Solution Profile

September 2020

Amdocs

Microservices360

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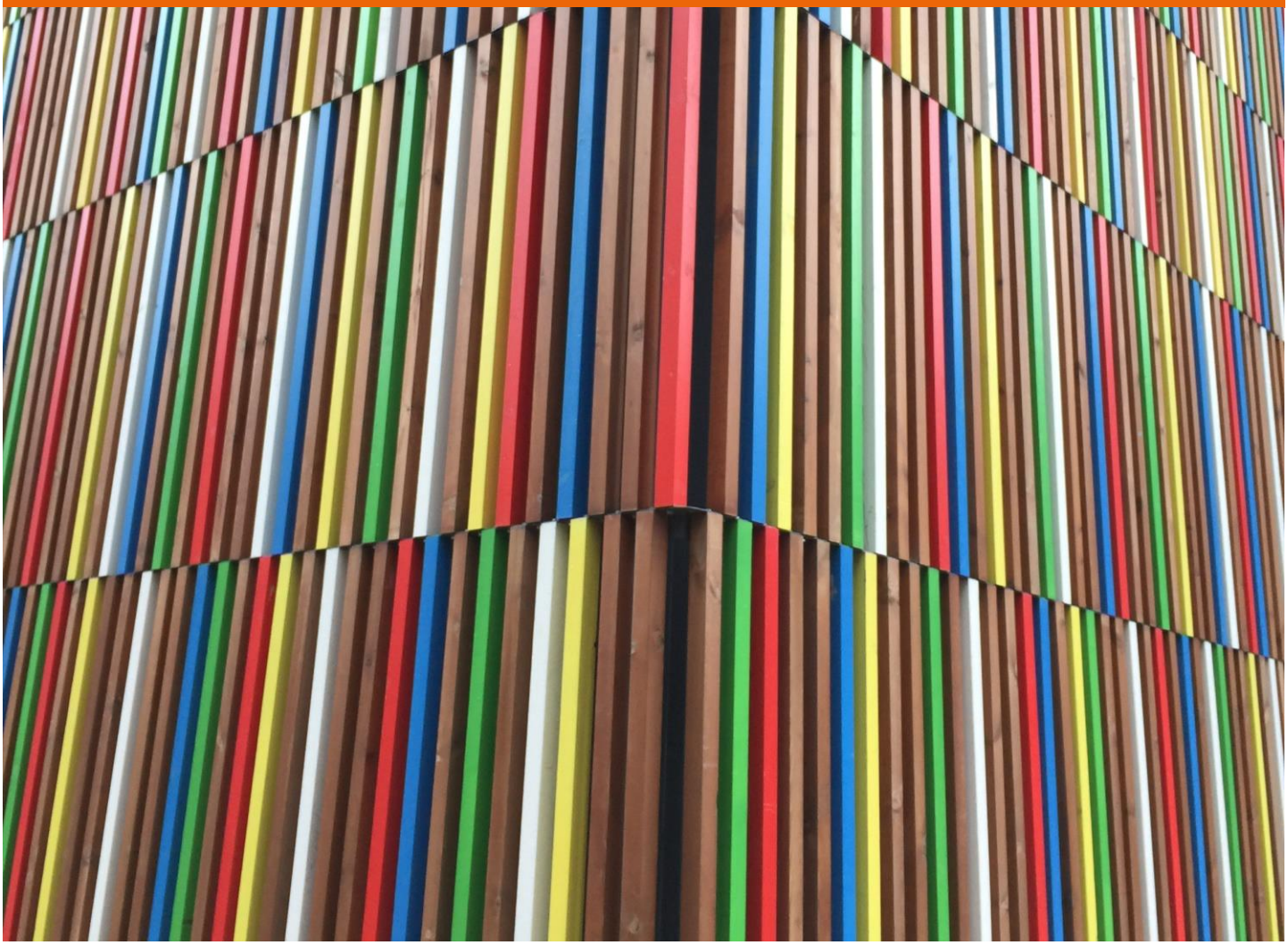

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EXECUTIVE SUMMARY

Amdocs is a provider of customer experience software solutions and services to communications, entertainment and media service providers. Amdocs solutions include BSS, OSS, Media & Entertainment, Digital User Experience, network control, optimization and network function virtualization.

Microservices360 (MS360) is the core platform which supports CES20 cloud-native suite. MS360 is used to support the development of CES20, an umbrella modular suite that includes all Amdocs products, solutions and services. Microservices360 has enabled the modernization of the digital experience DigitalONE, the catalog products CatalogONE, as well as the charging/billing products RevenueONE. CES20 provides a new modular, open and integrated business solution, backed by cloud-native and microservices technology, in contrast to its previous positioning of a set of monolithic applications.

