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Information-Driven Transformation in Financial Services with the Enterprise Data Hub Accelerator
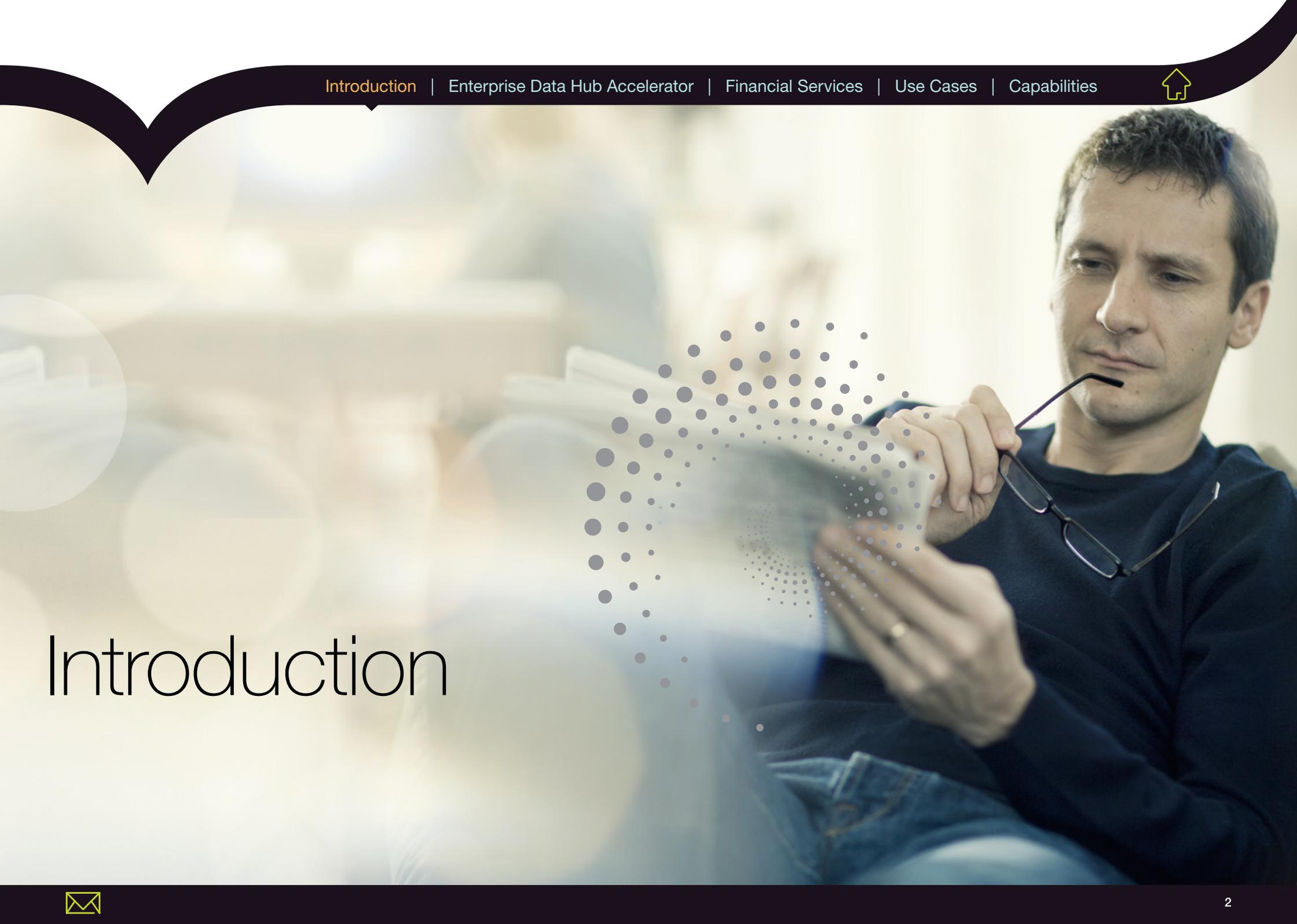
Introduction

Introduction

Capgemini and Cloudera have collaborated to build an execution framework for your Big Data initiatives: the Enterprise Data Hub Accelerator. For the five dimensions of Big Data (business drivers, governance, analytics, data and platform), we guide you on the road to information-driven transformation.

To help you kick-start your Big Data initiatives, we have assembled a catalog of sample key use cases we see as good starting points in Banking.

