Case Studies – Fortnightly Task 2

Vishal Patnaik Damodarapatruni - s3811521

17/08/2020

#**********#

E-Commerce

a) Data challenges

- ***Challenge 1: Constraints on budget and time.*** [1]

  Most of the small sized and the medium sized online retailers will be having only limited resources which makes data driven marketing a significant hurdle. [1]

- ***Challenge 2: Failure in transformation of data into actions.*** [1]

  All the data will be collected and puts in good use. [1] *The main and most common problem among small business owners is that they do not have enough time to extract the valuable information from their data and according to it quickly.* [1]

- ***Challenge-3: Action of bad data.*** [1]

  Big data is the bane for all the digital marketers. But it is difficult to realize that the digital marketers are acting on the bad data. The information may get outdated or inaccurate from the start, the marketers should get precise data to know the complete picture of the customer. [1]

- ***Challenge-4: Failure in gaining the great market share.*** [1]

  Without considering the competitors into account and solely focusing on the own e-commerce business may lead to the missing of vital part of the digital marketing strategy. [1]

- ***Challenge-5: Providing the experience in Omnichannel*** [1]

  The customers can shop on multiple devices and multiple channels. They expect a consistent shopping experience on these platforms and they also fluctuate from a retail space on online store. [1]

b) Solutions to overcome above challenges.

- *The challenge-1 can be solved by investing the collected data in an automated system is necessary. Marketing automation allows to gather the high-quality data*

and gets the user experience and measure the performance. For long term success, the technology is the investment. [1]

- *The solution for the challenge-2 is finding the good platform for marketing automation which gives the better result. With data-driven recommendation data sent to a dashboard and can analyze the data on real time to know what the next marketing move should be.* [1]
- *The solution for the challenge-3 is that if the old data do not have to kill the sales and relationships with the customers and to achieve this the data should be cleaned and updated.* [1]
- *The solution for the challenge-4 is performing a competitive analysis. Understand the competitor weakness and the strength. Then one can identify the new opportunities and eliminate the potential threat and can gain great market share.* [1]
- *The solution for the challenge-5 is breaking down the silos. For producing an integrated solution for all those platforms, one need to work with other departments and get the valuable data. By breaking down to silos one can take the integrated approach for marketing.* [1]

c) Techniques/Approaches/Practices

Data science in E-Commerce is mostly relevant to retail industry.

- *The most traditional tools of the data analytics which retailers have been profiting off for years is market basket analysis. This includes a great deal of how the showcasing of an item is finished by retailers.* [2]
- *Also, in the E-commerce world, customer data is mandatory for potential buying.* [2]
- *Search Recommendations involves Machine Learning.* [3]
- *Interactive Product Visualization.* [3]
- *Artificial Intelligence.* [3]
- *Advance Product Filtering.* [3]
- *Chatbots.* [3]
- *More Delivery Options.* [3]

d) *The technologies of data science that can be applied to the domain are:*

1. ***Embrace Blockchain*** [4]
    - *This technology is mainly used for an enhanced product traceability. To leverage each store's capabilities eCommerce integrations are built.* [4]
    - *Chargeback fraud protection and prevention* [4]
    - *Simplified fast card payments* [4]
    - *Border trade decentralization etc.* [4]
2. ***Shop with VR*** [4]
    - *Amazon digital retail kiosks.* [4]
    - *Toyota's immersive digital driving etc.* [4]
3. ***Invest in the Internet of Things (IoT)*** [4]
    - *Improves inventory management.* [4]

- *RFIDs and sensors help the real-time monitoring of items.* [4]
- *Under and overstocking elimination.* [4]
- *Provides real - time status and exact location of products etc.* [4]

#**********#

Finance/Banking

a) Data challenges

- ***Challenge-1: Risk with data.***

  Simply we can say when the data is higher, higher the risk. It is mandatory to the bank to assure the safety to the data of the customers.

- ***Challenge-2: Difficult to make use of siloed data.*** [5]

  Banking Services data highly diverse and stored in different departments. It is much difficult to profile a user details dealing with different departments like account details, loans, insurance etc. [5]

- ***Challenge-3: Legal and regulatory concerns.*** [6]

  Data can have big legal and regulatory concerns with complexities and limitations due to its size. Many of the companies have control procedures and the data management procedures for small data. [6]

- ***Challenge-4: Privacy and security.*** [6]

  The financial data can also have the large red flag in privacy and security. The ways to abuse this data is high and the banks need to correct it right. [6]

- ***Challenge-5: Quality of the data.*** [6]

  Data quality is more important even in any technology. [6]

- ***Challenge-6: Talent challenge.*** [6]

  Finding the combination of good business acumen and the hard science is scarcer. Right brained visualization team is a new paradigm for workforce management. [6]

b) Solutions to overcome above challenges.