Since our last report on AmdocsONE and MS360 in 2018 the emphasis of Microservices360 has radically changed. Microservices360 still supports the internally developed DigitalONE, CatalogONE and RevenueONE products. However, beyond this Amdocs has recognized that the value of Microservices360 is as much about the tools, platform and most importantly methodology to enable CSPs to adopt microservices architecture and CI/CD deployment. Helping CSPs to become digital software companies.

CSPs have been trying to become software companies for some time; trialing many open-source tools and using in-house agile delivery. However, the success of these approaches has often been limited. CI/CD development often remains more a "science project" within CSPs. Traditional delivery and development practice remain in place, with low levels of innovation and slow yearly and quarterly releases continuing to be the norm.

Amdocs is in a powerful position to help CSPs migrate from their traditional development and deployment approaches to one that is cloud-native and agile. As an existing supplier to CSPs they can enable existing and new customers to bridge the gap between the current monolithic approaches toward cloud-native approaches. This can support new types of customer engagement and services.

MICROSERVICES360

As the name indicates Microservices360 has been developed to enable ubiquitous use of microservices within Amdocs. It also aims to allow Amdocs to embrace opensource practices and create a strong framework for product innovation. Microservices360 provides a unified platform for microservices development across the company and with customers. Microservices360 is responsible for managing the operability aspects of the microservices (such as monitoring, security, logging) - so developers can focus on writing functional services which can run on any infrastructure. The Amdocs Microservices360 development platform and methodology has been rolled out to thousands of Amdocs developers worldwide.

Program

Amdocs see microservices as being about software design principles, rather than necessarily service size. In developing Microservices360 they have worked with Martin Fowler and Thoughtworks (a leading visionary consultancy for Microservices).

Microservices360 has evolved:

1. Firstly, as a program within the company
2. Then becoming a robust platform, allowing development of CES20 modules.
3. Finally, becoming a framework for CSPs to develop microservices

Amdocs state that it took one year to build the program and that getting the structure right has been critical to the program's success. The acquisition of Kenzan, a pioneer in microservices, has been central to this work. Success with microservices has seen a complete change in R&D, development and delivery principles within Amdocs.

Key challenges in the program were:

- Alignment of all people on a single set of principles when everyone has a distinct view of what microservices are.
- Building platform with a minimum set of capabilities to enable development teams to work quickly

With the recent acquisition of Openet, we look forward to seeing how MS360, with Openet, can accelerate the adoption of cloud by telco.

Opensource Foundation

Microservices360 has been built using cloud-native best practices and Industry leading open-source technologies underpinned with key partnerships with technical leaders. The following diagram outlines Amdocs Microserves360 architecture detailing the inner architecture focused at the microservices infrastructure management and the outer architecture which provides the customer interaction services, backend services and DevOps automation framework.

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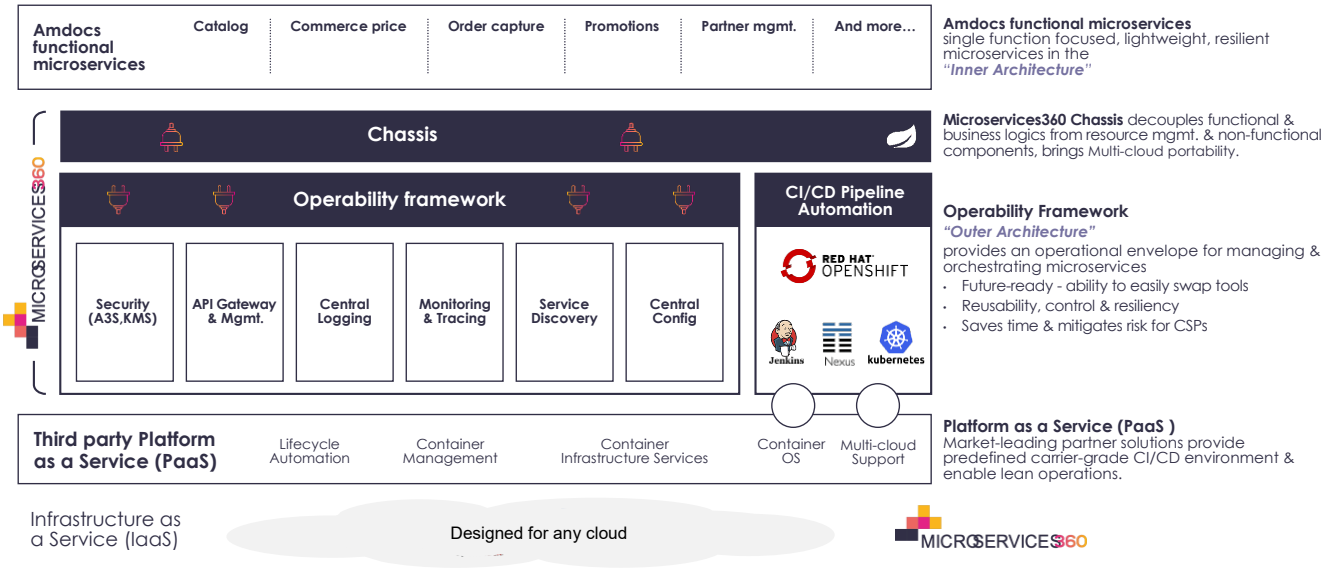
Figure 1: Amdocs Microservices360 platform



