Big Data usage in Customer Relationship Management for Organizations

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***Abstract*- When consumers engage with channels such as e-commerce sites now, they get a very intimate experience and personalized product offers that are relevant to the consumer's needs. Based on these experiences, consumers have similar expectations from other consumer-centric companies such as banks, retailers and news/media. Without deep know-how about their consumers, companies may not be able to meet these expectations. This can have a profound impact on business. Not being able to gain insights from the goldmine of data means companies that should be consumer-centric, are truly falling short. They are allowing their competition to identify critical business trends and act on those before they can. They are basically leaving business on the table. Big Data and Customer Experience Management changes that equation.**

While executives from consumer-centric companies agree that Big Data has potential to transform their businesses, they often are unsure which use cases they should consider when implementing a Big Data solution.

Keywords-Customer Relation Management, Big Data, Organization, Analytics

1. INTRODUCTION

Big data is a broad term for data sets so large or complex that traditional data processing applications are inadequate. Challenges include analysis, capture, duration, search, sharing, storage, transfer, visualization, and information privacy. The term often refers simply to the use of predictive analytics or other certain advanced methods to extract value from data, and seldom to a particular size of data set.

2. CUSTOMER RELATIONSHIP MANAGEMENT

During the next few years, most companies will struggle to realise customer relationship management (CRM) business value from big data strategies. The first key to success will be identifying relevant customer processes across marketing, sales, customer service and e-commerce that can benefit from actionable, big data customer insights. Once a customer process has been identified as a big data opportunity, CRM leaders working with CIOs should follow four critical steps to derive business value Identify sources of customer information for big data strategies.

- Manage and integrate customer information from the relevant sources.
- Use big data analytics to derive relevant customer insights.
- Apply insights to customer decision-making.

Being relevant to the customer starts with having the best data and insights to drive the customer opportunity. Erroneous or irrelevant data will get you into trouble with customers. The first step in deriving big data or information value is information acquisition.

3. PUTTING BIG DATA TO WORK

When consumers engage with channels such as Amazon and Google Now, they get a very intimate experience and personalized product offers that are relevant to the consumer's needs. Based on these experiences, consumers have similar expectations from other consumer-centric companies such as banks, retailers and news/media. Without deep know-how about their consumers, companies may not be able to meet these expectations. This can have a profound impact on business. Not being able to gain insights from the goldmine of data means companies that should be consumer-centric, are truly falling short. They are allowing their competition to identify critical business trends and act on those before they can. They are basically leaving business on the table. Big Data and Customer Experience Management changes that equation.

While executives from consumer-centric companies agree that Big Data has potential to transform their businesses, they often are unsure which use cases they should consider when implementing a Big Data solution. While working with a number of Fortune 500 companies, we have identified key use cases in consumer-centric industries that are leading the wave and delivering significant business value.

4. CUSTOMER RELATION MANAGEMENT KEY

PRINCIPLE

Customer Experience Management in Banking and Financial Services:

- Mobile wallet for one-to-one marketing
- Offer recommendations based on individual preferences
- Reduced customer churn
- One-to-one marketing and personalized product offerings
- Manage risk, fraud prevention

4.1 Customer Experience Management in Media and Publishing:

- Personalized content and programs
- Recommendations – ads, content, etc.
- Audience measurement
- Customer retention and loyalty programs based on granular segmentation
- Cross- and up-sell

4.2 Customer Experience Management in Retail:

- One-to-one marketing and personalized product/coupon offers
- Customer retention and loyalty programs based on granular segmentation
- Sentiment and trend analysis

4.3 Customer Experience Management in Telecoms:

- Personalization
- Better targeting, micro campaigns, social leaders
- Reduce customer churn, price sensitivity
- Media and IPTV, audience measurement

Companies have vast amounts of customer information and big data, including that from CRM applications (including contact centre, sales, campaign management and social media) and the unused "dark" data from blogs, texts and click streams, speech and location-based context.

The biggest untapped opportunity for most companies lies with the unused dark data, which is often unstructured, presenting it as one of the organization's biggest challenges.

There is a vast and growing amount of external data on customers, which comes from partners, suppliers and distributors, as well as from third-party data suppliers. Cloud-based solutions may also hold key data that is beyond the company's firewall.

Social media is contributing to the unprecedented volume, variety and velocity of information. Organizations often have some of this information (sentiment) internally, but most (wants, needs, hobbies) is outside of its firewalls and can be difficult to consistently and accurately acquire.

It is important to identify the best and most appropriate sources and types of customer information, based on the customer process and business objective, regardless of the origin of the data. One source is unlikely to be adequate for most big data CRM initiatives. Therefore, data integration and management will become paramount.

Companies must also consider legal usage policies and privacy concerns across the different sources and how they affect the management of that information.