Watch Capgemini's CTO Lanny Cohen and Cloudera's CSO Mike Olson

Enterprise Data Hub Accelerator

The how-to guide for Big Data

Enterprise Data Hub Accelerator

The Enterprise Data Hub Accelerator is an execution framework for Big Data, built around Cloudera's Apache Hadoop-based open-source enterprise data management platform.
It helps you to define your first projects, make sure you execute them well, and show you how to grow these to a fully-defined and sustainable Big Data strategy for your organization.

What is the Enterprise Data Hub Accelerator?
Have a look at this animation

Financial Services
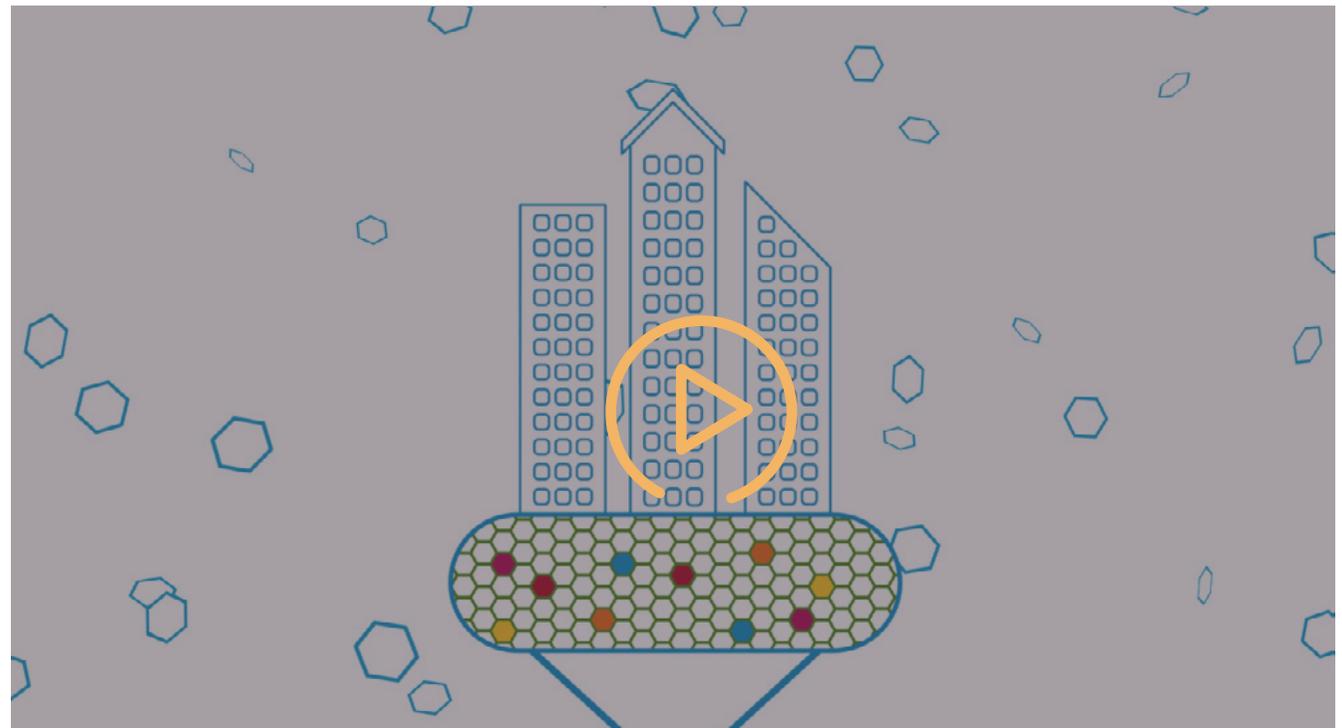
Financial Services

Financial Services Sector Overview

Key Topics

Data Monetization
Cost Improvements
New Revenue   Risk Management
Fraud Detection   Data Monetization
Risk Management
Customer Experience   360 Customer
Sentiment Analytics
Customer 360 View   Fraud Detection
Next Best Action
360 Customer View

Many financial institutions operate across multiple channels and often as part of larger groups. Throughout the years, these groups have grown via mergers and acquisitions, and this has resulted in technology ecosystem where data resides in disparate systems and silos. This creates significant challenges around both gaining an overview at group level, and acting independently, with actionable insight, for individual brands within the group.

Using an enterprise data hub and the new analytical capabilities of the platform, banks can integrate all of their data along with new datasets like clickstream data or external data to get more precise and dynamic insights into fraud management, risk management & compliance and improved customer experience. Using the scalability of the platform and its cost-efficiency, banks can also realize significant cost improvements on their existing BI landscapes.