Source: Amdocs

The Amdocs architecture is primarily based on opensource components (shown in figure 1). These are augmented by a number of Amdocs proprietary extensions.

The target state architecture for all CES20 components is cloud-native, consisting of open interfaces which enable plug-and-play connectivity and stateless, highly-scalable microservices which allow efficient scaling and deployment across geo-redundant data centers and clouds.

By breaking its existing monolithic OSS and BSS systems into micro-services, individual functions within the component can be scaled up and down to minimize resource utilization. The stateless nature of the micro-services allows updated functions to be introduced alongside legacy functions and then for traffic to be gradually routed to new functions with no need for scheduled maintenance windows.

Strategic Partnerships

Microservices360 is currently certified in AWS and the OpenShift environment. However, other cloud providers can be supported, including Microsoft Azure and Google Cloud Platform (GCP), with whom Amdocs also has strategic agreements.

Amdocs has a strategic relationship with AWS. CES20 is certified on AWS and is built to the AWS Well Architected Framework.

Amdocs has a strategic partnership with RedHat leveraging their Open Shift platform within Microservices360 to allow portability and carrier grade reliability. This portability allows applications to be built “on premise” and then deployed to cloud infrastructure such as AWS, GCP or Azure.

Deployment Model

Amdocs note that in adopting an opensource microservices platform they have to be flexible in allowing a customer to make their own platform choices. For example, Amdocs has chosen Elasticsearch as its search and analytics foundation but needs to enable a customer to replace this foundation with a different opensource component such as Splunk. To support this Amdocs has a DevOps charter and reference architecture governance for Microservices360. Microservices360 provides an abstraction layer for the developer with guidelines for CSP tools. Amdocs see this capability as a way for the developers to reuse its integrated development ecosystem.

Amdocs note that one of the key principles of CES20 is that it allows customers to choose specific solutions/components to add into an existing architecture/implementation. The customer should not require full transformation to enjoy the new benefits and capabilities that CES20 provides.

Microservices360 is a platform that provides a set of capabilities and services that customers can pick and choose from according to their business needs, and then use them to continuously iterate and improve their business operations and customer experiences. This is enabled by the CES20 cloud-native, microservices-based architecture.

Results

By implementing Microservices360 Amdocs has obtained major product benefits. Internally and externally, Amdocs is seeing a 50% increase in development speed through the introduction of Microservices360 across 1000s of developers. Three years on, Amdocs is seeing an improvement of 50% in its end to end velocity. Customers are also seeing end to end velocity improvements of between 15% and 40%, depending on the maturity of the customer. Amdocs is also seeing lowered TCO, with a minimum 15% saving being achieved.

New Product Strategy

Since our last report Amdocs microservices based digital modernization, in early 2019, there has been a major change of emphasis by Amdocs on Microservices360. Previously Microservices360 was a platform that differentiated the success of Amdocs products. It was only about supporting Amdocs development and customer configuration and integration. Now; Amdocs have opened up Microservices360 to support customers developing their own microservices applications. Microservices360 is now a product and being sold directly to customers.

In the earlier report we noted

> ***"Amdocs is noting major gains from implementing Microservices360 platform; including in current projects with CSPs, some of which are co-developing on the same underlying platform. They would like to see similar benefits within their whole customer base and are seeing serious interest in customers implementing microservice based solutions."***

This co-development has now moved far more center stage. In adopting this approach, Amdocs have changed their product management approach. They are now seeking to differentiate themselves by

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climbing up the customer value chain; building on a core strength of Amdocs, which is its services and delivery capability. Amdocs is seeking to move from providing tools for its own developers, to enabling and supporting customers that want to be digital software companies. To compete with software startups and the webscale players CSPs need help beyond simply software but also software methodology. This is where Microservices360 comes in.

