



Case Study

Airtel reduces customer frustration to near-zero levels with AI-driven automated operations

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Who: Airtel and Amdocs

What: Introduced AI-driven automated operations to Airtel's existing business support systems (BSS) and created a unique Customer Frustration Index to measure experience improvements in real time.

How: Designed AIOps (AI for IT operations) framework and advanced automation to increase efficiency and speed, coordinated across multiple vendor systems, while leveraging TM Forum's AIOps toolkits and Business Process Framework.

Results: Customer frustration dropped to near-zero level; 60% reduction in call center volumes in six months; order fallout decreased by 90%; and nearly 100% accuracy in bills paid via online and mobile apps.

Bharti Airtel is one of India's leading integrated operators with more than 300 million active subscribers, providing mobile, fixed, broadband and direct-to-home TV and broadcast services. When faced with a disruptive new player that had aggressively entered the country's competitive telecoms market, Airtel knew they had to act. Airtel's response to the intensifying market dynamics was to provide an unbeatable digital user and operational experience. This included a "Zero Failure" public promise to consumers: Airtel focused on resolving customers' operational frustrations and reducing their need to contact call centers by making complex processes and call centers super-efficient and fault-free and making it easier for customers to order products and pay bills.

"We know that 'zero questions' is an impossible utopian thought, especially for a telecom brand – but that won't stop us from trying because we know that the closer we get to zero, the happier our customers will be," explained Airtel Chief Marketing Officer Shashwat Sharma. "For us, this is not just a campaign, we are now re-engineering the entire organization towards this goal and are obsessed with building a culture of consumer centricity."

Amdocs was tasked with finding an innovative solution to apply AI-driven automation to Airtel's existing systems to dramatically improve their digital operations and, subsequently, Airtel's end-user digital experience. As Airtel wanted to be able to monitor and measure improvements in real time, and directly map business impact and value against system impact and operational KPIs, they developed a unique experience measurement mechanism: the Customer Frustration Index (CFI).

Measuring real-time customer frustration using a unique index

It might seem like a psychological quest to find a way to measure an emotion like frustration, but Airtel managed to devise an index that provides a valuable measure of customer experience based on how its systems are performing. The CFI is a weighted average of six key business parameters that Airtel identified as most likely to impact customer frustration and churn.

The CFI combines the percentage of:

- New orders completed in less than five minutes.
- Change orders (for example, change of bill plan) completed in less than five minutes.
- SIM replacement requests completed in less than five minutes.
- Service resumption orders that are completed in less than one minute.
- Payments from online or digital channels completed in less than one minute.
- Bills that are dispatched and delivered within 12 hours of the billing due date.

Amdocs designed and developed the mechanism to measure the CFI and provided real-time monitoring and visualization capabilities, including developing hooks and plugins across multiple BSS applications to pull the statistical data and generate CFI KPIs.

“The end customer doesn’t care for your system – customers only care that their transaction works. We sat together, Amdocs and Airtel, and jointly agreed on a combination of metrics that will form the Customer Frustration Index (CFI)”. Nathan Phipps, Bharti Airtel CIO

Introducing a federated AIOps model

Airtel and Amdocs together innovated a federated model for AIOps to give Airtel a clear view of process flows across the entire system and apply AI-driven automated operations to Airtel’s existing systems. This included proactive and pre-emptive monitoring, zero-touch operations through self-healing and auto-resolutions of any failures, and problem management by addressing system issues from the root.

- Amdocs helped implement AI-driven automation tools and dashboards for advanced monitoring and machine learning, leveraging Amdocs toolsets combined with Open Source, which enabled Airtel to benefit from reusable functionalities, making implementation faster and cheaper.
- Amdocs also provided end-to-end design, development, testing, deployment and maintenance services for the entire framework that was implemented. This includes Level 2 operations (for example, the support by IT Operations of end-to-end business processes and also their work with Level 3 maintenance services) via Amdocs’ SmartOps managed services. It also includes Level 3 maintenance services, (for example, code fixes) for the Amdocs billing systems used by Airtel.

The project leveraged TM Forum’s [AIOps toolkits](#) to build the federated model and Airtel’s billing system from Amdocs adhered to TM Forum’s [Business Process Framework \(eTOM\)](#). Amdocs’ SmartOps AIOps platform aligns with TM Forum’s AIOps framework in multiple areas. The software lifecycle of the automation flows built at Airtel are fully aligned to TM Forum’s AIOps software lifecycle for creating automation software. In addition, machine learning-based AI models implemented at Airtel generate predictions and/or decisions by finding patterns in the input datasets, and the datasets are managed in accordance with TM Forum’s AIOps framework.

There was another issue that Airtel needed to address, which was more of a mentality shift. They noticed that in urgent cases operators and developers used to fix problem quickly, leave it and move on to something else. This created a large technical debt landmines which Airtel and Amdocs decided to eliminate. They decided on a new methodology according to which any issue gets two fixes: the immediate fix that solves a particular issue and the long-term one that deals with the issue for good.

“We wanted to make sure that this kind of zombie issues do not come back from the dead and continue to haunt us”. Nathan Phipps, Bharti Airtel CIO

Solving complex challenges through innovation

Among the challenges for this implementation, the model had to incorporate multiple systems and applications from different vendors in Airtel's billing stack.

