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Reijiro Matsui
Customer Relations and Services Division
The Kansai Electric Power Co., Inc.



The Kansai Electric Power Company (KEPCO) is using Fujitsu Artificial Intelligence to analyze smart meter data and detect lifestyle rhythm changes.

At a glance

Country: Japan

Industry: Energy

Founded: 1951

Website: www.kepcoco.jp/english

Challenge

KEPCO uses data from smart meters to identify the lifestyle patterns of individual residents. When the resident's electricity use deviates from normal behavior, a message is sent to inform his or her family, who may be living elsewhere. This is the concept behind KEPCO's "Lifestyle Rhythm Notification Service." However, the sheer amount of data has proved hard for KEPCO to analyze.

Solution

Following field tests undertaken with Fujitsu, KEPCO has incorporated Artificial Intelligence (AI)-based technologies to make the service viable.

Benefits

- Enabled the development of the "lifestyle rhythm notification service" which picks up on changes in a customer's power usage
- Data curators built logic that utilizes AI and can be used for data analysis
- Adopted a sophisticated cloud-based marketing AI container with a platform that is suitable for analytics

Customer

In response to electricity deregulation, the Kansai Electric Power Company has been proactively diversifying its main areas of business which include electric power, heat supply, telecommunications and gas supply. The company maintains the group vision of “fulfilling its role as Japan’s leading company in the energy sector” and from May 1, 2016, it has been operating under the brand statement of “power with heart”.

Products and Services

■ FUJITSU Marketing AI Container



Remaining the 'provider of choice' in the midst of electricity market deregulation

Electricity market deregulation in Japan began from April 1, 2016, and enabled regular households, stores, and other general consumers to select their own electricity providers, services, and fee structures.

“Before the electricity market was completely liberalized, all the households within our service area were our customers. However, having a liberalized market meant that we needed to win our customers’ approval once again in order to continue being their power provider of choice. While new companies were competing for customers by placing emphasis on their competitive prices, we felt it was necessary to come up with something that was worth more than just competitive prices, such as a new service which would address the needs of each individual customer,” stated Reiji Matsui, Section Manager of the Regional Sales Promotion Department of the Customer Relations and Services Division.

Adopting smart meters to provide a better service

KEPCO had been working on moving away from using analog power meters prior to the electricity deregulation. The company was proceeding to shift to smart meters that have a data communication function which enables power usage data to be collected in 30-minute increments. Smart meters can collect the power usage data of every household in real-time via a network making it unnecessary for the company to visit households every month to do meter readings.

“Smart meters can collect the power usage data of every household in 30-minute increments. We were wondering if we could make use of this feature to realize a service that would accommodate the needs of our customers’ lifestyles even more. This was our starting point and in 2016, we came up with the idea for our ‘lifestyle rhythm notification service’. This service monitors the power usage trends of elderly people who live alone and it will notify their family members who live far away when the service detects unusual power usage behavior,” said Kazutaka Yamamoto who was at the forefront of this project as a member of the Residential Sales Promotion Department of the Customer Relations and Services Division.

Utilizing AI to improve change-forecasting accuracy

Chronological changes in power usage are closely related to the lifestyles of each household. Therefore, gaining an understanding of each household’s usage pattern, should enable providers to capture changes in lifestyle patterns with greater accuracy.

“However, when we actually looked at the power usage curve, we could see that the usage patterns truly differed from household to household. On top of this we discovered that even in the same household, the power usage varies widely depending on the day of the week and the season. So we deemed that we would not be able to easily and systematically record the changes in power usage and we decided to pair up with Fujitsu in order to build logic that could reflect the actual power usage conditions and could analyze the data with high precision,” said Yamamoto.

The company chose Fujitsu for two main reasons. The first was the impressive track record Fujitsu’s Data Curation Services had for data analysis. Since the implementation of KEPCO’s Hapi e-Miruden membership service, which allowed customers to check their power usage in real-time, Fujitsu had continued to conduct collaborative research with KEPCO, utilizing the smart meters. The second reason was because Fujitsu possessed marketing AI containers that served as platforms. These platforms made it possible to conduct data analysis by efficiently processing advanced logic that utilized AI.

Yamamoto stated, “The ‘lifestyle rhythm notification service’ is aimed at all households that are utilizing a smart meter. As smart meters become more widespread, the amount of data also continues to increase day-by-day. So being able to utilize Fujitsu’s highly reliable cloud services that can scale-out flexibly to respond to this increase in data was also something that we appreciated.” Matsui added, “I think Fujitsu possesses some of the highest data analysis capabilities within the industry. We felt very reassured when we were working with them to develop AI algorithms to analyze the usage patterns that were characteristic to each household.”

“When utilizing AI and other advanced technologies, it is more important than ever to strengthen collaboration with partners who have specialist expertise. We wish to provide increasingly high-value-added services, based on alliances with companies in sectors that serve individual households directly, such as social issues which are home delivery and home-visit nursing care,” concludes Reiji Matsui.

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Contact a representative at: AskFujitsu@uk.fujitsu.com