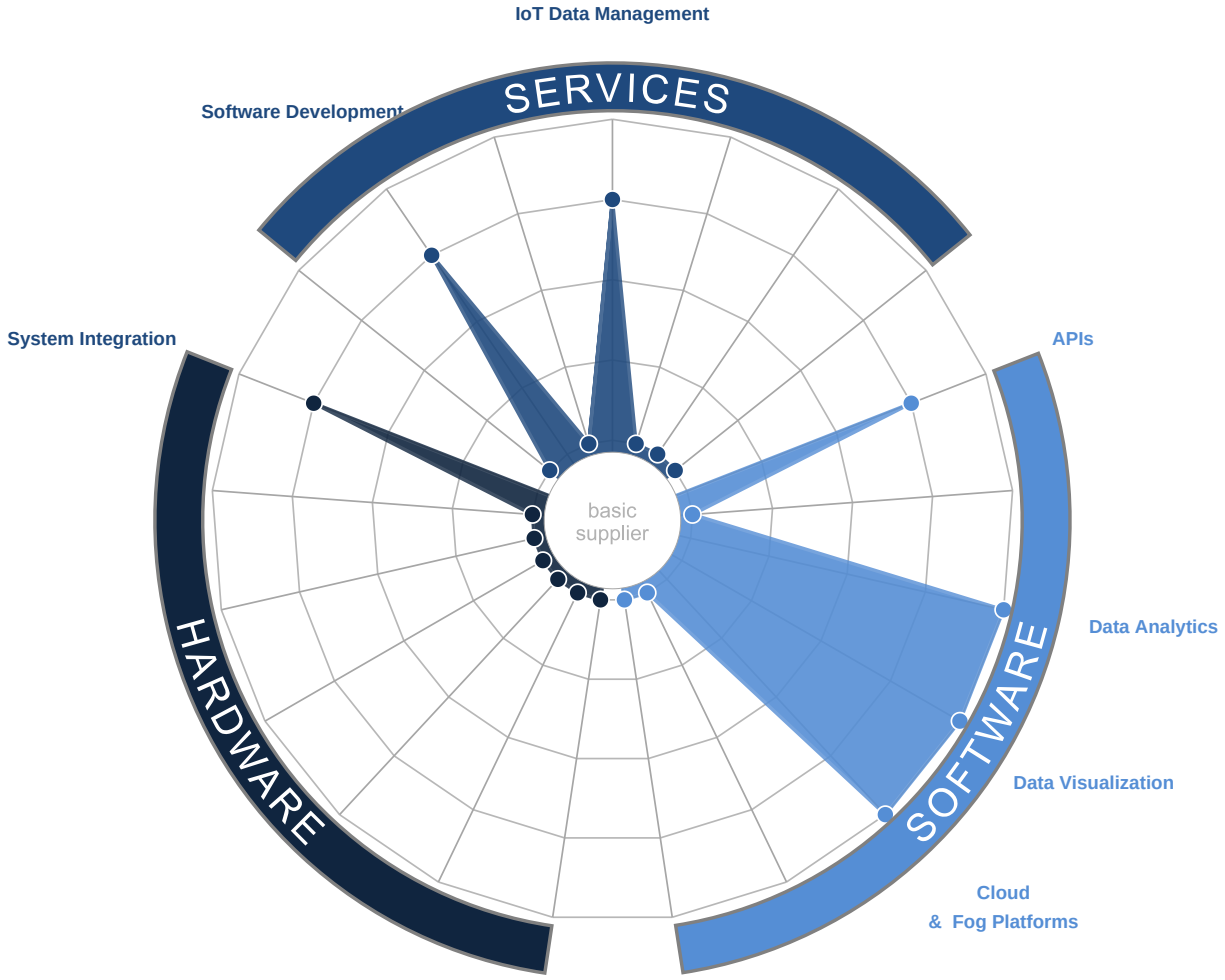
Amazon Web Services (Amazon) + IoT ONE

The Kellogg Company



Overview

Applicable Industries	Food & Beverage
Applicable Functions	Sales & Marketing Information Technology
Connectivity Protocols	IPv6
Challenge	Kellogg keeps a close eye on its trade spend, analyzing large volumes of data and running complex simulations to predict which promotional activities will be the most effective. Kellogg needed to decrease the trade spend but its traditional relational database on premises could not keep up with the pace of demand.
Customer	Kellogg Company is an American multinational food manufacturing company, with 30,000 employees.
Solution	Amazon Web Services offered a fully SAP-certified HANA environment on a public cloud platform. Because SAP works on the AWS Cloud, the solution could achieve the speed, performance, and agility it required without making a significant investment in physical hardware.
Data Collected	Spend data for TV ads, digital marketing, coupon campaigns and other promotions, sales commissions, display and shelving costs
Solution Type	IT
Solution Maturity	Emerging (technology has been on the market for > 2 years)

Operational Impact

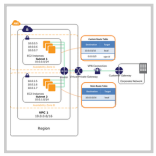
Impact #1	End-to-end Service Delivery - Amazon CloudWatch allocates costs to each department based on their individual infrastructure usage to incentivize waste reduction.
Impact #2	High Acceptance - Engineers can easily apply their existing knowledge and infrastructure skills to the AWS Cloud.

