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# Bank BTPN Sets Digital Banking Data in Motion with Confluent



## Headquarters

Jakarta, Indonesia

## Industry

Banking

## Challenge

Power digital banking and improve customer experiences at one of the largest banks in Indonesia

## Solution

Use Confluent to set data in motion, integrate back-end services, and simplify the IT landscape with stream processing applications

## Results

- Costs lowered
- IT landscape simplified
- Digital banking powered by data in motion

Following a merger that made it one of the top 10 largest banks in Indonesia, Bank BTPN is focused on three strategic priorities: ensuring a smooth integration of processes, developing existing core businesses, and continuing its digital innovation and transformation. Underpinning the bank's ability to achieve these objectives is an initiative to set data in motion with Confluent and Apache Kafka®. "Data is very important to Bank BTPN," says Joko Kurniawan, Digital Service Enablement Head at PT Bank BTPN. "That's why we are using data streaming for a growing number of use cases to improve the customer experience, increase automation, and lower costs."

Initially, Bank BTPN deployed open source Kafka, but the team responsible for self-managing the deployment had no access to dedicated support and relatively little prior experience with Kafka. To maximize the value of data streaming while minimizing any potential service disruptions, the bank soon made the move to Confluent. "After we implemented Kafka, it started to become more and more critical. We weren't confident in our ability to handle every issue that might arise or configure Kafka most efficiently, because we had no support at that time. We relied on help from internet forums, and there were no guarantees with that," says Kurniawan. "With Confluent, we have confidence in our Kafka deployment. Confluent engineers not only provide us with support, but they also share with us their deep knowledge of Kafka to help us make the most of our streaming use cases."

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Building upon the success of its early use cases for data in motion, Bank BTPN plans to expand its use of Confluent as a key component of its IT strategy going forward. "I will definitely endorse Confluent and data streaming in our formal IT strategic plan," says Kurniawan. "Confluent is part of our roadmap for meeting the bank's business needs."

## Technical Solution

Among the earliest use cases for data streaming at Bank BTPN was a basic data pipeline used to feed the company's data lake. After gaining valuable experience from this effort, the team began taking on more complex projects that involved back-end integration of services via Kafka.

For one of these projects, Bank BTPN engineers used Confluent to improve a key process that sends customers notifications when certain trigger conditions, such as a low balance or an overdue payment, are met. This use case required the integration of IBM MQ middleware with a microservice that sends the notification to the customer via SMS or email.

The team used the [IBM MQ Source Connector for Confluent Platform](#) to read messages from IBM MQ and publish them to a Kafka topic. Because the microservice that notifies the customer requires JSON formatted data, the team used [ksqlDB](#) to create a stream processing application that transforms the fixed-length text messages from IBM MQ to JSON.

For a different use case, the goal was to reduce the burden being placed on the bank's main Oracle database by using a cache to handle queries originating from the bank's popular Jenius mobile app. A key requirement of this approach was finding a way to refresh the cache when needed, that is, when the relevant data in the database had changed. To achieve this goal, the team again used [ksqlDB](#) to create a stream processing app. The app combined data from two independent topics into one. The team then used the [HTTP Sink Connector for Confluent Platform](#) with this combined topic to automatically trigger a cache refresh whenever the data in the cache was out of sync with the database.

Currently, the team is working on another project on which they are using [ksqlDB](#) to summarize API usage. For this effort they are also using Schema Registry to automate schema management and validation.

As Bank BTPN continues to implement new streaming use cases with Confluent, they are also seizing the opportunity to simplify operations by replacing applications and microservices they no longer need. "As part of our strategic plan, we will decommission IBM MQ and move all of its messaging to Confluent to take advantage of the improved performance and availability," says Kurniawan. "We can take on that and similar efforts with the assurance that we have Confluent engineers to rely on for any issues that may arise."

## Business Results

- **Costs lowered**

"Previously, our core database had to handle all requests," says Hardy PC, IT Integration Lead at Bank BTPN. "With Confluent, we have implemented a system in which most requests are handled by a cache, reducing the load on our core database and lowering our licensing costs."

- **IT landscape simplified**

"In our environment we have numerous microservices that perform data enrichment," says Hardy PC. "Now, with Confluent and [ksqlDB](#) we can perform enrichment midstream on Kafka topics, which eliminates the need to develop and maintain a separate microservice, simplifies our environment, and enables us to optimize the use of our resources."

- **Digital banking powered by data in motion**

"To meet the growing demand for digital banking, BTPN Bank launched Jenius, a mobile app that makes it easier and safer for customers to manage their finances," says Kurniawan. "Jenius is powered in part by Confluent, with asynchronous transactions flowing over Kafka topics. Going forward, we plan to enhance our fraud detection system by linking it directly into these same topics."

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