Finally, banks can now generate new revenue streams from value added services they can offer to their customers or partners and begin to monetize their data and insights.

SUB-DOMAINS

Banking

INDUSTRY OVERVIEW
Financial services organizations routinely work with huge volumes of data from a wide variety of sources - some of it internal, much of it external. By using Big Data techniques, organizations are combining all these varied sources and analyzing them to deliver information-driven transformation with regards to insight into customers, markets, economies and the industry as a whole.

Financial Services
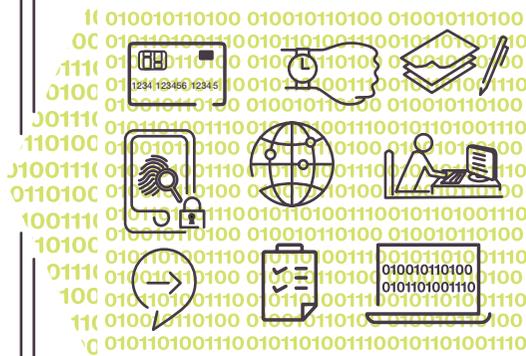
BUSINESS DRIVERS FOR FINANCIAL SERVICES TRANSFORMATION

- Cross-selling and up-selling products and offers
- Improved CRM and market intelligence
- Improved efficiency of management information systems
- Regulatory compliance
- Fraud prevention
- Real time Transaction screening / filtering / monitoring
- Risk assessment
- Solvency capital calculations
- Optimization of online customer services

DATA ELEMENTS IN FINANCIAL SERVICES

- Customer data
- Geographic data
- Transaction data
- Channel data including branch / mobile / internet
- Contracts
- Historical trades
- Server logs
- Clickstream navigation logs
- Social media feeds
- Crime databases and fraud watchlists
- Business news, general news and weather reports

Use Cases

» Risk Management

» Fraud Detection Optimization

» Customer Analytics

» Data Monetization

» BI & Data Warehouse Optimization

Use Cases

Risk Management » Fraud Detection Optimization » Customer Analytics » Data Monetization » BI & Data Warehouse Optimization

Financial institutions today struggle to **identify and manage risk** as they don't have a complete view of their portfolios and assets.

Identification and Management of Risk Concentration

Financial institutions today struggle to identify and manage risk as they don't have a complete view of their portfolios and assets. Asset classes are sometimes not aligned to business functions and data stores are often isolated in silos, making it difficult or even impossible to cross analyze data across these silos without tremendous amount of manual efforts. On the other hand, as line-of-business (LoB) hierarchies and information stores change frequently due to mergers and acquisitions, there is a requirement to keep analytics framework highly agile, adding to the challenge of getting a true picture of risk concentrations.

With Cloudera's enterprise data hub, financial institutions can store data from all sources in its original format and progressively create an integrated view of all assets using the agility of the Hadoop platform. In contrast to traditional data warehouse environments, it is not necessary to pre-determine the way business users will want to analyze their data. "Business views" can be created and easily adapted to guarantee an always-complete view of the business.

With an enterprise data hub, financial institutions can get daily updates on the global, enterprise-wide concentration analysis against the thresholds set for all portfolios. As the platform is more agile, data integration processes can be drastically accelerated, providing the business users with a fresher view of the business.

Financial institutions can optimize counterparty risk identification and proactively manage emerging concentration development trends in advance of exceeding thresholds.

Use Cases

Risk Management » Fraud Detection Optimization » Customer Analytics » Data Monetization » BI & Data Warehouse Optimization

ENHANCED COMMERCIAL SCORECARD DESIGN AND IMPLEMENTATION

Financial records are often not submitted in standard or structured format. With traditional architectures, ensuring accuracy of financial data sometimes requires manual effort.

With an enterprise data hub based on Cloudera Enterprise, financial institutions benefit from the agility and integration capabilities of the platform to store all data in a single place regardless of the format, and build a more agile integrated view.

Financial institutions use these Big Data solutions to analyze commercial loan origination, developing scorecards and scoring, and ultimately improving accuracy as well as optimizing price and risk management.

REGULATORY REQUIREMENTS ANALYSIS

The urgency of regulatory updates has increased, and risk/compliance groups are struggling to keep track of the latest requirements as traditional architectures are not agile enough to implement these changes as quickly as needed by the business. In addition, there is little to no consolidated and comprehensive view of all regulatory requirements as well as their common/interdependent elements (eg. Dodd-Frank, Basel, CCAR, etc.)

