Providing fast, secure payment processing for finservs and their customers

Wibmo Inc., a Cupertino, California company, is a subsidiary of PayU. It is a global full-stack PayTech company and an industry leader in payment security and digital payments in emerging markets. The company is India's largest authentication service provider and one of the world's leading digital payment markets. It also offers fraud and risk management solutions, mobile payments, prepaid solutions, and a host of merchant-acquiring services.

Challenges

- Need to provide safe, secure processing without sacrificing speed for over a billion annual transactions
- Legacy systems couldn't meet high availability and performance needs as the business grew
- Different customers have different requirements

Outcomes

- Couchbase's highly reliable in-memory database significantly boosted performance
- Couchbase scales quickly and easily for both business growth and spikes in demand
- Couchbase's flexible NoSQL database makes it easier to address diverse and evolving requirements
- 80% of India's banks use Wibmo's fraud risk management and payment security solution
- 4-5 million real-time payment transactions per day with 50ms–1 sec response times

Industry
- Financial Services

Customer application
- Fraud management solution

Product
- Couchbase server

Use case
- Caching and Session Management
- Real-Time Analytics
- Personalization and Profiles

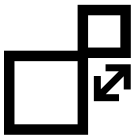
Key features
- In-Memory/Caching

Cloud provider
- AWS

"Couchbase's elasticity gives us the ability to scale up and scale down as needed to handle peak times. Our cloud deployments play a big role in optimizing costs"

— **Animesh Jha**, VP of Fraud Business, Wibmo

Wibmo's fraud risk management and payment security solution is used by 80% of the banks in India, including some of the largest banks in both the public and private sectors. The solution identifies potential fraudulent transactions on real-time payments happening at sub-second speeds.



THE CHALLENGE: Provide safe, secure transactions without sacrificing speed

Wibmo's banking and credit card customers need to provide safe and secure transactions without sacrificing fast processing speeds. These customers all have service level agreements (SLAs) that require them to meet certain levels of performance. If they fail to meet their SLAs, they can incur significant penalties.

As Wibmo's business scaled, the company's legacy relational database and other in-memory stores couldn't provide the high availability and sub-second response times needed to meet the mission-critical requirements of its customers.

THE SOLUTION: An in-memory database that's fast, reliable, and scalable

To provide real-time performance with in-memory assessment capabilities, Wibmo made the move to Couchbase's NoSQL database. Key reasons for choosing Couchbase included scalability, reliability, fast response times, data availability, and security for sensitive data.

At its core, Wibmo's fraud management solution is a profiling engine. Transaction data and profile information is stored in the database and is available in memory. The data is then retrieved as needed so profiling can happen in near-real-time on any suspicious entity. A suspicious entity can be any attribute that comes into the transaction feed, such as a credit card number or a mobile number.

"Couchbase is our in-memory data store for all profile data," explained Animesh Jha, Wibmo's VP of Fraud Business. "We're able to retrieve this data, do a risk assessment, and then make a decision on the suspicious entities before a transaction goes through, which can be as fast as 50 milliseconds to 1 second. This is why having a fast database is so critical to our success. Data has to be available quickly and securely to meet the SLAs we have with the bank while providing a strong user experience for cardholders."

Wibmo has different deployments based on data sensitivities, geographical considerations, compliance requirements, and customers preferences, so not all data can be stored in the cloud. The flexibility and adaptability of Couchbase enables Wibmo to tailor its solution to the specific requirements of each bank.

Couchbase is also instrumental in helping Wibmo cost-effectively handle spikes in demand. "Couchbase's elasticity gives us the ability to scale up and scale down as needed to handle peak times," said Jha. "Our cloud deployments play a big role in optimizing costs."

THE RESULTS:
Reliable high performance at any scale

Wibmo uses Couchbase Server on Amazon Web Services (AWS) to serve more than 160 banks with its payment security solutions. Wibmo is able to meet SLA requirements for all its banking and merchant customers while continuing to scale rapidly. For example, Wibmo processes close to 2 million transactions per day for one of India's leading private sector banks.

The scale is even greater for Wibmo's parent company PayU, which uses Couchbase Capella™ DBaaS on AWS to process 4-5 million real-time payment transactions per day.

One example of easy scalability with Capella and AWS is the Flipkart Big Billion Days shopping event – India's equivalent of Black Friday. Flipkart is backed by Walmart, which is PayU's largest customer. "For an event like this, the data volume can grow ten times," said Wibmo's Global Business Leader, Payment Security Platforms, Ravi Battula. "With Couchbase on AWS, we're able to maintain top-tier service levels without degrading the performance for our customers."

COUCHBASE + AWS PROVIDE TOP PERFORMANCE AND EASE OF MANAGEMENT

Wibmo's roadmap includes plans to move more workloads to AWS to take advantage of the high performance and simplified management enabled by the Couchbase and AWS partnership.

"Couchbase on AWS provides us a dynamic environment with top performance speeds and ease of management, especially on scaling," said Battula. "It also allows us to meet all the financial compliance requirements for having the data center within the country."

USING AI AND ML FOR DYNAMIC FRAUD DETECTION

Wibmo also depends on Couchbase to develop cutting-edge solutions that use machine learning and other AI technologies. One of these solutions is Trident FRM, an omnichannel API-based fraud and risk management platform that monitors transactions in real time.

"We use a lot of AI in this space," said Jha. "We have our fraud models built and there will be a lot more focus on using AI and data modeling, which we anticipate will improve our accuracy and flexibility even further. Using vectors instead of a rule-based system helps move us from static to dynamic fraud detection."

Modern customer experiences need a flexible database platform that can power applications spanning from cloud to edge and everything in between. Couchbase's mission is to simplify how developers and architects develop, deploy and run modern applications wherever they are. We have reimagined the database with our fast, flexible and affordable cloud database platform Capella, allowing organizations to quickly build applications that deliver premium experiences to their customers – all with best-in-class price performance. More than 30% of the Fortune 100 trust Couchbase to power their modern applications. For more information, visit www.couchbase.com and follow us on X (formerly Twitter) @couchbase.