Sprint transforms to cloud native architecture using a unique co-development approach

Who?

What?
Sprint moved from a heavily-siloed environment to a unified, simplified cloud native architecture to deliver functionality in weeks instead of months, and enable digital, omnichannel experiences and continuous new, fast-to-market offerings.

How?
Used a unique co-development model across the lifecycle of a complex end-to-end modernization project, using the same microservices-development practices and a seamless continuous integration and continuous delivery (CI/CD) process.

Results

<table>
<thead>
<tr>
<th>Expectations</th>
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<tr>
<td><strong>Expects 50% time-to-market reduction</strong> for new services and features</td>
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<tr>
<td><strong>Up to 20% savings in cost of ownership</strong> due to Sprint’s greater autonomy in software development</td>
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<tr>
<td><strong>Expects 30% reduction</strong> in order fall-out rates</td>
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<td><strong>Gradual transformation</strong> minimizes business risk and ensures continuity</td>
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<td><strong>Business users can define offers themselves, reducing time and cost to market</strong></td>
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<td><strong>Anticipates 30% more efficient</strong> tele-sales and handling of customers’ changes to services</td>
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US communications service provider Sprint (now part of T-Mobile US) had a clear vision of where it wanted to go and was prepared to try an unconventional, pioneering co-development approach to get there. The CSP’s intention was to modernize its application portfolio – particularly the e-commerce and product-catalog operations – by moving to a unified, simplified, cloud-native architecture, with unified operations and customer experiences.

The starting point was a heavily-siloed architecture developed over many years, built around individual channels. Each channel has its own catalog, 22 in total, and order-management systems, plus multiple user interfaces for different applications. This resulted in lengthy, expensive integrations and cumbersome processes.

Instead, Sprint wanted a common user interface, a single centralized catalog, and to standardize integrations to give customers seamless, digital omnichannel experiences. Another goal was to continuously launch new offerings that proactively respond to customers’ needs. In parallel, it needed to minimize business risk and operational costs; including connectivity-related challenges such as implementing security elements across various domains.

Sprint was keen to generate incremental value aligned to the cost expenditures as the project deployed through rapid delivery cycles for new functionalities, and to be agile enough to support future development and business models.
“We wanted to become actively involved in designing, developing and deploying the new cloud native architecture, so the innovative idea of a joint co-development and co-operations support model with Amdocs across the entire software-development lifecycle was really appealing”

explained **T-Mobile Vice President of IT Software Development & Production Support, T-Mobile, Meg Knauth.**

Sprint’s employees were reskilled and retrained to work within a cloud native architecture and DevOps culture. This involved re-engineering the two companies’ IT and software-development lifecycle best practices, methodologies, processes, tools and documentation into common holistic ones.

It’s challenging to migrate heavy-duty monolithic commerce flows – representing hundreds of people-years’ development time – to a cloud native digital environment that spans almost 500 REST endpoints, while maintaining the feature-rich legacy environment. So Amdocs created a combined program-increment planning process for both companies that allowed them to continually synchronize front and back-end systems.

Amdocs' MS360 platform is an end-to-end framework that automates microservices management and supports co-development by ensuring IT teams have the same real-time view of activities anywhere in the development pipeline. This means Sprint and Amdocs can develop, build, test, deploy, operate and upgrade applications for DevOps and its continuous integration and continuous delivery (CI/CD) practices quickly. So as work progressed, the teams managed to speed up releases: moving from a 3+3+2-week program-increment model to a 2+2+1-week model.

The platform doesn’t just allow portability between infrastructures – that is, private, public and multi-cloud environments – it can also be adjusted to Sprint’s operational needs since components can be replaced independently, on-demand, to give the operator development autonomy meaning it can also develop its own microservices. The platform also automatically adapts and fine-tunes computing power to optimize system performance.

Amdocs designed its cloud native applications using a domain-driven approach to enable a microservices-based architecture for optimized granularity and flexibility. Sprint’s digital commerce and customer-first transformation is built around two solutions:

- **Amdocs’ CatalogONE**, which supports business functions and marketing, using a role-based user interface to provide an analytics dashboard, collaborative processes and embedded intelligence to help Sprint define, implement, test, launch and manage new offers, products and services.

- **Amdocs’ DigitalONE**, which is a cloud-native, digital-enablement platform based on microservices. It covers the lifecycle of care and commerce processes across any channel, and supports greater business agility to accelerate Sprint’s time to market, enabling Sprint to launch complex offerings in days, instead of weeks.
The magic of Open APIs

The cloud native solutions were designed on top of TM Forum’s Open APIs, which are a strong starting point for designing microservices because they define a consistent, simple-to-use resource model for the business entities needed for commerce and customer care. For example, the Product Offering Qualification API enables DigitalONE to consume functionality from external systems that use the Forum’s Open APIs, such as the Resource Pool API for number reservation.

Amdocs’ extensive involvement in TM Forum’s Open API program, including participating in the Open-API Schema-ification program, helps the company adopt APIs for its solutions and to contribute back to the Forum’s development community. Amdocs’ use of an Integration-Platform as a Service (iPaaS) approach allows additional APIs to be adopted as needed to support business functionalities.

Some of the many TM Forum Open APIs exposed by the microservices include the Product Catalog Management API for authoring and runtime exposure, (that is, the discovery of product offerings) - Amdocs leads the ongoing development of this API within the Forum. Another one is the Shopping Cart Management API - for which Amdocs is also part of the development team.

Giving Sprint agility and independence

Sprint is confident that the co-development model is agile enough to support future development and business models, providing it with tools to achieve future development-autonomy, with an anticipated 20% reduction in the cost of ownership.

Key benefits of Sprint’s move to a simplified cloud native architecture

Delivers functionality in weeks instead of months
Enables digital, omnichannel experiences and continuous new, fast-to-market offerings

Expected
50% time-to-market reduction
for new services and features

Up to
20% savings in cost of ownership

Expected
30% reduction in order fall-out rates

Business users can define offers themselves, reducing time and cost to market

Anticipated
30% more efficient tele-sales and handling of customers’ changes to services

Amdocs designed its cloud native solutions on top of TM Forum’s Open APIs, part of the Open Digital Framework

TM Forum 2020, (Source: Sprint & Amdocs)

The cloud native architecture and microservices allow Sprint to adopt the latest technologies gradually, minimizing business risk and ensuring continuity. For example, it expects a 30% drop in order-fallout rates due to end-to-end order handling, and the ability to trace orders in Amdocs’ DigitalONE.
Sprint expects at least a 50% time-to-market reduction – from months to weeks, or days – thanks to the product-driven catalog combined with the microservices co-development environment.

Enabling business users to define offers reduces the number of Sprint employees involved in the process to three or four, down from around 20 to 30, depending on the offer, and dramatically cutting time to launch, efforts and costs.

Sprint anticipates a 30% improvement in telesales and care-handling time for plan changes and adding or removing services.

The operator offers customers a digital omnichannel experience which enables customers to move between different channels at will to complete tasks, picking up where they left off.

“Very few CSPs have successfully managed to achieve true omnichannel Nirvana,”

noted IDC Research VP Karl Whitelock, recently.

Sprint plans to become one of them.