FamilyMart: Bringing convenience stores' one-stop services online with AI and data analytics

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GOOGLE CLOUD RESULTS

- ✓ Realizes real-time ecommerce product recommendation with faster data analytics powered by [BigQuery](#)

- ✓ Helps personalize convenience store shopping experience through [Vertex AI Search for retail](#)

- ✓ Enhances in-app click-through rate by 4X with more relevant search results

- ✓ Ensures scalability and smooth deployment for diverse services with [Google Kubernetes Engine](#)

By leveraging Google Cloud to enable AI computing and data analytics that empower its convenience store app

features, FamilyMart is able to improve its service quality by providing more relevant search results and personalized recommendations.

"To optimize our services and operations, we need to constantly analyze a large amount of data from various sources. Google Cloud offers industry leading data analytics capabilities that can help us innovate and make business decisions faster."

Chih-Cheng Wang
ER Business Director,
FamilyMart

Convenience stores are an integral part of many people's lives in Taiwan. Besides all types of products from warm meals, fresh coffee to grocery, they also provide wide-ranging services like utility bill payment, package pickup, and cash withdrawal, covering consumers' everyday needs.

With more than 4,100 stores across the country, FamilyMart is one of the largest convenience store chains in Taiwan. In 2016, FamilyMart embarked on the digital transformation journey by digitizing its membership system and launching an application that incorporates its per-order, payment, package tracking, social media, and ecommerce services in one place. As of October 2024, the app had 18 million member users.

"We want to bring the convenience of our physical stores to the digital world. With one application, our users can access almost every service they need in daily life," notes Chih-Cheng Wang, ER Business Director at FamilyMart. "Through our partnerships with governmental institutions and many merchandises, our member users can also save all their spending records and coupons under their FamilyMart accounts. Since we launched the application, our user base has been continuously growing."

FamilyMart has been relying on data analytics to understand its users' needs and improve its services. As the number of its services and users increased, the team needed more scalable and powerful data processing tools than the ones deployed in on-prem environments that it used. At the same time, FamilyMart wanted to launch its new services on a public cloud platform, so that it could take advantage of the latest technologies to boost innovation. As a result, the convenience store chain in 2021 started leveraging Google Cloud to support part of its data analytics workloads and services, because Google Cloud provides high-performance data tools and can ensure data security compliance with its data center in Taiwan.

"To optimize our services and operations, we need to constantly analyze a large amount of data from various sources. Using on-prem solutions proved to be insufficient due to the lack of scalability and performance," explains Wang. "Google Cloud offers industry leading data analytics capabilities that can help us innovate and make business decisions faster."

Realizing real-time product recommendation with BigQuery

FamilyMart now uses BigQuery to analyze the business data of its several services, including its ecommerce platform. Wang notes that BigQuery has

"With its outstanding

greatly shortened the time required for data query in parallel computing architectures, which helps the FamilyMart team react more quickly and improve its services effectively.

For example, offering highly relevant product recommendations in real time on its ecommerce platform was a challenge for FamilyMart, because it used to take the team two to three minutes to generate recommendations based on users' current browsing behavior, which was not timely enough to attract users' attention before they made a purchase. On the other hand, leveraging predictive analytics usually delivers product recommendations that are less relevant, as it's based on historical data.
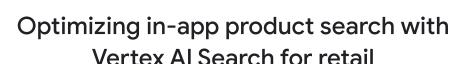
performance, BigQuery has significantly enhanced our data analytics capabilities. By analyzing our business data more speedily, we've improved many aspects of our operations and services from logistics efficiency to marketing targeting."

Chih-Cheng Wang
ER Business Director,
FamilyMart

With BigQuery, FamilyMart is able to complete cross-analyses of users' past purchases and current browsing behavior in two to five seconds. This way, FamilyMart's ecommerce platform can show product recommendations that are highly relevant or change product orders in nearly real time, which has boosted sales and created a more personalized shopping experience.

"With its outstanding performance, BigQuery has significantly enhanced our data analytics capabilities," adds Wang. "By analyzing our business data more speedily, we've improved many aspects of our operations and services from logistics efficiency to marketing targeting."