Microservices360 is now available in two forms:

- Microservices360 Essentials, which continues to support CES20 products
- Microservices360 Enterprise Edition which supports external development by customers.

MICROSERVICES360 – ESSENTIALS

Microservices360 continues to support Digital ONE, RevenueONE and CatalogONE customers who want the simplicity of integrated products.

Supporting CES20 Roadmap

The complete rearchitecting of a product portfolio as extensive as Amdocs' into microservices is a big task. Amdocs has adopted a phased approach to moving to cloud-native initially focusing at network functions and then moving to customer engagement BSS functions. Amdocs has implemented a gradual modernization of its BSS portfolio building on top of its legacy and in parallel to its modernization of its network functions. It has prioritized key parts of the portfolio for rearchitecting based on what it believes is the rate of change demanded by its customers.

- Amdocs have prioritized the re-design of systems which support business agility (systems of customer engagement). Here they have moved directly to a "cloud-native" microservices approach. These applications must be agile and flexible since this is where the industry believe that most innovation is currently happening. Amdocs "direct move" to microservices and domain driven design was made relatively simple because of the alignment of the traditional applications with TMF TAM.
- Amdocs has adapted existing systems as macro services where operability and cost optimization are critical (systems of record). Here they have made existing capabilities capable of deployment on the cloud "cloud enabled". Here the new platform provides Amdocs with more IT agility (for example, upgradeability and maintenance) whilst at the same time not affecting reliability and stability. These will be transformed to a micro-services platform in the future.

Within the BSS transformation, Amdocs has a phased and prioritized migration of functions to the microservices platform based on business value and focus on systems of engagement with the customer. Amdocs have currently prioritized systems associated with Experience, Care, Order Capture, Order Handling and Customer Management.

Release Model

Microservices360 has enabled Amdocs to move to an agile recursive approach to delivery. Amdocs have adopted a staged model to new feature release:

- An MVS release (Minimum Viable Solution) is first produced;
- Multiple iterations of MTV releases (Minimum Tested Value)
- Final ADM (Application Developer Marketing) release

At each of these stages, functionality is released to production, with a customer able to use new functions much more quickly than in the traditional waterfall release model.

Amdocs states that it is currently achieving two sprints per month, with a core release monthly and a full release (marketing ready) being achieved every quarter. Amdocs is aiming to be able to define functionality at the beginning of quarter and have delivery by the end of that quarter.

As part of the microservices approach the Amdocs has adapted its test approach for the needs of CI/CD and microservices. It retains unit tests to exercise small pieces of software within the microservice. Built on top of this are:

- Contract tests that verify the interactions at the border of the service.
- Integration tests that verify service interfaces between components, verifying communication paths and interactions.
- End-to-end tests that test whole system against external requirements and goals.

Customization and Configuration

Microservices360 and the CES20 products are structured for customization and configuration at three levels:

- A core layer where Amdocs' own proprietary products sit. This is immutable with no visibility of code by the CSP in the Essentials edition
    - The core layer exposes functional APIs based on the TMForum Open API manifesto.
    - The core layer exposes a set of cloud-native non-functional APIs for all products to enable deployment on different environments.
- A common extension layer, built on the core layer, in which common industry customizations and templates of best practice can be added to CES20. The CSP has visibility of this code. The CSP has the ability to use APIs to modify the behavior of Amdocs microservices or to extend them with new microservices. Examples of common extensions are:
    - Localization in terms of names and addresses

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  - Integration with tax engines
  - Integration with payment systems

- A CSP specific layer where CSP specific integration and practice can be enabled.
  - Customers can extend from fixed extension points with their own separate microservices.
  - This layer effectively provides a BSS SDK.
  - This layer enables large customers, such as AT&T, to extend the product to meet their very specific innovation requirements. Amdocs note that these innovation requirements are more often focused at change in experience, rather than changes in the underlying digital microservice layers.

The use of clearly defined layers and integration points enables the agile CI/CD deployment of CES20 components, Amdocs best practice as well as CSP development.

MICROSERVICES360 – ENTERPRISE EDITION

Cloud native applications are inherently more complex. Amdocs believes this leads to development complexity and the use of a huge diversity of technologies. With Microservices360 Enterprise Edition, Amdocs is attempting to simplify this, reducing down the levels of complexity. Giving enterprise level control and methodology, whilst at the same time enabling development teams to be agile and creative.

Microservices360 is about doing once for many at scale.

