

Amdocs

CatalogONE

Author: Francis Haysom



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Tel: +1 603 969 2125 • Email: info@appledorerg.com • www.appledorerresearch.com

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SUMMARY

“Catalog was dull! Amdocs’ aim is to make it exciting; enabling digital transformation”

CatalogONE is Amdocs’ next generation enterprise catalog, providing a unified commerce, charging and service/resource catalog. It provides the catalog platform for all of AmdocsONE (the overall brand portfolio for Amdocs). CatalogONE is built and delivered as cloud-native microservices. It is designed as a stand-alone solution that can federate existing BSS and OSS catalog systems, both from Amdocs and third parties.

“It is not unusual for a large service provider to have 20-30 legacy product catalogs scattered across the business.”

Amdocs’ aim is to enable CSPs to rapidly deploy and bundle new products and offerings, as well as to innovate new digital offers. Traditional catalogs have often been extremely complex (requiring large amounts of IT support), vendor specific and siloed; meaning the benefits of catalog configuration are often lost. CatalogONE supports CSPs to rapidly innovate and deploy products/offers with the following key capabilities:

- Catalog federation. Enabling the use of existing in place systems and the bundling of products and offers across any catalog.
- Business owner (not IT) setup of products and offerings in minutes not in days with minimal overhead. Allowing them to be more independent, bringing technology into the ‘hands of the user’ and accelerating time to market.
- Openness using TMF APIs to allow rapid integration of other systems, underpinned by a cloud native microservice architecture
- Rapid distribution of catalog definitions to test and live systems in minutes, not days. This enables innovation and experimentation.
- Portfolio of pre-defined, configurable product templates across traditional telco, infotainment, licence management and hard goods. These embed best practices and use cases from Amdocs’ 30+-year industry experience
- Modular catalog. Enabling the separate or integrated deployment of components of catalog based on customer need.
- Business Intelligence. Enabling a business owner to effectively manage offerings, reacting and changing offerings in response to real world feedback.

The focus of CatalogONE is on customer facing (BSS) aspects of catalog and 5G charging enablement, including integration with TMF product, customer, service and resource level APIs.

