



Ericsson Delights Customers with DevOps SAP Integration

by **Lauren Bonneau**, Senior Editor

The idea of a 140-year-old technology company might seem contradictory in today's world of digital transformation, ubiquitous online platforms, and start-ups around every corner. But that's how long Ericsson has been in the telecommunications business — evolving from a telegraph instrument repair workshop to a cutting-edge technology firm with networks that carry around 40% of the world's current data traffic.

How does a global technology giant stay at the forefront of a rapidly changing industry and deliver even more value to its customers? The answer, in part, for Ericsson was to upend long-established software development processes and move to a continuous delivery model based on DevOps — an approach that provides the business with the means to orchestrate automatic deployment of change across up to 15 different enterprise applications. ActiveControl by Basis Technologies was selected as the solution that would help to integrate SAP systems into this continuous delivery pipeline.

The journey began with Ericsson's Digital Services Delivery team, which in recent years has begun to adopt agile development. Although a gradual process — with multiple consulting, systems integration, and learning

services projects delivered each year from Ericsson's global service centers — this was a significant shift. Meanwhile, Ericsson's IT leadership was considering how customer satisfaction could be further increased for the projects the company delivers through its digital business support systems (BSS) portfolio, an area of recent focus and investment. As the business value of agile became evident, adoption of a full-blown continuous integration and delivery (CI/CD) pipeline, enabled by DevOps, seemed a natural next step toward more consistent, repeatable quality of delivery and a faster time to market for the BSS team.

One of Ericsson's domain experts, Uday Poranki, Domain Lead, explains how the IT organization worked closely with the wider business in the drive to modernize IT delivery. Broad commercial outcomes — greater product differentiation, more responsiveness to changing market conditions, and increased customer satisfaction — were considered just as important as tactical benefits like lower project costs, higher product quality, reduced risk, and greater efficiency. “A DevOps methodology does save a lot of time and effort in creating and deploying new environments, but it also increases the customers' delight,” Poranki says. “Customers love to hear that we are following a DevOps methodology and successfully automating deployments, and it is something that adds a lot of value to our solutions.”

However, as the company embarked on a phased rollout of DevOps, it encountered a stumbling block: how to successfully integrate SAP applications into



At a Glance

Goal: Update software development processes and move to a continuous delivery model based on a DevOps approach that would include SAP systems

Strategy: Implemented a dedicated automation solution, ActiveControl by Basis Technologies, to integrate SAP Customer Relationship Management (SAP CRM) and the rest of the continuous deployment pipeline

Outcome: Achieved successful software delivery to SAP CRM using agile techniques as part of a DevOps approach; improved delivery speed and quality, as well as reduced manual effort and related errors using an automated deployment methodology and code merge process

this new CI/CD pipeline. Perhaps unsurprisingly, some of the global customers that Ericsson supports with specific telecom BSS solutions have implemented SAP software in addition to Ericsson's stack of products. Inclusion of those SAP systems in the new DevOps approach was critical to the effectiveness of the initiative.

Poranki, who is currently an SAP Customer Relationship Management (CRM) domain lead, has been working on a project for a client whose solution stack includes SAP CRM alongside a number of non-SAP systems for billing, charging, and order management. This service provider was using SAP CRM as the front-end tool for case managers to track, address, and resolve its subscriber claims generated from various channels, such as call centers, web, email, or social media. Then back-office functions would manage these customer cases and escalate and report on them as necessary.

For this project, Ericsson achieved something that is not yet the norm in the SAP world: successful software

delivery using agile techniques as part of a DevOps approach. The company was able to integrate SAP systems into its wider DevOps tool chain, via ActiveControl, to help achieve this success.

Combining Agile Techniques and DevOps Technology

Historically, SAP developments, integrations, and deployments have followed waterfall methodology, a sequential process with lengthy release cycles where the requirements are delivered in one shot — typically after weeks of design, development, and testing. “Three or four years back, when we first began instituting agile techniques, you couldn't find many — if any — SAP projects that were being delivered with an agile methodology,” says Poranki. “I've been working on SAP systems for over 15 years, and this was the first SAP project in which I've seen truly successful agile delivery of SAP change. In fact, we had very seasoned SAP developers who were following this methodology for the first time in an SAP landscape.”