Amdocs, and Appledore agree, believe that the use of opensource by telcos has largely failed. It has allowed many internal science projects and Proof of Concepts. However, in the wider business it simply has not scaled as it lacked the ability to scale critical people and to change business processes. With Microservices360 Enterprise Edition Amdocs is seeking to do something about this.

DevOps industry practice is based on three things: Enabling technology, process change and people skills. Often CSPs have succeeded in adopting the underlying technology but have failed in changing processes and people to leverage this.

Within Microservices360 enterprise, Amdocs aims to provide a set of ways of working, that can be adapted to the needs of a CSP, and importantly provide the basis for ongoing improvement within the CSP. These can be broken into four key area:

- Automated telco best practice
- Templates catalog
- Visualization of release

- End to end operability features.

Enterprise Architect Experience

Microservices360 enables an enterprise architect to make infrastructure choices that developers will consume. The enterprise architect is able to choose valid message broker and databases that developers can then be factored into the developed microservice. This provides the basis for "extreme automation". To do this it provides a set of telco best practices in terms of processes, compliance and security

Templates are central to Amdocs' approach to microservices management in Microservices360 enterprise. Templates allow an enterprise architect, within a customer, to codify requirements from across the business in terms of enterprise IT, business needs and operational organization processes. The An enterprise architect, within a customer, can create modified Microservices360 templates, based on Amdocs extensive library of industry best practice templates

Developer Experience

With Microservices360 a customer is able to rapidly onboard a developer and enable them to rapidly to produce microservices. At the same time Microservices360 also provides enterprise control that gives consistency & controls across all developers. Amdocs believe they are finding the right balance point between enterprise level control and developer enablement.

Focus on doing with developers

Microservices360 is a service led product, with much of the transition to microservices development and deployment being about changes to people skills and processes, not simply underpinning technology. Amdocs have identified that it is in the area of process and people skills that most CSPs are lagging in terms of achieving DevOps best practice. By addressing the need for people skills and methodology, Amdocs believe they are doing more than an SI with a software stack would achieve.

Microservices360 provides an SDK targeted at developers, with the SDK API enabling the generation of a microservices. This enables development teams to create (or rebuild) new microservices, based on the latest templates created by enterprise architects. Using this approach changes in template are decoupled from development. For example, a MongoDB upgrade can be decoupled from change of the actual database. Subject to constraints set by the Enterprise Architects, technology can be decided by developer, appropriate for the microservice being developed.

Microservices360 development is based on the use of microservice templates. Templates are created by an enterprise architect to reflect business and technical policy. Using templates, a developer builds and rebuilds microservices.

Deployment Experience

Microservices360 has a mature CI/CD process. Microservices360's CI/CD environment allows a variety of microservice deployment scenarios (upgrade and rollback), including:

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- Auto upgrade where all microservices are upgraded in one release
- Security patch push fixed, without rebuilding
- Blue Green deployment; multiple sets of microservice snapshots with traffic directed to the newer build.
- Canary deployment; use of new microservice snapshots by friendly user, a live test
- Rolling upgrade move to traffic

"Don't fix it if it ain't broke"

Amdocs emphasize that in many cases microservices that work can continue to operate as is. Without upgrade. You have to take care not to upgrade simply because you can. Don't fix it, if it ain't broke!

Management Dashboards

Amdocs have put extreme automation at the heart of Microservices360. Lots of automation provides process consistency and allows strong management insight with dashboards. Example dashboards include development process monitoring and Microservice status management.

Open Collaboration

Amdocs is supporting an open collaboration model in Microservices360 Enterprise Edition. In many ways this is similar to many of the approaches adopted by opensource communities, but within a closed community, of enterprise edition customers. Open collaborations enable people in CSPs to contribute to Amdocs core. This is a major change from the previous model where the core was only visible and changeable by Amdocs internally.

However, Microservices360 is not opensource and only customers with Microservices360 enterprise have visibility of Microservices360 code.

In adopting an open collaboration model, Amdocs is aiming to improve its go-to-market. Specifically making it easier to listen to and react to customers' needs as well as enabling more certification. Amdocs are now adding capabilities driven by users, including operations from Amdocs managed services.

Network/MANO Level Support

Amdocs currently is choosing to focus Microservices360 on supporting the development of new BSS/OSS applications. The framework could support an ETSI MANO VNF environment. However, Amdocs' current focus is network management and ONAP level systems.

Currently Amdocs believe that the Kubernetes ecosystem, used by Microservices360, is not yet mature enough to support today's VNFs. VNF specific requirements still drive choice of network deployment environment. This limits the benefits of a microservice methodology/platform and

favors the traditional Network Equipment Providers. Today many VNFs remain monolithic, reliant on traditional C++ development, with semi-static fixed implementations onto low latency infrastructure like Openstack.

