Energyworx: Building an energy data management solution using Google Cloud Platform

Google Cloud Platform

- Better competes with larger co
  it needs fewer resources
- Frees engineers to focus on cre
  managing infrastructure and pl
- Offers a comprehensive energy
  and intelligence platform for th

Energyworx (http://www.energyworx.
SaaS platform that lets utilities an
process, manage, and mine energy
intelligence to decrease costs, mee
efficiently, and create new business
uncovering the value of this data, Energyworx

energyworx

About Energyworx

Energyworx provides businesses with unique, precise, and relevant data. The platform enables behavorial science and lets businesses aggregate data in several profiles with valuable context-enriched data points.

data points.

BigQuery (https://cloud.google.com/bigquery/)

Cloud Bigtable (https://cloud.google.com/bigtable/)

App Engine (https://cloud.google.com/appengine/)

Cloud Pub/Sub (https://cloud.google.com/pubsub/)

Cloud Dataflow (https://cloud.google.com/dataflow/)

customers have optimized the grid and reduced losses during electricity transmission and distribution. They have also automated smart business decisions and created new business concepts and models.

The Energyworx platform gathers and stores energy data from multiple sources, including the national energy grid, Internet of Thing (IoT) devices and sensors, energy-generation facilities, office buildings, apartment complexes, individual homes, and manufacturing plants. Companies that subscribe to the platform use Energyworx tools to delve deeper into the data by applying sophisticated analysis and/or machine learning algorithms. Utilities companies, for example, can plan for peak electric demand during summer, and businesses can find out which facilities use the most energy.

Energyworx initially developed its software to run on-premises at customer sites, but managing on-premises at such a massive scale became too expensive. It moved to a public cloud solution to host the platform, but the solution had too much downtime and didn't offer sophisticated data processing and querying capabilities. So Energyworx turned to Google Cloud Platform (https://cloud.google.com/) for hosting its platform, allowing them to evolve to a serverless architecture running at scale without a dedicated staff.

"We chose Google Cloud Platform because it scales quickly, has no downtime and offers us sophisticated data processing, analytics and machine learning capabilities. It has reduced our infrastructure costs and increased our speed of development. We can pass those savings and efficiencies in our SaaS

platform to our customers, allowing them to uncover the hidden values in their data and monetize it," says Edwin Poot, president, founder and chief visionary officer, Energyworx.

Scaling to meet demand using App Engine

Energyworx uses App Engine (https://cloud.google.com/appengine/) to run the Energyworx API which gives its customers access to its platform. That allows Energyworx to instantly scale to meet demand. It also allows Energyworx to charge its customers only for the time they use the API.

Cloud Pub/Sub (https://cloud.google.com/pubsub/) and Cloud Dataflow (https://cloud.google.com/dataflow/) process energy data gathered from customers and send it to Cloud Bigtable (https://cloud.google.com/bigtable/) and BigQuery (https://cloud.google.com/bigquery/). Energyworx delivers analytics and machine learning capabilities to gain insights into energy data. For example, a utility company can find out the total amount of electricity customers with solar panels generate between 1 and 2 p.m. on a Monday and predict their energy generation over several weeks. A corporate customer could uncover the total amount of energy used across its 1,500 facilities on specific days and times. Based on these kinds of information, utility companies use Energyworx to better plan for future energy demand, and corporations can find ways to save on their electricity use.

"With Google Cloud Platform, we're able to give our customers the tools they need to gain valuable insights from energy data. They can perform fast queries, only have to pay on a per-use basis and have all the data they need at their fingertips," says Poot.

Beating the competition to market

With Google Cloud Platform, Energyworx's platform scales quickly and is better able to compete against larger, established companies. "Google App Engine scales in seconds, which means that we can meet customer demand more quickly and much cheaper than our competitors," Poot says.

Because Energyworx doesn't have to run its own infrastructure, its engineers can focus on their core competence, building better products. In addition, the company has to only maintain one codebase for all of its customers, rather than writing different versions for each. When it updates its code, all of its customers automatically get the latest version.

"We're leaner and meaner and move faster than the competition — we have daily or weekly release cycles. That allows us to beat them to market with new features, gaining us new customers while keeping existing ones," Poot says.