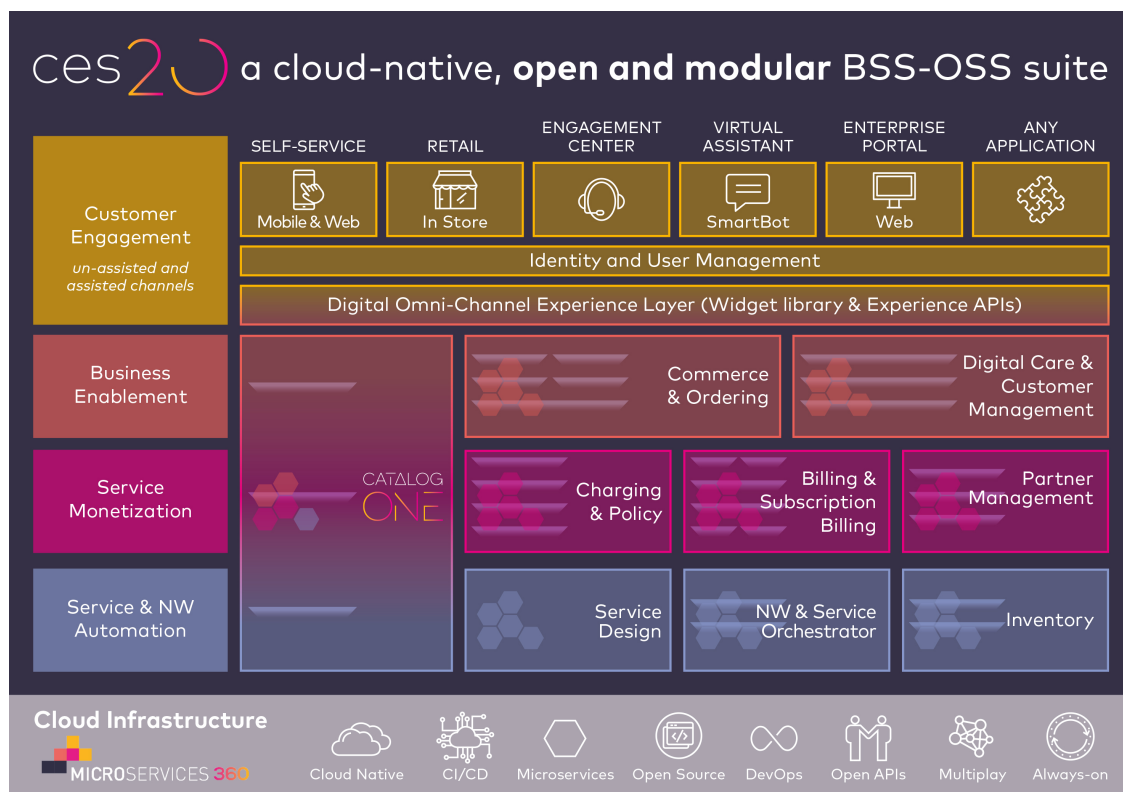
PRODUCT

Catalog

CatalogONE provides a modular catalog that provides standard models for telco services from customer to service to resource, with ability to deploy separate modules as necessary. Amdocs has based its catalog approach on the TMForum framework with four distinct catalog capabilities:

- A commercial catalog that enables the definition of customer and partner products and offerings supporting the business owner. This is pre-integrated with Amdocs' DigitalONE product.
- A charging/billing catalog that enables the monetization of services supporting the business owner. This is pre-integrated with Amdocs' RevenueONE product.
- A service/resource catalog which enables the technical community to package and expose network and IT capabilities to business owners for easy innovation of products by business owners.
- Reference data management

Figure 1: CatalogONE in the overall CES20 cloud native BSS/OSS suite



Source: Amdocs

CatalogONE is designed both to support Amdocs's solutions and also to enable the federation of third-party catalogs and BSS solutions. Amdocs' initial focus is on supporting business enablement with product/offering and charging management. Future focus will be on service/resource management. CatalogONE's position in the overall CES20 suite is shown in the preceding figure.

CatalogONE provides a service/resource (technical) catalog that is focused at giving BSS layer access to OSS capabilities. This includes full mapping and access to ONAP catalog definitions and network layer designs.

Definition

Existing legacy catalogs are often very rigid in their way of working, with a steep overhead to making marketing and offer changes. Product catalogs are also often viewed as a technical catalog to be used by IT users disconnected from business need. CatalogONE aims to change this.

Amdocs has focused CatalogONE at making the definition of products and offers as simple as possible; with the definition process focused at business change not IT change. CatalogONE gives the relevant business owner full autonomy to make changes. It removes the need for IT projects to implement change. Through different role-based user interfaces, with visual tools and guided wizards, CatalogONE allows everyone to work on their relevant parts: Network can create new services; IT new products; and the business can define new offers and bundles

CatalogONE is now enabling products to be defined in minutes rather than in days. More importantly, the decoupling of product definition from IT is removing the need for IT support and the typical IT delay that may be measured in weeks.

New products are not introduced that much. However, the ability to adjust a product, offer or promotion immediately in response to real world feedback is critical to business success.

Templates

To support product definition Amdocs has invested in a library of pre-existing templates. These templates are configurable by the customer. The library covers products for classic telco products; as well as templates to support infotainment, licensed products (anti-virus) and hard goods.

In preparation for 5G deployment Amdocs have focused on providing 5G ready catalog definitions and templates for RevenueONE, to enable rapid monetization of new 5G capabilities by operators.

Federation

CatalogONE enables the use of existing in place systems and the bundling of products and offers across any catalog and BSS system. CatalogONE can be used to federate local or any third party catalog on any BSS. It supports the ability to both replace and federate catalog data; depending on need and the capabilities of existing system catalogs.

Federation enables the rapid deployment of a unified catalog utilizing the existing ecosystem. CatalogONE is capable of working in a federated manner with the ONAP catalog to allow seamless product and service definition.