To reduce regulatory risk and optimize operations for risk management support and regulatory compliance, financial institutions leverage the agility of architectures such as enterprise data hubs to keep track of regulations from multiple authorities (eg. FDIC, OCC, Fed), and identify common or distinct elements across regulations.

Use Cases

Fraud Detection Optimization using a Deeper Transaction Trends History

Preventing fraud is a major priority for all financial services organizations. But to deal with the escalating volumes of financial transaction data, statisticians need better ways to mine data for insight.

With queries taking weeks to run and often not based on long-term data, the existing systems struggle to provide the right answers. It's not uncommon for organizations to store up to a year's data in the enterprise data warehouse at significant cost. Data integration processes are also expensive and the annual spend on storing and analyzing data can make a serious dent in financial performance.

One global financial services organization showed the way forward by augmenting its data warehouse with Cloudera Enterprise to improve fraud detection. The company was able to store 100% more data including transaction data, with the ability to handle all other data types and support analytics workloads through the use of Cloudera Impala.

This delivered faster analysis on more data for improved fraud detection.

A month's data scan could now be analyzed in 4.5 seconds, compared to 3.6 hours previously. This improved capability led to increased revenue from reports sold to clients. With this solution in place, the company reduced data integration (ETL) costs by 10-15%, and saved $30 million on storage costs.

Use Cases

Risk Management » Fraud Detection Optimization » **Customer Analytics** » Data Monetization » BI & Data Warehouse Optimization

Supercharge Your Customer Analytics, Optimize Your Customer Experience, Grow Your Share of Wallet

GETTING TO KNOW YOUR CUSTOMER: THE DYNAMIC 360 CUSTOMER VIEW

Financial institutions are using Big Data solutions to deliver more personalized customer communications and offers based on interactions across all channels.

Financial institutions often operate with multiple brands, stores, and websites. Customers may interact with the institution through many different channels. Correlating all the data from these disparate sources has previously proved challenging.

But in today's data-driven world, it is no longer enough to simply know **who** your customer is. The key is to track events in your customers' lives and get to know their network of influence. You can then use these contextual insights to increase the accuracy of your interactions, and eventually increase the propensity for a new financial product (loan, credit card, etc.)

Financial institutions benefit from open and agile architectures such as an enterprise data hub not only to store all customer related data and integrate across all channels, but also to integrate that internal view with external data sets such as social media activity and competitive data. These external data enrich the Customer 360 View with a more dynamic view of a customer and can detect particular events in their lives allowing you to take appropriate proactive actions.

This Dynamic Customer 360 view maximizes the portfolio opportunity for each customer and optimizes customer-centric processes such as credit risk evaluation and customer profiling models to detect the propensity to save, to default payment, or to get a new loan or a credit card. In addition, marketing interactions can be personalized to be more efficient, improve customer experience, and provide a better return.

The following use cases describe how this Dynamic Customer 360 view can be used for better offer push, sentiment analysis and churn prevention.

Use Cases

Risk Management » Fraud Detection Optimization » **Customer Analytics** » Data Monetization » BI & Data Warehouse Optimization

NEXT BEST ACTION RECOMMENDATION ENGINES

Consumers today are bombarded with letters, calls, and emails with offers or promotions that are mostly irrelevant. This is due to an incomplete view of the customer base and/or the inability to push the right offer at the right time for the right customer.

Retail banks increasingly rely on marketing and product innovation to grow the total value of the average customer. Simultaneously, banking customers are using more channels, particularly online and mobile, to access banking information and transact in real-time, increasing the volume and variety of data collected and the number of sales opportunities.

The "Next Best Action" approach breaks away from that static approach by turning customer profiles, preferences, and behavior into actionable insights in real time. This allows marketing to the right customer at the **right time** about the **right product** and at the **right place**.

An enterprise data hub helps to integrate a dynamic 360 customer view with the relevant agility and time to action, and guarantees that the platform will be able to scale to the dimension needed for an always-complete and dynamic view of the customer, as a basis for advanced analytics algorithms to generate personalized offers.