Aside from long release cycles, which prevent rapid delivery of innovation and value, waterfall has other drawbacks. Changes to initial requirements are not easy to accommodate, issues tend to be identified late in the process when they are expensive to fix, and end-user feedback isn't possible until development is complete, which slows down refinement and enhancement. The agile development approach adopted by Ericsson aimed to avoid such issues by running two-week sprint cycles that would deliver small, tightly-bound units of development on a frequent, regular basis. It was clear that doing this successfully in SAP landscapes would require established working patterns to change significantly.

New technology was also critical. Among the earliest requirements was adoption of a central platform that would manage Ericsson's CI/CD pipeline in an automated fashion, enabling safe delivery of change at a high speed. An open-source product was selected, which functions as both a code repository and an orchestration tool that can automate the process of building, integrating, testing, and deploying new software. Critically, the open-source platform provides the means to deploy code at the right time to multiple applications — a common necessity when working with complex enterprise software. “The goal state was for multiple developers to be able to write code on their laptops and, when ready, check the code into a single online code repository,” says Poranki. “Then at the end of each day, a manager would review the code versions in

the repository and automatically deploy development from all the domains to the next environment, such as testing.”

Ericsson’s objectives in looking for such a DevOps solution were to adopt continuous delivery of change while ensuring that every release maintained coherency and integrity throughout the development lifecycle. Automation was recognized as the way to support the application of best practices to every activity in each phase of software development, without negatively impacting release timelines.

While the non-SAP systems for billing, charging, and order management were aligned relatively quickly with this new DevOps approach, it became apparent equally quickly that the SAP CRM system remained in a silo and was being left behind. Since application development, deployment, and testing for SAP systems is typically all done within the SAP landscape, using built-in SAP tools, code is not exposed to the external tools used to manage delivery of other applications in the CI/CD pipeline.

The Ericsson team soon realized that of the many challenges presented by the unique architecture of SAP software, three stood out. First, according to Poranki, was the fluid SAP landscape that Ericsson aimed to implement to complement the development approach used for other applications. “The built-in SAP transport mechanism felt like a major limitation that could discourage people from implementing DevOps in SAP systems,” he says. “Using the standard out-of-the-box SAP transport tool involves a complex and tedious process that requires a lot of work and effort. Once you define a transport path, you need to stick to it rigidly. If you need to deviate from that path, the process for changing and defining a new one in the landscape is difficult, time consuming, and not very straightforward — this lack of flexibility was a big issue for us.”

Actual deployment of SAP transports, and the basic incompatibility of SAP systems with most standard DevOps tooling, was a second major pain point. Ericsson wanted the orchestration engine to arrange all deployments via a centralized call, but it had no way to make such a call trigger automatic movement of SAP transports. The only option was to continue delivering SAP change using the same old-fashioned processes

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that existed prior to the DevOps project. However, this option was seriously problematic as it delayed delivery of code in other systems when changes were dependent on related updates to SAP CRM.

Lastly, but certainly not of least importance, the BSS team decided to employ a multi-track SAP development landscape that would enable multiple teams to work independently on different tasks during each sprint cycle. It was clear that managing this configuration would be a task of significant complexity. To overcome these key roadblocks and accelerate SAP change, Ericsson searched for a dedicated automation solution that could bridge the gap between its SAP CRM system and the rest of its new CI/CD pipeline.

Searching for a DevOps Solution for SAP Integration

The Ericsson team identified Basis Technologies as the initial vendor to contact, based on the company’s extensive experience with DevOps in SAP systems. “Their consultants came to us, devoted a couple of weeks to understand our requirements and dynamic setup, and spent a week designing and presenting a proof of concept with their ActiveControl solution,” says Poranki. “Then they did some development on their end, and we configured the implementation and plugged it into one of the test environments. All in all, we were able to get it working within about a month, and the flexibility really impressed us so much that we didn’t take time to review another vendor.”

SAP developers who were accustomed to the previous waterfall process didn’t initially understand how it was possible to develop code and safely deploy it at such speed, according to Poranki. “It’s not easy for a whole team of solution architects and developers to learn a new methodology, which involves a completely new



Ericsson

Headquarters: Stockholm, Sweden

Industry: Communications technology

Employees: 94,580

Revenue: \$22.5 billion (SEK 210.8 billion)
(2018)

Company details:

- Founded in 1876
- Provides hardware, software, and services to enable the full value of communications technology connectivity
- Offices in approximately 110 countries
- Currently holds 49,000 patents

SAP solution focus: SAP Customer Relationship Management (SAP CRM)

Third-party solution: ActiveControl by Basis Technologies

mindset and new ways of working,” he says. “There was certainly a learning curve and some resistance to change, and it took some time to get everyone on board and implement the new process — but management was very supportive, giving the SAP teams ample time to ramp up and familiarize themselves, which was extremely helpful.”