Optimizing in-app product search with Vertex AI Search for retail

"Vertex AI Search for retail enables us to leverage Google-quality search capabilities and take good advantage of our data to provide personalized search results. Now, our users can easily find the products they need, and we're able to effectively implement

FamilyMart's application offers a search feature to help users find the products they want. However, due to the low accuracy of the search results, the function's benefits were rather limited. In early 2024, FamilyMart decided to improve its in-app search feature using Vertex AI Search for retail, because it generates the most relevant search results compared to other similar offerings.

With the technical support of Dynacloud, a Google Cloud Partner, FamilyMart built a dedicated data warehouse in BigQuery to store all the data related to its search feature, so that the search results can be generated faster. Through Vertex AI Search for retail, the

marketing
strategies
through our
search feature."

Chih-Cheng Wang
ER Business Director,
FamilyMart

FamilyMart and Dynacloud teams were able to seamlessly integrate the data collected by Google Analytics with FamilyMart's services in a short time to produce personalized search results based on users' browsing and purchase habits. The development of the search AI model was completed within only three months.

"Dynacloud provides extensive technical assistance from development to operations to ensure that our new search feature delivers the best-possible results," says Wang. "They spent a lot of effort fine tuning our search AI model to enhance accuracy and meet our customization needs like promoting certain products."

The improvement of FamilyMart's in-app search feature is remarkable. Not only can it now deliver personalized search results, it is also able to contextualize keywords input by users, such as identifying homophonic characters and referencing related terms. Five months after the launch of the new search feature, the percentage of the users who leverage the feature increased by 2.5X, with the click-through rate up by 4X.

"Vertex AI Search for retail enables us to leverage Google-quality search capabilities and take good advantage of our data to provide personalized search results," notes Wang. "Now, our users can easily find the products they need, and we're able to effectively implement marketing strategies through our search feature."

Ensuring service scalability and smooth deployment with GKE

While enjoying the AI and data analytics capabilities of Google Cloud, FamilyMart has been launching its new services using Google

"GKE is a reliable backbone of our cloud-native

Kubernetes Engine (GKE). Now, its in-app search, pre-order, social media, and fast delivery services are supported by the Kubernetes clusters deployed in GKE. The autoscaling feature of GKE ensures that FamilyMart's services are available during traffic surges, and its automatic deployment feature allows FamilyMart to release new app versions quickly and smoothly.

"GKE is a reliable backbone of our cloud-native services, enabling us to provide reliable online services effortlessly, use computing resources cost-effectively, and release updates frequently," says Wang. "Our operations have become more efficient and flexible."

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Maximizing service convenience with generative AI

"Having seen how Google Cloud has helped improve our services in a short time, we're excited to find out what we can achieve with its latest generative

Moving forward, FamilyMart will further optimize its in-app search feature by enabling voice search, using the Gemini 1.5 Flash model in Vertex AI to automatically tag data for model training to attain 95 percent search result accuracy, and integrating Google Maps Platform with its app for users to directly launch navigation to the FamilyMart store that has their searched products. Furthermore, the

AI technology and other Google solutions."

Chih-Cheng Wang
ER Business Director, FamilyMart

team plans to employ Gemini to build interactive chatbots for customer service and staff training, as well as generate image and text for marketing.

Wang notes, "Having seen how Google Cloud has helped improve our services in a short time, we're excited to find out what we can achieve with its latest generative AI technology and other Google solutions. Our app will become a hyper personalized convenience store that anyone can have on their phone."

FamilyMart is one of the largest convenience store chains in Taiwan with its first store opened in 1988. Currently having more than 4,100 stores across Taiwan, FamilyMart maximizes the convenience of its services by offering an application that digitizes product purchase, payment, and its membership system. As of October 2024, the app had 18 million members.

Industry: Retail

Location: Taiwan

Products: [BigQuery](), [Vertex AI Search for retail](), [Google Kubernetes Engine]()

About Google Cloud Partner- [Dynacloud]()

Founded in 2021, [Dynacloud]() is a cloud management service provider and consultant based in Taiwan. Leveraging its expertise in AI and cloud computing, Dynacloud helps enterprises cost-effectively realize secure and stable intelligent cloud solutions. In 2022, Dynacloud became a Google Cloud Partner.

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