Structured and unstructured data most organizations have developed sophisticated techniques and tools for hierarchical and relational data (or structured data).

However, an increasing amount of unstructured content is coming from social, mobile and speech data streams. Content in its original form does not have a predefined data model or fit well into relational tables.

Most big data CRM initiatives are likely to require the integration and analysis of both structured and unstructured data to identify the most relevant insights and determine the most appropriate customer action. Most information infrastructure and technology can deal with one or the other information type — but not both.

Hybrid use cases expose a requirement to enable access to multiple information sources and manage multiple information types in an integrated and consistent manner. Developing consistent processes, technologies and best practices for content and then combining structured data and content will be a prerequisite for the hybrid use case.

CRM leaders will need to work with CIOs to ensure that hybrid data can be managed and ultimately analyzed for better customer insights.

Customer data can be integrated to create some form of a single view of the customer by using different forms of integration and applying them at different levels of the technology stack: portal/enterprise mash up, business process, application, data model and database.

The results will vary from tactical to strategic. Organizations need to build the case for a strategic approach; however, in many cases, the tactical approach is all that can be achieved in the short term.

The creation of a physical master data management (MDM) system is the most strategic method for creating a single view of the customer and laying a firm architectural foundation for future applications.

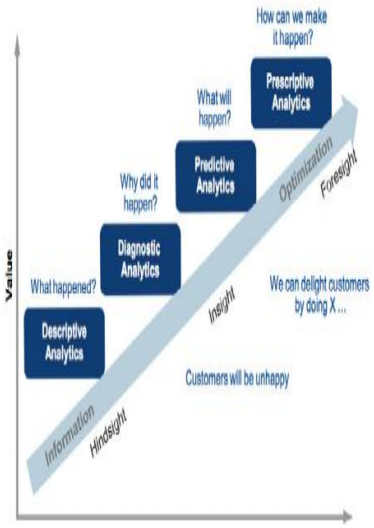
However, it requires the most commitment from and coordination in the organization in terms of time and resources. It also mandates the implementation of the companion discipline of information governance. Unlike other approaches, it directly tackles the challenge of MDM, and will give the best data quality, consistency and shareability of master customer data.

6. ANALYTICAL TOOLS

Various analytical capabilities and tools can be applied to customer information. Each will yield a different type of customer insight. The type that is gathered will determine the best customer decisions that can be made using that information.
For example, determining that a customer just went skiing is unlikely to warrant an offer for new skis or boots, but it may warrant a travel voucher for the next ski season. Predicting that a customer will go skiing in three months' time opens the door to selling a variety of retail items, as well as travel and accommodation.

Analytics for customer analysis can answer four questions:

1. What is happening (visibility/descriptive analytics)?
2. Why is it happening (causality/diagnostic analytics)?
3. What will happen (predictability/predictive analytics)?
4. How can we make it happen (influencing/prescriptive analytics)?



Getting answers to all four questions is the basis of a successful big data CRM initiative. Predictive and prescriptive analytics will open up more opportunities to market and sell the customer, as well as proactively prevent customer service issues. Companies will need to start first with the basics, then move to more advanced levels for predictive and prescriptive analysis. The data collected at Levels 1 and 2 often provide a more solid foundation for advanced analysis with more accurate data. Most CRM initiatives focus on descriptive analytics and are moving toward more-diagnostic types of analytics.

7. APPLYING CUSTOMER INSIGHTS

To be effective and derive business value, customer insights generated by big data must be put into action. For example, social network and media analysis benefit from a process feedback loop approach that many organizations have already begun to adopt. Here, social listening is used to seek new or known patterns, such as product or brand complaints.

Where possible, the decisions for specific contextual scenarios are modeled and automatically made via business rules, which can handle complex events. Rule engines drive marketing or other workflow automation tools, which can generate and track leads, target segments of users with special offers, feed alerts to a customer support centre and adjust product recommendations at the call centre or website.

This customer decision-making phase requires an intimate understanding of the customer's purchase journey, and the construction of multiple context scenarios is probably the most difficult part for companies to properly understand and automate decisions.

Big data presents many CRM opportunities. However, with the business opportunity also comes the potential to bombard the customer with too many messages – or worse, to be inconsistent and contradictory. Aligning all customer initiatives isn't easy, but establishing a customer engagement or interaction hub will provide: common access to structured and unstructured information, access to customer insights, insight into previous customer interactions, the ability to priorities customer interactions

8. CONCLUSION

Customer relationship management (CRM) requires enterprises to interact flexibly with their customers. Enterprises must quickly and effectively find complex customer data from large quantities of data by big data to help understand and interact with them by suitable marketing tactics, increase the value to the customer, and improve their competitive advantages of enterprises. In this chapter, discuss big data mining, customer relationship management, customer value, and propose a case study of big data mining for customer relationship management with data of the Automotive Maintenance Industry.

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