CatalogONE uses the TMF APIs to enable rapid integration of legacy and competitive catalogs. CatalogONE is being used by a North America operator in a POC to federate other competitive BSS systems. CatalogONE has been integrated with non telco commerce platforms to provide the ability for a CSP to incorporate non-communication products into an overall offer.

Distribution

The effective distribution of products and offerings to federated systems is a key component of CatalogONE. Utilizing a Kafka bus, CatalogONE is able to synchronize automatically between systems in minutes rather than in weeks (where IT support is required).

CatalogONE's distribution capability enables customers to trust the distribution and synchronization of definitions. This allows a business owner led approval process, rather than an IT testing approval process. Included with CatalogONE's distribution capability is the ability to support the Product Life Cycle Management process, including sandboxes, validation and testing.

The speed of synchronization between systems enables quicker implementations and the flexibility to develop faster and richer offers. Whilst a typical operator will only occasionally create new products, the ability to change offers and promotions in "real time" is game changing. Enabling bundled changes to be distributed to multiple systems directly by product manager without the need for IT delay is key to enabling this. It also ultimately provides a consistent and strong customer experience.

Business Intelligence

CatalogONE provides the business owner with strong business intelligence capabilities. It incorporates capability from Amdocs' Data and Intelligence platform to provide dashboards on the effectiveness of catalog defined products, offerings and promotions. This enables a business owner to make changes in response to the "real time" performance of an offer.

CatalogONE allows product offering business KPI tracking, predictive analytics, contextual recommendations, and actionable competitive insights.

Dashboards are made from pre-defined widgets that are configurable by the customer. CatalogONE is building a portfolio of widgets to support business decision making.

CatalogONE also provides a recommendation capability that uses performance data from previous campaigns; for example, “If you decrease price by £1 take up rate doubles”. It sources historical evidence by integrating to data queues from performance data source. It does not duplicate or persist data, avoiding the management of data synchronization. This capability is supported by Analytics and Machine Learning

Architecture

CatalogONE is based on Amdocs Microservices360 development platform and methodology. This provides a cloud-native environment, 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 leveraging the microservice360 platform Amdocs are able to benefit in terms of service discovery and the ability to scale out with need. The stateless nature of the CatalogONE microservices enables CI/CD iterative release 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.

The following diagram outlines Amdocs CatalogONE architecture

Figure 2: CatalogONE platform



Source: Amdocs

Strategic Partnerships

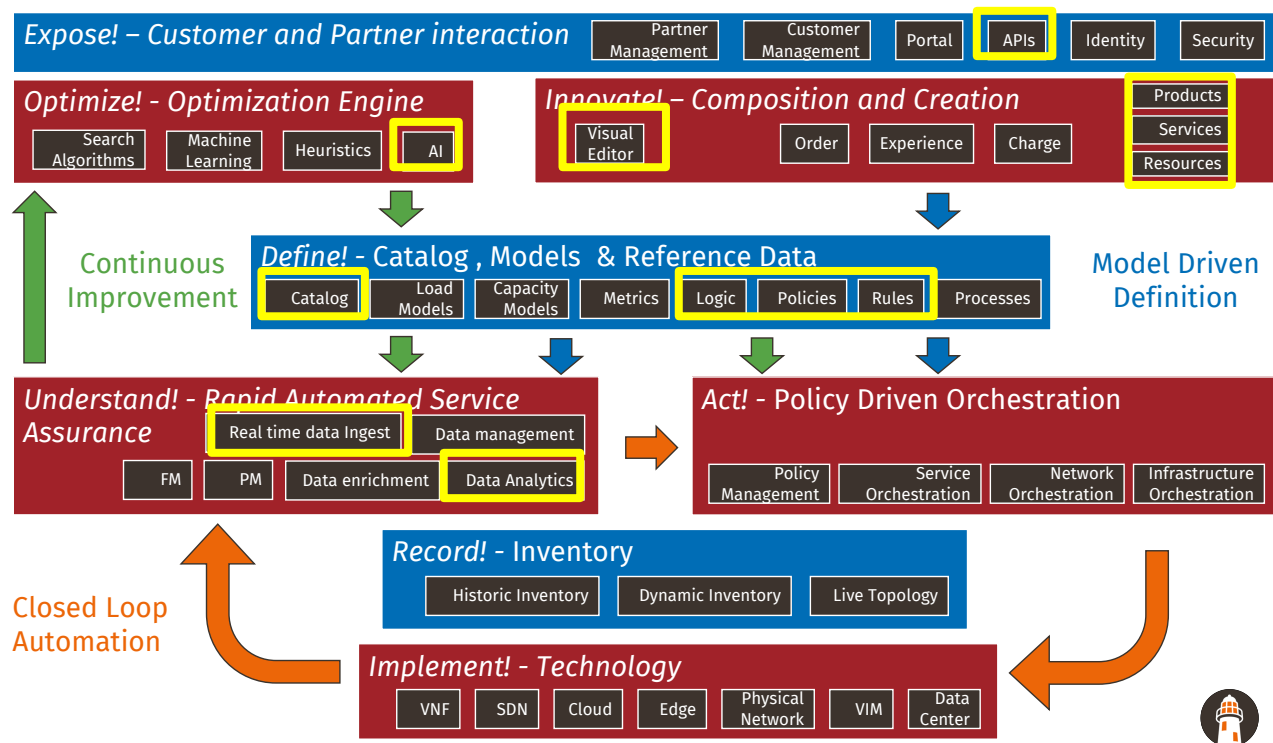
Amdocs has a strategic relationship with AWS. CatalogONE is certified on AWS and is built to the AWS Well Architected Framework.

