



Enterprise Data Hub Enhances Service Offerings and Competitive Differentiation

Overview

Epsilon is the global leader in helping clients create customer connections that build brand and business equity. An **Alliance Data** company, Epsilon is a market leader with a wide range of offerings including digital, loyalty, data, email, direct mail, mobile, social media, and agency services.

The company has found success by combining its team of digital marketing experts with a technology infrastructure that supports the dynamic demands of communicating and delivering loyalty rewards to millions of customers. Epsilon supports a blue-chip portfolio of clients including Dunkin' Donuts, FedEx, JP Morgan Chase, and Walgreens.

To address today's digital markets, Epsilon has built a new omni-channel solution called **Agility Harmony™** on top of its **Cloudera** enterprise data hub (EDH). Agility Harmony is designed to deliver campaigns intelligently across all digital channels. That is why Epsilon engineered Agility Harmony from the ground up to share real-time intelligence from channel to channel. As new digital channels emerge and evolve, Agility Harmony was developed to evolve with them.

The Challenge

"We're living in a search-driven society," stated Bob Zurek, Epsilon's senior vice president of products. "People are always looking for information. So it's not unusual to have thousands of campaigns that have run over the course of a year and be asked by a marketing executive to retrieve a specific promotion that really resonated with consumers. Standard database technologies don't have the support necessary for the varied data types and storage capabilities that we need to deliver for our clients. In addition, they weren't able to accommodate our demands for scaling and throughput."

He continued, "Business requirements are constantly changing, and we saw an opportunity to take advantage of new technologies to deliver our services at higher speed, with greater reliability and more scalability. We knew the way forward had to embrace big data."

Key Highlights

Industry

- Marketing Services

Locations

- Headquarters: Irving, TX, USA
- Global presence

Business Application Supported

- Enterprise data hub empowering digital marketing services portfolio

Impact

- Ability to offer unprecedented levels of capability and speed of execution
- Enhanced competitive differentiation

Technologies in Use

- Hadoop Platform: Cloudera Enterprise
- Hadoop Components: Apache Sentry, Apache Sqoop, Cloudera Manager, Impala
- Servers: Dell
- Infrastructure as a Service: OpenStack
- Analytic Tool: SAS
- BI Tools: SAP Business Objects, Tableau

Big Data Scale

- More than 10 PB on the EDH

With this in mind, Epsilon set out to build a next-generation marketing solution that would help its clients gain a 360-degree customer view so they could deliver the right message to the right audience, at the right time, and on the right device or channel. The marketing solution would need to ingest, process, and act upon massive quantities of data, much of that being unstructured text-based messaging.

Zurek recalled, “Our research quickly led us to **Apache Hadoop**, which excels at handling the huge volumes of data we have, and subsequently to Cloudera, the longest standing and largest provider of **Hadoop-based software, support, and services.**”

In evaluating commercial Hadoop vendors, Epsilon decided to move forward with Cloudera based on a number of key factors:

- Rapid innovation and industry leadership
- Comprehensive expertise and ability to support all aspects of the Big Data ecosystem, beyond core Hadoop
- Affordability at large scale
- Reliability and security

The “enterprise data hub” vision that Cloudera articulates in the market particularly resonated with the Epsilon team. Zurek elaborated, “A key reason for embracing the enterprise data hub model had to do with the ‘three Vs’ of big data; volume, velocity, and variety.”

The Solution

Epsilon signed up for a **Cloudera Enterprise** subscription, leveraging tools including **Apache Sentry** (incubating), **Cloudera Manager**, and **Impala** to create the foundation for its next generation digital messaging platform.

Epsilon’s Cloudera-powered EDH provides a platform capable of handling a variety of different workloads. It also is highly effective in coordinating the wide number of communication channels the company uses. The technology needed to be able to rapidly ingest massive amounts of structured, unstructured, and semi-structured data; frequently exceeding ten petabytes (PB) of information.

“One of the great things about the Hadoop architecture is that we can use industry standard hardware and scale as needed without being restricted to a specific vendor or model type. In addition, the critical service elements that we offer to our own clients—such as data security, reliability, redundancy and automatic failover and recovery—are already present in the Cloudera platform.”

Zurek continued, “As much as we were impressed by Hadoop, we viewed Impala as the game changer for us. It runs natively in Hadoop and enables us to give our clients the ability to expediently segment their own campaign lists using all the available data. Being able to perform complex partitioning allows for far greater granularity and personalization, and Impala’s open source, interactive SQL capabilities enable clients to greatly enhance the effectiveness of each of their campaigns.”

Impact: Capabilities, Cost, and Confidence

The new architecture permits Epsilon to offer clients immediate access to all information relating to every campaign they’ve ever conducted. “By holding everything in a single logical repository, clients can take advantage of Hadoop’s native services and a new class of data-driven applications that run on top of the infrastructure. For example, by using segmentation tools built on the data hub, clients can instantly target a micro-

demographic on the fly. Previously, the only way of achieving this with our legacy systems was to invest in, and deploy, a significant amount of additional processing power," Zurek noted. "We also were very impressed with the capabilities provided by Sentry, an enterprise-grade big data security module, and the bulk data transfer abilities of the Apache Sqoop toolset."

The digital marketing industry is evolving at a rapid pace. "It's imperative to have agility; we're constantly discovering new ways to communicate and we need to be able to rapidly embrace all of the emerging options. On top of this, there are trends towards using innovative pricing models, so it is critical that any platform we implement is able to adapt to the dynamic needs of the company on both the business and technology levels. We feel that our new infrastructure optimally positions us to be able to rapidly capitalize on any opportunities that present themselves," reflected Zurek.

With the EDH, Epsilon is leveraging a comprehensive set of data for its customers and recently introduced the ability to spontaneously combine offline data with online data; this helps customers enrich their own segmentation models and enhance the relevance of the end consumer's online experience. "We have just announced a significant partnership with a top social media provider to ensure that its users get an optimized personalized marketing experience," said Zurek. "We've been told that this is one of the best end user experiences ever seen in the campaign management space. And all of this is based on the new platform."

Agility Harmony offers a centralized solution for managing email and cross-channel campaigns, along with real-time optimization of results. "We can provide our clients with advanced levels of data segmentation, all of which are powered by the Hadoop infrastructure and Cloudera. The dramatic speed that we're getting out of the Hadoop environment is allowing us to offer things that our previous environment just couldn't support. We're definitely able to achieve the volume, velocity, and variety we need," stated Zurek.

He concluded, "The Hadoop/Cloudera pairing is very significant for Epsilon; it gives us the business agility, affordability, and speed of execution that is critical for our continued success. The ability to scale using standard hardware and the choice of such a sophisticated set of supporting capabilities makes it truly compelling."

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About Cloudera

Cloudera is revolutionizing enterprise data management by offering the first unified Platform for Big Data, an enterprise data hub built on Apache Hadoop. Cloudera offers enterprises one place to store, process and analyze all their data, empowering them to extend the value of existing investments while enabling fundamental new ways to derive value from their data. Only Cloudera offers everything needed on a journey to an enterprise data hub, including software for business critical data challenges such as storage, access, management, analysis, security and search. As the leading educator of Hadoop professionals, Cloudera has trained over 40,000 individuals worldwide. Over 1,400 partners and a seasoned professional services team help deliver greater time to value. Finally, only Cloudera provides proactive and predictive support to run an enterprise data hub with confidence. Leading organizations in every industry plus top public sector organizations globally run Cloudera in production. www.cloudera.com.

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