This Next Best Action use case consists in utilizing financial institutions' existing cross-sell and segmentation models with:

- Data from the customer service systems in full fidelity (branch/teller, call center, on-line banking, clickstreams, service logs) that identifies problem status and resolution activity
- Data from voice of the customer/customer satisfaction surveys
- Data collected from social media interactions

In current legacy architectures, these types of information are not well used or integrated in relation to cross-sell. The cost of storing data on all customers and interactions has prevented that data from being actively analyzed to drive real-time offers. This is becoming critical as ineffective marketing depletes customer sentiment and drives down return-on-investment. Product cross-sell and up-sell efforts have diminishing returns, as offers are based on novelty or popularity, not tailored to the customer.

Yet banks recognize that they need to understand these topics before they attempt to cross-sell to a customer.

Use Cases

Risk Management » Fraud Detection Optimization » **Customer Analytics** » Data Monetization » BI & Data Warehouse Optimization
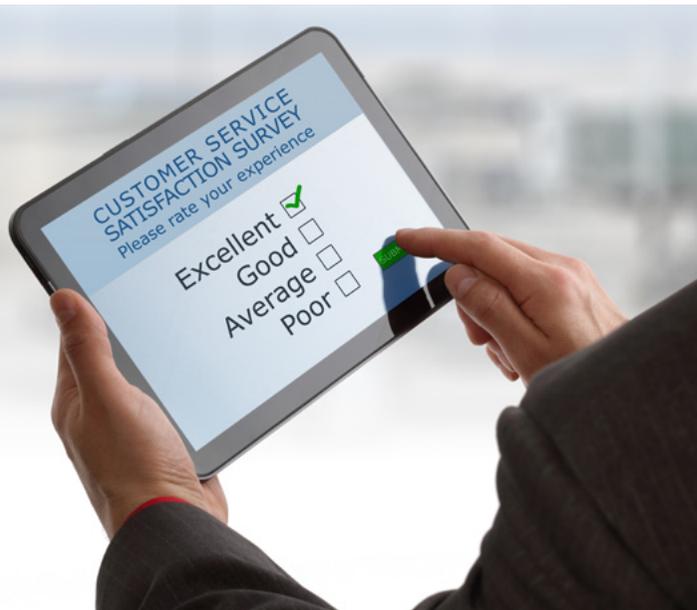
Using an enterprise data hub, banks can gain a complete view of all the interactions between the bank and a customer, getting to know service and problem data related to this customer (such as structured service/problem code, problem description, date, resolution action, current status, issue interaction data, and customer response data). This is key to go from the classic next best offer / next best product strategy (proposing a new product upfront) to a smarter next best action strategy (solve the customer problem first if there is one, then propose a new relevant product).

Financial Institutions use the capabilities of the Cloudera Enterprise platform to:

• Find data using Cloudera Search and build models using Pig, Mahout, Spark, and ecosystem analytics tools such as R
• Test machine learning models and run experiments on complete, large data sets to iterate and continuously improve
• Significantly shorten timelines to operationalization and production

These new capabilities result in automated processes that can:

• Identify customer profiles in real-time
• Suggest next likely action to be taken (proactive problem resolution or new product to be offered)
• Generate corresponding scorecards dynamically according to various business rules
• Track offer history to avoid repeating offers
• Capture event data showing customer interactions in real-time, including channel, time, intermediate behaviors, and not just transactions
• Automatically generate relevant marketing notifications and promotions.

This leads to improved cross-sell penetration, an enhanced customer experience, and ultimately better customer retention.

Use Cases

Risk Management » Fraud Detection Optimization » **Customer Analytics** » Data Monetization » BI & Data Warehouse Optimization
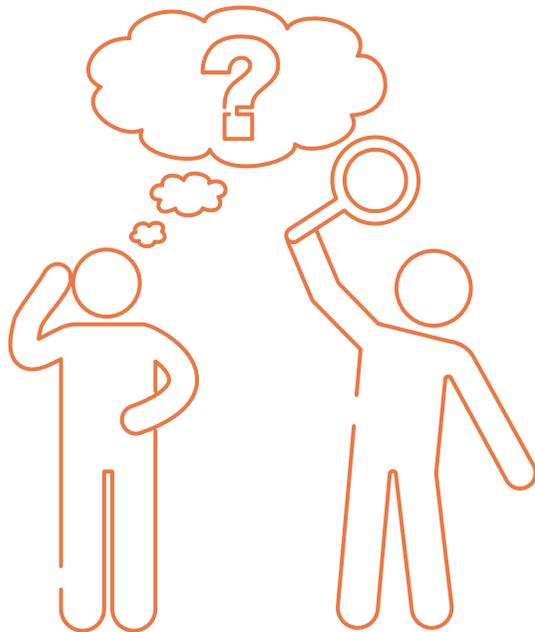
Focus on Sentiment Analysis

Sentiment analysis or opinion mining refers to the application of natural language processing, computational linguistics, and text analytics to identify and extract subjective information in a variety of types of conversations. It aims at mining the attitude of a speaker or a writer with respect to some topic or the overall contextual polarity of a document. The attitude may be his or her judgment or evaluation, affective emotional state, or the intended emotional communication.

