insights and opinions expressed in this assessment are those of Stratecast, and have been developed through the Stratecast research and analysis process. These expressed insights and opinions do not necessarily reflect the views of the company executives interviewed.

[2] Stratecast and the supplier community have not been immune to the changes in the communications industry. As CSPs have evolved over the years, so have the operations support systems (OSS) and business support systems (BSS) that address CSP business and network management needs. In recent years, the lines between OSS and BSS have become less clear, with much overlap. In addition, the roles in which OSS and BSS operate have expanded beyond traditional boundaries. As such, Stratecast now uses the term Operations, Orchestration, Data Analytics & Monetization (ODAM) to encompass both the traditional OSS and BSS functions and the new areas in which business and operations management must now work together, including virtualized networks and telecom data analysis. A graphical representation of this transformation is shown on the cover of this report.

- CSPs continue to be squeezed financially. Data volumes continue their exponential expansion; yet, the carriers' ability to monetize hasn't kept pace. This means that most CSPs struggle with tightening profit margins.
- CSPs are now receptive to new ways of doing business in order to generate new revenue. While the business-to-consumer (B2C) model is still prevalent, a number of variations within the B2C model have arisen. Many new models include partnerships between a CSP and other enterprises to provide something of value that wasn't previously possible. That something of value may be for a consumer in a business-to-business-to-consumer (B2B2C) model or for some other entity in a B2B2X model. The Internet of Things (IoT) presents both opportunities and challenges for CSPs. In fact, in the recently concluded Stratecast Global CSP Billing 2015 Edition report series, we identified six strategic business areas that CSPs are actively operating within.[3]
- The Virtual Network—which Stratecast defines as a blend of Network Functions Virtualization (NFV), Software Defined Networking (SDN), and cloud architecture—continues on the path to reality. It is happening, even as the industry moves to define the operations, orchestration and monetization of virtual network components, and the resulting hybrid network that will most certainly remain in place for years to come. While none of these architectures will provide immediate relief to the financial squeeze CSPs feel, CSPs have shown solidarity in their belief that the long-term benefits of flexibility, programmability, cost reduction, and competitive prowess are compelling and achievable.

- On the operations side, CSPs look to their ODAM suppliers to help keep their networks running efficiently, keep their costs down, and keep their customers happy. However, the rise of virtual networks adds a new dimension of complexity to orchestration, network management and service assurance as CSPs struggle to support a hybrid of network configurations over the next decade.

The solution suppliers that provide systems, services, and IT infrastructure to CSPs—the ODAM suppliers—must stay abreast of the business and technology redefinitions that are now underway.

[3] See Stratecast report OSSCS 16-14, *Global CSP Billing 2015 Edition Part 6: Global Business Drivers, Market Trends, and New Solution Strategies,* December 2015—in particular, the section "Business Management is No Longer One Size Fits All."

CSPs are counting on their ODAM suppliers to lead them successfully through this extended period of change.

ODAM solutions will need to perform in a double-duty fashion for several years. First, seamlessly interacting with existing systems and numerous data repositories associated with previously implemented business management and network operations processes. Second, delivering new capabilities essential to operate and manage the needs of new business models, new technologies, new services, and new types of customers.

In addressing these needs, some systems will be replaced, others will be augmented, and new ones will be added. This is where a new age of innovation is essential; and, from Stratecast's perspective, cannot be done by a handful of entrepreneurial startups alone. The candidates for the ***Stratecast 2016 '10 to Watch'*** report included all ODAM suppliers, regardless of size. This is a significant redirection from the past, when ***10 to Watch*** mainly spotlighted smaller suppliers.

Our reasons for looking at all ODAM suppliers are straightforward. While a smaller company may focus on specific or targeted business challenges for a smaller initial base of customers, larger suppliers hear the same needs magnified by many. In response, they commission internal work teams to attend to these needs—or risk losing such customers to the competition. Larger companies also commission advanced market strategy teams to prepare for challenges that lie ahead; in many cases, operating them as though they were small entrepreneurial startups in their own right.