In the future Amdocs could see this VNF environment changing as network functions become increasingly microservices based, particularly the adoption of CNFs. Today many VNFs are still monolithic and non-cloud-native in approach. At this point they anticipate an increasing relevance of the MS360 environment to network function management.

APPLEDORE RESEARCH ANALYSIS

Appledore believe that the new positioning of Microservices360 is a positive step in enabling CSPs to truly adopt modern software development practice. Their approach is well aligned with modern cloud-native software and opensource practice. It acknowledges that the hard boundaries of what is product, what is services, what is delivered by customer, what is delivered by the product vendor increasingly blur and break down in this modern environment.

Mapping to Appledore Reference Architecture

Appledore Research has identified a reference architecture and taxonomy that describes the critical needs and components to support CSP innovation and software enabled networks. This is shown in the following figure. Central to the taxonomy are four high level process needs that we believe are critical to supporting lower capital and operational cost for CSPs and to enable innovation both internally and with partners: Closed loop automation; model driven definition of components; Continuous improvement processes that seek to optimize the CSP environment and the ability to readily expose all the capabilities of a CSP to customer and partners. For more on each of these topics please visit www.appledoreresearch.com.

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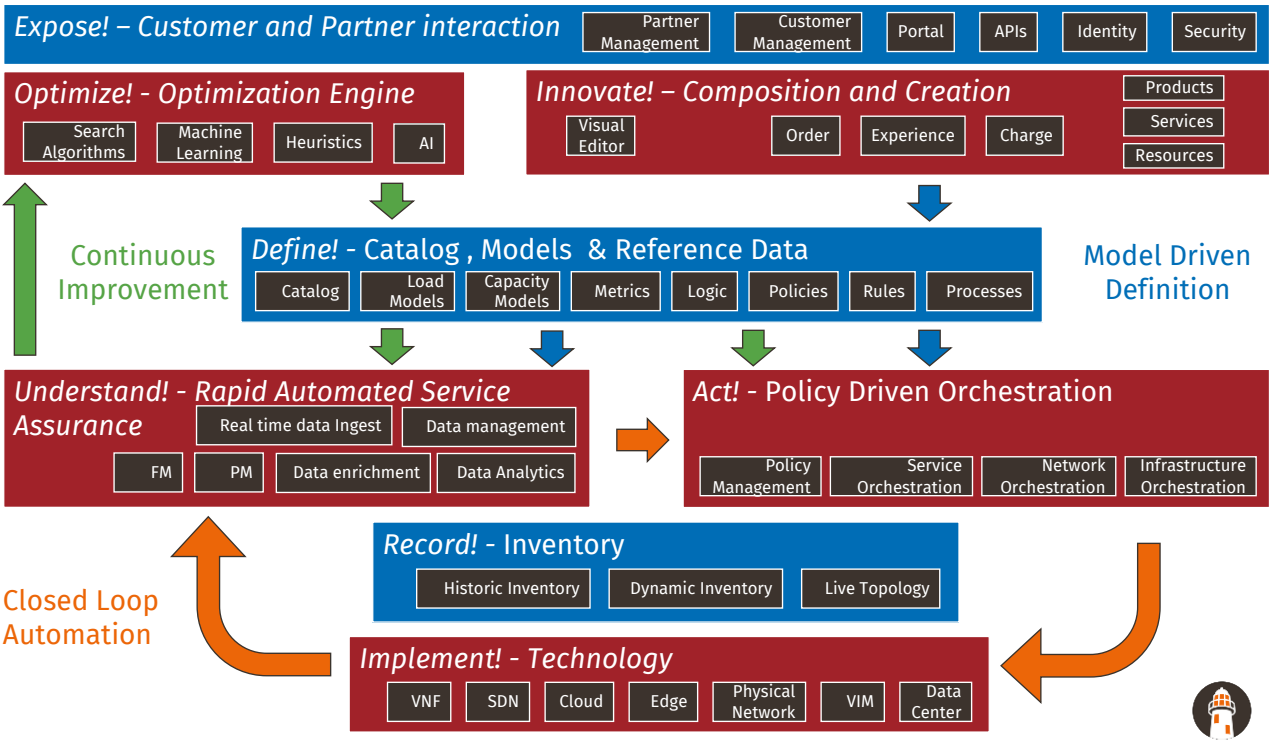
Figure 2: Appledore Taxonomy and Reference Architecture



Source: Appledore Research

Typically, at this point in a solution profile, we would map a product to this taxonomy. However, Microservices360 is in reality an enabling platform for all aspects of this taxonomy. By providing a strong and agile development environment Appledore believe that Amdocs will support the increased software automation of these processes, which are characterized by siloed manual processes today.