Quantitative Benefit

Benefit #1	Staff can deploy instances 90% faster than with Kellogg's previous on-premises solution.
Benefit #2	Kellogg estimates savings of $1M in software, hardware, and maintenance over 5 years, solely due to switching to AWS in its test and development environments.
Benefit #3	The new cloud infrastructure enabled Kellogg to run dozens of data simulations a day to identify opportunities to reduce trade spend.

Technology

Software



Amazon Virtual Private Cloud (VPC)

Amazon Web Services (Amazon)

Amazon Virtual Private Cloud (Amazon VPC) lets you provision a logically isolated section of the Amazon Web Services (AWS) cloud where you can launch AWS resources in a virtual network that you define ...

Amazon Elastic Compute Cloud (Amazon EC2)

Amazon Web Services (Amazon)

Amazon Elastic Compute Cloud (Amazon EC2) is a web service that provides resizable compute capacity in the cloud. It is designed to make web-scale cloud computing easier for developers.

Amazon CloudFront

Amazon Web Services (Amazon)

Amazon CloudFront is a global content delivery network (CDN) service.

Amazon Simple Storage Service (Amazon S3)

Amazon Web Services (Amazon)

Amazon Simple Storage Service (Amazon S3), provides developers and IT teams with secure, durable, highly-scalable cloud storage. Amazon S3 is easy to use object storage, with a simple web service inte ...

Amazon Elastic Block Store (Amazon EBS)

Amazon Web Services (Amazon)

Amazon Elastic Block Store (Amazon EBS) provides persistent block level storage volumes for use with Amazon EC2 instances in the AWS Cloud.

Amazon CloudWatch

Amazon Web Services (Amazon)

Amazon CloudWatch is a monitoring service for AWS cloud resources and the applications you run on AWS. You can use Amazon CloudWatch to collect and track metrics, collect and monitor log files, set al ...

AWS Cloud

Amazon Web Services (Amazon)

Amazon Web Services (AWS) is a secure cloud services platform, offering compute power, database storage, content delivery and other functionality to help businesses scale and grow. Explore how million ...

AWS Identity and Access Management (AWS IAM)

Amazon Web Services (Amazon)

AWS Identity and Access Management (IAM) enables you to securely control access to AWS services and resources for your users.

The Kellogg Company Case Study

About The Kellogg Company

The Kellogg Company was founded in 1898 when founder W. K. Kellogg and his brother, Dr. John Harvey Kellogg, accidentally flaked wheat berry—a mistake that would result in the recipe for Kellogg's Corn Flakes. The company, which is headquartered in Battle Creek, Michigan, now operates in 180 countries, providing ready-to-eat cereals and other food products. Its 2013 reported net sales totaled $14.8 billion. Kellogg's brands include Froot Loops, Frosted Flakes, Special K, Rice Krispies, Pop Tarts, Eggo Waffles, Nutri-Grain Bars, and of course, Kellogg's Corn Flakes.

The Challenge

Margins are tight in the ready-to-eat cereal industry. For a company like Kellogg, approximately a third of its annual revenue is spent on promotional costs or trade spend: every dollar spent on coupons and special offers, promotions for special pricing, sponsorships, even the location each brand occupies on the grocery-store shelf. "Any improvements we make to trade spend go straight to our bottom line," says Stover McIlwain, Senior Director of IT Infrastructure Engineering at Kellogg. "If we improve trade spend by just 1 percent, that's $50 million dollars."

The company keeps a close eye on its trade spend, analyzing large volumes of data and running complex simulations to predict which promotional activities will be most the most effective. Kellogg had been using a traditional relational database on premises for data analysis and modeling, but by 2013, that solution was no longer keeping up with the pace of demand. Each day, Kellogg needed to run dozens of complex data simulations on things like TV ad spend, digital marketing, coupon campaigns and other promotions, sales commissions, display and shelving costs—but its system only had the capacity to run just one simulation a day. "Margins are very tight in our industry, and even slight changes in trade spend can swing market share," McIlwain says. "Revenue growth is flat in some of our categories, so we need to be very agile to stay competitive. We needed to eliminate waste and invest more in the trade spend that drives faster time to market and greater revenue." It was clear that Kellogg needed to move away from its traditional on-premises infrastructure.