Regardless of company size, 2016 will see a new era of innovation ushered in by companies that exhibit what Stratecast understands are the foundational attributes of all successful ODAM suppliers: agility, alignment with market needs, product reliability, innovation, scalability, differentiation, vision, and strong partnerships with customers and other suppliers.

The answer to addressing many of today's new business problems lies in the right combination of capabilities, from several parts of the global marketplace, in a way that produces results much better than if such assets were delivered independently. This means building ecosystems, and working with partners in ways very different than in the past. We believe that ODAM companies will work to solve specific problems with unique technologies and approaches. These companies will take advantage of the most recent advances in interface definitions and computing resources, regardless of delivery model (licensed or virtual), and regardless of market position. **Most importantly, Stratecast believes that answers to tough business situations come from a dedicated focus on solving problems.**

The 10 ODAM companies that Stratecast has chosen as its ***10 to Watch*** in 2016 are focused on meeting critical business challenges and technology enablement functions. These companies are included in our list because they deliver innovative solutions that help CSPs transform operations, address new business needs, and help to improve the customer experience.

Innovation is Essential Now More Than Ever Before

In the past, when CSPs were focused on delivering just connectivity at a price point customers would accept, and at a revenue yield that maximized the return on all network investments, the ODAM marketplace (then referred to as the OSS and BSS marketplace) was different.

Suppliers focused on specific operational functions such as billing, order management, network inventory, and service assurance. While many bemoaned the silo mentality of the CSPs, the communications world, in retrospect, seemed to be a much simpler place than it is now. Hence, Stratecast's move to the term "ODAM," to better capture the reality of today's market.

In the introduction section of this report, a number of business drivers and resulting transformations were noted. When transformation happens in an industry, innovation is needed to facilitate the transformation. The communications industry is experiencing transformation in many different areas; and the rate of change continues to increase. Innovation, from all directions, is the key to the future of the industry.

The primary reason to comment on the number of changes, and the increasing rate of change, is that the communications industry now competes in a new world. Do Apple, Google, Facebook, and Microsoft, among several other Over the Top (OTT) competitors to the CSP marketplace, bemoan that things have changed? No, they create change and thrive on it.

What Makes a Stratecast *10 to Watch* Company

10 to Watch companies have developed innovative solutions that address current business-critical objectives and business-impacting challenges. These companies come from a wide range of disciplines, business structures, and motivations. Some are small, and others are well-established suppliers in their respective fields. All ***10 to Watch*** companies are organizations with proven solutions through revenue-bearing customer installations. Additional characteristics of a Stratecast ***10 to Watch*** company are:

- **Market Focused and Aware of What Is Beyond the Horizon** – To be recognized in a very crowded Operations, Orchestration, Data Analytics & Monetization environment, ***10 to Watch*** companies must be up-to-date on all current business challenges and ODAM needs. Such companies, small and large, must always be mindful of how the industry is changing, and what will be critical business requirements 12-18 months from the present.

- **A Culture of Innovation** – A ***10 to Watch*** Company must be innovative—possibly not in every functional area the company may address, but surely within the functional domains for which the company is recognized in this report. Most have fundamentally changed their strategic approach to the market several times in an effort to meet on-going business challenges. These companies must be able to continuously change as the industry or industries they target evolve. ***10 to Watch*** companies rely on their leadership to recognize trends or impending market conditions. With their beyond-the-horizon awareness, these companies adjust to meet those conditions through either organic development or acquisition of assets. When such assets are blended with a company's existing solutions, they should yield a better approach or improved outcomes to new business requirements.