Amdocs is embracing DevOps across the lifecycle process from sandbox to full scale deployment based on its Microservices360 platform. Appledore believe that Amdocs approach here is in line with IT best practice and that Amdocs can take a leading position in adoption of this approach in Telco.

Appledore believe that for innovation success in software enabled networks, much of what has traditionally been seen as separate systems of BSS, OSS and Networks needs to be merged, with everything becoming software. Continuing the historical distinctions between these types of software may ultimately limit the innovation possible in the future. Microservices360 by providing a common Amdocs platform across BSS and OSS will enable this merger/blurring and increased innovation across BSS and OSS. Whilst Amdocs is currently not focused at using Microservices360 for network/MANO level development there is no inherent reason why it could not in the future. By providing Microservices360 as a common software development platform we believe that Amdocs can help this blurring and merging of these traditional systems categories.

Appledore however recognize that the reality of most CSPs today is to view software networks as a continuum of existing physical networks, which need to fit within an existing BSS and OSS environment. By enabling customers to benefit from a fully functional micro service enabled platform, whilst enabling continued use of key legacy systems Amdocs is hopefully providing an evolutionary path for its customers to fully adopt micro service-based innovation. By providing end to end business processes, that will be familiar to customers, on top of the new microservices platform this will hopefully bridge the traditional approach to BSS and the possibilities that can be provided by a fully enabled microservices platform.

SWOT Analysis

Strengths

- Market Leader in Telecom OSS/BSS market with large-scale deployments at top tier CSPs. Microservices360 builds on Amdocs' existing leading position in OSS/BSS with a large installed customer base.
- Strong services and managed services organization that uses Microservices360 and can help CSPs in their journey to cloud-native software development
- Opening up Microservices360 enterprise edition provides a common foundation for Amdocs and CSP development, removing many of the impediments to cross organization agile working. Customer needs can more readily be delivered, without waiting for fixed long-term product release schedule.
- Amdocs has led the industry in CEM based solutions. Detailed understanding of customer touch points in the lead to cash process cycle should build trust with CSPs to facilitate process change improvements and the adoption of microservices approach in CSPs.
- Amdocs has a strategic partnership with AWS which supports the deployment of CES20 on the public cloud. CES20 products are optimized to run on AWS and allow CSPs confidence to select AWS as a public cloud vendor. Amdocs also have strategic partnerships with Microsoft Azure and Google Cloud Platform.
- Amdocs has a strategic partnership with RedHat and is using OpenShift as the underpinning for its Microservices360 platform. This enables flexible deployment of Amdocs applications across different cloud environments.
- CES20 with Microservices360 positions Amdocs as a leader in adoption of microservices and cloud enabled software in the communications market.
- Microservices360 has built a strong program and methodology across company meaning that microservice projects are more likely to succeed.
- Microservices360 is well structured with clear customization and integration points for customers

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- Microservices360 is well structured with clear points where customers can choose to replace key opensource component foundations.

Weaknesses

- Appledore believe that the existing hard boundaries between BSS, OSS and Network will blur as everything becomes software. Appledore believe this blurring is important in maximizing automation and innovation from software enabled networks. With current focus at only BSS and OSS Amdocs may miss the opportunity to drive more agile microservices developments in network software.

- CES20 encompasses solutions based on both Amdocs' microservices360 platform and on ONAP opensource. Whilst these are bundled together the exact business and technical tie between these solutions is currently unclear.

Opportunities

- Microservices360 can enable the evolution of existing BSS applications toward cloud-native scalable platforms that allow rapid new service innovation and subsequent scaling

- Amdocs if they put the right emphasis have the opportunity to use Microservices360 to coach CSPs in innovating new services with webscale players and small partners

- Microservices360 enterprise edition can be an enabler for helping CSPs to fully adopt Microservices and CD/CI delivery methodology.

- Support for multi-vendor environments enables co-development with customers using Microservices360 platform increasing the adoption of the Amdocs platform.

- Microservices360 is relevant beyond telco and gives Amdocs an ability to diversify its customers. Enterprise has the same issues in managing and adopting microservices into their businesses. Amdocs is at the early stage of working with a number of companies in the finance sector. Amdocs could look to build on this and target further enterprise verticals.