After successfully implementing ActiveControl and proving out its DevOps capabilities, the tool was immediately integrated into Ericsson’s application development and delivery landscape, where it has been successfully utilized since late in 2017 — greatly assisting the business on its path to DevOps and a true continuous delivery process.

Continuous Integration and Delivery in a Multi-Track SAP Environment

ActiveControl provides Ericsson with a solution that connects the SAP landscape with the automated cross-application CI/CD process. By providing a native integration with the company’s open-source platform, it allows the central DevOps orchestration engine to trigger deployments in SAP CRM as well as other applications.

To manage this automated process, Ericsson employs an agile management tool alongside the central CI/CD platform. The management tool is used to track the requirements for each sprint in the form of ‘user stories’ and provides a holistic view of development progress. Development managers check it at the end of each day (or sprint), to confirm whether all the tasks for given user stories are complete across all applications. Thanks to the integration with ActiveControl, the status of SAP CRM development is now also transparent and visible in the management tool. If all necessary work is complete, the development manager then triggers a deployment request through the open-source platform, which initiates the next stage of the deployment process. In the case of SAP CRM, that means an automated call to ActiveControl, alerting it to deploy the relevant transports into the appropriate environment (testing, pre-production, production, etc).

With ActiveControl, the process of adding or removing SAP systems to or from the defined transport deployment paths — to support a specific phase of testing, for example — is simple, usually handled with just a few clicks prior to triggering the deployment request.

According to Poranki, while ActiveControl's ability to orchestrate automated SAP deployments is fundamental, its Merge function is also of great importance in managing multi-track development in such a dynamic scenario. "ActiveControl can automatically deploy transports without any manual involvement, which helped simplify the complete transport process a lot and, in this case, certainly helped the SAP team go the DevOps route," he says. "But now, with agile teams working in tandem with multiple scenarios — maybe three different teams working in parallel in three different tracks, for example — we can also use ActiveControl to perform a code match across these tracks very easily and ensure that all systems stay aligned. It saves us a massive amount of time and user effort in that regard."

The Merge function can automatically identify and merge non-conflicting changes — which are usually the vast majority — from one system into another when a phase of development is completed, removing the need for a developer to re-key everything in multiple systems. "Because of the automated code merge process, developer effort in navigating different code branches has been reduced by 60% at least, which converts into a lot of time and cost savings," Poranki says.

Once the SAP integration was up and running, the Ericsson team began to see the real value of automation. For example, quality, as well as speed, of delivery has improved. "When developers are manually inputting the same code into multiple tracks, you can never expect that it will be 100% perfect because there is always the tendency for human error or other mistakes to creep in, such as variable definition mismatches," Poranki says. "By automating our deployment methodology and the code merge process, we have helped to reduce all these issues."

The visibility that ActiveControl provides for tracking purposes is considered a further huge benefit to project teams. Developers and managers now know what user stories and business tasks have already been moved from one SAP system to another thanks to the tool's comprehensive record of linkage between transports and user stories, and how each has progressed.

According to Poranki, the tangible benefits of ActiveControl are boundless. "For developers



working on agile projects, especially with more than one development track going in tandem, this tool adds so much value. I would honestly recommend it to anyone who is working on agile deployment in a multiple-track environment," he says.

DevOps Integration is a Recipe for Success – Even for SAP Projects

Thanks to the successful adoption of DevOps, Ericsson can be more responsive and delight its customers by delivering value faster than ever — even when SAP systems are part of the application stack. Poranki notes that this approach has been highly successful in the project he was working on, where the SAP team has been freed from the constraints of regular release cycles and is now able to roll out new functionality as soon as it's ready. Changes are automatically delivered into the live SAP CRM production system on a biweekly basis, with thousands of transports being safely deployed in some two-week sprints despite the complexity of a multi-track development landscape.

According to Poranki, many people still believe that SAP projects have to follow a waterfall methodology, and that it's too hard to develop SAP applications in an agile way. "But that need not be the case. Trust me. With a bit of practice and some discipline in how the scope is defined and implemented, SAP development can definitely go agile," he says. "Following a DevOps methodology and using automated solutions, such as ActiveControl, can help in optimal planning, testing, implementing, and enhancing SAP solutions — and that will go a long way in delivering a stable solution to the end customer." ■