- **Support Rapid Change in Business Climate or Technology Approach** – ***10 to Watch*** companies recognize that the pace of necessary innovation is accelerating; and thus, solutions to address new business needs, which took several months to over a year to deliver in the recent past, must now be done in dramatically collapsed time frames.
- **Business Savvy** – ***10 to Watch*** companies are attentive to market issues, and understand trends relative to both CSP needs and the competitive landscape. Company executives are constantly talking with current or potential partners, customers, sales prospects, analysts, and consultants. Using their extensive radar, ***10 to Watch*** companies recognize patterns of unmet market needs; they rapidly translate these opportunities into strategic and marketing initiatives.
- **Market Savvy** – To match the market reputation of an entrenched supplier within a market, geography, or functional discipline, ***10 to Watch*** companies must establish buzz and a viral reputation tied to the business problems they address. Key needs include partnership development, sales leadership, marketing, and communications functions that must be clearly aligned around business problems at hand. This market savviness requires discipline within each organization, from individuals well-connected in industry and financial circles, who are well-spoken, and have a solid knowledge of both the CSP business problems and the solutions offered.
- **Well-defined, Clearly Differentiated Product Offering** – ***10 to Watch*** companies offer products that are not just technically differentiated, but are often geared to address an evolving set of business needs or process inadequacies. Software systems and business expertise tied to the solutions they offer must target a set of pain points regularly experienced by CSPs. These solutions must also show an easy-to-use approach, appeal to a specific customer audience, and instill confidence in better ways to address an existing problem or satisfy a new business need.

10 to Watch status does not excuse these companies from the usual requirements that CSPs place on their network infrastructure and ODAM suppliers, including: carrier-class scalability, product reliability, interoperability, financial stability, ongoing research and development, and partnerships for pre-integration and global support.

Year Nine and Going Strong

This is the ninth year for this report. Many of the ODAM suppliers identified over this period continue to grow and thrive, or have been acquired by larger solution suppliers to satisfy a growing list of business concerns. Stratecast views the ***10 to Watch*** companies as a source of innovation for the industry.

There will always be startups that bring new ideas and innovation to market ahead of the mainstream. These companies are important and play a valuable role in the changing communications marketplace. Pockets of innovators within the large ODAM suppliers will be challenged to deliver solution strategies for the same new business problems that drive the startup companies. For their part, many of the larger organizations have the foresight to apply what they do now in a different way in order to meet the needs of new business challenges, or they acquire the innovative capabilities from other organizations to complement what these suppliers now deliver to a varying number of CSPs. Large or small, "1 + 1 = 3 or more" mentality is the driving force of all ODAM suppliers in meeting the needs of the expanding communications marketplace in 2016.

Global ODAM *10 to Watch* in 2016

UXP Systems: Powering the Digital User Lifecycle

Identity is important, even in the digital world…perhaps, *especially* in the digital world.

Think of the digital services enjoyed via the Internet today. Music, video, games, email. All require an identity. Most email users have personal email identities, not household email accounts, for obvious reasons. While many have a single premium video streaming account for the household, most video streaming services go beyond the billing relationship to identify who is actually watching. This is key, as young children have different entertainment needs and desires than their older teenage siblings, or their parents. Each person has a digital identity for the service, allowing the service to be personalized for the individual using the service.

> ***Many CSPs globally are moving to become digital service providers (DSPs), in the hope of emulating the success of the so-called OTT providers. In this environment, a DSP must be keenly aware of each of its customers and the service experience they receive. Doing so however, with the systems CSPs presently use to enable their businesses, is challenging since these systems were never designed to understand the digital identities of individuals.***
>
> ***UXP Systems aims to change that, which makes the company one to watch in 2016.***