To measure the improvements, Airtel wanted a clear view of process flows across the entire system and how different milestones along a service path perform. It is highly complex to build the logic behind this when it involves multiple vendor and in-house systems. This was resolved by creating a unique framework which enables end-to-end monitoring and visualization of service process flows across different vendor systems, and so far, 20 flows have already been successfully mapped and visualized.

An innovative hybrid model approach optimizes automation capabilities by enabling Airtel to avoid vendor lock-in by using different automation tools from multiple vendors for different process flows. For example, ticket auto-healing is performed either by Airtel's ServiceNow or Amdocs' Amily tools depending on the type of ticket flow and a predefined set of rules.

Also, the operations automation project was running in parallel with another major transformation in Airtel's postpaid systems – however, tight collaboration between both projects prevented wasting time and resources from duplicated or conflicting coding efforts.

Results exceed all expectations

Airtel's objective was to reduce customer frustration resulting from faults and process inefficiencies.

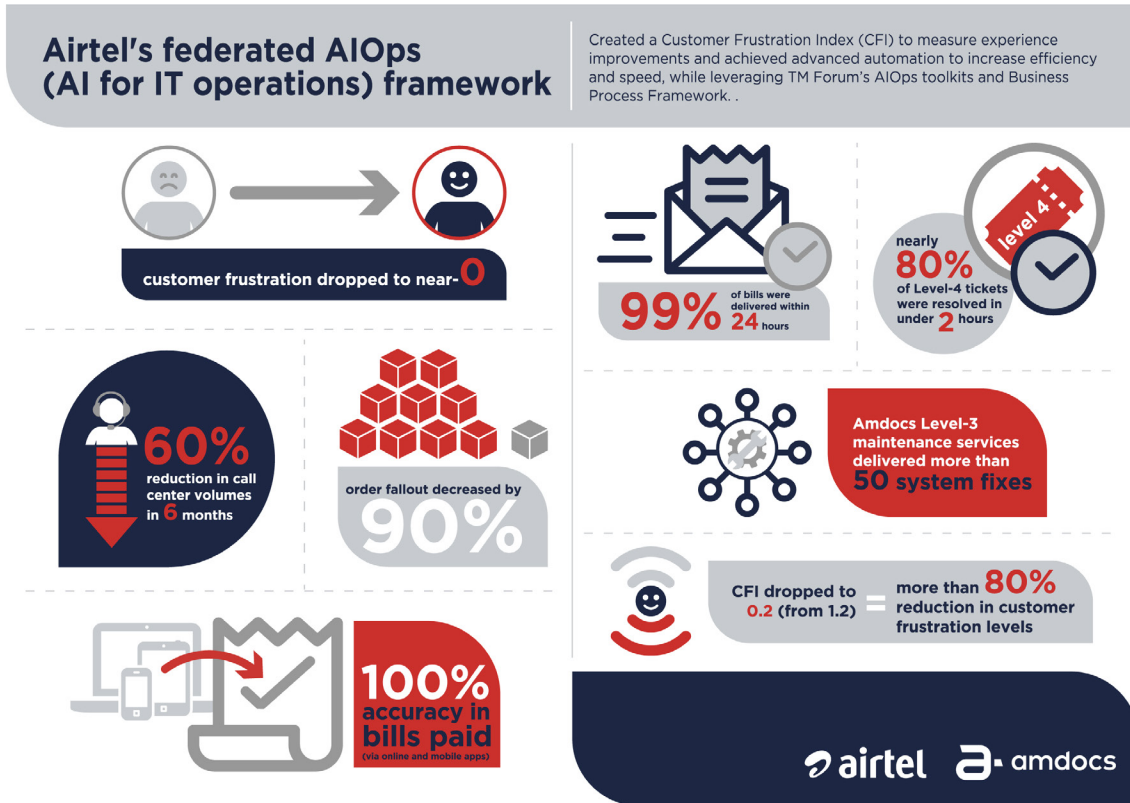
"The dramatic improvements in the efficiency of our ordering and billing processes resulted in a 60% reduction in call center volumes in just six months". said Nathan Phipps, Bharti Airtel CIO

At the start of the project, Airtel had a CFI of 1.2 and their target was to reduce it by 58% to 0.5. However, the results beat the target: Airtel's CFI actually dropped down to 0.2, which is more than an 80% reduction in customer frustration levels, and a sign of significantly better digital user experience.

The federated AIOps model clearly improved process efficiency through automation and proactive monitoring, which contributed to the significantly reduced frustration levels:

- In order processing, there were 90% fewer order fallouts, and 92% of order fallouts were resolved using automated and self-healing capabilities.
- For bill delivery, 99% of bills were delivered within 24 hours and 100% of bills paid via self-service online or mobile apps were accurately completed.
- Amdocs Level-3 maintenance services delivered more than 50 system fixes.
- Nearly 80% of Level-4 tickets were resolved in under two hours.

"We have to move to a completely zero-touch, cloud-native application environment. This requires rolling up our sleeves and doing those legacy transformations. Anyone who works in telco knows that these are the trickiest riskiest and most problematic projects". Nathan Phipps, Bharti Airtel CIO



"Obviously we expected AI-driven automated operations to have a positive impact on customers' operational frustrations and their digital experience as a whole thanks to capabilities like proactive and pre-emptive monitoring, and zero-touch operations through self-healing and auto-resolutions, but the successful results far exceeded all expectations." Nathan Phipps, Bharti Airtel CIO



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Listed on the NASDAQ Global Select Market, Amdocs had revenue of \$4.3 billion in fiscal 2021.

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