# CUSTOMER 360: "DIGITAL BRAIN" FOR PERSONALIZED CUSTOMER ENGAGEMENT IN REAL TIME

## Benefits with Aerospike

- Greater scalability, allowing Airtel to process more than 100 billion records in one day
- Better reliability, agility, and speed of 40K+ transactions per second
- 99.999% reliability
- Resilient persistence to prevent any data loss
- 90% reduction in TCO over Oracle TimesTen

## About Airtel

Bharti Airtel Limited, also known as Airtel (www.airtel.in/), is the world's fourth largest mobile network operator with 440 million subscribers and operations in 18 countries across Asia and Africa. The company's product offerings include 2G, 3G and 4G wireless services, mobile commerce, fixed line services, high speed home broadband, direct-to-home (DTH), and enterprise services including national and international long-distance services to carriers.

Airtel is also a trusted provider of information and communications technology (ICT) services, along with digital TV services, in India for enterprises, governments, carriers, and small and medium businesses. In addition to their telecom business, Airtel is also a successful bank, which allows them to offer prepaid and postpaid phone services, online payment processing for utilities, and toll tags as the ability to send money.

## Challenge

With 1.3 billion potential customers in India alone, competition for customers is fierce. To reduce churn, Airtel knew it needed to provide a better customer experience.  As such, Airtel was looking to:

- Unify its data from its various business services
- Upgrade to a highly accessible, responsive architecture for scalability, speed and agility
- Develop a unique footprint for customers
- Deliver better customized experiences and services

Airtel's Global CIO and Head of Digital, Harmeen Mehta, stated that the company's goals go far beyond just providing the traditional telecom areas of mobility – it wanted to offer a range of services that will create customer delight.

That meant more than offering just broadband Internet and television, but also going further to offer increasingly unique services such as payments.

To this end, Airtel wanted to better leverage the information it received about its customers in the course of doing business to better understand individual customers and their needs.  They created a Customer 360 initiative aimed at developing a holistic set of historical data and real-time triggers from their current siloed data from different business units so they could develop a geographic, demographic footprint for the customer.

*"We said we're going to take all of these 350 million customers regardless of which line of business they belong to and create a single repository which will actually power what we call the digital brain of the company. It will also give us a complete 360 degree view of the customer."*

Harmeen Mehta
Global CIO and Head of Digital
Airtel

Their challenge was figuring out a way to collect and combine data sources from more channels and to have a 360 degree view of everything including phone, messaging, emails, voice, but also all aspects of the customer including:

- Internet of Things (IoT)
- phone
- instant messaging
- customer emails
- voice services and plan information
- SMS, social media
- geospatial
- internet
- customer data (including usage)
- buying behaviors
- customer profitability matrix (ARPU)
- user segment data

Lastly, they wanted to use the data to increase customer engagement so they could get closer to their customers and prevent churn at the same time as they increased their average revenue per user (ARPU). For example, behaviors that indicated a customer was showing signs of jumping to another carrier would be flagged automatically and trigger a relevant offer that a customer would be interested in.

## The Plan

In order to realize the company goal to go far beyond just providing the traditional telecom areas of mobility and offer services that delighted its customers, Airtel needed to overcome some significant technical challenges. They needed Aerospike.

As Airtel unified its data in a highly accessible, responsive architecture, it became clear that there was a great need for scalability – but there was also a need for speed and agility because its payment platform was processing nearly $80 million payments.

> *"From the very inception, we needed very resilient persistence to prevent data loss and realize 99.999% reliability," said Mehta. "Aerospike made some bespoke enhancements into the core product to allow that to happen and I believe this is something that we could have done only with probably a handful of companies in the world."*
>
> Harmeen Mehta
> Global CIO and Head of Digital
> Airtel

## Why Aerospike

Airtel selected Aerospike to help them realize their impressive Customer 360 goals. They were convinced that Aerospike would make it easy for them to use their data because Aerospike can ingest so much data in a short period of time.

Aerospike provided the ability to take data from 350 million customers across all customer data channels and bring that into one database at a rate of more than 40,000 transactions per second with sub-millisecond performance to significantly improve their reads and writes.

Once they had a database that could mine trillions of records with deep learning to get a better understanding of what their customers are doing, deeper and deeper questions would be answered.

"We wanted to map out the circle of influence to pinpoint which of the people in our group of customers is the true influencer, so we could target them with the right kind of offer," says Mehta.