To perform sentiments analysis on unstructured data, data scientists at Capgemini make use of advanced Big Data analytical techniques such as natural language processing (NLP), statistical modeling and machine learning.

Sentiment analysis can be applied to text-based content such as Word documents, email, and postings on social media streams such as Facebook, Twitter, and LinkedIn. They can help financial institutions to derive new KPIs that can augment their decision making process. It helps them to:

- Keep on top of issues and respond to trends impacting business
- Gather new customer insights from unstructured-content (from social networks)
- Determine the degree to which a sentiment is positive, negative or neutral for the entire content or a segment of the content
- Identify those voices and publications influencing customers and competitors
- Adjust and optimize communication strategies
- Use it to direct strategic decisions such as modifying marketing messages, customer service or product development
- Receive early warnings of market developments
- Manage and preserve brand equations and reputations.

Using new architectures such as Cloudera Enterprise, financial institutions can benefit from their capability to handle complex high volume, high velocity and high variety (multi-structured and unstructured) data sources.

Use Cases

Risk Management » Fraud Detection Optimization » Customer Analytics » **Data Monetization** » BI & Data Warehouse Optimization

Data Monetization: Create New Services by Leveraging Customer-related Data

Financial institutions are also looking at leveraging Big Data solutions not only for their internal reporting needs, but also to monetize the data in order to offer new value-added services to their end customers. They can also advise customers on the best way to achieve their personal financial goals, or help partners better target offers and promotions considering client purchase behaviors taken from transaction data.

Of course, these new services need to be designed with data privacy and security in mind, and often will need to provide insights on aggregated or anonymized spending data.

Still, interesting use cases are currently being considered by banks to generate additional revenue streams.

For example, banks can leverage the large amount of transaction data to increase the customer knowledge in a specific distribution area. By anonymizing the data they can create reports describing customer behavior and its evolution for a specific distribution area. Banks can sell these key insights to banks' partners such as retailers that will use it as a detailed customer analysis and for their own marketing campaigns.

In addition, financial institutions can use transaction data to generate revenue-driving reports for merchants or partners. By combining transaction and purchase data in Cloudera Enterprise, a bank can sell those reports to merchants allowing them to better optimize their finances, optimize customer segmentation, cross-sell analytics, and more.

A bank reported that by using Big Data solutions such as Cloudera Enterprise, they were able to run these reports in hours in Cloudera Enterprise instead of two days using legacy architecture. As they are able to run these reports more frequently and analyze bigger data sets, they are expecting to grow revenue generated by this business by a factor of five.

Use Cases

Risk Management » Fraud Detection Optimization » Customer Analytics » Data Monetization » **BI & Data Warehouse Optimization**

Optimize Your Existing BI and Reporting Environments with Big Data

DATA OPTIMIZATION: EXTEND YOUR DATA WAREHOUSE INVESTMENTS WITH BIG DATA

Financial services organizations handle huge volumes of data from a wide variety of sources. As web channels proliferate, data volumes increase putting increasing strain on incumbent systems.

With the movement from in-person to online financial transaction processing, the number of transactions processed daily has ballooned. This has caused skyrocketing data volumes and increased susceptibility to fraud.

Improving the collection and analysis of all this data has the potential to enhance decision-making, deliver a single view of the customer and increase profitability.

Current traditional enterprise data warehouse architectures struggle with these data volumes and generate increasingly higher costs. In addition, statisticians are limited to fairly simple queries on no more than a year's worth of data because anything more extensive would consume too much computing resources.

Statisticians from Information Security teams in particular want faster query response and unconstrained access to analyze data in the warehouse so they can better mine the data.

Using Cloudera Enterprise, business analysts and statisticians can start doing exploratory analytics. The new architecture stores longer historical data with greater detail, and makes it possible to join large data sets from disparate sources to improve the flexibility and scale of analysis.