Why Amazon Web Services

Kellogg needed a solution that could accommodate terabytes of data, scale according to infrastructure needs, and stay within its budget. The company became interested in an SAP solution called Accelerated Trade Promotion Planning, which is powered by SAP HANA, SAP's in-memory database technology platform. Amazon Web Services (AWS) offered a fully SAP-certified HANA environment on a public cloud platform. Because SAP works on the AWS Cloud, the company knew it could achieve the speed, performance, and agility it required without making a significant investment in physical hardware. Kellogg decided to start immediately with test and development environments for its US operations.

The company is now running the SAP Accelerated Trade Promotion Management (TPM) solution, powered by SAP HANA and leveraging multiple AWS instance types for both the SAP application and HANA database layers. These Amazon Elastic Compute Cloud (Amazon EC2) instances process 16 TB of sales data weekly from promotions in the US, modeling dozens of data simulations a day.

The company also uses Amazon Virtual Private Cloud (Amazon VPC), which is connected directly to the Kellogg data centers to allow access to SAP TPM directly for employees who are on the company network. Amazon Simple Storage Service (Amazon S3) is used for data backups, including HANA, and Amazon Elastic Block Store (Amazon EBS) provisioned IOPS (P-IOPS) volumes for storage. The company logs events using AWS Identity and Access Management (AWS IAM).

Kellogg uses Amazon CloudWatch for monitoring, which helps the company allocate costs to each department based on their individual infrastructure use. "CloudWatch helps our people make better decisions around the capacity they need, so that they can avoid waste," McIlwain says. "We were never able to do that with our on-premises infrastructure. AWS breaks down usage and cost to such a granular level that we can identify which costs come from which department, like a toll model." Costs and benefits of this IT service can now be aligned so that Kellogg can assess the true return on investment.

For high availability, Kellogg leverages multiple AWS Availability Zones (AZs) without the additional cost of maintaining a separate datacenter.

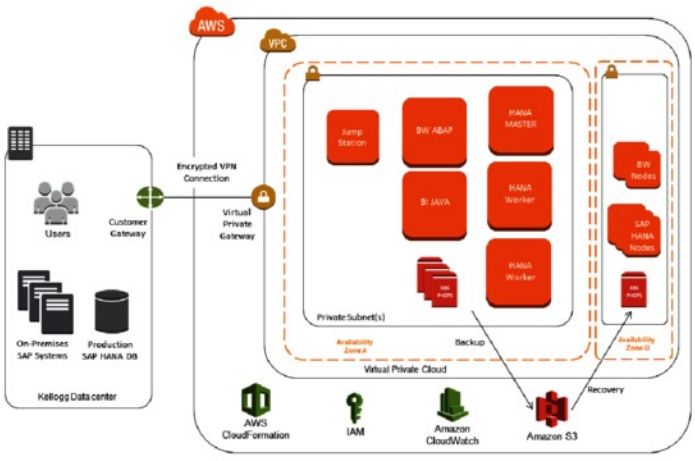


Figure 1. Kellogg SAP HANA Deployment Architecture on AWS

The Benefits

Kellogg estimates that it will save close to a million dollars in software, hardware, and maintenance over the next 5 years, just by using AWS in its test and development environments. "Using AWS saves us more than $900,000 and lets us run dozens of data simulations a day so we can reduce trade spend. It's a win-win, and a pretty compelling business case for moving to the cloud," McIlwain says.

By using AWS, the company is also able to be more agile. Instead of having to wait 30 days to make changes to its trade spend analysis system, the company can spin up instances immediately to perform the necessary data simulations (or calculations). "The speed and agility that using AWS gives us lets us develop and deliver business services much more quickly than before, so that we can keep one step ahead of the market. Our staff can deploy instances 90 percent faster than with our previous on-premises solution," McIlwain says. "The AWS Cloud drives a lot of business benefits for Kellogg."

Kellogg engineers liked the accessibility and familiarity of the AWS platform, which enabled them to easily apply their existing knowledge and infrastructure skills to the AWS Cloud. In addition, by using AWS, the IT team's internal customers can now self-fund IT projects—saving the IT team from having to budget for projects from other departments and driving more efficient use of resources. "AWS allows me to do the unprecedented: bill Sales directly for the infrastructure they're using, instead of the hosting costs being lost in the overall Infrastructure annual budget," McIlwain says.

Kellogg is pleased that AWS supports the option to leverage existing HANA licenses that the company previously purchased from SAP; it allows the team to quickly provision instances and avoid having to repeatedly install and configure the software.

The company uses AWS Support, Business Level, and training, as well; one engineer already has successfully achieved the AWS Certified Architect certification. "The engineering support included training and documentation," McIlwain says. "It exceeded expectations and became a key differentiator and added benefit in working with AWS."

Kellogg is using AWS for its US operations, and plans to expand worldwide in 2014 — which should increase the amount of data being processed from 16 TB to 50 TB. "By using AWS, we have happier customers and we work faster, cheaper, and better," McIlwain says.

Next Step

To learn more about how AWS can help you run your SAP applications, visit our SAP Solutions details page: http://aws.amazon.com/sap/.

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