Using Aerospike, every single system in the ecosystem could query the database to ask information about the customer.
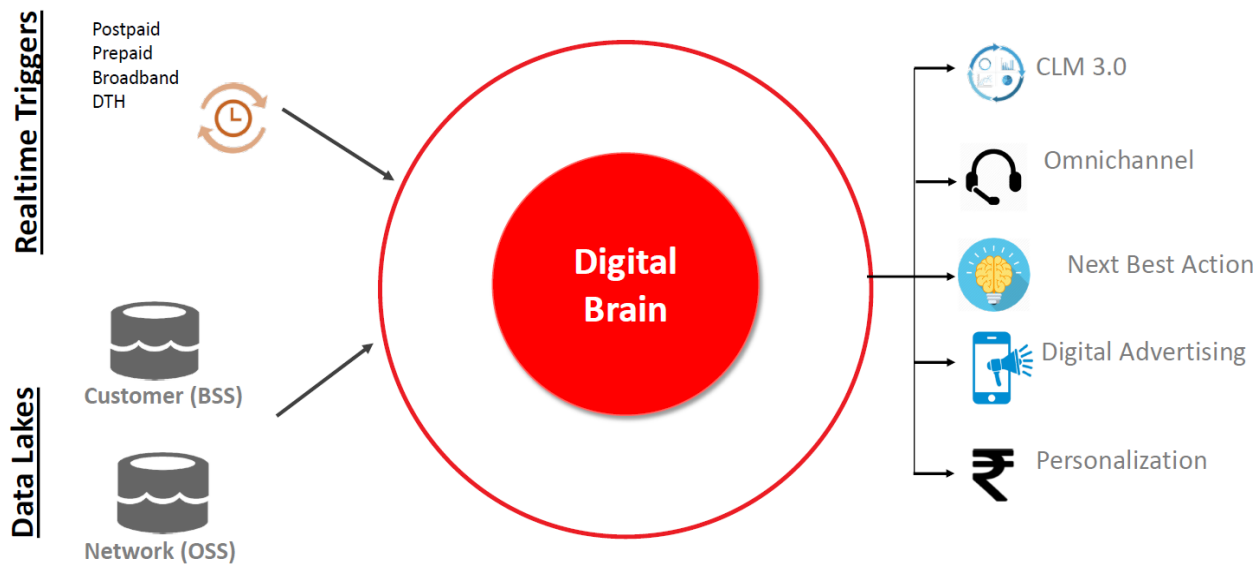


*Figure 1: The Digital Brain - using the power of AI and Machine Learning*

Airtel uses its "digital brain" to drive the one-channel experience for consumers, no matter which service they are using -- call centers, app, stores, or digital television.

Adds Mehta, "Because we have such a high amount of PII (personal identifying information) stored, it is incredibly important that we have an active, strong consistency layer to ensure it is always available – not like a typical NoSQL database."

Bottom line, they needed Aerospike to allow them to progress from knowing what their customers were doing, to what they wanted, as well as how and when they wanted it. All of this would result in a much more personal customer experience.

# Results

With Aerospike in place, Airtel finally has a unified and holistic view of each customer.
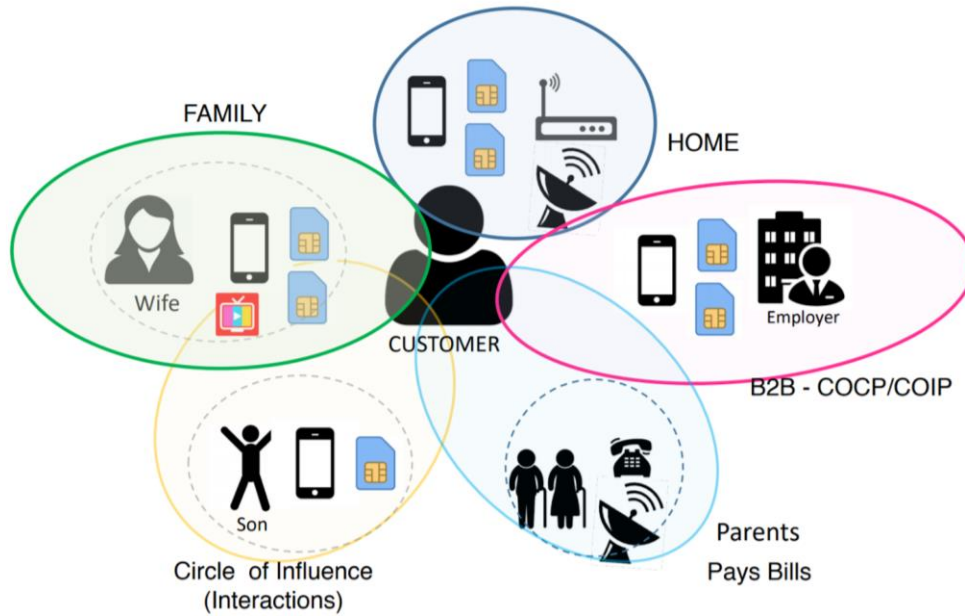