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 or Azure.

APPLEDORE ASSESSMENT

This section analyses CatalogONE in the context of Appledore’s Reference Architecture for closed loop automation and gives our SWOT analysis. Figure 3 overlays CatalogONE on the Appledore ‘Closed Loop Automation Reference Architecture’. The call-out boxes indicate where CatalogONE contributes to the architecture.

Figure 3: Mapping CatalogONE Solution to Appledore Taxonomy and Reference Architecture



Source: Appledore Research

CatalogONE addresses the functional aspects of the Appledore taxonomy:

- Expose! – CatalogONE enables the exposure of offers to third parties through APIs (based on TMF open APIs)

- **Innovate!** - Innovation of new customer services, products and bundles through catalog management. CatalogONE provides federated catalog management to any third party catalog enabling enriched products and services. CatalogONE Delivery of new customer services with order, experience and charging processes. For example, providing new means of capturing revenues with flexible payment and billing, monetization.
- **Understand!** – Data and Intelligence platform provides data analytics for CatalogONE delivering the customer experience aspects of Appledore's Rapid Automated Service Assurance. For example, providing intuitive recommendations throughout the product lifecycle. Data and Intelligence platform supports real time data ingest from a variety of data sources.
- **Define!** – CatalogONE provides the underlying catalog definitions but also provides metrics, rules and policies to support the business owner in managing products and offerings.

Strengths

- Market Leader in Telecom OSS/BSS market with large-scale deployments at top tier CSPs. CatalogONE builds on this leading position in BSS with a large installed customer base.
- Appledore believe that boundaries between BSS, OSS and Network will blur as everything becomes software. CatalogONE, with its common catalog, can support this blurring.
- Amdocs is enabling existing customers to adopt CatalogONE by integrating its traditional systems with its new solutions. For example, the integration of CatalogONE with SDC
- A strategic partnership with AWS including certification of CatalogONE on the public cloud. CatalogONE is optimized to run on AWS.
- CatalogONE has been designed to integrate with any commerce catalog from any digital platform, allowing it to support CSPs in moving beyond traditional CSP products and services.
- CatalogONE development approach is driven by APIs and builds on TMForum API initiative to provide a strong set of API driven services and ease of integration/federation.
- CatalogONE is underpinned by Microservices360 which positions Amdocs as a leader in adoption of microservices and cloud enabled software in the communications market
- Whilst CatalogONE is initially BSS focused it provides an OSS technical catalog capability and the ability to integrate technical catalog capabilities for easy use by business managers.

Weaknesses

- CatalogONE is positioned to support products that have a direct to customer business. The opportunity to support indirect customer services with online/dynamic engagement may be missed in this model. It would be good to see more emphasis on how CatalogONE could be used to support these models.