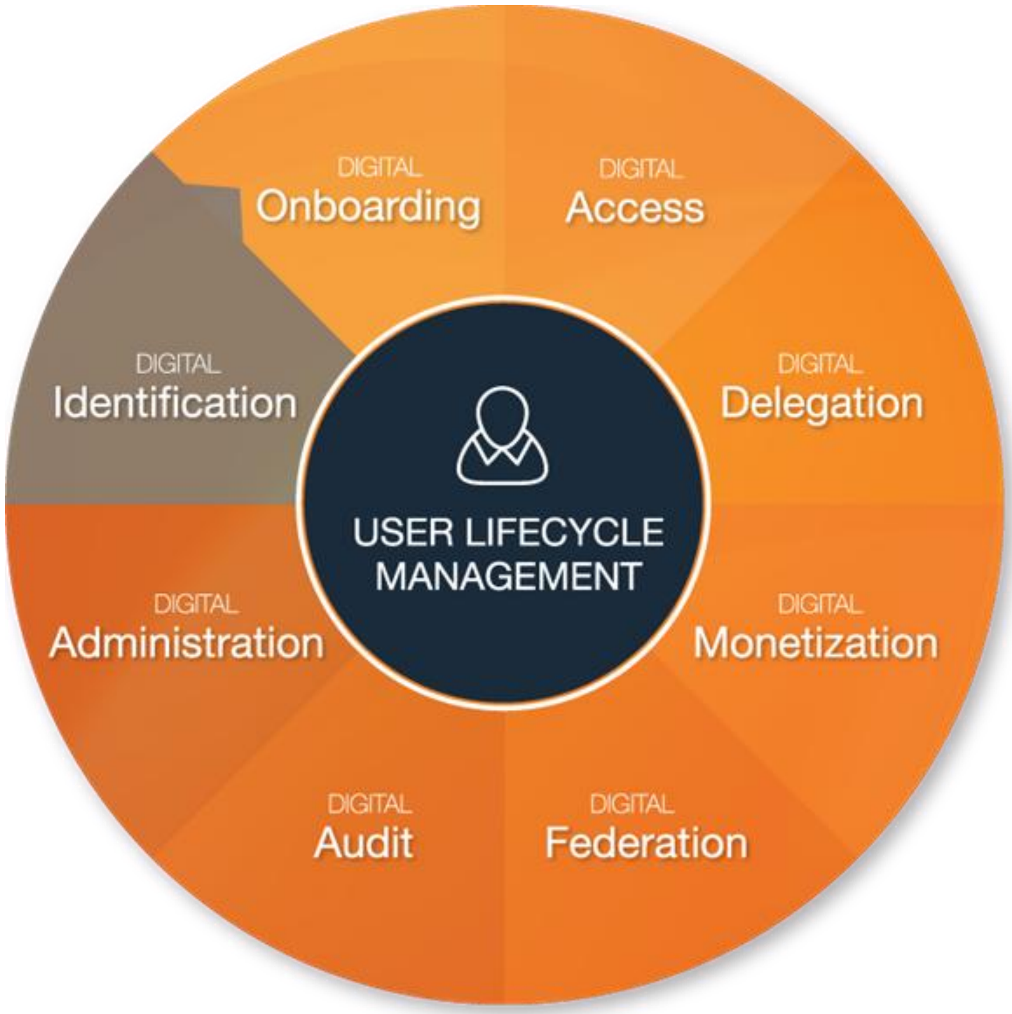
Many CSPs globally are moving to become digital service providers (DSPs), in the hope of emulating the success of the so-called OTT providers.[4] In this environment, a DSP must be keenly aware of each of its customers and the service experience they receive. Doing so however, with the systems CSPs presently use to enable their businesses, is challenging at best, since these systems were never designed to understand the digital identities of individuals. At most, these systems only understand an account, which is managed by the person paying the bill. UXP Systems aims to change that, which makes the company one to watch in 2016.

Founded in 2011, UXP Systems is a privately held company headquartered in Toronto, Ontario, Canada, with offices in the United States, Germany, and Ireland. With more than 90 employees, the company's customer base includes CSPs in North America, Europe, and Latin America. UXP Systems offers a user-driven, service-enablement platform it calls the MINT Digital Experience Engine.

[4] A DSP is a communications service provider that has transformed from network connectivity supplier to digital service provider. The digital services offered by a DSP generally involve the combination of network-based services with those from one or many external partners.