*Figure 2: Unified and Holistic view of the Customer across services*

Embracing this holistic approach, the elimination of less siloed data allows Airtel to use historical data along with real-time triggers to develop a better customer understanding. With greater scalability, Airtel accomplishes this by being able to process 100 billion+ records a day at a rate of 25K-40K transactions per second.
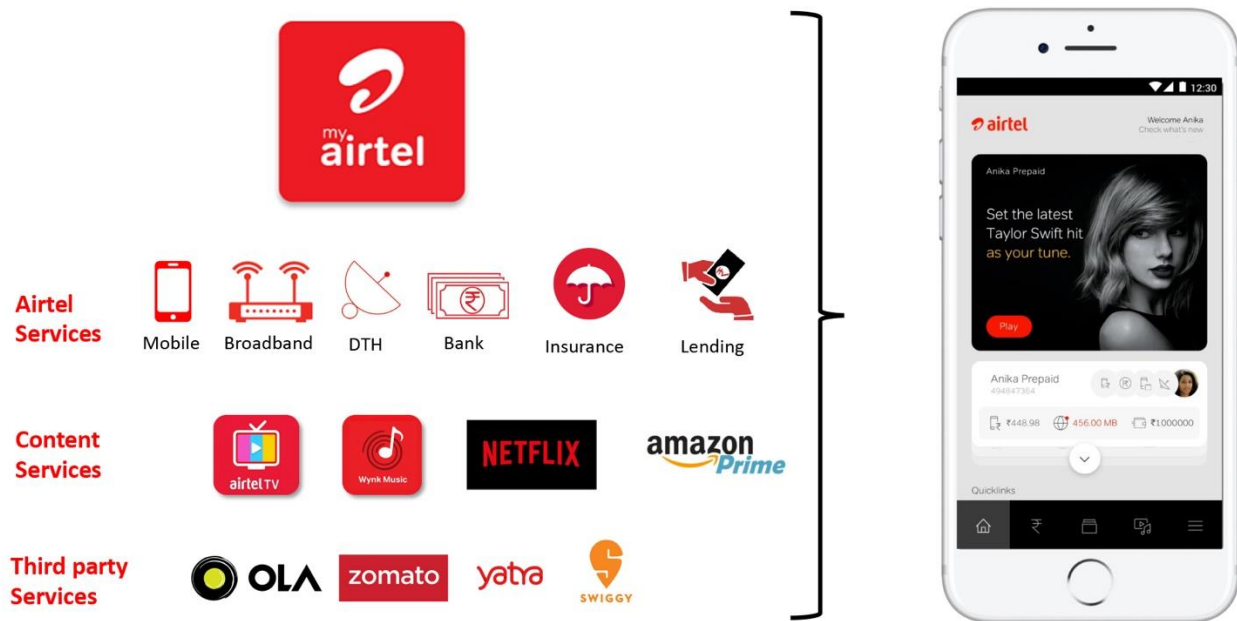


*Figure 3: Fully personalized AI-powered recommendations across service offerings*

In the Airtel Thanks app nothing is coded. Every single piece of text, every image, every offer is completely unique and updated in real time to be of maximum value to that customer. The app has many services and solutions and has added bundles from other companies such as banking, insurance, cash-lending and device financing, Mehta says.

In the year since Airtel partnered with Netflix and Amazon Prime, Airtel has doubled the entire base that they had in India, Mehta says. *"We ran a program with Amazon in India, which we did on the same platform, and that allowed them in a matter of 65 days to reach 9 million consumers,"* she adds. *"I think a large part of that happened only because of this understanding of the consumer, which comes from the Customer 360, that allows us to create a personalization which is only for that individual."*

Mehta says that, as CIO, she believes the most dramatic thing in the company's tech evolution is its active cloud technology, as well as the Zero Ops organization and moving toward a full AI, fully automated Ops team.

Best yet, moving from Oracle TimesTen to Aerospike resulted in a 90% reduction in Airtel's total cost of ownership (TCO).

As the company continues its drive toward innovation and a quality customer experience -- along with the technology advances provided by Aerospike -- Airtel is well-positioned to compete successfully in an explosive marketplace where customer churn needs to be reduced in order to benefit from the lifetime value of a customer.