

Cost Effective Solution Model using Cloud and Big Data – to Be Competitive in Retail

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ABSTRACT: This article provides an overview of a Solution model for handling the huge volume of data produced from retail business. It also describes how the Cloud and Big Date empowers the retail business. A solution architecture used in industry is provided. It also discusses the benefits of Cloud and the business Cases based for Retail.

I. INTRODUCTION

Retail businesses around the world are facing challenging market conditions due to higher customer churn rates, unpredictable price variations, meeting the customer expectations. Most of the retail businesses have got operational systems to manage their sales, marketing and billing, however they fail or lack to analyze these data and other social media generated data to identify the customer behavior, price variations, different offers and deals from opponents. With the introduction of cloud and big data technological framework, carrying out the analytical operations on the huge volume of data (structured, semi-structured and unstructured) generated on day-to-day basis by retail businesses have been made easier, and enables them to remain competitive and generate more revenues by converting all their challenges into productive business. By adopting these IT solution model, many retail businesses have proved successful. In addition to that, many businesses have invested reasonable amount of money and other resources on these solution model to make their challenges into productive outcome.

II. HOW CLOUD AND BIG DATA EMPOWERS THE RETAIL BUSINESSES:

These two technologies are very cost effective, mostly open-source based products and architected to run on commodity Hardwares that made businesses' CAPEX (capital expenditure) very minimal with quick turn-around time to achieve the outcomes expected.

A decade ago, most businesses fully depend only the business generated data with limited capabilities to process their structured data, whereas now with the help of new technological advancement, getting the real time or near real time view of their business model has taken them to a new height to remain successful in their business. In fact, these two technologies developed more jobs in the industry.

With the help of these technologies, businesses can tap all their data irrespective of types into Data Lake on cloud in its native form and enable the analytical team to predict the trend, pattern, purchasing habits, review their social feedback, auctioning quickly on the customer needs to make them satisfied.

It is predicted that every one in this world would produce 200MB of data every day, which needs to be tapped properly to produce all requirements into revenues. These technologies will definitely help in all possible ways to achieve goals.

III. SOLUTION ARCHITECTURE

This solution architecture outlines the high-level solution model adopted in the industry to carry out all analytical operations. Fig.1 shows the solution architecture.

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The solution architecture ingests data from data sources:

1. CRM system
2. Billing
3. Social Media
4. Customer Support
5. Clickstream
6. Usage Data (in case of Telecom, Electricity and Power)

Ingested data is staged in Data Lake, and being consumed as and when needed basis. EMR (big data solution) is highly scalable and parallelism capability inbuilt in it.

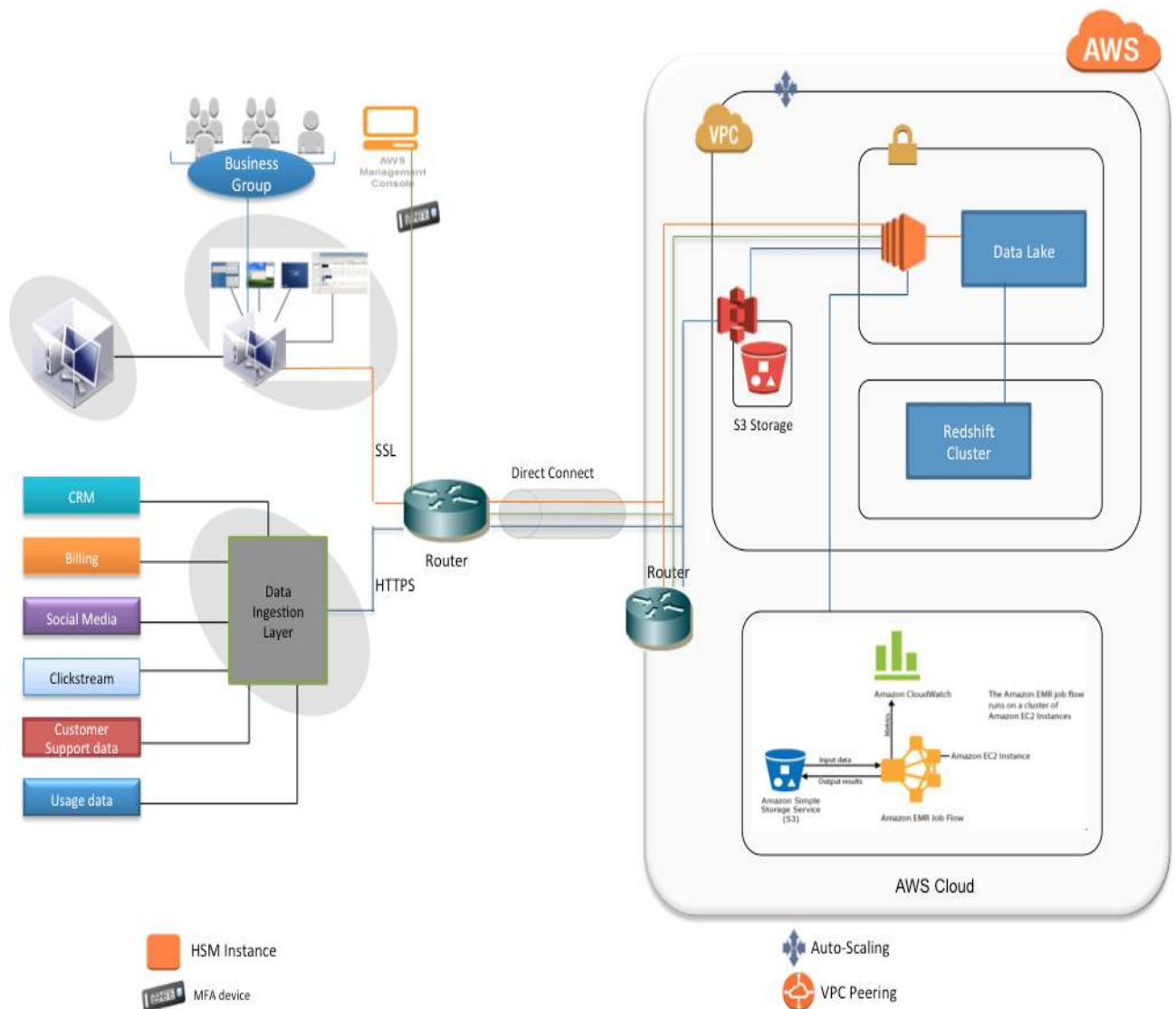


Fig. 1. Solution Architecture

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With help of Hadoop ecosystem, most of the source data can be tapped to ingest data and enable the business analytics, which helps businesses to derive insights; values and real time trend to better understand and serve the customer.

This solution model has been adopted in most the retail industries that deals with many services such as supermarkets, internet services, gas and electricity supplies and other retails businesses.

So far, the industry just followed a batch-oriented process model with limited capability to understand the customer's need and serve them, which did not help much. However, all the challenges and limitations of legacy processing approaches have been overcome with the introduction of cloud and big data.

i. Benefits of cloud

- Flexibility to scale up and down when required
- Cost-effective streamlined operations
- Real-time reporting
- Quicker speed to market

ii. Business Cases based for Retail

- Gaining knowledge of current customers.
- Improving customer service by using rapid product/service development.
- Responding to customer inquiries and needs in (near) real-time.
- Quickly adapting messaging and offers to reflect shifts in consumer sentiment and activity.
- Identifying the market demand by analysing the customer purchasing habit.
- Customer churn

IV. CONCLUSION

This article provides an insight of the solution model which is more cost effective and the architecture used for retail business for handling the huge volume of data.

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