- Amdocs' history with Telco means that CatalogONE services naturally align with existing CSP BSS domains, business models and processes. CatalogONE enables new services and business models, beyond just Telco. Amdocs need to ensure that this easy alignment does not simply lead to the continuation of existing CSP business models and processes.

Opportunities

- CatalogONE can enable the evolution of existing BSS applications whilst rapidly allowing new service innovation. Amdocs if they put the right emphasis have the opportunity to use CatalogONE to coach CSPs in innovating new services with partners.
- CatalogONE provides federation enabling existing multi-vendor catalog environments to be retained in the short term. This enables possible phased replacement of over complex legacy catalogs over time.
- Using CatalogONE templates Amdocs have an opportunity to drive product innovation in CSPs, particularly in monetizing 5G
- CatalogONE provides the capability for implementing offers beyond the traditional CSP business model. For example, in financial industry it can provide banking offers. Amdocs have an opportunity to be relevant to other industries as well as allowing the creation of cross industry products and offers.
- CatalogONE, with its ability to federate non-telco catalogs, gives Amdocs an opportunity to help the CSP innovate and develop new products and bundles.

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.
- Whilst some CSPs are using modern agile software delivery approaches, the risk remains that many CSPs will retain traditional software delivery and integration approaches. This means that the benefits of a microservice platform and openness are not realized in Amdocs CSP market. Please note this is an industry wide problem and is not specific to Amdocs.
- CSPs retain existing product lifecycle management processes and ways of working, meaning the potential savings in implementation time and increased innovation rate are missed.

CASE STUDIES

Sprint

Sprint recently chose CatalogONE to modernize its commerce and product catalog operations. This project is part of Sprint's IT modernization journey to a cloud-native, microservices based architecture. This aims to reduce operational expenditures whilst delivering more robust offerings. It will enable quicker delivery cycles and more proactive response to customer needs.

Sprint had a heavily siloed architecture, developed over many years. It was built around individual channels, each with its own catalog (over 20), and order-management systems, plus multiple user interfaces for different applications.

CatalogONE, is providing Sprint operational efficiencies, and a centralized platform to create and deploy more competitive offerings, ultimately leading to enhanced customer experience.

Korea Telecom

KT Corporation, the largest quad-play service provider in South Korea, recently selected Amdocs CatalogONE. Using CatalogONE KT aim to create, deploy, test and launch new services at a much faster pace and quickly take advantage of new 5G use cases and revenue opportunities.

CatalogONE provides KT with a centralized view of all products and services. It provides KT with an advanced user interface, collaboration platform as well as approvals and notification management capabilities. CatalogONE is allowing business and marketing users to manage the offering lifecycle and create frequent configuration updates. By deploying on the cloud, it will enable KT and Amdocs teams to collaborate and handle multiple business requests in parallel. Having previously deployed Amdocs' real-time convergent charging solution, KT will be able to further accelerate its ability to introduce and monetize new 5G consumer and enterprise offerings.

Source: Amdocs KT press release 4th February 2020 www.amdocs.com/media-room/kt-selects-amdocs-catalogone-cloud-native-solution-rapidly-create-and-launch-new-5g

North American Prepaid Wireless Operator

Using CatalogONE a North American Prepaid Wireless Operator is now able to provide offerings with on-device activation of customers sold through third party retailers. CatalogONE was rapidly introduced in about 6 weeks and the system going live rapidly afterwards.

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.

European Quad Play Operator

CatalogONE has been deployed in a European Quad Play Operator to address the problem of long time to market (TTM) for new services and offers. CatalogONE has unified a number of siloed line of businesses and allowed cross business bundles. Prior to deployment new offers took up to 9 months to create. With CatalogONE the operator is achieving a TTM of 1-2 weeks for new offers and can make changes to existing offers in hours. CatalogONE has enabled 80% of offer/service development to be achieved through configuration. Previously 70% of offer changes required system integration.

E: info@appledorerg.com

www.appledorererearch.com

44 Summer Street Dover, NH. 03820, USA

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