Threats

- Non-traditional services may be delivered to customer by third party applications bypassing or avoiding order engagement with CSP. Potential that much of what constitutes traditional BSS (DigitalONE and CatalogONE) is bypassed by these services and non CSP vendors.

- CSPs retain traditional software delivery and integration approaches in the majority of their activities, meaning that benefits of microservice platform and methodology are not realized

- CSPs remain also-rans in digital software development. Innovation continues to occur outside CSPs with CSPs becoming increasingly utility providers.

CUSTOMERS

Amdocs is seeing that the majority of CSPs understand the need for a move to a micro service architecture. Microservices360 in both editions they believe will allow CSPs to start the micro service journey and obtain service scale and agility. Amdocs expect a number of projects, spanning a spectrum of use cases. Amdocs is already noting distinct geographic distinctions in CSPs approach to micro-services:

- In North America there are a number of microservices projects, with operators keen to close the micro-services gap with Netflix.
- Europe by contrast is still in an experimental/first exploration of micro-services.
- APAC are focused on public cloud deployment and less on micro- services.

Sprint Case Study

MS360 has enabled Sprint to modernize its application portfolio, particularly the e-commerce and product-catalog functionality. Sprint started with a heavily-siloed architecture, developed over many years, built around individual channels. They have now moved to a unified, simplified, cloud-native architecture, with unified operations and customer experience, based on Amdocs' cloud-native solutions.

An important goal of the transformation was the ability to continuously launch new offerings that could proactively respond to customers' needs. At the same time, they needed to minimize business risk and operational costs, and to be agile enough to support future business models.

Sprint adopted a joint co-development and co-operations support model, with Amdocs, across the entire software-development lifecycle. Sprint's employees were reskilled and retrained to work within a cloud native MS360 architecture and its DevOps culture. This meant re-engineering their joint IT and software-development lifecycle best practices, methodologies, processes, tools and documentation into common ones. This team is expected to lead the way for any customizations that are required on top of the core Amdocs offering.

Sprint anticipate reductions of 50% in time-to-market for new services and features using MS360 and CatalogONE. They are also achieving up to 20% savings in TCO, because of their greater autonomy in software development that MS360 is enabling. Finally, MS360 has enabled Sprint to achieve a gradual transformation, with minimized business risk and strong business continuity.

Microservices360 Essentials Case Study

As an evolution of their existing product suite all Amdocs customers already use parts of the solutions that utilize Microservices360 essentials. In a North American Prepaid Wireless Operator CES20 supported by Microservices360 essentials is working alongside existing legacy Amdocs applications. Using CES20 a North American Prepaid Wireless Operator is now able to provide on-device activation of customers sold through third party retailers. This is enabling significant reduction in calls to call centers and improved customer experience. CES20 and the underlying

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microservices has enabled the operator to rapidly introduce this new capability with a Proof of Concept in about 6 weeks and the system being turned live rapidly afterwards.

In this case study microservices based DigitalONE & CatalogONE has enabled Amdocs to effectively compete with smaller more agile competitors to win and then successfully deliver innovative solutions. It has allowed Amdocs to change the customer perception of large, lengthy and costly delivery projects.

Amdocs note that in delivering this solution with microservices they have also been able to innovate and change the way in which customer engagement occurs. It has allowed them to move from a traditional telco fixed business flow, where a customer must first authenticate before they use a system, to a webscale customer engagement where the customer is first presented with offers and service and authentication only occurs at the end of the transaction.

Amdocs also note a number of other operators that are making use of capabilities of CES20 and the microservices360 platform, where the customer is deploying microservices360 and customizing it to map with their architecture choices.

Microservices360 Enterprise Edition Case Study

A major North American CSP, who had previously used Microservices360 essentials, has now adopted Microservices360 enterprise. This is to accelerate its ability to become a digital service provider and emulate the agility and innovation rate of both web scale competition and small innovative companies. The CSP is also a major user of ONAP today.

Amdocs are seeing increasing amounts of Continuous Integration occurring in CSP development teams. However, Continuous Deployment is still at the same level as before, with improvement still in the future. Using Microservices360 the CSP is now getting a CI/CD cadence of 2 weeks with 1-month delivery.

At the CSP a developer can choose between version of Mongo or Cassandra and then have the microservice built using that choice. This changes software builds from taking a week, to being achievable in hours.

The CSP is now an active contributor to the Microservices360 core, through its membership of the Amdocs Open Collaboration Model.

Microservices360 is also being used to support service level guarantees for the CSP using ONAP. ONAP by default is provided as a community edition. Microservices360 is enabling Amdocs to provide enterprise grade support for ONAP to the CSP.

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