The MINT Digital Experience Engine as shown in Figure 1, works with existing billing, customer care, and identity management systems. It is an overlay, sitting above these systems, for the management of individual user relationships beyond the billing account. MINT enables the creation of user hierarchies that provide users with delegated access to manage their specific set of individual, shared, or cloud-based services.

Figure 1: UXP Systems: ULM – Best Practices for Digital Transformation



Source: UXP Systems

UXP Systems' solution utilizes a technology known as User Lifecycle Management (ULM), which enables CSPs to manage the digital lifecycle of every user consuming services—not just the account holder responsible for the bill. With a library of over 100 lifecycle processes, covering initial service onboarding to digital monetization (and everything in between), the solution expands the possibilities of service offerings and business models. ULM adds user-centric business processes to simplify user access journeys, unifies and federates services around users, and individually personalizes the service experience.

MINT also automates the onboarding and registration of devices by using similar processes, including automated device association and username-driven registration processes. This largely eliminates manual legacy processes, as well as complex account numbers and unique device identifiers.

Usage data is powerful for CSPs; however, most activity is logged at the household or device level. With MINT, usage data is logged at the individual user level. This user data can then feed personalization and recommendation engines, targeted advertising, analytics, and campaign management systems, to deliver fully personalized user experiences while maximizing the monetization of a service.

UXP Systems, and its MINT Digital Experience Engine, allows CSPs to move beyond the limitations of their legacy systems and the billing relationship, to provide individual, user-centric service personalization. CSPs have found usage data to be an extremely valuable source of insight; yet, that data currently only ties to a household or a device. User-specific usage data should prove even more valuable.

Many suppliers aim to help CSPs on their journey to become DSPs; yet, only UXP Systems specifically tackles this digital identity issue. In doing so, UXP Systems has created an entirely new software category. The marketplace has rewarded UXP with strong revenue growth over its short existence. **Stratecast believes that UXP Systems is a company to watch in 2016 and beyond, and we expect continued market success for the company in the months ahead.**

Stratecast
The Last Word

Change is rapid (and rampant) in the communications industry. However, it is time to stop worrying about change, and begin embracing the business, customer experience, network operations, and monetization opportunities that change is now bringing about.

The **Stratecast Global ODAM *10 to Watch* in 2016** report is a celebration of 10 companies that have embraced the changing environment, and developed innovative solutions to help CSPs succeed in this new world. In this year's list, there are some small suppliers, many that would best be categorized as medium-sized, and one large supplier. Our ***10 to Watch*** companies for 2016 include, in alphabetical order:

- **Alepo**: Data Charging Innovation
- **CENX**: Lifecycle Service Orchestration
- **MATRIXX Software**: Supporting the Digital Customer Lifecycle
- **Netrounds**: Orchestrated Assurance
- **Openet**: Virtual Network Functions Lifecycle Manager
- **Sandvine**: Making Time-Based Mobile Data Work
- **Tango Telecom**: Making Data Pay
- **UBIqube Solutions**: Network and Security Services Orchestration
- **UXP Systems**: Powering the Digital User Lifecycle
- **VMware**: Helping Virtualize Telecom

The software suppliers named as ***10 to Watch in 2016*** are innovative, but also embrace solid business and marketing strategies. Each delivers practical solutions that solve pressing problems in open, interoperable ways. This combination of innovation and practicality enable ***10 to Watch*** companies to continue on a solid path of growth and success.

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About ODAM

The processes and tools that communications service providers (CSPs) have utilized to run their businesses have changed over time. More than a half-century ago, CSP network and business management processes were manual (OAM&P). As CSPs evolved over the years, so did the operations support systems (OSS) and business support systems (BSS) that address CSP business and network management needs. In recent years, the lines between OSS and BSS have become less clear, with much overlap. In addition, the roles in which OSS and BSS operate have expanded beyond traditional boundaries. As such, Stratecast now uses the term Operations, Orchestration, Data Analytics & Monetization (ODAM) to encompass both the traditional OSS and BSS functions and the new areas in which business and operations management must now work together, including virtualized networks and telecom data analysis.

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