

Customer 360

Most awaited project in Banking and Finance, Retail and Telecom

Agenda

Things you will learn

Customer 360 introduction

Key points

Architecture

Lab

Things you will learn

After completion of this project, you will learn the following:

- Customer 360
- Customer 360 Architecture
- End to end implementation
- Technologies: MySQL, sqoop, pig, Hbase, Hive

Customer 360 – An Industry Perspective

- What is Customer 360?



A holistic real-time view of your individual customers

Across all products, systems, devices and interaction channels

In order to deliver a consistent, personalized, context specific and relevant experience

Key challenges in Driving a Customer 360

DATA SILOS



- Multiple Data Silos
- Often store overlapping and conflicting info
- Issue compounded with multiple business units

DATA VOLUMES



- Data growing at ~**100% YoY**
- A typical mobile service provider generates approx. 5 – 30 Billion Call Detail Records (CDRs) every day

NEW DATA SOURCES



- Semi/ Un-Structured Data Sources
- Streaming/ Real-time data
- Critical for building a True 360 view

COSTS OF DATA PROCESSING



- Cost prohibitive
- **\$30,000 and \$100,000 (USD) per TB** – Cost of storing data in relational database systems per year

[http://www.slideshare.net/
cloudera/using-big-data-to-
drive-customer-360](http://www.slideshare.net/cloudera/using-big-data-to-drive-customer-360)

What is customer 360

Customer 360 refers to summarized information related to customer, at every digital touch point, which describes the behavior of customer, and predicts what can happen with him in future.

It can be thought on mega table, which is holding information of all products a customer holds, summary of all customers transactions, demographic features, CRM information.

Why; Understand Your Customers

Improve the entire customer lifecycle with a customer 360-degree profile.

Any marketing team or any other team dealing with customers must leverage technology to:

- collect and analyze customer data
- execute successful omni-channel campaigns
- understand the customer lifecycle
- influence buyers in a congested market.

Possible data sources



Use case1; Customer Acquisition & Retention



How to acquire a new customer and how to retain existing customers is a big time challenge for any marketing team.

Now with customer 360, they know the DNA of customer, there by plan accordingly.

Especially in telecom sector, this is a big challenge.

Use case2: Next best offer



Whom to offer what is a big question?

Especially in retail sector, identifying loyal customers and offering them products based on previous transactions is a bigger challenge.

Having customer DNA will make it much simpler.

Use case3: Customer satisfaction



Email sent by a customer, needs an immediate response.

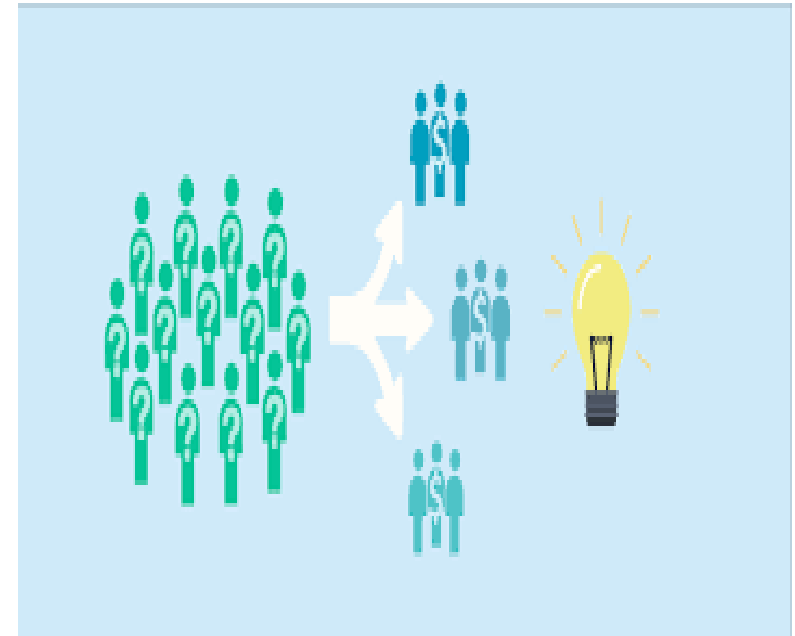
It's important that organizations collect every interaction in order to identify leading indicators of unhappy customers, keep their existing customers, and improve net promoter scores.

Up sell and cross sell recommendations

Identifying similar customers is on the top priority for all the industries, as it can solve upsell, cross sell, product recommendation and many other problems.

To identify similar customers, one should have all possible information of customers, summarized and store digitally.

Customer 360 can do that.



Why hadoop for customer 360?

