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Cloudera Enterprise Data Hub in Telecom:
Three Customer Case Studies

Version: 103

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TELECOM

INDUSTRY BRIEF

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Today's leading Telcos are turning to a Hadoop based enterprise data hub to keep pace with these massive volumes of data in order to gain deeper insights into their customers and networks.

Introduction

Communication Service Providers (CSPs) are among the world's biggest aggregators of consumer data and work under the most fluid market and regulatory conditions. CSPs today have access to unprecedented amounts of data including – customer profiles, device data, network data, usage patterns, location data, apps downloaded, content preferences, clickstream data and so on and so forth.

With an abundance of data at their fingertips, CSPs are virtually sitting on a goldmine of information and are in a great position to capitalize on these valuable data sets. However, the question really is – how can CSPs leverage this treasure trove of data and turn it into something meaningful that will help them drive down operational costs, deliver a more compelling customer experience, reduce churn or drive new revenue streams?

Today's leading Telcos are turning to a Hadoop based enterprise data hub to keep pace with these massive volumes of data in order to gain deeper insights into their customers and networks. With an enterprise data hub, Telcos can securely bring together user, network, device, business, and social data to drive customer intimacy, improve network performance and drive new revenue streams.

Cloudera Enterprise Data Hub for Telcos

Cloudera's Enterprise Data Hub (EDH), powered by Apache Hadoop, complements CSP's existing data warehouses to improve performance, reduce costs, and enable new insights. The enterprise data hub enables the Telcos to effortlessly bring together user, transaction, network, and service data across multiple sources into a single, unified platform at considerably lower cost. Today, the introduction of an enterprise data hub at the core of Telco's information architecture promotes the centralization of all data, in all formats, available to all business users and groups, with full fidelity and security at up to 99% lower capital expenditure per terabyte compared to traditional data management mechanisms.
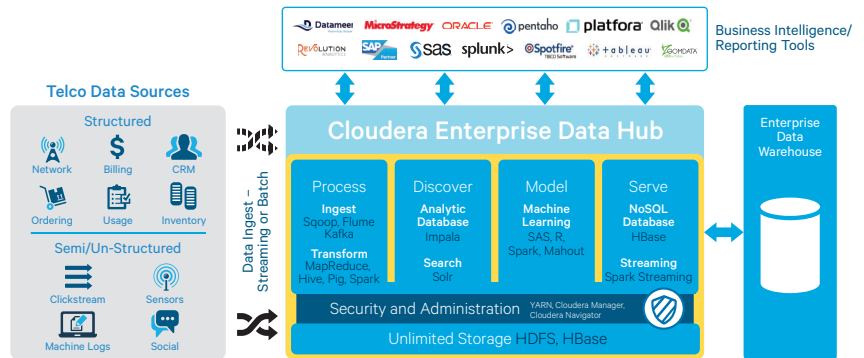

Figure 1: Enterprise Data Management Architecture for Telcos

So all the structured data from the CSP's diverse billing, customer care, ordering and network systems along with semi/un-structured data including network logs, clickstream data, social media and sensor data can now all be stored within a centralized platform for comprehensive analytics. Data can now be collected, stored, processed, explored, modeled, and served in a single unified platform. To achieve full value from all of the data, an enterprise data hub builds on Hadoop's principal benefits by delivering an array of powerful analytics and processing engines certified to work seamlessly with your existing infrastructure and tools. More importantly, it is connected and compatible with the systems and BI tools you already rely on and thereby complements your existing investments.

The enterprise data hub thus serves as a flexible repository to land all your data and increasingly keep it there, whether for compliance purposes or for more sophisticated applications such as real-time analytics or anomaly detection. For example, Service Providers can now bring together customer usage information along with social media interactions and sentiment analysis to effectively identify, detect and prevent churn. CSPs can combine the customer usage patterns with customer lifetime value data and network performance data to 'proactively' address any Quality of Service (QoS) issues for customers based on their value to the business. Moreover, staging and offloading data to the enterprise data hub to preprocess and refine data sets for analysis helps preserve the data warehouse for high-value curated data thereby significantly improving the warehouse performance and scalability.

Today a number of Service Providers across the globe are leveraging Cloudera's Enterprise Data Hub to gain a 360-degree view of their customers, accelerate data processing timeframes, improve network performance and drive innovation. Presented below is a set of summary case studies that highlights how some of the world's leading CSPs are leveraging the power of Cloudera's Enterprise Data Hub and the benefits they have been able to realize.

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> "We wanted the benefits of open source plus enterprise-ready capabilities, hence we chose Cloudera."
>
> Francois Nguyen, Director of Systems Integration Decisions and Relationship Marketing, SFR

> "Instead of upgrading our environment every three years, the system will deliver optimal performance for eight or nine years now,"
>
> Francois Nguyen, Director of Systems Integration Decisions and Relationship Marketing, SFR

Cloudera Enterprise Data Hub in Telecom: Customer Case Studies

Case Study 1: Using EDH to Drive Customer 360
Customer: SFR
Geography: France

Background

With revenues of more than US$12.6 billion in 2014, SFR is the second largest telecommunications operator in France. It serves more than 21 million mobile customers and delivers high-speed wired internet to 5.2 million households in France.

In addition to consumers, SFR serves over 160,000 business, government, and community clients as well.

Business Challenge

Actionable 360° Customer View

- SFR needed to create a mechanism capable of collecting and storing the huge amounts of data generated by subscribers; volumes in excess of a billion events a day were not uncommon.
- SFR wanted the ability to provide employees across the organization with a 360-degree view of the customer. To truly understand the customer journey, SFR needed to bring in multi-structured data from new sources, such as customer behavior across SFR's many channels into a single unified platform.
- SFR also wanted to create a shared, detailed view into the customer journey that would be available to employees across the company for real-time search, reporting, and analysis.