Use Cases

Risk Management » Fraud Detection Optimization » Customer Analytics » Data Monetization » **BI & Data Warehouse Optimization**

By augmenting a data warehouse environment with Hadoop for **exploratory analysis**, financial services firms are better equipped to identify and prevent fraud. In one particular case, a financial services firm discovered an incidence of fraud that appeared to have been on-going for two weeks. Using Cloudera Enterprise, their Global Information Security group decided to check into it by looking at the long-term detailed data in their Hadoop cluster. By searching through the broader data set, they realized that the fraudulent activity had been going on for months. It turned out to be the largest incidence of fraud ever caught at the financial services firm.

In addition to these exploratory analyses, being able to **accelerate and facilitate integration of data is key**. Augmenting traditional data warehouse architectures with Hadoop help optimize data integration (ETL) processes, making them more scalable and less expensive than using traditional ETL tools on separate and dedicated servers.

One financial services company wanted to increase data integration processing by more than 500 times, to help deliver a single view of the customer, with real-time updates on purchasing behavior, online browsing patterns and social media activity. The goal was to process 100 million records an hour - or 28,000 records a second. This organization used Cloudera Enterprise to power its cross-channel identity resolution engine to achieve this goal - moving from 50 million records a day to 100 million records in an hour, while costing only a fraction of the legacy environment.

Finally, financial institutions also use Big Data solutions to help with **security and compliance regulations**. As they must replicate all of their production data in a **disaster recovery** (DR) environment, the costs of setting up such environments (production replicated in a DR environment) are getting intolerable. Financial firms use Cloudera Enterprise with Impala to meet their DR needs through the long term, providing an active archive solution at a significantly lower cost.

By replicating their production data in Hadoop with Impala instead of purchasing a duplicate production environment for DR, a financial firm expects to save up to $30 million, reducing drastically their overall storage costs.

Use Cases

Introduction | Enterprise Data Hub Accelerator | Financial Services | Use Cases | Capabilities

Risk Management » Fraud Detection Optimization » Customer Analytics » Data Monetization » **BI & Data Warehouse Optimization**

ANALYTICS & REGULATION REPORTING OPTIMIZATION

Using a single data store as the enterprise data hub, financial institutions can begin to rationalize the huge number of reports generated by business management and regulatory needs.

Using Capgemini's Enterprise Data Hub Accelerator approach on Governance and Analytics, and the capabilities of the Cloudera Enterprise platform, financial institutions can progressively take their analytics to the next level by identifying:

- Which reports are overlapping across business units
- Which reports are duplicates
- Which are rarely and never used
- Which reports use non-standard nomenclature e.g. 'gross revenue' and 'net revenue' both labeled 'revenue'.

Also, banks may have several existing databases with similar/same data information making it hard to identify the golden source of the data to be used for lineage analysis. Business users are starved of access to relevant data access, business information and unfettered report analysis, and on-time relevant data.

Using new Big Data architectures, financial institutions can begin to eliminate multi-dimensional cube proliferation, and enable proactive, intuitive decision support with drill-down and 'what if' analysis with no pre-defined queries.

DATA QUALITY WITH BIG DATA

Financial institutions are using Big Data technologies such as Cloudera Enterprise to provide iterative and continuously improving data quality and data lineage services to their business users.

As the volume and scope of the data sets are growing and access to data is facilitated by the agile capabilities of these platforms, building solid trust in the data is vital.
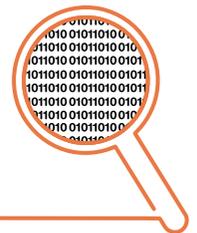
Use Cases

Risk Management » Fraud Detection Optimization » Customer Analytics » Data Monetization » **BI & Data Warehouse Optimization**

> The Enterprise Data Hub Accelerator approach helps you **address data quality from day one** in your Big Data projects.

Capgemini's Enterprise Data Hub Accelerator approach helps you **address data quality from day one** in your Big Data projects. These new architectures provide:

- Accuracy of data format screening at LOB level and Enterprise level
- Statistics on critical data element's for an early identification of data quality issues

Data quality can't be a bottleneck or managed as a monolithic process. Often, data quality requirements are different from one BU/LoB to another. This is why data quality should be provided as a framework, continuously providing indicators on data quality levels on critical data elements to the business users, allowing them to evaluate how potential data qualities issues could impact their analytics, and taking corrective actions.

In addition, the ability to analyze LoB-specific and enterprise-wide data lineage and map dependencies is key. Banks may have several databases with similar/same data information making it hard to identify the golden source of the data to be used for lineage analysis.

Using new Big Data architectures, financial institutions can more easily:

- Identify data element relationships and dependencies
- Validate the accuracy of lineage within data elements for complex models, and rectify inaccuracies.