Existing systems are costly

Are not scalable

Vendor locked

Slow in processing

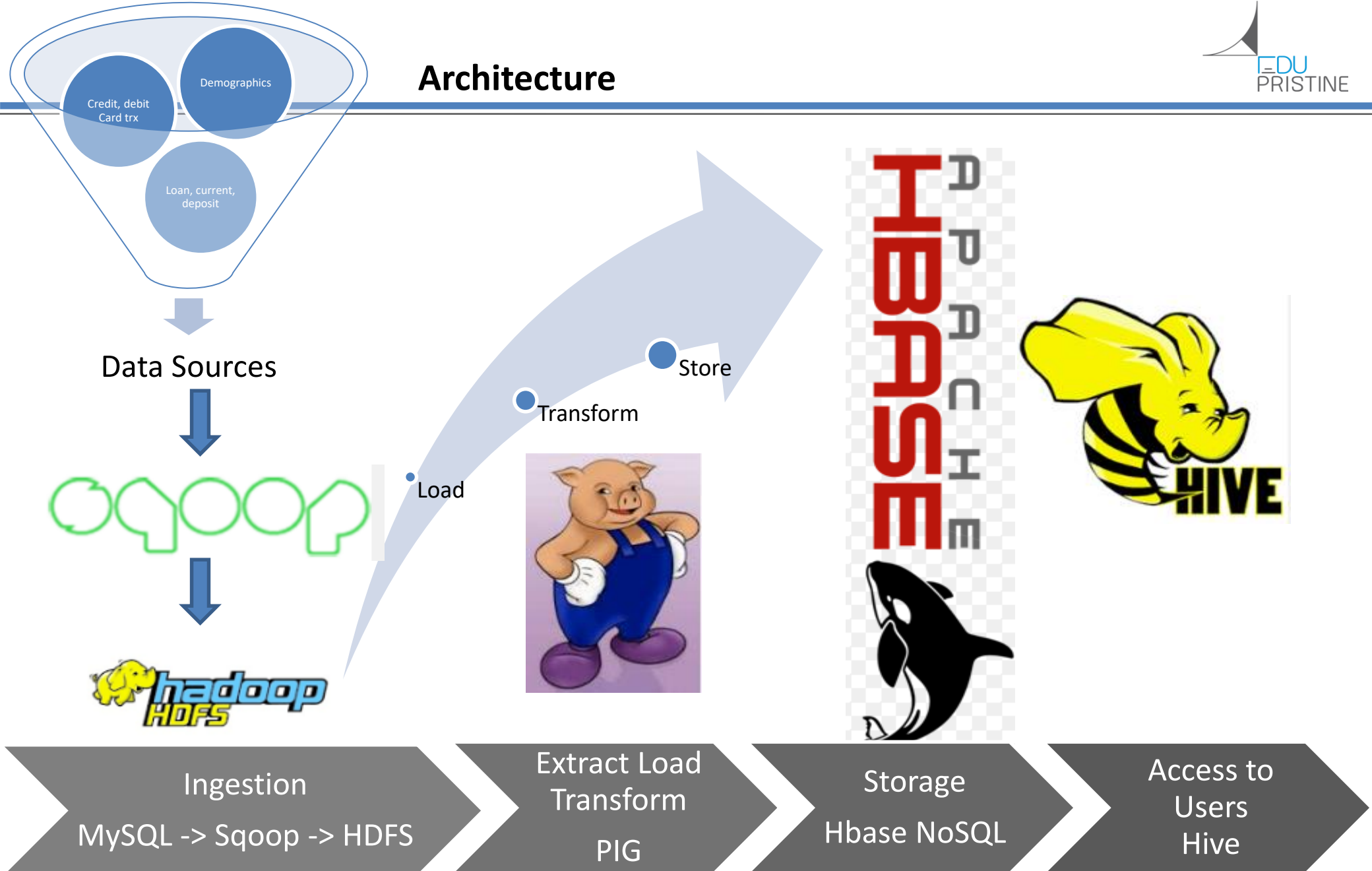
Key Notes

To demonstrate this case study, we have created data sets and designed dataflow architectures.

Students will get to know how to implement customer 360 industrial case study, which is the most needed technology for many sectors.

This will improve your profile.

Architecture



Step1: Understanding data

In datasets folder, six datasets are provided:

- Credit card: Credit card account details.
- Credit card trx: Credit card trx details.
- Demographics: Customer demographic details.
- Deposit: Deposit account details.
- Loan: Loan account details.
- Savings: Savings account details.

Refer to datasets folder.



1.DataSets

Step2: Load data to MySQL

To replicate the exact business scenario, data will be first ingested to MySQL.

Refer to step2.



2. Mysql data ingest

Step3: Data Ingestion

Sqoop will be used to ingest data from MySQL to HDFS.

Sqoop is the most preferred tool for data ingestion.

Refer to:



3. Hadoop data import - sqoop

Step4: Customer 360 Mega Table; HBase

Create a table with following column families:

- Demographics
- Savings
- Loan
- Credit
- Deposit
- credittrxsummary



4. HBase

Step5: ELT with Pig

Pig is the most preferred tool for ELT. It has many capabilities:

- Can create complex projections.
- Can store output in any point of data flow.
- Easy to understand
- Suits well for data flow

Refer to:



Now check hbase

Now in Hbase, for each customer, all possible information from all different products are at one place.

Now how would you provide access to different teams??

Providing access; Hive

Now different teams need different data. Reception office should have access to only account information. Marketing team needs customer wallet data. Like this, different teams need different data, to make decisions.

Using hive, map external tables to required columns in Hbase.

Refer:



Conclusion

Customer 360 is the most needed project in many banking, telecom and retail sectors.

With hadoop, entire load on traditional systems can be transferred to hadoop, and there by cost cuttings.