Solution Deployed

A Single, Centralized Data Store

- By complementing its data warehouse infrastructure with Cloudera Enterprise, Data Hub Edition, SFR is delivering the 360-degree view that will help the company optimize the customer journey. Many of SFR's employees now have a self-service discovery environment enabling query and exploration of a single, centralized data store.
- MongoDB is interconnected with the Cloudera data hub, "exposing" the data processed in Cloudera using the MongoDB connector on both sides.
- Cloudera Manager and Sentry play key roles in streamlining the operational efficiency of SFR's data hub, offering robust system management and security.

Business Benefits

Better Customer Experience coupled with IT Efficiencies

- SFR is now able to have a centralized, real-time 360-degree customer view that spans across devices and multiple data sources.
- With its enterprise data hub, SFR is empowering employees across the country to operate based on a centralized, real-time customer view that spans many devices and data sources. For the first time, SFR has the capacity to ingest, store, and analyze log data, that can be combined with other data sets to reveal previously hidden customer insights.
- By offloading large-scale data ingest, processing, and exploration of multi-structured data sets from the data warehouse, SFR was able to improve data-warehouse performance – extending the EDW life upto 3 times.

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> "We were able to increase the Data Velocity by a factor of 15"
>
> Phillip Radley, Chief Data Architect, BT

> "Our one-year return on investment from Hadoop deployment is in the 200 percent to 250 percent range."
>
> Phillip Radley, Chief Data Architect, BT

Case Study 2: Using EDH to Accelerate Data Velocity
Customer: British Telecom (BT)
Geography: UK

Background

With £18 billion (about $30 billion) in revenue in 2014, BT serves more than 18 million consumers and nearly 3 million businesses in the UK.

BT's main activities are the provision of fixed-line services, broadband, mobile and TV products and services as well as networked IT services.

Business Challenge

Disparate Customer Databases & Maxed-out ETL windows
- Business consumer data spread over 12 different customer databases.
- Massive ETL job (up to a billion records) started extending the ETL window to more than 24 hours.
- Data Velocity - It took 24 hours to process 24 hour's worth of data, which resulted in business units not having access to the most accurate and up-to-date information about their customers.

Solution Deployed

A Centralized & Fast Processing Engine
- BT engaged with Cloudera to put in a production-ready Hadoop cluster, to replace the batch ETL application with MapReduce routines.
- Up-skilled existing resources to support the new Hadoop platform.
- Went from PowerPoint to production in just 9 months!

Business Benefits

Improved Data Velocity & Increased IT Efficiencies
- Increased Data Velocity by 15X (5 times the data processed in a third of the time).
- Business now have access to the most up-to-date and centralized customer information.
- Significant Cost Savings - "Our one-year return on investment from Hadoop deployment is in the 200 percent to 250 percent range." – Phillip Radley – Chief Data Architect at BT.
- Based on the success of its Hadoop deployment, BT is planning to utilize the implementation for other compelling use cases including tracing network connections for deploying high speed broadband and for launching their '4G at Home' initiatives.

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> "With 100 percent data growth annually, Hadoop is the best option to offload the data from the EDW"
>
> - Metra C. Utama, Vice President of IT Planning, Telkomsel

> "We're looking forward to the next phase of adoption of our Cloudera environment, which will drive new analytical insights."
>
> - Metra C. Utama, Vice President of IT Planning, Telkomsel

Case Study 3: Using EDH To Drive New Customer Insights
Customer: Telkomsel
Geography: Indonesia

Background

With over 140 million subscribers and a market share of approximately 50%, Telkomsel is the leading mobile operator in Indonesia.

Telkomsel provides cellular services in Indonesia, through its own nationwide 3G network, and internationally, through 442 international roaming partners in 200 countries. In December 2014, Telkomsel became the first operator in Indonesia to launch commercial mobile 4G LTE services.

Business Challenge

Manage Data Growth & Drive Insights into Data

- With over 100% volumes growth in data annually, Telkomsel needed a more effective way to offload the data and ETL jobs from their data warehouse for more efficient and cost-effective data processing.
- More importantly, with increased competition, Telkomsel needed to derive new analytical insights on its customers and network usage including analyzing customers' lifetime value, delivering proactive care and understanding churn.

Solution Deployed

Derive Business Insights from Massive amounts of Data

- Telkomsel deployed Cloudera's Enterprise Data Hub on premise to derive valuable customer and network insights from data streaming from mobile devices.
- One of the first use cases was storing xDR data for longer data retention, followed by a full pipeline of use cases focused on enhancing consumer experience.
- Data ingestion using Apache Sqoop, Apache Flume, and Apache Kafka to move data from its sources to the EDW.
- Telkomsel is currently implementing more data discovery and analytics use cases on the Cloudera platform to gain deeper customer insights that will support their users' adoption of smartphones and broadband services.

Business Benefits

Valuable Customer Insights & Increased IT Efficiencies

- Telkomsel is able to uncover valuable insights about its network and customers and have implemented a range of use cases including - proactive care dashboard, churn analytics, customer lifetime value and social analytics.
- Offloaded ETL operations from the data warehouse for more cost-effective data processing thereby improving the performance of their data warehouse.

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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, access, process, secure, 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. Cloudera's open source big data platform is the most widely adopted in the world, and Cloudera is the most prolific contributor to the open source Hadoop ecosystem. As the leading educator of Hadoop professionals, Cloudera has trained over 22,000 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.

For additional information, please visit us at: www.cloudera.com

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