Finally, such architectures enable Rapid Data Quality Profiling. Using the schema-on-read capabilities of the platform as well as data quality tools on top of Hadoop enables the execution of fast, inexpensive initial data quality maturity diagnostics. By bringing in insights from data lineage, it gives this ability to quickly prioritize specific data elements for data quality remediation based on the value of that data element and the impacts generated in analytics or models using this element.

Capabilities

Capabilities

Capgemini's & Cloudera's Financial Services Experience

CAPGEMINI INDUSTRY EXPERTISE FOR FINANCIAL SERVICES

Business Information Management (BIM) is a Top-Line Initiative (TLI) across Capgemini. Financial Services BIM already delivered a number of Pilot and Proof-of-Concept (PoC) projects over the last few years; the main programs include Fraud Detection, Customer Analytics, Datawarehouse Optimization with our Tier-1 clients.

Big Data is a key transformation lever for our FS clients, and as such is a big focus in terms of growing capabilities, using BIM's large population of Big Data experts and Data Scientists globally.

Capgemini is leading innovation with its Big Data partner Cloudera and collaborating on integrated solutions for its customers, using BIM's Big Data COE and innovation labs.

Capabilities

cloudera®

CLOUDERA IN FINANCIAL SERVICES

Every sector of the global financial industry faces tremendous risk and regulatory need on a daily basis. When data is freed from silos, secured, and made available to the analysts it can answer key questions about the market—as they need it, in its original form, and accessed via familiar tools. This means everyone in the C-suite can rest assured that the EDH provides a complete view of the business, perhaps for the first time.

CLOUDERA ENTERPRISE DATA HUB

An enterprise data hub securely and cost-effectively stores any amount and any type of data, in its original form, for as long as you need. It lets you access all your data in multiple ways while providing the robust management and governance required by enterprises.

Using an enterprise data hub, financial institutions can spend less time in data integration processes of customer data, transactions data or external data, and focus more on improving analytics. While current architectures would struggle with the increasing volume and complexity of these datasets, Big Data solutions such as an enterprise data hub allow you to be more flexible when you need to bring in new data sets.

How do we use several decades worth of customer data to detect fraud without having to build out dedicated systems or limit our view to a small sample size?

What does a 360-degree view of the customer across various distinct lines of business tell us about downstream opportunity and risk?

SECURITY AND ACCESS CONTROL FOR YOUR DATA

Cloudera is driving a vision for security at the core of Hadoop -- in an open, unified, and comprehensive way. With the Cloudera Center for Security Excellence and innovations such as Sentry and Navigator, Cloudera offers the breadth of security capabilities necessary to meet the stringent requirements of every enterprise. Cloudera Enterprise offers a central place to manage and monitor security policies across the stack.

- **Guard the Perimeter** - Cloudera provides comprehensive perimeter security that preserves the agility of multiple entry points while providing strong authentication that's easy to manage. Cloudera Manager makes it easy to secure your cluster using industry standard Kerberos, LDAP/AD, and SAML.
- **Protect Data-At-Rest and Data In Motion** - encryption and powerful key management are integrated into Cloudera Navigator. Navigator Encrypt provides massively scalable, high performance encryption for critical Hadoop data. Navigator Key Trustee is a "virtual safe-deposit box" for managing encryption keys, certificates, and passwords.
- **Control Access with Project Rhino and Sentry** - Cloudera has donated Apache Sentry as a common authorization framework for the open source security initiative Project Rhino. Sentry allows for fine-grained authorization and role-based access controls across the Hadoop platform, all through a single, unified system.
- **Gain Visibility with Cloudera Navigator** - for full visibility into where data came from and how it's being used to verify authenticity and easily comply with regulatory requirements.
- **Cloudera Center for Security Excellence** - dedicated to developing comprehensive data and cluster security technologies and enabling integration with key security partners.

About Capgemini

With more than 130,000 people in over 40 countries, Capgemini is one of the world's foremost providers of consulting, technology and outsourcing services. The Group reported 2013 global revenues of EUR 10.1 billion.

Together with its clients, Capgemini creates and delivers business and technology solutions that fit their needs and drive the results they want. A deeply multicultural organization, Capgemini has developed its own way of working, the Collaborative Business Experience™, and draws on Rightshore®, its worldwide delivery model.

Learn more about us at

www.capgemini.com/bim

or contact us at

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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 20,000 individuals worldwide. Over 1,000 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.

Learn more about us at

www.cloudera.com

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