- *As we know the banks are early adopters of data analytics technology, but these older systems cannot hold the complexity of today's data. Traditional approach to data science cannot effectively deal with data collection, pre-processing. To overcome this new platform that automates the whole process should be adapted.*
- *The Solution for the Challenge-2 is the big data needs to collate all the data that was highly diverse according to departments to provide comprehensive intelligence.* [5]
- *The solution for the privacy and the security challenge is that the big data techniques and the analytical tools provide better services to the customers with privacy and security. It will be better thing between the helpful and intrusive.* [6]

- *The solution for the legal and regulatory concerns is that the growing impacts of regulation, banks are clear of the big data and at least proceeding judiciously.* [6]
- *The solution to overcome the talent challenge is that big data specialist should be payed significantly compared to the traditional ETL and the big data specialist should have solid business understandings.* [6]
- *The solution for the data quality challenge is to make sure of the highest data quality and integrity, the data quality attributes like accuracy, timeliness, completeness, Validity and so forth must be measured, defined, recorded and make the data available for the end users. Banks must create data quality meta data that includes data quality attributes, measurements, mappings, and controls.* [6]

c) Techniques/Approaches/Practices

- *Financial institutions struggle for maximum advantage of customer insights derived from systems of records to manage risk and fraud and to improve production department, marketing, and customer communications.*
- *Now many of the banks are just beginning to consolidate and utilize the internal data elements such as debit, credit transactions etc. When it comes to big data banks collect large information and newer platforms opens for data sets that can be mined for meaningful data.*
- *Digital Account Opening* [7]
- *Person-to-Person (P2P) Payments* [7]
- *Video Collaboration/Marketing* [7]
- *Cloud Computing* [7]
- *APIs* [7]

d) *For proper implementation of how customers preferred to be served, banks will apply the following data science techniques:*

1. ***Hypothesis Testing***
2. ***NLP***
3. ***ML***
4. ***Crowd sourcing***
5. ***Signal Processing.***

These techniques or approaches shows a vast change in the finance industry. These techniques can also play a significant role in early warning and detection and monitoring fraud. These also allow the organization to exact, analyze, interpret, and transform business data to detect potential instances of the fraud and implement effective fraud monitoring programs.

#**********#

Similarities and differences [8]*,*

Banking and trading not remained to aloof and made many advancements to make both banking and trading(marketing) easier, fast, and convenient to the people. The difference between the banking and the trading is self-evident. Banking is often involved in many cases of the e-commerce.

E-commerce is between the businesses to businesses when it is B2B, business to customer when it is B2C, CONSUMER-TO-CONSUMER when it is C2C, CONSUMER-TO-BUSINESS when it is C2B, BUSINESS-TO-ADMINISTRATION (B2A) and CONSUMER-TO-ADMINISTRATION (C2A).

The differences between the banking and e-commerce, it is clear that banking is a tool that makes the people get to their money and account fast and in an easy manner whereas the e-commerce is a tool that allows not only the companies to transact business with each other but also exchange of products and services using internet.

The similar thing in both domains is in the potential benefits. The approaches followed by both the domains are quite like implement.

Finance on e-commerce, [9]

- *Digital currency to Cryptocurrency.* [9]
- *Services for the one who does not have bank accounts.* [9]
- *Reducing fraud by using block chain.* [9]
- *Behavioral analysis of customer patterns by big data mining.* [9]
- *By mining with AI fraud can also be reduced.* [9]
- *Transactions like peer-to-peer lending, crowdfunding, and for-sale-by-owner (FSBO) real estate transactions.* [9]
- *Personalizing of customer experience by using AI chatbots for customer service and sophisticated data analytics.* [9]

References

[1] hypepotamus inc,, "hypepotamus," hypepotamus inc,, 2020. [Online]. Available: https://hypepotamus.com/community/data-driven-marketing-e-commerce/. [Accessed 13 8 2020].

[2] TechVidvan , "TechVidvan," TechVidvan , 2020. [Online]. Available: https://techvidvan.com/tutorials/data-science-in-banking/. [Accessed 14 8 2020].

[3] Smart Insights (Marketing Intelligence) Ltd, "Smart Insights," Smart Insights (Marketing Intelligence) Ltd, 2019. [Online]. Available: https://www.smartinsights.com/ecommerce/ecommerce-strategy/5-must-have-e-commerce-strategies-2019/. [Accessed 13 8 2020].

[4] Cedcommerce , "Cedcommerce," Cedcommerce , 2020. [Online]. Available: https://cedcommerce.com/blog/5-emerging-technologies-poised-to-revolutionize-ecommerce/#:~:text=The%20future%20of%20eCommerce%20definitely,also%20give%20VR%20a%20look.&text=It%20is%20the%20future%20of%20online%20shopping%20and%20retail.. [Accessed 13 8 2020].

[5] Finextra logo, "Finextra logo," Finextra logo, 2020. [Online]. Available: https://www.finextra.com/blogposting/17847/big-data-in-the-financial-services-industry--from-data-to-insights. [Accessed 14 8 2020].

[6] TechTarget, " TechTarget," TechTarget, 2020. [Online]. Available: https://www.datasciencecentral.com/profiles/blogs/5-key-big-data-challenges-in-banking-industry. [Accessed 13 8 2020].

[7] Forbes, "Forbes," 2020. [Online]. Available: https://www.forbes.com/sites/ronshevlin/2020/02/03/the-5-hottest-technologies-in-banking-for-2020/#731180d4c0d3. [Accessed 14 8 2020].

[8] UGD Repository, "UGD Repository," UGD Repository, 2020. [Online]. Available: http://eprints.ugd.edu.mk/11579/#:~:text=E%2Dcommerce%20consists%20of%20buying,characteristic%20only%20in%20e%2Dbanking. [Accessed 13 8 2020].

[9] TechFunnel, "TechFunnel," TechFunnel, 2020. [Online]. Available: https://www.techfunnel.com/fintech/role-of-e-commerce-financial-services/. [Accessed 14 8 2020].